

Twelfth Census of the United States.

CENSUS BULLETIN.

No. 160.

WASHINGTON, D. C.

April 26, 1902.

AGRICULTURE.

IOWA.

Hon. WILLIAM R. MERRIAM,
Director of the Census.

SIR: I have the honor to transmit herewith, for publication in bulletin form, the statistics of agriculture in the state of Iowa, taken in accordance with the provisions of section 7 of the act of March 3, 1899. This section requires that—

The schedules relating to agriculture shall comprehend the following topics: Name of occupant of each farm, color of occupant, tenure, acreage, value of farm and improvements, acreage of different products, quantity and value of products, and number and value of live stock. All questions as to quantity and value of crops shall relate to the year ending December thirty-first next preceding the enumeration.

A "farm," as defined by the Twelfth Census, includes all the land, under one management, used for raising crops and pasturing live stock, with the wood lots, swamps, meadows, etc., connected therewith. It also includes the house in which the farmer resides and all other buildings used by him in connection with his farming operations.

The farms of Iowa, June 1, 1900, numbered 228,622, and had a value of \$1,497,554,790. Of this amount, \$240,802,810, or 16.1 per cent, represents the value of buildings, and \$1,256,751,980, or 83.9 per cent, the value of land and of improvements other than buildings. On the same date the value of farm implements and machinery was \$57,960,660, and of live stock, \$278,830,096. These values, added to that of farms, give \$1,834,345,546, the "total value of farm property."

The products derived from domestic animals, poultry, and bees, including animals sold and slaughtered on farms, are referred to in this bulletin as "animal products." The total value of all such products, together with the value of all crops, is termed "total value of farm products." This

value for 1899 was \$365,411,528, of which amount \$169,858,981, or 46.5 per cent, represents the value of animal products, and \$195,552,547, or 53.5 per cent, the value of crops, including forest products. The total value of farm products for 1899 exceeds that for 1889 by \$206,063,684, or 129.3 per cent. A part of this apparent increase is doubtless due to a more detailed enumeration in 1900 than in 1890.

The value of "net farm products" or the "gross farm income" is obtained by deducting from the total value of farm products the value of the products fed to live stock on the farms of the producers. In 1899 the reported value of products fed was \$102,023,040, leaving \$263,388,488 as the gross farm income. The percentage which this amount is of the "total value of farm property" is referred to in this bulletin as the "percentage of gross income upon investment." For Iowa in 1899 it was 14.4 per cent.

As no reports of expenditures for taxes, interest, insurance, feed for stock, and similar items have been obtained by any census, no statement of net farm income can be given.

The statistics presented in this bulletin will be treated in greater detail in the final report on agriculture in the United States, which will be published about June 1, 1902. The present publication is designed to present a summarized advance statement for Iowa.

Very respectfully,

L. G. Powers.

Chief Statistician for Agriculture.

AGRICULTURE IN IOWA.

GENERAL STATISTICS.

Iowa has a total land surface of 55,475 square miles, or 35,504,000 acres, of which 34,574,337 acres, or 97.4 per cent, are included in farms.

The state extends from the Mississippi River westward to the Missouri, and its entire area is included in the drainage basin of these two rivers, by far the larger part lying within the basin of the Mississippi. In general the land slopes toward the south and east. There is very little woodland, and almost the entire area is available for cultivation.

The soil, which is a dark, heavy, drift loam from 2 to 5 feet in depth, is very fertile, well drained, and easily cultivated. Iowa is especially adapted to stock raising, and in 1900 stood first among the states of the Union in total value of domestic animals.

NUMBER AND SIZE OF FARMS.

The following table gives, by decades since 1850, the number of farms, the total and average acreage, and the per cent of farm land improved:

TABLE 1.—FARMS AND FARM ACREAGE: 1850 TO 1900.

YEAR.	Number of farms.	NUMBER OF ACRES IN FARMS.				Per cent of farm land improved.
		Total.	Improved.	Unimproved.	Average.	
1900.....	228,022	34,574,337	29,897,552	4,676,785	151.2	86.5
1890.....	201,908	30,491,541	25,428,899	5,062,642	151.0	83.4
1880.....	185,351	24,752,700	19,866,541	4,886,159	133.5	80.3
1870.....	116,292	15,541,793	9,396,467	6,145,326	133.6	60.5
1860.....	61,168	10,069,907	3,792,792	6,277,115	164.6	37.7
1850.....	14,805	2,786,084	824,682	1,911,382	184.8	30.1

The number of farms reported June 1, 1900, was fifteen times as great as the number reported in 1850, and was 26,719, or 13.2 per cent, greater than in 1890. The total farm acreage has increased steadily, and since 1880 more rapidly than the number of farms, so that the average size

of farms increased from 133.5 acres in 1880 to 151.2 acres in 1900, the greater part of this gain taking place in the decade from 1880 to 1890. The improved acreage has increased faster than the total farm area, as is shown by the steady and rapid increase in the percentage of farm land improved.

FARM PROPERTY AND PRODUCTS.

Table 2 presents a summary of the principal statistics relating to farm property and products for each census year, beginning with 1850.

TABLE 2.—VALUES OF SPECIFIED CLASSES OF FARM PROPERTY, AND OF FARM PRODUCTS: 1850 TO 1900.

YEAR.	Total value of farm property.	Land, improvements, and buildings.	Implements and machinery.	Live stock.	Farm products. ¹
1900.....	\$1,834,345,546	\$1,497,554,790	\$57,960,660	\$278,830,096	\$365,411,528
1890.....	1,100,682,579	857,581,022	36,665,315	206,436,242	159,347,844
1880.....	721,517,214	567,430,227	29,371,894	124,715,103	136,103,478
1870.....	496,159,156	392,662,441	20,509,582	82,987,133	\$114,886,441
1860.....	147,702,373	119,899,547	5,327,033	22,476,293	-----
1850.....	21,519,711	16,657,567	1,172,869	3,689,275	-----

¹ For year preceding that designated.

² Values for 1870 were reported in depreciated currency. To reduce to specie basis of the other figures they must be diminished one-fifth.

³ Includes betterments and additions to live stock.

The value of farm property in 1900 was nearly ninety times as great as in 1850. The gain in the last decade was \$733,662,967, or 66.7 per cent. Of this amount \$639,973,768, or 87.2 per cent, represents the gain in value of land, improvements, and buildings; \$21,295,345, or 2.9 per cent, that in implements and machinery; and \$72,393,854, or 9.9 per cent, that in live stock.

COUNTY STATISTICS.

Table 3 gives an exhibit of general agricultural statistics by counties.

TABLE 3.—NUMBER AND ACREAGE OF FARMS, AND VALUES OF SPECIFIED CLASSES OF FARM PROPERTY, JUNE 1, 1900, WITH VALUE OF PRODUCTS OF 1899 NOT FED TO LIVE STOCK, AND EXPENDITURES IN 1899 FOR LABOR AND FERTILIZERS, BY COUNTIES.

COUNTIES.	NUMBER OF FARMS.		ACRES IN FARMS.		VALUES OF FARM PROPERTY.				Value of products not fed to live stock.	EXPENDITURES.	
	Total.	With build- ings.	Total.	Improved.	Land and improve- ments (ex- cept build- ings).	Buildings.	Imple- ments and machinery.	Live stock.		Labor.	Fertili- zers.
The State	228,622	220,626	84,574,337	29,897,652	\$1,256,751,960	\$240,802,810	\$57,960,660	\$278,830,096	\$263,388,488	\$16,375,670	\$387,190
Adair	2,887	2,295	360,224	331,570	10,868,310	1,965,700	503,840	8,414,436	2,809,447	116,410	1,660
Adams	1,949	1,843	273,042	249,130	9,662,040	1,628,760	408,450	2,903,761	2,313,077	85,400	1,600
Allamakee	2,368	2,333	383,324	223,256	8,389,430	2,284,090	627,670	2,110,468	2,268,088	173,130	1,970
Appanoose	2,526	2,422	325,147	265,492	8,111,620	1,658,450	373,280	2,321,730	1,782,170	61,090	7,270
Audubon	1,988	1,901	282,456	272,197	9,814,950	1,030,500	474,110	2,650,485	2,892,791	102,580	4,050
Benton	2,774	2,691	458,801	408,859	20,788,180	3,966,730	799,280	3,896,565	3,828,340	291,900	194,690
Blackhawk	2,257	2,177	349,194	318,102	14,948,470	3,354,200	675,210	3,067,985	3,040,066	142,280	190
Boone	2,670	2,597	349,980	307,938	13,481,850	2,495,340	632,200	2,656,709	2,656,793	180,350	2,020
Bremer	2,004	1,937	275,501	242,494	10,389,470	3,084,690	624,200	2,255,815	2,250,581	166,840	1,970
Buchanan	2,447	2,389	367,516	320,901	12,852,520	2,755,840	646,880	3,014,781	3,115,964	188,970	6,070
Buena Vista	1,956	1,919	360,231	338,925	13,001,470	2,906,120	562,610	2,736,760	2,612,688	107,050	6,060
Butler	2,804	2,231	360,578	323,179	14,145,860	2,571,020	641,120	2,841,148	2,773,647	137,170	5,150
Calhoun	2,134	2,032	362,873	345,079	13,248,880	1,992,560	584,120	2,496,244	3,047,603	146,960	6,940
Carroll	2,175	2,150	356,987	346,597	13,676,400	2,527,550	652,530	2,875,267	2,847,862	199,420	2,110
Cass	2,895	2,256	354,644	383,557	13,725,420	2,365,790	602,070	3,610,416	3,348,196	208,440	420
Cedar	2,291	2,245	348,056	313,257	16,824,370	3,627,460	649,060	3,658,147	3,261,015	187,850	7,560
Cerro Gordo	1,957	1,907	353,188	314,078	13,272,230	2,384,700	640,230	2,610,465	2,811,297	151,410	2,390
Cherokee	1,908	1,839	354,648	323,883	15,341,580	2,268,410	573,840	3,051,784	2,584,577	65,470	2,080
Chickasaw	2,197	2,128	311,208	265,380	11,594,740	2,330,060	589,290	2,251,825	2,280,213	259,200	7,480
Clarke	1,714	1,663	259,491	197,818	7,131,900	1,248,960	318,790	2,183,388	1,509,431	352,040	9,800
Clay	1,684	1,604	344,960	324,815	11,440,140	1,750,250	526,780	2,413,082	2,186,381	206,770	8,540
Clayton	3,318	3,204	459,892	814,776	13,826,980	3,965,540	898,890	3,217,318	3,398,410	138,840	760
Clinton	2,786	2,719	423,251	383,562	19,023,080	4,285,110	822,230	3,959,715	3,782,638	250,370	2,100
Crawford	2,649	2,564	449,956	416,917	15,266,790	3,049,900	770,560	3,988,215	3,534,097	104,300	8,730
Dallas	2,007	2,522	359,280	307,221	14,124,010	2,505,300	566,660	3,279,689	3,187,544	200,370	8,730
Davis	2,553	2,478	318,892	246,558	7,762,460	1,724,020	399,310	2,260,854	1,779,885	64,030	2,860
Decatur	2,508	2,412	326,678	235,657	8,537,330	1,676,120	402,600	2,417,781	1,800,229	90,280	8,020
Delaware	2,241	2,199	355,610	292,386	14,607,900	3,123,380	754,660	3,038,823	2,951,827	128,250	2,390
Des Moines	2,189	2,104	250,572	186,882	9,875,800	2,475,230	490,030	1,939,490	1,976,447	74,930	80
Dickinson	995	936	221,970	198,812	6,243,020	970,260	329,660	1,143,256	1,101,161	200,370	8,730
Dubuque	2,485	2,442	367,203	259,785	13,981,470	3,386,240	779,230	2,894,899	2,961,925	104,300	970
Emmet	1,056	999	236,580	209,877	8,559,570	979,200	312,020	1,341,214	1,293,151	229,670	720
Fayette	3,261	3,169	445,118	356,848	15,210,420	3,756,290	828,120	3,592,448	3,266,824	148,960	1,480
Floyd	2,054	1,976	308,848	278,541	11,583,320	2,381,020	614,370	2,201,961	2,559,416	171,910	5,140
Franklin	1,874	1,815	362,601	326,411	13,878,480	2,025,880	564,000	2,728,713	2,709,888	173,680	1,680
Fremont	2,894	2,245	328,958	295,577	12,791,750	1,996,860	420,280	2,646,021	2,467,785	140,540	5,600
Greene	2,314	2,260	366,125	329,617	13,018,450	2,186,710	584,070	2,849,654	2,671,872	185,610	1,840
Grundy	1,783	1,738	316,912	304,421	15,614,830	2,387,520	615,590	2,751,260	2,955,776	121,900	1,470
Guthrie	2,492	2,367	357,076	304,646	11,201,840	2,025,720	512,750	3,096,133	2,794,223	159,790	1,470
Hamilton	2,245	2,195	364,042	328,308	13,245,110	2,364,880	595,720	2,704,918	2,804,782	142,700	1,840
Hancock	1,703	1,600	349,342	322,088	11,367,060	1,735,980	565,090	2,068,541	2,153,116	158,410	8,680
Hardin	2,294	2,245	351,046	305,871	13,272,250	2,471,260	604,990	2,852,577	2,915,380	208,020	2,180
Harrison	3,224	3,003	422,749	332,303	12,580,850	2,481,820	655,470	3,374,820	3,154,940	106,870	2,590
Henry	2,252	2,181	271,588	215,464	10,728,740	2,506,750	461,980	2,872,828	2,096,719	139,920	1,640
Howard	1,708	1,671	291,263	257,938	9,800,150	1,971,910	507,630	1,987,949	1,901,999	117,790	1,600
Humboldt	1,478	1,438	274,618	258,186	9,904,680	1,746,780	468,160	1,974,374	1,950,523	102,950	6,100
Ia	1,493	1,460	270,415	260,556	10,104,640	1,923,970	538,590	2,597,113	2,330,478	192,430	4,650
Iowa	2,454	2,318	368,779	312,378	13,740,820	2,828,300	616,260	3,463,023	2,937,937	185,110	1,640
Jackson	2,687	2,574	394,420	271,742	11,908,350	3,087,650	650,930	3,104,633	2,801,911	228,970	2,160
Jasper	3,320	3,196	464,105	425,393	18,995,090	3,344,060	778,600	4,447,620	4,138,061	85,090	10,160
Jefferson	2,208	2,135	268,189	211,089	9,012,520	2,247,510	445,610	2,247,408	1,818,659	204,080	430
Johnson	2,712	2,661	385,770	319,264	16,328,830	3,789,670	748,820	3,693,820	3,217,735	189,430	2,240
Jones	2,378	2,319	354,699	289,431	14,761,750	3,081,660	598,930	3,464,931	3,074,637	186,450	3,220
Keokuk	2,927	2,839	361,544	300,975	13,560,100	2,724,680	664,580	3,840,935	2,889,449	208,280	6,880
Kossuth	2,807	2,781	587,147	539,818	17,923,910	2,830,460	947,420	3,289,761	3,174,904	120,680	2,440
Lee	2,649	2,450	312,862	216,794	9,539,660	2,441,890	458,180	1,986,872	1,867,520	81,710	1,440
Linn	3,567	3,458	432,888	351,998	19,207,170	4,254,110	819,180	3,848,881	3,828,154	65,780	2,830
Louisa	1,619	1,580	287,972	182,032	8,812,240	1,770,530	352,660	1,791,864	1,671,589	268,150	7,890
Lucas	1,892	1,817	263,674	198,724	7,296,300	1,818,340	334,350	2,127,340	2,285,848	119,750	5,850
Lyon	1,619	1,518	358,801	344,041	11,590,090	1,727,090	552,320	1,918,442	2,085,436	184,440	4,250
Madison	2,600	2,505	354,216	271,717	11,373,450	2,206,850	517,930	3,325,232	2,685,436	98,540	1,600
Mahaska	3,202	3,082	358,250	307,823	14,835,900	3,078,970	689,180	3,320,268	3,090,997	189,630	4,250
Marion	2,914	2,729	351,163	292,500	12,043,210	2,104,720	460,080	3,122,080	2,659,380	182,720	7,040
Marshall	2,400	2,384	360,232	334,372	15,408,970	2,998,000	700,740	3,132,071	3,818,962	188,380	8,190
Mills	2,016	1,851	272,815	241,456	11,492,560	2,083,310	411,020	2,688,799	2,450,667	200,780	500
Mitchell	1,718	1,665	288,600	257,107	11,823,630	2,181,900	550,550	2,089,764	2,326,906	190,380	9,770
Monona	2,491	2,374	386,780	305,664	12,084,550	1,851,220	666,500	2,917,524	2,745,540	59,160	1,510
Monroe	1,987	1,883	262,236	181,110	7,756,140	1,865,820	364,850	1,452,296	1,521,888	155,020	10,690
Montgomery	1,910	1,883	272,067	252,009	12,045,490	1,976,010	470,850	2,799,733	2,821,883	199,070	1,670
Muscataine	1,976	1,909	264,121	219,652	11,342,880	2,604,270	492,710	2,197,576	2,416,868	215,780	540
O'Brien	1,845	1,791	360,025	343,008	13,754,510	2,171,510	638,950	2,618,240	2,614,846	118,000	490
Osceola	1,088	1,047	245,875	236,099	8,011,360	1,123,060	400,770	1,096,678	1,299,984	176,790	2,380
Page	2,648	2,549	338,132	311,496	14,962,610	2,660,800	579,330	3,446,301	3,184,944	106,740	1,510
Palo Alto	1,661	1,630	342,509	326,854	9,372,930	1,421,810	442,310	1,982,055	1,954,090	278,990	3,770
Plymouth	2,648	2,542	541,967	489,765	19,388,570	2,423,480	877,200	3,425,044	3,615,604	93,770	90
Pocahontas	2,005	1,986	365,455	326,759	11,338,110	2,206,070	589,880	2,658,035	2,876,889	186,340	6,390
Polk	3,171	3,023	870,252	826,759	13,799,700	3,272,560	689,040	3,135,246	3,556,235	369,960	7,880
Pottawattamie	4,239	3,954	699,930	529,790	24,223,790	4,440,310	1,007,670	5,414,155	5,380,116	203,050	4,210
Poweshiek	2,322	2,245	366,020	338,773	14,983,600	2,824,640	632,730	3,966,124	3,249,660	91,730	1,670
Ringgold	2,356	2,249	340,111	285,581	9,877,970	1,688,320	414,870	3,215,154	2,229,624		

TABLE 3.—NUMBER AND ACREAGE OF FARMS, AND VALUES OF SPECIFIED CLASSES OF FARM PROPERTY, JUNE 1, 1900, WITH VALUE OF PRODUCTS OF 1899 NOT FED TO LIVE STOCK, AND EXPENDITURES IN 1899 FOR LABOR AND FERTILIZERS, BY COUNTIES—Continued.

COUNTIES.	NUMBER OF FARMS.		ACRES IN FARMS.		VALUES OF FARM PROPERTY.				Value of products not fed to live stock.	EXPENDITURES.	
	Total.	With buildings.	Total.	Improved.	Land and improvements (except buildings).	Buildings.	Implements and machinery.	Live stock.		Labor.	Fertilizers.
Sac.	1,999	1,962	364,232	354,151	\$13,892,300	\$2,590,690	\$633,120	\$3,189,585	\$2,936,298	\$206,220	\$970
Scott.	2,347	2,307	278,945	254,739	14,987,980	3,973,940	750,200	2,489,635	2,961,750	\$37,330	5,930
Shelby.	2,387	2,285	371,873	350,733	13,813,760	2,418,980	661,610	3,029,677	3,245,560	205,360	4,760
Sioux.	2,451	2,322	476,621	452,031	18,558,110	2,675,470	737,980	3,094,098	3,454,171	333,140	4,120
Story.	2,436	2,326	356,654	329,856	15,780,830	2,627,360	658,280	2,859,454	3,131,013	151,970	5,080
Tama.	2,725	2,632	438,596	391,668	18,403,280	3,277,300	802,290	3,895,081	3,845,577	230,750	3,090
Taylor.	2,581	2,487	337,002	294,010	11,381,040	2,070,700	448,500	3,214,361	2,528,801	104,220	4,280
Union.	1,823	1,742	268,513	212,705	8,622,540	1,593,330	395,850	2,517,131	1,967,490	100,890	1,700
Van Buren.	2,242	2,192	300,111	210,723	8,079,130	2,052,030	414,380	2,200,911	1,856,524	79,920	3,750
Wapello.	2,311	2,237	262,459	208,840	9,282,280	1,965,530	404,840	2,141,102	1,517,884	95,290	1,480
Warren.	2,926	2,833	351,783	287,010	11,931,710	2,266,510	468,330	3,306,985	2,675,808	107,160	1,850
Washington.	2,511	2,404	344,695	293,219	14,662,740	2,382,430	617,770	3,348,190	2,965,344	144,000	4,400
Wayne.	2,285	2,189	332,762	298,910	9,826,640	1,891,240	465,590	2,732,306	1,859,592	95,560	1,400
Webster.	2,564	2,502	428,976	360,535	15,556,930	2,643,920	759,620	2,734,918	2,760,576	163,450	730
Winnebago.	1,512	1,470	239,085	207,969	7,643,020	1,294,890	367,910	1,397,096	1,459,966	84,720	1,800
Winnesiek.	2,960	2,902	423,227	338,358	14,288,410	3,626,140	731,980	2,941,096	3,225,513	301,320	2,000
Woodbury.	3,231	3,073	522,737	443,681	16,237,170	2,878,120	800,110	3,703,887	3,902,855	235,710	17,700
Worth.	1,485	1,452	249,081	233,292	8,809,130	1,662,570	436,570	1,472,731	1,666,756	135,810	1,400
Wright.	1,878	1,818	366,871	330,851	13,221,370	2,048,830	613,460	2,521,948	2,584,921	182,810	100
Sac and Fox. ¹	28	18	881	789	31,450	4,310	3,380	7,540	5,426	80	-----

¹ Indian reservation.

In surface, soil, drainage, and other natural features the counties of Iowa are so similar that no striking differences are shown in their agricultural statistics. The average size of farms is largest in the northwestern counties, exceeding 200 acres in a few instances. The percentage of farm land improved does not vary materially. The average values of farms range from \$4,000 to \$10,000, being determined more by transportation facilities and the nearness of markets than by natural advantages.

The average expenditure for labor per farm was highest in the northwestern counties, where the average size of farms is greatest, and in the counties containing the largest cities. The amounts expended for fertilizers were small, averaging less than \$1.50 per farm, and in no county exceeding 5 cents per acre.

Only two counties, Grundy and Shelby, have fewer farms than in 1890, and in both cases the decreases are slight. Grundy is the only county reporting a smaller farm acreage than ten years before, but several counties report smaller improved acreages. These decreases are due largely to the stricter definition of the term "improved" by the Twelfth Census than by preceding censuses. Increases are shown for all counties in the values of the various forms of farm property, with the exception of live stock in Des Moines and Tama counties.

FARM TENURE.

Table 4 gives a comparative exhibit of farm tenure for 1880, 1890, and 1900.

The farms operated by tenants are divided into groups designated as farms operated by "cash tenants," and farms

operated by "share tenants." These groups comprise, respectively: (1) Farms operated by individuals who pay a cash rental or a stated amount of labor or farm produce; (2) farms operated by individuals who pay as rental a stated share of the products.

In Table 5 the tenure of farms for 1900 is given by race of farmer, the farms operated by owners being subdivided into four groups designated as "owners," "part owners," "owners and tenants," and "managers." These terms denote, respectively: (1) Farms operated by individuals who own all the land they cultivate; (2) farms operated by individuals who own a part of the land and rent the remainder from others; (3) farms operated under the joint direction and by the united labor of two or more individuals, one owning the farm or a part of it, and the other or others owning no part, but receiving for supervision or labor a share of the products; and (4) farms operated by individuals who receive for their supervision and other services a fixed salary from the owners.

TABLE 4.—NUMBER AND PER CENT OF FARMS OF SPECIFIED TENURES: 1880 TO 1900.

YEAR.	Total number of farms.	NUMBER OF FARMS OPERATED BY—			PER CENT OF FARMS OPERATED BY—		
		Owners. ¹	Cash tenants.	Share tenants.	Owners. ¹	Cash tenants.	Share tenants.
1900	228,622	148,886	44,502	35,234	65.1	19.5	15.4
1890	201,903	145,183	24,940	31,780	71.9	12.4	15.7
1880	183,351	141,177	8,421	33,753	76.2	4.5	19.3

¹ Including "part owners," "owners and tenants," and "managers."

TABLE 5.—NUMBER AND PER CENT OF FARMS OF SPECIFIED TENURES, JUNE 1, 1900, CLASSIFIED BY RACE OF FARMER.

PART 1.—NUMBER OF FARMS OF SPECIFIED TENURES.

RACE.	Total number of farms.	Owners.	Part owners.	Owners and tenants.	Managers.	Cash tenants.	Share tenants.
The State.	228,622	116,188	28,988	2,129	1,581	44,502	35,234
White	228,395	116,090	28,952	2,129	1,577	44,452	35,195
Colored	227	98	36		4	50	39
Indian	27	26	1				
Negro	200	72	35		4	50	39

PART 2.—PER CENT OF FARMS OF SPECIFIED TENURES.

The State.	100.0	50.8	12.7	0.9	0.7	19.5	15.4
White	100.0	50.8	12.7	0.9	0.7	19.5	15.4
Colored	100.0	43.2	15.8		1.8	22.0	17.2

That the facts epitomized in the foregoing tables may be seen in their true relation to the agricultural conditions and changes on Iowa farms in the past twenty years, they should be considered in connection with the occupation tables of the census. Those tables are available for 1880 and 1890, but not as yet for 1900. In 1880 the total number of males engaged in agriculture was 302,171, while in 1890 it was 313,484. In 1880, 88,045 of the total number were employed at farm labor for wages; in 1890 but 73,753 were so employed. In connection with each 1,000 farms there were in 1880, 1,630 males employed in some capacity. Of that number, approximately 762 operated farms as owners; 238, as tenants; 470 were farm laborers working for wages; and 160 were employed for wages at special occupations, such as gardening, floriculture, etc. In 1890 for each 1,000 farms, 1,553 males were employed, of whom 719 operated farms as owners; 281, as tenants; 365 were employed as wage laborers; and 188 at special occupations.

To show the relative changes that took place in the four classes of farming population, the following comparative statement is presented: Of every 1,000 males engaged in agriculture in 1880, approximately 467 operated farms as owners; 146, as tenants; 292 were farm laborers; and 95 were employed at special occupations for wages. In 1890 there were 463 owners, 181 tenants, 235 farm laborers, and 121 persons engaged in special occupations. The relative number of owners was practically the same in 1890 as in 1880; tenants and laborers employed at special occupations increased faster than the total number of males engaged in agriculture; while the number of farm laborers working for wages actually decreased.

It may be safely assumed that the total farming population varies from decade to decade approximately with the number of males engaged in agriculture. From figures

given above it is seen that in the decade from 1880 to 1890 the number of males engaged in agriculture, and hence the total farming population, increased 3.74 per cent. During the same period, owners increased in number 2.84 per cent, and tenants 28.4 per cent, while the number of wage laborers employed on farms decreased 16.2 per cent. In each of the classes mentioned there was a movement that assisted in raising the average social and economic level of the farming population. Whether caused by the rise of farm laborers to ownership or tenancy, as appears probable from the figures reviewed, or by additions to the classes of owners and tenants through immigration, this elevation is a beneficent change in all its aspects.

The occupation tables for 1900 are not yet prepared, but if the changes in rural population are reliable indices of the changes in the farming population proper, the movements noted for the decade from 1880 to 1890 continued with but slight modification in the last decade, and the average condition of people on Iowa farms has been improved even more than is shown by the foregoing comparisons.

In connection with the changes noted above, attention is called to the specific changes in farm tenure shown in Tables 4 and 5. The number of farms operated by owners has increased 7,709, or 5.5 per cent, since 1880, while the total number of farms has increased 23.3 per cent, resulting in a decrease in the per cent of farms operated by owners. The total number of tenant-operated farms has increased 80.5 per cent. Aside from this increase, there has been another remarkable change. The number of cash tenants is over five times as great as in 1880, while in the same time the number of share tenants has decreased 1.5 per cent. In 1880, 80.9 per cent of all tenants were share tenants; in 1890, 56.0 per cent; and in 1900, 44.2 per cent. This change is believed to be the result of a growing sentiment on the part of both landlord and tenant in favor of the cash-payment system, and indicates greater independence and financial responsibility on the part of the tenant class as a whole. This belief is supported by the fact that in the most intensively cultivated regions the greater part of the tenants are cash tenants. In Cherokee county, for instance, 67.3 per cent, and in Grundy county 68.5 per cent of all tenants pay cash rentals, while in Van Buren and Winnebago counties the corresponding percentages are only 41.8 and 44.2.

No previous census has reported the number of farms operated by "part owners," "owners and tenants," or "managers," but it is believed that the number of farms conducted by the last-named class is constantly increasing.

FARMS CLASSIFIED BY RACE OF FARMER AND BY TENURE.

Tables 6 and 7 present the principal statistics for farms classified by race of farmer and by tenure.

TABLE 6.—NUMBER AND ACREAGE OF FARMS, AND VALUE OF FARM PROPERTY, JUNE 1, 1900, CLASSIFIED BY RACE OF FARMER AND BY TENURE, WITH PERCENTAGES.

RACE OF FARMER, AND TENURE.	Number of farms.	NUMBER OF ACRES IN FARMS.			VALUE OF FARM PROPERTY.	
		Average.	Total.	Per cent.	Total.	Per cent.
The State.....	228,622	151.2	34,574,837	100.0	\$1,834,345,546	100.0
White farmers.....	228,395	151.3	34,558,319	100.0	1,833,523,669	100.0
Colored farmers ¹	227	70.6	16,018	(²)	821,877	(²)
Owners.....	116,188	143.2	16,639,363	48.1	918,612,747	50.1
Part owners.....	28,988	186.9	5,418,760	15.7	274,391,294	15.0
Owners and tenants.....	2,129	184.9	393,645	1.1	21,648,004	1.2
Managers.....	1,581	315.6	498,982	1.4	28,838,823	1.6
Cash tenants.....	44,502	144.9	6,449,286	18.7	338,475,628	18.4
Share tenants.....	85,284	146.9	5,174,801	15.0	252,379,050	13.7

¹ Comprising 200 negroes and 27 Indians.

² Less than one-tenth of 1 per cent.

TABLE 7.—AVERAGE VALUES OF SPECIFIED CLASSES OF FARM PROPERTY, AND AVERAGE GROSS INCOME PER FARM, WITH PER CENT OF GROSS INCOME ON TOTAL INVESTMENT IN FARM PROPERTY, CLASSIFIED BY RACE OF FARMER AND BY TENURE.

RACE OF FARMER, AND TENURE.	AVERAGE VALUES PER FARM OF—					Per cent of gross income on total invest- ment in farm property.
	Farm property, June 1, 1900.				Gross income (products of 1899 not fed to live stock).	
	Land and im- prove- ments (except build- ings).	Build- ings.	Imple- ments and ma- chinery.	Live stock.		
The State.....	\$5, 497	\$1, 053	\$253	\$1, 220	\$1, 152	14. 4
White farmers.....	5, 500	1, 054	254	1, 220	1, 153	14. 4
Colored farmers ¹	2, 523	454	116	528	558	15. 4
Owners.....	5, 174	1, 191	258	1, 283	1, 117	14. 1
Part owners.....	6, 581	1, 112	301	1, 472	1, 647	16. 3
Owners and tenants.....	6, 752	1, 417	300	1, 699	1, 342	13. 2
Managers.....	11, 850	2, 345	334	3, 712	2, 397	13. 1
Cash tenants.....	5, 533	831	235	1, 007	1, 064	14. 0
Share tenants.....	5, 263	753	217	930	988	13. 8

¹ Comprising 200 negroes and 27 Indians.

The value of the farm property of the colored farmers is \$821,877. Of this amount, \$783,377 represents the property of negroes, and \$38,500 that of Indians. Farms operated by owners have the smallest average area, 143.2 acres, while those operated by managers have the largest, 315.6. Many of the latter are adjuncts of public institutions, while others are conducted by wealthy individuals in connection with their summer homes. As a rule, such farms are favorably located and highly improved, and the average values of the various forms of farm property, shown in Table 7, are much larger for this class than for any other class of farms grouped by tenure. The ratio which the gross income of these farms bears to the total value of their farm property is, however, smaller than for the other groups. This is due to the high average valuation of land and buildings, and to the fact that many of these farms are not cultivated primarily for profit.

FARMS CLASSIFIED BY AREA.

Tables 8 and 9 present the principal statistics for farms classified by area.

TABLE 8.—NUMBER AND ACREAGE OF FARMS, AND VALUE OF FARM PROPERTY, JUNE 1, 1900, CLASSIFIED BY AREA, WITH PERCENTAGES.

AREA.	Number of farms.	NUMBER OF ACRES IN FARMS.			VALUE OF FARM PROPERTY.	
		Average.	Total.	Per cent.	Total.	Per cent.
The State.....	228,622	151.2	34,574,337	100.0	\$1,834,345,546	100.0
Under 3 acres.....	975	1.9	1,838	(¹)	1,240,756	0.1
3 to 9 acres.....	4,756	6.0	28,517	0.1	7,078,585	0.4
10 to 19 acres.....	5,917	13.4	79,572	0.2	10,500,241	0.6
20 to 49 acres.....	21,475	35.6	765,266	2.2	49,990,584	2.7
50 to 99 acres.....	49,665	77.1	3,828,843	11.1	208,694,536	11.4
100 to 174 acres.....	79,923	140.1	11,197,376	32.4	598,231,639	32.6
175 to 259 acres.....	38,144	214.7	8,190,188	23.7	483,853,182	26.6
260 to 499 acres.....	24,609	332.0	8,171,295	23.6	413,260,142	22.5
500 to 999 acres.....	2,818	626.0	1,764,029	5.1	87,694,694	4.8
1,000 acres and over.....	340	1,610.1	547,418	1.6	23,795,187	1.3

¹ Less than one-tenth of 1 per cent.

TABLE 9.—AVERAGE VALUES OF SPECIFIED CLASSES OF FARM PROPERTY, AND AVERAGE GROSS INCOME PER FARM, WITH PER CENT OF GROSS INCOME ON TOTAL INVESTMENT IN FARM PROPERTY, CLASSIFIED BY AREA.

AREA.	AVERAGE VALUES PER FARM OF—					Per cent of gross income on total investment in farm property.
	Farm property, June 1, 1900.				Gross income (products of 1899 not fed to live stock).	
	Land and improvements (except buildings).	Buildings.	Implementments and machinery.	Live stock.		
The State.....	\$5,497	\$1,053	\$253	\$1,220	\$1,152	14.4
Under 3 acres	411	673	48	141	287	22.5
3 to 9 acres	637	617	60	174	237	15.9
10 to 19 acres	878	591	75	237	282	15.9
20 to 49 acres	1,854	522	100	352	392	16.8
50 to 99 acres	2,726	687	168	621	668	15.9
100 to 174 acres	5,141	1,012	258	1,074	1,085	14.5
175 to 259 acres	7,941	1,408	346	1,634	1,594	14.0
260 to 499 acres	11,891	1,806	440	2,656	2,288	13.6
500 to 999 acres	21,661	2,639	584	6,185	4,200	13.5
1,000 acres and over	47,685	5,850	1,038	15,413	9,019	12.9

The group of farms containing from 100 to 174 acres each comprises the largest percentage of the total farm acreage and also the largest percentage of the total value of farm property. In this group the average values of the various forms of farm property approach nearest to the average for the state. Except for slight variations in the average value of buildings on small farms, the average values of the several forms of farm property advance with the size of the farm. For farms of less than 3 acres the average value of buildings exceeds that of land and improvements, as this class includes most of the florists' establishments and city dairies.

The average gross incomes per acre for the various groups are as follows: Farms under 3 acres, \$152.21; 3 to 9 acres, \$39.46; 10 to 19 acres, \$20.99; 20 to 49 acres, \$11.01; 30 to 99 acres, \$8.66; 100 to 174 acres, \$7.74; 175 to 259 acres, \$7.43; 260 to 499 acres, \$6.89; 500 to 999 acres, \$6.71; and 1,000 acres and over, \$5.60. In considering the relatively high gross income per acre for farms of less than 3 acres, it should be borne in mind that the income of the florists' establishments, nurseries, and

city dairies, of which this group is largely composed, are determined not so much by the acreage of land used as by the amount of capital invested in buildings, implements, and live stock, and the amounts expended for labor and fertilizers.

FARMS CLASSIFIED BY PRINCIPAL SOURCE OF INCOME.

Tables 10 and 11 present the leading features of the statistics relating to farms classified by principal source of income. If the value of the hay and grain raised on any farm exceeds that of any other crop and constitutes at least 40 per cent of the value of the products not fed to live stock, the farm is designated a "hay and grain farm." If vegetables are the leading crop, constituting 40 per cent of the value of products, the farm is designated a "vegetable farm." The farms of the other groups are classified in accordance with the same general principle. "Miscellaneous" farms are those whose operators do not derive their principal income from any one class of farm products. Farms with no income in 1899 are classified according to the agricultural operations upon other farms in the same locality.

TABLE 10.—NUMBER AND ACREAGE OF FARMS, AND VALUE OF FARM PROPERTY, JUNE 1, 1900, CLASSIFIED BY PRINCIPAL SOURCE OF INCOME, WITH PERCENTAGES.

PRINCIPAL SOURCE OF INCOME.	Number of farms.	NUMBER OF ACRES IN FARMS.			VALUE OF FARM PROPERTY.	
		Average.	Total.	Per cent.	Total.	Per cent.
The State.....	228,622	151.2	84,574,837	100.0	\$1,884,345,546	100.0
Hay and grain.....	78,210	157.6	11,536,843	38.4	578,063,766	31.2
Vegetables.....	2,136	39.9	85,320	0.2	7,437,889	0.4
Fruit.....	852	37.5	31,926	0.1	3,519,932	0.2
Live stock.....	133,625	153.2	21,133,392	61.1	1,151,548,425	62.8
Dairy produce.....	7,678	112.0	860,049	2.5	49,635,864	2.7
Tobacco.....	2	55.0	110	(1)	8,669	(1)
Sugar.....	35	115.7	4,049	(1)	325,848	(1)
Flowers and plants.....	97	6.9	669	(1)	646,435	(1)
Nursery products.....	104	60.4	6,285	(1)	866,788	0.1
Miscellaneous.....	10,883	84.2	916,194	2.7	47,292,000	2.6

¹ Less than one-tenth of 1 per cent.

TABLE 11.—AVERAGE VALUES OF SPECIFIED CLASSES OF FARM PROPERTY, AND AVERAGE GROSS INCOME PER FARM, WITH PER CENT OF GROSS INCOME ON TOTAL INVESTMENT IN FARM PROPERTY, CLASSIFIED BY PRINCIPAL SOURCE OF INCOME.

PRINCIPAL SOURCE OF INCOME.	AVERAGE VALUES PER FARM OF—					Per cent of gross income on total investment in farm property.
	Farm property, June 1, 1900.				Gross income (products of 1899 not fed to live stock).	
	Land and improvements (except build-ings).	Build-ings.	Imple-ments and ma-chinery.	Live stock.		
The State-----	\$5,497	\$1,053	\$253	\$1,220	\$1,162	14.4
Hay and grain-----	5,884	852	248	894	1,039	13.8
Vegetables-----	2,322	765	117	278	657	18.9
Fruit-----	2,690	1,037	113	286	605	14.7
Live stock-----	5,665	1,195	271	1,487	1,297	15.1
Dairy produce-----	4,281	989	208	987	699	10.8
Tobacco-----	3,600	350	45	839	470	10.8
Sugar-----	6,925	1,420	236	729	1,025	11.0
Flowers and plants-----	2,888	3,545	186	50	3,499	52.5
Nursery products-----	6,073	1,739	260	262	6,037	72.4
Miscellaneous-----	2,887	735	151	572	524	12.1

For the several classes of farms the average values per acre of products not fed to live stock are as follows: For farms deriving their principal income from flowers and plants, \$507.30; nursery products, \$99.89; vegetables, \$16.46; fruit, \$16.15; sugar, \$8.86; tobacco, \$8.55; live stock, \$8.20; hay and grain, \$6.59; dairy produce, \$6.25; and miscellaneous products, \$6.23.

The wide variations shown in the averages and percentages of gross income are largely due to the fact that in computing gross income no deduction is made for expenditures. For florists' establishments, nurseries, and market gardens the average expenditure for such items as labor and fertilizers represents a far larger percentage of the gross income than in the case of "hay and grain," "live stock," or "miscellaneous" farms. Were it possible to present the average net incomes, the variations shown would be comparatively slight.

FARMS CLASSIFIED BY REPORTED VALUE OF PRODUCTS NOT FED TO LIVE STOCK.

Tables 12 and 13 present data relating to farms classified by the reported value of products not fed to live stock.

TABLE 12.—NUMBER AND ACREAGE OF FARMS, AND VALUE OF FARM PROPERTY, JUNE 1, 1900, CLASSIFIED BY REPORTED VALUE OF PRODUCTS NOT FED TO LIVE STOCK, WITH PERCENTAGES.

VALUE OF PRODUCTS NOT FED TO LIVE STOCK.	Number of farms.	NUMBER OF ACRES IN FARMS.			VALUE OF FARM PROPERTY.	
		Average.	Total.	Per cent.	Total.	Per cent.
The State.....	228,622	151.2	84,574,837	100.0	\$1,884,345,546	100.0
\$0.....	769	52.5	40,408	0.1	1,612,180	0.1
\$1 to \$49.....	1,192	36.5	43,534	0.1	2,286,170	0.1
\$50 to \$99.....	2,944	32.2	94,929	0.3	5,282,150	0.3
\$100 to \$249.....	14,951	43.6	652,090	1.9	35,401,930	1.9
\$250 to \$499.....	32,384	75.5	2,446,379	7.1	119,579,489	6.5
\$500 to \$999.....	72,900	119.4	8,705,650	25.2	436,140,770	23.8
\$1,000 to \$2,499.....	87,291	193.7	16,912,255	48.9	904,556,930	49.3
\$2,500 and over.....	16,191	350.8	6,679,092	16.4	329,485,935	18.0

TABLE 13.—AVERAGE VALUES OF SPECIFIED CLASSES OF FARM PROPERTY, AND AVERAGE GROSS INCOME PER FARM, WITH PER CENT OF GROSS INCOME ON TOTAL INVESTMENT IN FARM PROPERTY, CLASSIFIED BY REPORTED VALUE OF PRODUCTS NOT FED TO LIVE STOCK.

VALUE OF PRODUCTS NOT FED TO LIVE STOCK.	AVERAGE VALUES PER FARM OF—					Per cent of gross income on total invest- ment in farm property.
	Farm property, June 1, 1900.				Gross income (products of 1899 not fed to live stock).	
	Land and im- prove- ments (except build- ings).	Build- ings.	Imple- ments and ma- chinery.	Live stock.		
The State.....	\$5,497	\$1,053	\$253	\$1,220	\$1,162	14.4
\$0.....	1,850	308	72	368	47	2.4
\$1 to \$49.....	1,244	852	61	261	70	3.9
\$50 to \$99.....	1,138	589	57	211	183	7.7
\$100 to \$249.....	1,473	451	88	326	405	11.0
\$250 to \$499.....	2,444	587	195	527	683	11.0
\$500 to \$999.....	4,087	831	211	844	1,684	15.0
\$1,000 to \$2,499.....	7,220	1,317	323	1,503	3,924	19.3
\$2,500 and over.....	13,640	2,305	516	3,889		

The absence of income in the first group is due in part to the inability of the enumerators to secure complete reports for certain farms where changes in ownership or tenancy had occurred shortly prior to the date of enumeration. The persons in charge of such farms, June 1, 1900, could not always give definite information concerning the products of the preceding year. The same statement is also true of some of the farms with reported incomes of less than \$100. To this extent the reports fall short of giving a complete exhibit of farm income in 1899. Other farms with small reported incomes are doubtless the suburban homes of retired farmers and of city merchants and professional men, who derive their principal incomes from other than agricultural pursuits.

LIVE STOCK.

At the request of the various live-stock associations of the country, a new classification of domestic animals was adopted for the census of 1900. Neat cattle are grouped by age, in accordance with their present and prospective relations to the dairy industry and the supply of meat products. Horses and mules are classified by age, and neat cattle and sheep by age and sex. The new classification permits a very close comparison with the figures published in previous census reports.

Table 14 presents a summary of live-stock statistics.

TABLE 14.—NUMBER OF DOMESTIC ANIMALS, FOWLS, AND BEES ON FARMS, JUNE 1, 1900, WITH TOTAL AND AVERAGE VALUES, AND NUMBER OF DOMESTIC ANIMALS NOT ON FARMS.

LIVE STOCK.	Age in years.	ON FARMS.			NOT ON FARMS.
		Number.	Value.	Average value.	Number.
Calves	Under 1	1,290,279	\$14,413,585	\$11.17	9,015
Steers	1 and under 2	730,681	17,655,451	24.16	2,824
Steers	2 and under 3	603,745	23,624,389	39.18	2,891
Steers	3 and over	173,016	9,510,610	54.97	3,142
Bulls	1 and over	93,154	4,408,021	47.32	337
Heifers	1 and under 2	592,076	12,242,609	20.68	3,313
Cows kept for milk	2 and over	1,423,648	46,349,012	32.56	56,028
Cows and heifers not kept for milk	2 and over	461,031	14,315,225	31.05	2,330
Cattle	Under 1	124,527	2,991,078	24.02	3,393
Horses	1 and under 2	133,589	5,859,392	40.12	2,728
Horses	2 and over	1,131,457	69,370,107	61.15	148,654
Mule colts	Under 1	6,488	207,356	31.96	103
Mules	1 and under 2	6,807	333,830	49.04	271
Mules	2 and over	42,452	3,045,575	71.74	4,864
Asses and burros	All ages	1,832	150,768	82.30	503
Lambs	Under 1	398,850	945,615	2.37	980
Sheep (ewes)	1 and over	576,104	2,610,908	4.53	1,564
Sheep (rams and wethers)	1 and over	81,764	399,619	4.89	313
Swine	All ages	9,723,791	43,764,176	4.50	128,138
Goats	All ages	41,408	146,708	3.54	807
Fowls: ¹					
Chickens ²		18,907,673	6,535,464		
Turkeys		424,306			
Geese		223,612			
Ducks		187,752			
Bees (swarms of)		138,811	443,923	3.20	
Unclassified			6,675		
Value of all live stock.			278,830,096		

¹ The number reported is of fowls over 3 months old. The value is of all, old and young.

² Including Guinea fowls.

The total value of all live stock on farms, June 1, 1900, was \$278,830,096, of which 34.5 per cent represents the value of neat cattle other than dairy cows; 27.9 per cent, the value of horses; 16.6 per cent, that of dairy cows;

15.7 per cent, that of swine; 2.3 per cent, that of poultry; 1.5 per cent, that of sheep and goats; and 1.5 per cent, that of all other live stock.

The prices of neat cattle are high, but not higher than the excellent grade of stock kept throughout the state will warrant.

No reports were secured of the value of live stock not on farms, but it is probable that such animals have higher average values than those on farms. Allowing the same average values, however, the total value of domestic animals not on farms would be \$12,714,320, or 4.4 per cent of the total value of farm live stock; and the value of all live stock in the state exclusive of poultry and bees not on farms, would be \$291,544,416.

CHANGES IN LIVE STOCK KEPT ON FARMS.

The following table shows the changes since 1850 in the numbers of the most important domestic animals.

TABLE 15.—NUMBER OF SPECIFIED DOMESTIC ANIMALS ON FARMS: 1850 TO 1900.

YEAR.	Dairy cows.	Other neat cattle.	Horses.	Mules and asses.	Sheep. ¹	Swine.
1900.....	1,423,648	3,948,082	1,392,578	57,579	657,868	9,723,791
1890.....	1,498,418	3,397,132	1,312,079	41,648	547,394	8,266,779
1880.....	854,187	1,757,849	792,322	44,424	455,350	6,081,316
1870.....	369,811	636,424	433,642	25,485	355,493	1,353,908
1860.....	189,802	350,286	175,088	5,734	259,041	934,820
1850.....	45,704	90,917	33,536	754	149,900	323,247

¹ Lambs not included.

The number of dairy cows increased steadily in the forty years preceding 1890, but the table shows a decrease of 5.0 per cent from 1890 to 1900. It is probable, however, that this decrease is only apparent, as many of the 461,031 "cows and heifers not kept for milk" were doubtless milch cows dry at the time of enumeration, or were cows milked at some time during the year though not "kept for milk" primarily. An increase in the last decade of 48,910,829 gallons, or 10.0 per cent, in the quantity of milk produced, supports the view that the stricter definition of the term "dairy cows" by the Twelfth Census than by preceding censuses is largely responsible for the apparent decrease.

Better conveniences for feeding stock and increased and improved facilities for packing and shipping meats have given a great impetus to the raising of beef cattle in the central and western states. The table shows that the number of other neat cattle in Iowa in 1900 was over forty times as great as in 1850 and 16.1 per cent greater than in 1890. The comparatively small rate of gain in the last decade is probably due to the fact that the unusually high prices prevailing for several months just preceding the enumeration led many farmers to reduce their herds and flocks to an unusual extent.

The number of horses increased steadily during the period covered by the table, the rate of gain for the last decade being 6.1 per cent. The number of mules and asses decreased slightly in the decade from 1880 to 1890 but increased 38.3 per cent in the last decade, making the number of mules and asses in 1900, 4.1 per cent of the number of horses.

The increase in the number of horses and mules since 1890 has not kept pace with the increase in the acreage of land under cultivation, so that the average acreage now cultivated by the aid of a single working animal is larger than it was ten years ago. This change marks the introduction of better breeds of horses and the increased use of labor-saving machinery.

Except in the decade from 1870 to 1880 the number of sheep increased steadily during the half century. The rate of gain since 1890 was 20.2 per cent. The number of swine increased 17.6 per cent in the last decade.

In comparing the poultry report of 1900 (see Table 14) with that of the Eleventh Census, it should be borne in mind that in 1900 the enumerators were instructed not to report fowls less than 3 months old, while in 1890 no such limitation was made. This fact explains to a great extent the apparent decrease in the number of all fowls. An increase of 43.4 per cent in the quantity of eggs produced is evidence that more fowls were kept in 1900 than ten years before. Compared with the figures of 1890, the present census shows decreases in the number of fowls as follows: Turkeys, 54.9 per cent; geese, 14.6 per cent; ducks, 10.8 per cent; chickens, 6.4 per cent.

ANIMAL PRODUCTS.

Table 16 is a summarized exhibit of the products of animal industry.

TABLE 16.—QUANTITIES AND VALUES OF SPECIFIED ANIMAL PRODUCTS, AND VALUES OF POULTRY RAISED, ANIMALS SOLD, AND ANIMALS SLAUGHTERED ON FARMS IN 1899.

PRODUCTS.	Unit of measure.	Quantity.	Value.
Wool	Pounds	5,015,965	\$992,334
Mohair and goat hair	Pounds	28,080	8,607
Milk	Gallons	1535,872,240	27,516,870
Butter	Pounds	61,789,288	
Cheese	Pounds	306,428	10,016,707
Eggs	Dozens	99,621,920	
Poultry			9,491,819
Honey	Pounds	2,539,784	305,183
Wax	Pounds	49,314	
Animals sold			113,078,523
Animals slaughtered			8,448,938
Total			169,858,981

¹ Includes all milk produced.

Of the value of animal products in 1899, 71.5 per cent represents the value of animals sold and animals slaughtered on farms; 16.2 per cent, that of dairy products; 11.5 per cent, that of poultry raised and eggs produced; and 0.8 per cent, that of wool, mohair, honey, and wax.

DAIRY PRODUCTS.

The production of milk in 1899 was 10.0 per cent greater than in 1889. Decreases in the last decade of 15.2 per cent in the quantity of butter and 70.5 per cent in the quantity of cheese made on farms are due in part to the transfer of these industries from the farm to the creamery, and in part to the growing demand for milk and cream in cities.

Of the \$27,516,870 given in Table 16 as the value of all dairy products in 1899, \$8,697,868, or 31.6 per cent, represents the value of such products consumed on farms, and \$18,819,002, or 68.4 per cent, the amount realized from

sales. Of the latter amount, \$12,275,844 was derived from the sale of 214,338,442 gallons of milk; \$1,349,938, from 3,323,073 gallons of cream; \$5,167,031, from 33,266,912 pounds of butter; and \$26,189, from 258,003 pounds of cheese.

POULTRY AND EGGS.

The total value of the products of the poultry industry in 1899 was \$19,508,526, of which amount, 48.7 per cent represents the value of fowls raised, and 51.3 per cent the value of eggs produced. Between 1889 and 1899 the number of eggs produced increased 43.4 per cent.

WOOL.

The quantity of wool produced increased 89.3 per cent in the last decade, the western counties reporting the greatest gains. The average weight of fleeces in 1880 was 6.5 pounds; in 1890, 7.3 pounds; and in 1900, 7.0 pounds.

HONEY AND WAX.

The quantity of honey reported in 1900 was but 37.8 per cent as great as that reported ten years before. The quantity of wax produced decreased 26.8 per cent.

ANIMALS SOLD OR SLAUGHTERED.

The total value of animals sold and animals slaughtered on farms in 1899 was \$121,527,461, or 33.3 per cent of the value of all farm products, and 46.1 per cent of the gross farm income. Sales of live animals were reported by 190,097 farmers, or 84.6 per cent of the total number reporting live stock. The average value per farm of live animals sold was \$594.84, and of animals slaughtered, \$45.16.

HORSES AND DAIRY COWS ON SPECIFIED CLASSES OF FARMS.

Table 17 presents, for the leading groups of farms, the number of farms reporting horses and dairy cows, the total number of these animals, and the average number per farm. In computing the averages presented, only those farms which report the kind of stock under consideration are included.

TABLE 17.—HORSES AND DAIRY COWS ON SPECIFIED CLASSES OF FARMS, JUNE 1, 1900.

CLASSES.	HORSES.			DAIRY COWS.		
	Farms reporting.	Number.	Average per farm.	Farms reporting.	Number.	Average per farm.
Total	218,955	1,392,573	6.4	210,276	1,423,648	6.8
White farmers	218,761	1,391,601	6.4	210,133	1,423,073	6.8
Colored farmers	194	972	5.0	143	575	4.0
Owners ¹	141,452	928,533	6.6	138,495	992,958	7.2
Managers	1,440	15,180	10.5	1,336	10,877	8.1
Cash tenants	42,578	255,847	6.0	40,119	245,255	6.1
Share tenants	33,485	193,013	5.8	30,526	174,557	5.8
Under 20 acres	8,902	19,292	2.2	8,008	16,812	2.1
20 to 99 acres	66,305	248,153	3.7	61,526	243,065	4.0
100 to 174 acres	78,467	475,726	6.1	76,714	522,960	6.8
175 to 259 acres	37,761	311,906	8.3	37,015	335,221	9.1
260 acres and over	27,520	337,496	12.3	27,013	305,590	11.3
Hay and grain	68,898	418,206	6.1	68,049	358,159	5.7
Vegetable	1,822	4,917	2.7	1,273	2,898	2.3
Fruit	713	1,708	2.4	545	1,231	2.3
Live stock	130,719	898,044	6.8	128,639	945,025	7.3
Dairy	7,206	37,104	5.1	7,078	74,460	9.7
Tobacco	2	5	2.5	2	8	4.0
Sugar	34	173	5.1	27	132	4.9
Miscellaneous ²	9,561	37,416	3.9	9,068	41,735	4.6

¹ Including "part owners" and "owners and tenants."

² Including florists' establishments and nurseries.

CROPS.

The following table gives the statistics of the principal crops of 1899.

TABLE 18.—ACREAGES, QUANTITIES, AND VALUES OF THE PRINCIPAL FARM CROPS IN 1899.

CROPS.	Acres.	Unit of measure.	Quantity.	Value.
Corn	9,804,076	Bushels	353,453,190	\$97,297,707
Wheat	1,689,705	Bushels	22,769,440	11,457,808
Oats	4,695,391	Bushels	168,364,170	33,254,987
Barley	627,851	Bushels	18,059,000	5,342,368
Rye	89,172	Bushels	1,179,970	480,817
Buckwheat	13,834	Bushels	151,120	84,842
Flaxseed	126,458	Bushels	1,413,380	1,380,102
Kafir corn	66	Bushels	1,408	552
Broom corn	2,220	Pounds	1,178,180	50,639
Clover seed		Bushels	15,114	69,640
Grass seed		Bushels	1,276,958	1,146,123
Hay and forage	4,614,378	Tons	6,851,871	30,042,246
Tobacco	131	Pounds	127,420	8,345
Hops	(¹)	Pounds	120	16
Peanuts	7	Bushels	127	164
Dry beans	2,427	Bushels	24,303	38,296
Dry pease	1,556	Bushels	27,606	24,473
Potatoes	176,888	Bushels	17,305,919	8,870,746
Sweet potatoes	2,688	Bushels	224,622	128,981
Onions	1,195	Bushels	292,097	177,088
Chicory		Pounds	80	2
Miscellaneous vegetables	81,502			3,332,039
Maple sugar		Pounds	2,320	280
Maple sirup		Gallons	2,652	2,640
Sorghum cane	7,999	Tons	10,033	29,125
Sorghum sirup		Gallons	521,212	190,695
Orchard fruits	2180,076			\$1,849,767
Small fruits	9,653			878,447
Grapes	25,180	Centals	7,403,900	\$166,360
Flowers and plants	140			320,407
Seeds	71			6,044
Nursery products	2,905			619,092
Nuts				7,008
Forest products				3,265,628
Miscellaneous				28,483
Total	22,164,564			195,552,547

¹ Less than 1 acre.

² Estimated from number of vines or trees.

³ Including value of cider, vinegar, etc.

⁴ Including value of raisins, wine, etc.

Of the total value of crops in 1899, corn contributed 49.7 per cent; oats, 17.0 per cent; other cereals, 8.9 per cent; hay and forage, 15.4 per cent; vegetables, including potatoes, sweet potatoes, and onions, 3.8 per cent; forest products, 1.7 per cent; orchard products, small fruits, and grapes, 1.5 per cent; and all other products, 2.0 per cent.

Of the total acreage cultivated 44.2 per cent was devoted to corn, 21.2 per cent to oats, and 21.0 per cent to hay and forage.

The average yield per acre of hay and forage was 1.5 tons, and the average values were \$4.38 per ton and \$6.47 per acre. The average values per acre of other crops were as follows: Flowers and plants, \$2,288.62; nursery products, \$213.11; onions, \$148.19; small fruits, \$91.00; tobacco, \$63.70; sweet potatoes, \$47.98; miscellaneous vegetables, \$40.88; grapes, \$32.12; peanuts, \$23.43; broom corn, \$22.81; potatoes, \$22.01; dry beans and dry pease, \$15.76; flaxseed, \$10.91; orchard fruits, \$10.27; cereals, \$8.74; and Kafir corn, \$8.36. The crops yielding the greatest returns were grown upon very highly improved land. Their production required a relatively large amount of labor and large expenditures for fertilizers.

CEREALS.

Table 19 is an exhibit of the changes in cereal production since 1849.

TABLE 19.—ACREAGE AND PRODUCTION OF CEREALS: 1849 TO 1899.

PART 1.—ACREAGE.

YEAR. ¹	Barley.	Buckwheat.	Corn.	Oats.	Rye.	Wheat.
1899	627,851	13,834	9,804,076	4,695,391	89,172	1,689,705
1889	618,729	26,243	7,583,522	3,752,141	93,707	585,548
1879	198,891	10,318	6,616,144	1,507,577	102,607	3,049,288

¹ No statistics of acreage were secured prior to 1879.

PART 2.—BUSHELS PRODUCED.

YEAR.	Barley.	Buckwheat.	Corn.	Oats.	Rye.	Wheat.
1899	18,059,060	151,120	353,453,190	168,364,170	1,179,970	22,769,440
1889	13,406,122	286,746	313,130,782	146,679,289	1,445,283	8,249,786
1879	4,022,588	166,895	275,014,247	50,610,591	1,518,605	31,154,205
1869	1,960,779	109,432	68,935,065	21,005,142	505,807	29,435,692
1859	467,103	215,705	42,410,686	5,887,645	183,022	8,449,408
1849	25,093	52,516	3,656,799	1,524,845	19,916	1,530,581

Of the total land surface of Iowa, 47.7 per cent, or nearly one-half, was devoted to cereals in 1899, corn alone covering over one-fourth. The total number of acres in cereals was 16,920,029 in 1899; 12,560,890 in 1889; and 11,490,795 in 1879. Of the total acreage in 1899, corn occupied 57.9 per cent; oats, 27.8 per cent; wheat, 10.0 per cent; barley, 3.7 per cent; rye, 0.5 per cent; and buckwheat, 0.1 per cent.

The rates of increase in acreage for the last decade were: Corn, 29.2 per cent; oats, 25.1 per cent; barley, 21.0 per cent; while the area devoted to wheat increased nearly threefold. Decreases are shown in the acreages devoted to buckwheat and rye, neither of which receive much attention.

Corn was reported in 1900 by 212,298 farmers, or 92.9 per cent of the total number, who devoted to the crop an average of 46.2 acres each. This crop was grown most extensively in the central and southwestern counties. Oats and barley are reported in largest quantities in northern counties, and wheat in northern and northwestern counties. The acreage given for cereals does not include 86,994 acres of grain cut green for hay, nor 178,409 acres devoted to corn, nonsaccharine sorghum, and similar crops grown for forage or ensilage.

HAY AND FORAGE.

In 1900, 187,122 farmers, or 81.8 per cent of the total number, reported hay or forage crops, from which, excluding cornstalks and corn strippings, they obtained an average yield of 1.4 tons per acre. The acreage in hay and forage in 1899 was 11.3 per cent less than it was ten years before.

In 1899 the acreages and yields of the various kinds of hay and forage were as follows: Wild, salt, and prairie grasses, 1,228,135 acres and 1,638,182 tons; millet and Hungarian grasses, 161,777 acres and 321,732 tons; alfalfa or lucern, 2,298 acres and 6,252 tons; clover, 148,720 acres and 229,326 tons; other tame and cultivated grasses, 2,838,095 acres and 3,823,133 tons; grains cut green for hay, 86,944 acres and 156,061 tons; forage crops, 178,409 acres and 425,483 tons; cornstalks and corn strippings, 161,875 acres and 251,702 tons.

In Table 18 the production of cornstalks and corn strip-

pings is included under "hay and forage," but the acreage is included under "corn," as the forage secured was an incidental product of the corn crop.

SORGHUM.

The area used in the cultivation of sorghum cane in 1899 was 8,287 acres, or 50.1 per cent of that reported in 1889. The products obtained were, 521,212 gallons of sirup, and 10,033 tons of cane, sold as cane.

The cultivation of sorghum cane in 1899 was reported by all counties except Dickinson and O'Brien. Johnson, Blackhawk, and Jones counties, ranking in the order named, reported the larger areas, and Blackhawk county produced the greatest quantity of sirup.

VEGETABLES.

The value of all vegetables grown in the state in 1899, including potatoes, sweet potatoes, and onions, was \$7,508,854. Of this amount 51.5 per cent represents the value of potatoes. This important crop was reported by 176,488 farmers, or 77.2 per cent of the total number in the state. There was a slight increase in acreage during the last decade, but a decrease in production.

Aside from the land devoted to potatoes and onions, 81,502 acres were used in the growing of miscellaneous vegetables. The products of 48,208 acres of this area were not reported in detail. Of the remaining 33,294 acres, concerning which detailed reports were received, 17,856 acres were devoted to sweet corn; 5,440 acres, to watermelons; 3,437 acres, to cabbages; 2,712 acres, to tomatoes; 1,316 acres, to cucumbers; 1,224 acres, to muskmelons; and 1,309 acres, to other vegetables.

ORCHARD FRUITS.

The changes in orchard fruits since 1890 are shown in the following table.

TABLE 20.—ORCHARD TREES AND FRUITS: 1890 AND 1900.

FRUITS.	NUMBER OF TREES.		BUSHELS OF FRUIT.	
	1900.	1890.	1899.	1889.
Apples	6,869,588	3,640,588	3,129,862	5,040,352
Apricots	6,809	2,663	378	266
Cherries	701,327	199,067	118,743	49,334
Peaches	516,145	82,238	6,481	25,040
Pears	104,046	12,757	5,014	7,812
Plums and prunes	1,302,217	260,600	186,312	80,878

The total number of fruit trees in the state more than doubled in the last decade, having increased from 4,197,913 to 9,590,132. The number of apple trees increased 88.7 per cent, but as the number of other fruit trees increased more rapidly, the proportion of apple trees decreased from 86.7 per cent of all trees in 1890 to 71.6 per cent in 1900. The number of plum and prune trees reported in 1900 was nearly five times as great as in 1890; peach trees increased over sixfold and pear trees over eightfold.

In addition to the trees shown in Table 20, unclassified orchard trees to the number of 46,512 are reported, with a yield of 12,232 bushels of fruit. The value of orchard products, given in Table 18, includes the value of 9,704

barrels of cider, 3,872 barrels of vinegar, and 79,740 pounds of dried and evaporated fruits.

The quantity of fruit produced in any given year is determined largely by the nature of the season, hence comparisons between the crops of 1889 and 1899 have little significance.

GRAPES.

Grapes were grown by 29,389 farmers, who obtained, in 1899, 7,403,900 centals of fruit from 2,072,101 vines. The total value of the crop, including the value of 76,301 gallons of wine made on farms, was \$166,360. Pottawattamie, Des Moines, and Polk are the leading counties in the cultivation of grapes, reporting in 1900 more than one-third of the vines of the state.

SMALL FRUITS.

The total area used in the cultivation of small fruits in 1889 was 9,653 acres, distributed among 62,260 farms. The value of the fruits grown was \$878,447, an average of \$91.00 per acre. Of the total area, 3,394 acres, principally in the southern counties, were devoted to raspberries and Logan berries, the total production of which was 3,604,210 quarts. The acreage and production of other berries were as follows: Strawberries, 2,335 acres and 3,164,320 quarts; blackberries and dewberries, 1,719 acres and 1,966,070 quarts; currants, 1,017 acres and 1,226,560 quarts; gooseberries, 777 acres and 975,890 quarts; cranberries, 1 acre and 1,952 quarts; and other berries, 410 acres and 388,130 quarts.

FLORICULTURE.

Flowers and plants were grown in 1899 by 172 farmers, of whom but 97 derived their principal income from that source. The total value of the flowers and plants grown in the state was \$320,407, of which \$307,583 represents the value of those reported by the commercial florists. The value of the farm property of the florists was \$646,435, of which \$279,660 represents the value of 669 acres of land; \$343,830, that of buildings and other improvements; \$18,090, that of implements and machinery; and \$4,855, that of live stock. They expended \$65,129 for labor, and \$1,929 for fertilizers.

LAND UNDER GLASS.

The 97 florists' establishments have 1,139,364 square feet of glass surface, which is equivalent to 854,523 square feet of land under glass. In addition to the florists there are 451 farmers who reported an aggregate of 581,737 square feet of land under glass, making the total for the state 1,436,260 square feet. The counties having large areas under glass are Dubuque, Polk, Pottawattamie, Scott, and Woodbury.

NURSERIES.

Nursery stock valued at \$619,092 was raised in 1899 by 238 farmers 104 of whom derived their principal income from that source, reporting a product of \$591,531, or 95.5 per cent of the total. The farms of the commercial nurserymen were worth \$812,490, of which \$631,590 was

invested in land, and \$180,900 in buildings and other improvements. They owned implements and machinery worth \$27,063, and live stock valued at \$27,235. In the cultivation of 6,285 acres of land, they expended \$125,205 for labor and \$3,145 for fertilizers.

LABOR AND FERTILIZERS.

The total expenditure for labor on farms in 1899, including the value of board furnished, was \$16,375,670, an average of \$72 per farm. The average was highest on the most intensively cultivated farms, being \$1,204 for nurseries; \$671 for florists' establishments; \$84 for fruit farms; \$81 for live-stock farms; \$75 for sugar farms; \$74 for vegetable farms; \$60 for hay and grain farms; and \$59 for dairy farms. "Managers" expended on an average, \$311; "owners," \$72; "cash tenants," \$60; and "share tenants," \$56. White farmers expended \$72 per farm, and colored farmers, \$33.

Fertilizers were purchased in 1899 to the value of \$337,190, an average of \$1.47 per farm, and a total increase of \$250,347, or nearly threefold, since 1889. The average expenditure was greatest for nurseries, amounting to \$30. For sugar farms the average was \$22; for florists' establishments, \$20; for vegetable farms, \$6; for fruit farms, \$4; and for hay and grain, live-stock, and dairy farms, \$1.

THE SAC AND FOX INDIAN RESERVATION.

The Sac and Fox Indian reservation, located in Tama county and containing an area of 2,965 acres, is a reservation in name only, as the land is owned in fee by the Indians, although held in trust for them by the Secretary of the Interior.

The inhabitants of this reservation, 385 in number, are among the most conservative and nonprogressive Indians in the United States. They have lived in the midst of civilization for nearly half a century without making any decided advancement until the last decade. A class among

them, more industrious than the rest, now till the soil and are making considerable progress in agriculture, as is shown by their recent extensive purchases of modern farming implements and machinery, and of a better grade of horses.

The principal crops grown are corn, wheat, and oats. Most of the farmers have small gardens in which potatoes, pumpkins, sweet corn, and beans are raised, pumpkins and sweet corn being dried for use during the winter months. A few of them cut the wild grass, and also raise small quantities of tame hay. A comparative table of the crops grown in 1889 and 1899 shows a marked advancement in the ten years.

PRINCIPAL CROPS GROWN ON THE SAC AND FOX RESERVATION: 1889 AND 1899.

CROPS.	Unit of measure.	1899	1889	INCREASE.	
				Total.	Per cent.
Corn	Bushels	4,400	2,500	1,900	76
Oats	Bushels	8,870		8,870	
Wheat	Bushels	914		914	
Hay	Tons	30	10	20	200

¹ Report of Commissioner of Indian Affairs, 1889.

The first crop of wheat was harvested in 1896. In 1899 the 26 Indian farmers cultivated for all purposes from 5 to 30 acres each, the largest area operated by one farmer being 48 acres. These small tracts are not owned by individual Indians, but each farmer's right of occupation is recognized by the tribe as long as he continues to cultivate his land.

The live stock of the reservation consists principally of ponies and work horses, most of the tribe being opposed to raising cattle and swine. Only one Indian owns any cattle, those reported on the reservation being the property of two white renters. A number of the Indians have chickens and a few possess turkeys.

CENSUS BULLETIN.

No. 161.

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April 29, 1902.

MANUFACTURES.

SILK MANUFACTURE.

HON. WILLIAM R. MERRIAM,
Director of the Census.

SIR: I transmit herewith, for publication in bulletin form, a report on silk manufacture, prepared under my direction by Mr. Franklin Allen, of New York city, secretary of the Silk Association of America, acting in the capacity of an expert special agent of the division of manufactures of the Census Office.

The statistics demonstrate a satisfactory rate of growth, which may be considered as commensurate with the increased needs of the country for silk products. The more important features of the progress in silk manufacture, as indicated by the statistics and more fully explained in the text of the report, are briefly summarized as follows: The productive capacity of plants has been increased by the invention of improved processes and machines, which also enable the manufacturers to turn out a superior quality of goods. The decade has been marked by the almost complete supersession of hand looms by power looms. American manufacturers have shown their ability to meet the exacting demands of the consumer by producing nearly all descriptions of weaves known to the trade. A notable improvement has taken place during the decade in the work of dyeing and printing. Recognition of the changing conditions of the industry has been shown by the establishment of new plants in communities offering superior advantages in the form of abundant and suitable labor, cheap fuel, and financial inducements advanced by the municipalities.

The small increase in the number of silk manufacturing establishments from 1890 to 1900 is accounted for by the transfer of 39 establishments making braids and

trimmings to the cotton and wool industries. In prior censuses all such establishments using silk as a component material were classed as silk establishments. Seventy-eight establishments manufacturing hosiery and knit goods have also been eliminated from the silk tabulations, and are included in the special report on hosiery and knit goods. The silk glove industry, which has had a marked development since 1897, will also be included in the hosiery and knit goods tabulations.

The statistics of this industry are presented in 23 tables: Table 1, comparative figures for the industry at the several censuses; Table 2, the statistics for establishments reporting a product exceeding \$500 in value, and those reporting a product of less than \$500; Table 3, the statistics of materials and products, eliminating materials and products twice included; Table 4, import statistics, 1850 to 1900, compared with the value of silk products of domestic manufacture at the several censuses; Table 5, a comparative summary of materials and products, 1890 and 1900; Table 6, a comparative summary of textile materials, 1890 and 1900; Table 7, broad-silk mills classified by number of looms; Table 8, statistics of the several kinds of broad silks manufactured; Table 9, velvet and plush mills classified by number of looms; Table 10, ribbon mills classified by number of looms; Table 11, throwing mills classified by number of spindles; Table 12, comparative summary, by states, 1880 to 1900; Table 13, comparative summary, of capital, by states, 1890 and 1900; Table 14, comparative summary of wage earners, by states, 1870 to 1900; Table 15, skilled and unskilled operatives, by states; Table 16, counties with products exceeding \$1,000,000 in value; Table 17, statistics of braids and trimmings manufacture, by

states; Tables 18, 19, 20, and 21, statistics of silk dyeing, printing, and finishing; Table 22, world's production of raw silk; Table 23, presenting detailed statistics for the industry, by states. In addition to the tables enumerated, several tabular statements explanatory of the various phases of the industry are shown.

In drafting the schedules of inquiry for the census of 1900 care was taken to preserve the basis of comparison with prior censuses. Comparison may be made safely with respect to all the general heads of the inquiry except those relating to capital, salaried officials, clerks, etc., and their salaries, the average number of employees, and the total amount of wages paid. Live capital—that is, cash on hand, bills receivable, unsettled ledger accounts, raw materials, stock in process of manufacture, finished products on hand, and other sundries—was first called for at the census of 1890. No definite attempt was made, prior to the census of 1890, to secure a return of live capital invested.

Changes were made in the inquiries relating to employees and wages, in order to eliminate defects found to exist on the form of inquiry adopted in 1890. At the census of 1890 the average number of persons employed during the entire year was called for, and also the average number employed at stated weekly rates of pay, and the average number was computed for the actual time the establishments were reported as being in operation. At the census of 1900 the greatest and least number of employees were reported, and also the average number employed during each month of the year. The average number of wage-earners (men, women, and children) employed during the entire year was ascertained by using 12, the number of calendar months, as a divisor into the total of the average numbers reported for each month. This difference in the method of ascertaining the average number of wage-earners during the entire year may have resulted in a variation in the number, and should be considered in making comparisons.

At the census of 1890 the number and salaries of proprietors and firm members actively engaged in the business or in supervision were reported, combined with clerks and other officials. In cases where proprietors and firm members were reported without salaries, the amount that would ordinarily be paid for similar services was estimated. At the census of 1900 only the number of proprietors and firm members actively engaged in the industry or in supervision was ascertained, and no salaries were reported for this class. It is therefore impossible to compare the number and sala-

ries of salaried officials of any character for the two censuses.

Furthermore, the schedules for 1890 included in the wage-earning class overseers, foremen, and superintendents (not general superintendents or managers), while the census of 1900 separates from the wage-earning class such salaried employees as general superintendents, clerks, and salesmen. It is possible and probable that this change in the form of the question has resulted in eliminating from the wage-earners, as reported by the present census, many high-salaried employees included in that group for the census of 1890. With the exception of several other changes of a minor character in the special features of the schedule, the investigation has been conducted along the lines followed at the census of 1890.

In some instances the number of proprietors and firm members, shown in the accompanying tables, falls short of the number of establishments reported. This is accounted for by the fact that no proprietors or firm members are reported for corporations. The reports show a capital of \$81,082,201 invested in the 483 establishments reporting for the industry. This sum represents the value of land, buildings, machinery, tools, and implements, and the live capital utilized, but does not include the capital stock of any of the corporations. The value of the products is returned at \$107,256,258, to produce which involved an outlay of \$3,134,352 for salaries of officials, clerks, etc.; \$20,982,194 for wages; \$10,264,208 for miscellaneous expenses, including rent, taxes, etc.; and \$62,406,665 for materials used, mill supplies, freight, and fuel. It is not to be assumed, however, that the difference between the aggregate of these sums and the value of the products is, in any sense, indicative of the profits in the manufacture of the products during the census year. The census schedule takes no cognizance of the cost of selling manufactured articles, or of interest on capital invested, or of the mercantile losses incurred in the business, or of depreciation in plant. The value of the product given is the value as obtained or fixed at the factory. This statement is necessary in order to avoid erroneous conclusions from the figures presented.

Very respectfully,



Chief Statistician for Manufactures.

SILK MANUFACTURE.

By FRANKLIN ALLEN, *Expert Special Agent.*

Silk manufacture in the United States has shown a marked development since the census of 1890. It has taken its place as one of the leading industries of the nation and along several lines has established its independence of foreign competition. The causes for these favorable conditions were manifold. Chief among them were the enterprise of the manufacturer, the

perfection and reliability of his machinery, and the wise restriction of importation during the less prosperous period of the development of the industry.

Table 1 presents a comparative summary of the industry as returned at each census from 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	1890 to 1900	1880 to 1890	1870 to 1880	1860 to 1870	1850 to 1860
Number of establishments.....	488	472	382	86	139	67	2.3	23.6	344.2	138.1	107.5
Capital.....	\$81,082,201	\$51,007,537	\$19,125,800	\$8,231,130	\$2,926,980	\$678,300	59.0	166.7	206.9	112.9	331.5
Salaries officials, clerks, etc., number.....	2,657	2,631	(3)	(3)	(3)	(3)	73.5				
Salaries.....	\$3,134,352	\$1,917,877	(3)	(3)	(3)	(3)	63.4				
Wage-earners, average number.....	65,416	49,382	31,337	6,649	5,435	1,723	32.5	57.6	371.3	22.3	215.4
Total wages.....	\$20,982,194	\$17,762,441	\$9,146,705	\$1,942,236	\$1,050,224	\$297,416	18.1	94.2	370.9	84.9	253.1
Men, 16 years and over.....	24,206	17,602	9,375	1,734	1,585	503	37.5	87.8	440.7	9.4	215.1
Wages.....	\$10,699,483	\$9,349,531	(3)	(3)	(3)	(3)	14.4				
Women, 16 years and over.....	34,797	28,914	16,396	3,529	3,850	1,220	20.3	76.3	364.6	18.3	215.6
Wages.....	\$9,377,696	\$7,970,065	(3)	(3)	(3)	(3)	17.7				
Children, under 16 years.....	6,413	2,866	5,566	1,380	(3)	(3)	123.8	148.5	301.6		
Wages.....	\$905,015	\$442,845	(3)	(3)	(3)	(3)	104.4				
Miscellaneous expenses.....	\$10,264,203	\$4,259,623	(4)	(4)	(4)	(4)	141.0				
Cost of materials used.....	\$62,406,665	\$51,004,425	\$22,467,701	\$7,817,559	\$3,901,777	\$1,093,800	22.4	127.0	187.4	100.4	256.7
Value of products, including amount received for contract work.....	\$107,256,258	\$87,298,454	\$41,033,045	\$12,210,662	\$8,607,771	\$1,809,476	22.9	112.8	236.0	84.8	265.2
Raw silk used, pounds.....	9,760,770	6,376,881	2,690,482	634,488	462,965	(4)	53.1	137.0	293.1	47.8	

¹ Decrease.

² Includes proprietors and firm members, with their salaries; number only reported in 1900. (See Table 23.)

³ Not reported separately.

⁴ Not reported.

Table 1 shows that in the items of capital, wages, materials, and products the industry has maintained a constant increase from 1850 to 1900. In considering such increases the differences in the method and scope of the inquiries at the several censuses should be taken into account. The reports on silk manufacture at prior censuses included establishments engaged in the manufacture of hosiery and knit goods, braids and trimmings, and other small goods in which silk was the fiber of chief value, but in which cotton or wool or both may also have been used. At the present census the statistics of hosiery and knit goods appear in a separate report, and only such braids and trimmings products and other small goods in the manufacture of which silk is the material of predominant value are included in this report. To what extent these differences may have affected the percentages of increase between 1890 and 1900 can not be accurately determined.

In the principal items of inquiry the absolute increase shown by the statistics for 1900, as compared with those for 1890, is less than it was during the preceding decade and, with the exception of capital invested, less than it was in the decade 1870 to 1880. A noteworthy and striking fact shown in the foregoing table is that the value of the products in 1900 was nearly sixty times as great as it was in 1850.

Table 2 presents the statistics of establishments man-

ufacturing a product exceeding \$500 in value and those reporting a product of less than \$500; the latter were not reported at previous censuses and therefore are omitted from the other tables and their use confined to Table 2.

In addition to the 488 active establishments in the United States during the census year, with a capital of \$81,097,276, shown in Table 2, there were 22 idle establishments, with a capital of \$427,491, distributed by states as follows:

STATES.	Number of idle establishments.	Capital.	SPINDLES.			LOOMS.		
			Total.	Throwing.	All other.	Total.	Broad.	Rib-bon.
Total.....	22	\$427,491	13,534	4,050	9,484	211	183	28
Connecticut.....	1	20,300						
Massachusetts.....	2	19,000						
New Jersey.....	11	57,810	1,354	250	1,104	185	173	12
New York.....	1	95,000						
Pennsylvania.....	7	235,381	12,180	3,800	8,380	26	10	16

Adding the statistics of active establishments to those shown in the foregoing statement gives a total of 510 active and idle establishments in the United States, with a capital of \$81,524,767; total number of throwing spindles, 1,053,674; accessory spindles, 952,122; broad looms, 37,174; and narrow fabric looms, 7,469.

TABLE 2.—SUMMARY OF ESTABLISHMENTS WITH A PRODUCT EXCEEDING \$500 AND THOSE WITH A PRODUCT OF LESS THAN \$500.

CLASSES.	Number of establishments.	Capital.	Proprietors and firm members.	WAGE-EARNERS.		Miscellaneous expenses.	COST OF MATERIALS USED.		
				Average number.	Total wages.		Total.	Textile.	All other.
Total.....	488	\$81,097,276	482	65,420	\$20,982,680	\$10,264,444	\$62,406,800	\$58,093,267	\$4,313,533
Establishments with a product exceeding \$500...	493	81,082,201	477	65,416	20,982,194	10,264,208	62,406,665	58,093,249	4,313,416
Establishments with a product of less than \$500...	5	15,075	5	4	486	236	135	18	117

CLASSES.	Raw silk thrown into organzine or tram, on commission (pounds).	Value of products, including amounts received for contract work.	NUMBER OF SPINDLES.			NUMBER OF LOOMS.		
			Total.	Throwing.	All other.	Total.	Broad.	Ribbon.
Total.....	4,800,059	\$107,257,376	1,992,262	1,049,624	942,638	44,432	36,991	7,441
Establishments with a product exceeding \$500...	4,298,659	107,256,258	1,987,401	1,045,304	942,100	44,430	36,989	7,441
Establishments with a product of less than \$500...	1,400	1,118	4,858	4,320	538	2	2	.....

MATERIALS AND PRODUCTS TWICE INCLUDED.

Table 3 is a comparative summary by states for 1890 and 1900 of the cost of materials and value of products as reported, the cost and value, respectively, of the materials and products twice included, and the cost of materials and value of products exclusive of duplications.

The amount shown in Table 3 as the value of products as reported, \$107,256,258, is in excess of the merchant-

able product of the silk industry in 1900. The value of finished goods is \$92,451,212. The tabulation has been made in the form herein presented in order to show statistics comparable with those of the censuses of 1880 and 1890, which included in their totals thrown silks and other materials which, while completed products to the throwster, are materials to the weaver and the trimmings manufacturer. They were designated in subsidiary tables of those censuses as "materials twice

TABLE 3.—ELIMINATION OF MATERIALS AND PRODUCTS TWICE INCLUDED: 1890 AND 1900.

STATES.	Year.	MATERIALS.			PRODUCTS.		
		Cost of materials as reported.	Cost of materials twice included.	Cost of materials exclusive of duplications.	Value of products as reported.	Value of products twice included.	Value of products exclusive of duplications.
United States.....	1900	\$62,406,665	\$11,840,267	\$50,566,398	\$107,256,258	\$14,805,046	\$92,451,212
	1890	51,004,425	15,587,520	35,466,905	87,298,454	18,143,855	69,154,599
California.....	1900	146,219	8,420	137,799	255,902	9,800	246,602
	1890	146,406	3,500	142,906	271,912	5,600	266,312
Connecticut.....	1900	7,198,008	557,713	6,640,295	12,378,981	1,041,714	11,337,267
	1890	6,201,876	889,756	5,312,120	9,788,951	1,665,890	8,123,561
Illinois.....	1900	187,514	51,042	136,472	421,088	29,893	391,195
	1890	314,855	.....	314,855	785,845	.....	785,845
Maryland.....	1900	.....	.....	.....	.....	.....	.....
	1890	34,805	.....	34,805	100,361	.....	100,361
Massachusetts.....	1900	3,823,968	354,697	3,469,266	5,957,532	290,730	5,666,802
	1890	3,251,898	746,175	2,505,718	5,557,569	945,610	4,611,959
New Jersey.....	1900	21,031,118	5,704,322	15,326,796	39,966,662	2,268,720	37,697,942
	1890	17,908,883	5,205,501	12,703,382	30,760,871	5,354,389	25,405,982
New York.....	1900	6,570,037	1,144,973	5,425,064	12,706,246	751,034	11,955,212
	1890	10,174,818	1,318,742	8,856,076	19,417,796	1,681,481	17,736,315
North Carolina.....	1900	99,403	.....	99,403	135,354	64,461	70,893
	1890	.....	.....	.....	.....	.....	.....
Ohio.....	1900	.....	.....	.....	.....	.....	.....
	1890	13,983	.....	13,983	33,927	.....	33,927
Pennsylvania.....	1900	19,884,869	3,979,881	15,905,038	31,072,926	9,359,279	21,713,647
	1890	12,094,389	7,017,604	5,076,785	19,357,546	7,953,823	11,404,223
Rhode Island.....	1900	818,561	37,730	780,831	1,311,333	22,294	1,289,039
	1890	149,763	68,242	81,521	229,062	94,062	135,000
Virginia.....	1900	720,525	.....	720,525	981,680	940,776	40,904
	1890	.....	.....	.....	.....	.....	.....
All other states.....	1900	1,326,448	1,589	1,324,909	2,068,554	26,845	2,041,709
	1890	713,254	288,000	425,254	995,114	444,000	551,114

¹Included in "all other states."

²Includes establishments distributed as follows: Delaware, 2; Maine, 1; Maryland, 2; Michigan, 2; New Hampshire, 2; Utah, 2.

³Includes establishments distributed as follows: Maine, 1; Michigan, 1; Missouri, 1; North Carolina, 1; Virginia, 1.

included," but in order to avoid the erroneous impression which might be conveyed by the figures without an explanation, and make clear the reasons for this duplication and consequent elimination, the conditions under which organzine and tram are manufactured are stated as follows:

1. Raw silk is purchased by a silk manufacturer who has the same thrown into organzine and tram in a plant owned by him, but located elsewhere than in proximity to his factory, possibly in another state. In this case the raw silk and the organzine and tram are reported as material and product, respectively, by the throwing plant, and the quantity and value of the organzine and tram thus thrown is also reported as material by the manufacturer at his weaving plant, and duplication occurs.

2. Raw silk is purchased by a silk manufacturer and thrown into organzine and tram in larger quantities than his own factory consumption requires, and this excess is reported in the products as organzine and tram for sale to other silk manufacturers. In this case the organzine and tram are also reported as material by the purchasing silk manufacturers, and duplication occurs.

3. Raw silk is purchased by a throwster on his own account and thrown into organzine and tram for sale to silk manufacturers. In this case the raw silk and organzine and tram are reported by the throwster as material and product, respectively, of his mill, and also as material (organzine and tram) by the purchasing silk manufacturer, and duplication occurs.

4. Raw silk is purchased by a silk manufacturer, who has the same thrown into organzine and tram in his silk factory or in a plant owned by him in close proximity thereto. In this case the raw silk is reported as material, and the quantity and value of the organzine and tram is not shown, the conversion of the raw silk thereto being only one of the several stages of the manufacturing process for the finished product, and no duplication occurs.

5. Raw silk is purchased by a silk manufacturer, who has the same thrown, on contract, at a throwing mill not owned or operated by himself. In this case the cost of the raw silk is not reported by the throwster, but only by the manufacturer in the report for his silk factory, and no duplication occurs. (The quantity of raw silk thus thrown by commission throwsters was 4,298,659 pounds, 2,331,456 pounds being thrown into organzine and 1,967,203 pounds into tram.)

Large quantities of spun silk are imported and a very considerable quantity is also manufactured in the United States. The spun silk manufactured in the United States is reported under material as silk waste, and the manufactured product as spun silk by the mill producing the same for sale, and when purchased and used by a silk manufacturer as material is necessarily duplicated. The amount of this duplication can not be more

accurately determined than by taking the amount thus reported "for sale" and deducting its value from materials and products alike.

A considerable quantity of manufactured floss and fringe silk is also used by silk trimmings manufacturers, not the product of their own factories, which is properly charged as materials. A duplication to that extent occurs and has therefore been eliminated by deducting its cost from materials and products alike.

Briefly, the elimination of "materials and products twice included" has been accomplished as follows:

1. The cost and value of organzine and tram are deducted as reported, under both "materials" and "products."

2. The value of spun silk reported as a product is deducted from both materials and products.

3. The cost of fringe and floss reported as material is deducted from both materials and products.

4. The amount received for contract work, in all cases, is deducted from the value of the products.

The results obtained are termed in Table 3 "cost of materials, exclusive of duplications," and "value of products, exclusive of duplications." The above method has been followed for the purpose of presenting results comparable with those published in reports of silk manufacture at former censuses. The results as presented in Table 3 will differ from the net value of products presented in the general tables of manufactures. The true "net value" is obtained by deducting from the gross value of products the total amount reported as the cost of materials used in partially manufactured form.

In Table 3, \$11,840,267 is estimated to represent the cost of "materials twice included" and \$14,805,046 to represent the value of "products twice included" in 1900. At the census of 1890 the corresponding allowances were \$15,537,520 and \$18,143,855 for materials and products, respectively. The following statement shows the items in detail, for the United States, of materials and products twice included at the present census:

CLASSES.	MATERIALS.		PRODUCTS.	
	Pounds.	Value.	Pounds.	Value.
Organzine and tram ...	2,838,464	\$10,539,632	12,468,387	¹ \$11,167,191
Fringe and floss, bought as such and used in manufacture.....	67,984	274,408	67,984	274,408
Spun silk made for sale.	437,459	1,026,227	437,459	1,026,227
Amount received for contract work				2,337,220
Total.....	2,843,907	11,840,267	12,973,830	14,805,046

¹ Organzine and tram "made for sale."

It should be noted that in many instances the products of partial manufacture reported in one state go to some other state to be completed. Hence, in some cases the gross product of a state more nearly represents the

industry in that state than would its finished products. For instance, the value of the gross product of Pennsylvania, amounting to \$31,072,926, is much nearer the total value of its manufactures of silk than the sum of \$21,713,647, the net value of its products, because a considerable portion of the thrown silk in the state went to other states to be woven into finished products. The relative figures of the number of looms and spindles in Pennsylvania and New Jersey are instructive on this point, the fact being that a considerable number of "throwing" plants in Pennsylvania are operated for account of weaving plants in New Jersey, as explained elsewhere in this report. Thus, it appears that there were 17,641 broad power looms and 2,916 ribbon power looms reported in New Jersey as against 11,135 and 1,788, respectively, in Pennsylvania, while the number of throwing spindles was 275,516 in the former state and 611,670 in the latter.

IMPORTS AND CONSUMPTION OF SILK AND SILK GOODS.

Silk factories depend entirely upon imports for their raw silk material. The quantity and value of the imports, raw silk, spun silk, raw silk waste, and manufactured silk goods for 1850, 1860, 1870, 1880, and each fiscal year between 1880 and 1900, inclusive, together with the value of silk of domestic manufacture at each census from 1850 to 1900, inclusive, are given in Table 4.

Table 4 shows the silk industry of the United States in several of its more important aspects. As the

import values of manufactured silk goods are foreign invoice values, an average of about 70 per cent should be added for freight, revenue duty, importers' profits, and occasional advances on imports, to represent cost to consumers. It should be stated in this connection that the figures of import values of manufactured goods at the several periods include the value of sundry articles, of which silk is the chief or only component material, such as silk caps, bonnets, and hats, silk wearing apparel, umbrellas and parasols of silk, and silk buttons.

The value of the domestic manufacture in the last six decennial census periods, when added to the value of foreign manufactured goods imported, presents in the most graphic way the volume of the consumption of silk goods in the United States. This consumption is shown by the table to be steadily increasing.

In 1850 there were 67 establishments reported as engaged in the manufacture of silk goods. Their total product was valued at \$1,809,476, an average of \$27,007 for each establishment. In 1900 the establishments had increased in number to 483 and the value of the products to \$107,256,258, an average product of \$222,063 for each establishment. The imports of raw silk in 1850 amounted to 120,010 pounds, valued at \$401,385, and it is probable that the total amount was consumed in the silk mills. The imports of raw silk for 1900 amounted to 11,259,310 pounds, valued at \$44,549,672, exceeding those for any prior fiscal year of the Government.

TABLE 4.—COMPARATIVE SUMMARY, 1850 TO 1900, OF IMPORTED SILK MATERIALS, AND OF IMPORTED AND DOMESTIC MANUFACTURED SILK GOODS.¹

FISCAL YEAR ENDING JUNE 30—	IMPORTED SILK MATERIALS.							VALUE OF MANUFACTURED SILK GOODS.	
	Total cost.	Raw silk.		Spun silk.		Raw silk waste, including cocoons and noils.		Imported. ²	Domestic.
		Pounds.	Cost.	Pounds.	Cost.	Pounds.	Cost.		
1850.....	\$401,385	\$ 120,010	\$401,385	(⁴)	(⁴)	.....	.....	\$17,694,658	\$1,809,476
1860.....	1,340,676	\$ 297,877	1,340,676	(⁴)	(⁴)	.....	.....	32,961,120	6,607,771
1870.....	3,055,026	583,559	3,017,958	7,521	\$37,668	.....	.....	24,219,881	12,210,662
1880.....	12,691,490	2,562,236	12,024,699	87,239	111,999	.....	\$554,792	31,348,948	41,033,045
1881.....	11,276,888	2,550,103	10,888,264	19,325	60,830	240,310	326,744	32,316,396	.....
1882.....	13,323,554	2,879,402	12,890,392	14,726	47,236	341,867	385,866	38,280,955	.....
1883.....	14,758,955	3,253,370	14,043,340	43,812	126,832	955,645	568,783	33,180,280	.....
1884.....	12,959,653	3,222,546	12,481,496	91,750	189,722	616,713	288,435	37,840,852	.....
1885.....	12,916,881	3,424,076	12,421,739	78,890	226,412	661,711	268,780	27,880,386	.....
1886.....	18,377,346	4,754,626	17,232,505	178,388	442,310	1,611,744	702,531	27,613,545	.....
1887.....	19,671,867	4,599,574	18,687,245	172,617	441,299	888,325	543,323	30,822,978	.....
1888.....	20,184,391	5,173,840	19,151,208	197,139	578,950	742,313	454,233	32,363,678	.....
1889.....	19,927,957	5,329,646	18,544,025	274,362	659,045	1,221,941	724,887	34,297,684	.....
1890.....	25,120,653	5,943,360	23,285,099	411,621	883,644	1,404,549	951,910	37,363,143	87,298,454
1891.....	20,885,357	4,917,688	17,994,654	856,706	1,821,421	1,266,888	1,019,282	35,478,966	.....
1892.....	26,055,036	7,521,342	24,321,494	489,652	1,093,384	1,121,486	640,158	30,348,796	.....
1893.....	31,064,800	7,422,430	29,055,557	758,502	1,338,851	888,118	670,392	36,681,097	.....
1894.....	16,841,187	4,956,875	15,627,822	437,428	719,390	763,786	498,975	23,441,139	.....
1895.....	23,726,638	7,974,510	22,029,068	843,647	1,239,619	1,021,029	457,946	29,788,529	.....
1896.....	27,649,132	8,000,621	26,246,902	782,796	998,604	1,084,299	403,626	25,629,128	.....
1897.....	20,001,899	6,513,612	18,496,944	801,386	1,083,616	1,479,832	421,339	25,433,477	.....
1898.....	33,283,884	10,315,162	31,446,800	956,974	1,177,817	1,762,297	659,267	21,457,249	.....
1899.....	34,439,927	9,691,145	31,827,061	1,703,794	1,962,588	1,545,701	650,278	23,063,916	.....
1900.....	48,866,752	11,259,310	44,549,672	2,336,947	8,555,227	1,784,404	761,853	26,803,534	107,256,258

¹ Figures for imported goods, both raw and manufactured, derived from reports of the United States Treasury Department.

² Not including spun silk.

³ Estimated from current prices, only the value being on record.

⁴ Not separately reported.

During the fiscal years 1898, 1899, and 1900 there was imported an annual average of 10,421,872 pounds of raw silk, valued at \$35,941,178. In the census year 1900, as shown by Table 23, there were consumed in the manufacture of silk goods and silk braids and trimmings 9,760,770 pounds of raw silk, costing \$40,721,877. Making allowance for the amount carried over as raw material from year to year, and the considerable quantity used by the wool and cotton textile industries, the consumption of raw silk as obtained for this report agrees closely with the quantities of the imports as reported by the Treasury Department.

During the year 1880 the manufactured silk goods of all varieties imported into the United States were valued at \$31,348,948 (foreign value). The gross value of manufactured silk products for the United States for that year was \$41,033,045. In 1890 the value of the imports of silk manufactures was \$37,363,143, while the gross value of the domestic product was \$87,298,454. In 1900 these values were \$26,803,549 and \$107,256,258, respectively.

In 1860 the silk goods made in the United States as compared with the entire consumption was only 13 per cent. The percentage rose to 38 in 1880,¹ to 55 in 1890,² and to 80 in 1900. In broad silk fabrics the domestic production in 1900 was 67.3 per cent of the total estimated consumption of such goods. America now produces 85 per cent of the annual consumption of silk ribbons, the value of imported ribbons representing only 15 per cent. The classes of goods now principally imported from Europe are high novelties, handmade silk velvets, and handmade silk laces which are not as yet made to any appreciable extent here, but, without doubt, will be made in due time. From Japan we are also receiving Habutai and Kaiki silks which, by reason of their extreme lightness in weight, have been in considerable demand in the American markets. American manufacturers expect, however, that international trade returns will show a considerably diminishing percentage of this class of goods in the next few years. The census tables show a production of 8,970,933 yards of velvets and plushes made in the United States by power-loom weaving in the census year. The value of this product is \$4,959,971, which is 55.5 per cent of the annual consumption. The annual import of foreign manufactured velvets and plushes during the census year was \$2,335,576, foreign invoice value, and allowing 70 per cent additional for revenue duties, freight, insurance, and importers' profits, we find the approximate value to the consumers to be \$3,970,479. The present relative position of the silk industry in the United States in the manufacture of broad silks, velvets and plushes, and ribbons, to the consumption of such silk goods annually, is shown by the following statement:

¹Tenth Census of the United States, Report on Silk Manufacture, by William C. Wyckoff, special agent, page 21.

²Eleventh Census of the United States: Report on Manufacturing Industries, Part III, page 215.

	TOTAL.		BROAD SILKS. ¹	
	Value.	Per cent.	Value.	Per cent.
Domestic production	\$75,579,966	70.0	\$52,152,816	67.8
Imports ²	32,439,342	80.0	25,379,055	32.7
Consumption	108,019,308	100.0	77,531,871	100.0
	VELVETS AND PLUSHES.		RIBBONS.	
	Value.	Per cent.	Value.	Per cent.
Domestic production	\$4,959,971	55.5	\$18,467,179	85.7
Imports ²	3,970,479	44.5	3,089,808	14.3
Consumption	8,930,450	100.0	21,556,987	100.0

¹ Does not include production of tapestry and upholstery silks, value \$1,009,835.

² Selling value to consumer by adding to invoice value 70 per cent for revenue duties, freight, insurance, and importers' profits.

In the above statement no account is taken of manufactured silk goods exported, such exports being inconsiderable. The domestic production of sewing silks and machine twist, 1,465,575 pounds, valued at \$9,274,800, practically represents the entire American consumption, there being no importations of any consequence.

MATERIALS AND PRODUCTS, 1890 AND 1900.

The growth of the silk manufacture during the last half of the century has been in keeping with the growth of other industries, and the returns of the Twelfth Census indicate the continued prosperity of the industry. The increase during the past ten years in the quantity and total cost of the different materials used and in the value of goods manufactured is shown in Table 5.

TABLE 5.—COMPARATIVE SUMMARY OF MATERIALS AND PRODUCTS: 1890 AND 1900.

	1900	1890	Per cent of increase.
Number of establishments	488	472	2.8
Materials used:			
Total cost	\$62,406,665	\$51,004,425	22.4
Raw silk	9,780,770	6,376,881	53.1
Waste silk, cocoons, and noils	\$40,721,877	\$26,087,371	56.1
Organzine and tram	1,657,195	1,557,618	22.8
Spun silk	\$734,630	\$1,106,608	133.6
Other silk materials	2,338,464	8,806,372	129.3
Yarns, other than silk	\$10,539,632	\$16,518,979	186.2
Fuel and rent of power and heat	1,550,291	(^a)	.....
All other materials, including mill supplies and freight	\$9,408,050	(^a)	.....
Total value	74,040	744,223	118.8
Spun silk yarn made for sale	\$284,738	\$2,638,242	89.9
Machine twist and sewing, knitting, embroidery, fringe, floss, and wash silks	7,116,728	5,624,960	26.5
Dress goods, figured and plain, and other silk broad goods, except velvets and plushes	\$2,406,954	\$2,827,684	8.4
Velvets and plushes	\$684,002	\$455,516	40.9
Tapestries, curtains, and other upholstery broad goods	\$3,629,414	\$1,840,025	97.2
Ribbons and laces	\$107,256,258	\$87,298,454	22.9
Braids and bindings	\$11,167,191	\$16,880,866	133.8
Dress, cloak, millinery, and military trimmings	\$1,026,227	\$1,203,489	18.8
All other products	\$10,246,190	\$8,917,844	14.9
Received for contract work	\$52,152,816	\$22,955,760	127.2
Total value	\$4,959,971	\$3,141,020	57.9
Spun silk yarn made for sale	\$1,009,835	\$3,712,382	172.8
Machine twist and sewing, knitting, embroidery, fringe, floss, and wash silks	\$19,270,283	\$17,843,197	11.1
Dress goods, figured and plain, and other silk broad goods, except velvets and plushes	\$1,522,565	\$2,771,382	145.1
Velvets and plushes	\$2,296,010	\$3,554,506	173.2
Tapestries, curtains, and other upholstery broad goods	\$1,268,950	\$1,758,502	127.8
Ribbons and laces	\$2,887,220	(^a)	.....
Braids and bindings			
Dress, cloak, millinery, and military trimmings			
All other products			
Received for contract work			

¹ Decrease.

² Not separately reported.

It will be noted that Table 5 shows an apparent decrease of 29.3 per cent in quantity and 36.2 in cost of organzine and tram as materials used and 33.8 per cent in value as products manufactured. The explanation for this seeming anomaly lies in the fact that the organzine and tram manufactured by commission or custom throwsters are not included in the statistics for 1900 presented in this report, either as materials used or as products manufactured, although so included in 1890. Therefore, in a comparison of the two censuses, the 2,331,456 pounds of raw silk thrown into organzine and the 1,967,203 pounds thrown into tram by commission throwsters in 1900 should be taken into consideration. As elsewhere explained, the small increase in the number of establishments is partly accounted for by the elimination from this report of 39 braids and trimmings and 78 hosiery and knit goods manufacturers.

The industry has undergone many changes since 1850, when the variety of its products was very limited. The demands of fashion, the adaptability of silk to fancy designs, and the varying proportions in which silk may be used with other materials in fabrics of all kinds have resulted in an almost unlimited variety of products. Much of the silk spun is now consumed in cotton and woolen mills, while the silk mills consume large quantities of cotton and woolen yarns.

There were 1,667,195 pounds of silk waste and noils consumed in the industry in the census year, from which were produced 661,292 pounds of spun-silk yarn. Of this quantity 437,459 pounds were made for sale to textile manufacturers and 223,833 pounds consumed in

manufacturing by the spinners of the yarn. Adding 1,550,291 pounds reported as spun silk used as materials, there were 1,774,124 pounds of spun silk consumed by the silk industry in the census year.

The quantity of spun-silk yarns of all grades imported in the fiscal year ending June 30, 1900, was 2,336,946 pounds; adding thereto the amount made in the United States during the census year, 661,292 pounds, we find the total for distribution among the textile industries to be 2,998,238 pounds.

The quantities of raw silk and raw-silk and spun-silk yarns consumed by the textile industries of the United States are reported as follows for the censuses of 1890 and 1900:

	RAW SILK.		SPUN-SILK YARN.	
	1890	1900	1890	1900
	Pounds.	Pounds.	Pounds.	Pounds.
Silk manufacture.....	6,376,881	9,760,770	(1)	² 1,774,124
Cotton manufacture.....	32,851	342,425	18,583	218,255
Wool manufacture ³	166,709	70,078	88,785	253,811
Hosiery and knit goods.....	77,597	162,424	42,744	103,823

¹ Not reported.

² Includes 223,833 pounds remanufactured into other silk goods by the spinners.

³ Including woolen goods, worsted goods, fur hats, felt goods, and carpets.

Table 6 indicates the extent of the further interchange of fibers for the silk industry, and shows the quantity and cost of the different textile materials reported at the censuses of 1890 and 1900 and the cost of all other materials (fuel, mill supplies, etc.), and the percentage which each item forms of the total.

TABLE 6.—COMPARATIVE SUMMARY OF MATERIALS: 1890 AND 1900.

	MATERIALS USED.				PER CENT OF TOTAL.			
	Pounds.		Cost.		Pounds.		Cost.	
	1900	1890	1900	1890	1900	1890	1900	1890
Total materials.....	22,507,490	17,409,054	\$82,406,065	\$51,004,425	100.0	100.0	100.0	100.0
Silk materials.....	15,390,760	11,784,094	55,036,895	46,351,200	68.4	67.7	89.2	90.9
Textile yarns other than silk.....	7,116,728	5,624,960	2,406,354	2,827,684	31.6	32.3	3.9	4.6
Cotton yarn.....	6,444,208	(1)	1,830,550	(1)	28.6	.....	2.9	.....
Mercerized cotton yarn.....	219,861	(1)	165,683	(1)	1.0	.....	0.3	.....
Wool yarn.....	239,461	(1)	167,770	(1)	1.1	.....	0.3	.....
Mohair yarn.....	104,810	(1)	107,365	(1)	0.4	.....	0.2	.....
Other yarns.....	108,888	(1)	134,988	(1)	0.5	.....	0.2	.....
All other materials.....	.....	.....	4,313,416	2,325,541	.....	.....	6.9	4.5

¹ Not reported separately in 1890.

Table 6 shows but slight differences in the several percentages at the two census periods. Owing to the high cost of silk per pound, the textile yarns other than silk form a much smaller percentage of the total cost of materials than of the total quantity.

The statistics for 1890, as presented in this table, show that establishments engaged in the manufacture of silk and silk goods used silk materials (raw, waste, spun, organzine, tram, etc.) and yarns other than silk amounting to 17,409,054 pounds. Of this total

quantity, silk materials formed 67.7 per cent and yarns other than silk 32.3 per cent. In 1900 the same class of materials amounted to 22,507,488 pounds, of which quantity silk materials formed 68.4 per cent and yarns other than silk 31.6 per cent. The total cost of these materials in 1890 was \$48,678,884, of which cost silk formed 95.2 per cent and yarns other than silk 4.8 per cent, while the cost in 1900 was \$58,093,249, of which amount silk formed 95.9 per cent and yarns other than silk 4.1 per cent.

SEWING SILK AND MACHINE TWIST.

Connecticut continues in the lead in the production of sewing silks and machine twist, its proportion being 47.1 per cent of the total quantity manufactured. Massachusetts is second, its proportion being 30 per cent. These two states produced 77.1 per cent of the total annual output of this class of goods. The following statement shows the output in pounds, for the census year, of the several states in the order of their importance as manufacturers of these products:

	Total.	Sewing, embroidery, and wash silks.	Machine twist.
	Pounds.	Pounds.	Pounds.
United States.....	1,465,575	477,658	987,917
Connecticut.....	690,455	145,032	545,423
Massachusetts.....	439,664	170,423	269,241
Michigan.....	124,535	64,000	60,535
Pennsylvania.....	117,951	74,475	43,476
New York.....	65,028	18,528	46,500
California.....	27,942	5,200	22,742

There is very little competition from abroad with domestic manufacturers of sewing silk and machine twist. In fact, the United States product is universally acknowledged as superior in finish and purity of dye to that of any other country, chiefly because only the best Japan and China filatures, dyed unweighted, are used. It is noteworthy that at the Paris Exposition of 1900, the grand prix d'honneur, the highest award given, was awarded to an American exhibitor of this class of silks.

Among the most important changes in the methods of business in this branch of the industry during the past decade are the following:

1. An increase in the use of machine twist for manufacturing purposes has been effected by shortening the lengths from 1-ounce or large spools to 200 and 100 yard spools. While this is a decided convenience and benefit to the smaller manufacturing trade, it entails greater cost to the silk manufacturer in the additional spooling and spools and in preparing the goods for the market. In the early days of the industry—say forty years ago—sewing silk was universally put up in skeins, but with the introduction of sewing machines and their use in the manufacture of clothing and shoes, that practice is now a thing of the past, fully 99 per cent of all machine and sewing silk being, at this time, put up on spools.

2. A decided tendency toward finer sizes of thread. Formerly the average size used was about size A, representing 1,000 yards per ounce. To-day the principal goods sold are double 0 (00), representing 1,600 yards per ounce.

While these changes have been a benefit to the consumer, they subject the silk manufacturer to the additional expense of spooling up 96 or 192 spools instead of 12, and to the further disadvantage of being able to

“throw” only 300 pounds of 00 in the time sufficient to “throw” 480 pounds A. The increasing quantities used in the manufacture of clothing and leather goods necessitates the use of an increased quantity of fine sizes for certain parts of the work.

These commercial changes, which are a direct loss to the manufacturer through the increase of his expense account, are indicative of his controlling desire to lead the trade in the direction of greater economies in the distribution of his product, and for that reason are noteworthy.

About two-thirds of the output of machine twist is sold to manufacturers of clothing, shoes, cloaks, etc., one-third being sold to the dry-goods trade in small wares, such as spool silks for the retail dressmaking trade. The manufacturing trade absorbs about one-half of sewings, the remaining one-half being sold as small wares in embroidery silks, knittings, and wash embroidery silks. The sale of embroidery silks has increased phenomenally during the decade, owing to the great vogue of art embroideries for decorative purposes.

Other noticeable features of the decade have been marked improvements in the luster and evenness of the thread, firmness of the twist, and great variety of brilliant, plain, and somber or shaded colors, perfectly blended. In sewing silks alone a full assortment of colors now runs up to 200.

The following statement illustrates the growth of this branch of the industry, and gives the percentage of increase in quantities produced since the census of 1860:

CENSUS YEAR.	Pounds.	Value of product.	Per cent of increase in quantity.
1860.....	(1)	\$1,209,426	.....
1870.....	409,429	(1)	.....
1880.....	516,621	(1)	26.2
1890.....	870,525	6,783,855	59.2
1900.....	1,119,825	7,688,213	41.6
.....	1,465,575	9,274,800	30.9

¹ Not reported separately.

² All sewing silk; machine twist first made in 1852.

³ Sewing silk and machine twist only.

BROAD SILK WEAVING.

The salient features of the development of broad silk weaving in the United States during the past decade are four in number:

1. The production of silk taffetas in both black and colors by power looms. This method of producing these goods was first employed in the United States, the production being on a scale of sufficient commercial importance to entitle this country to credit for its success. Later, power loom weaving of taffetas was adopted in Europe as a profitable commercial proposition. Foreign countries are now, therefore, close competitors in the manufacture of these goods, but the credit of original achievement remains with the United States. The

importance of this fact is best realized when we consider that fully one-half of the fabrics produced to-day in the United States on silk power looms are properly included in the "taffeta" class.

2. While a small proportion of the high-class "fancies" consumed in this country is of French origin, the great bulk is made by domestic mills. We are indebted for this result to the energy and versatility of the manufacturers, who during the last decade seized upon the possibility of reproducing here the grades of French and Swiss "fancies," which by their attractiveness dominated the American market. We have succeeded in manufacturing every variety of checks, stripes, and figured goods (Jacquards) in popular grades. The American silk industry can fairly claim to be unexcelled at the present time in the production of this class of goods.

3. Marked progress in the manufacture of piece-dyed goods woven with raw-silk warps. Continually expanding facilities for piece dyeing in silk manufacturing establishments and in dyehouses have largely increased the output of this description of fabrics. Both piece dyeing and printing have been for many years features of the foremost silk manufacturing establishment in the United States, but recent favoring circumstances have given a great impetus to these branches of the industry. At the present time piece-dyed and printed goods of domestic manufacture have largely replaced the imports from Europe. Formerly the European productions were printed exclusively in Europe. As a consequence of the American tariff, European manufacturers have been shipping a considerable quantity of their goods to this side in the raw or gum to be printed. At the present time both the manufacture and the printing of the fabric are so successfully accomplished in the United States that the domestic production dominates our own markets in these specialties.

4. Under pressure of sharp competition, both foreign and domestic, American manufacturers have been compelled to study more closely the intricate details of

manufacturing and to master the economies developed abroad by experience and long practiced there.

Warp-print fabrics have also been manufactured to a large extent in the United States during the past ten years, both in broad silks and in ribbons. Warp-print goods, including tie silks made in this country, have reached such a degree of perfection that at the Paris Exposition of 1900 gold medals were awarded to two American exhibitors of these fabrics.

A similar award was also made to an American exhibitor of plain black silks for the superior weave and finish of the fabric.

A striking feature of the industry is the increase in the number of power looms and the decrease in hand looms. The following statement presents the number of power and hand looms at each census from 1880 to 1900, inclusive:

	1880	1890	1900
Power looms on broad goods	3,103	14,866	36,825
Power looms on narrow goods	2,218	5,956	7,432
Hand looms on broad goods	1,629	413	164
Hand looms on narrow goods	1,524	1,334	9

The power looms used on broad goods in 1900 were classified as follows:

Plain looms, 36 inches or over, reed space	13,077
Plain looms, under 36 inches, reed space	16,161
Jacquard broad looms	7,587

Table 7 presents a summary, by states, of establishments classified according to the number of looms operating on broad silk goods, not including broad looms on velvets and plushes, during the census year. It should be noted that where several mills in the same state are operated by one firm they are treated as one establishment and classified according to the combined total of looms.

VELVETS.—One of the notable developments of the past decade, realizing the earlier ambitions of the Amer-

TABLE 7.—BROAD-SILK WEAVING MILLS, CLASSIFIED BY NUMBER OF LOOMS: 1900.

STATES.	Total number of establishments.	ESTABLISHMENTS CLASSIFIED BY NUMBER OF BROAD LOOMS.								Total number of broad looms.
		Under 50.	50 and under 150.	150 and under 250.	250 and under 500.	500 and under 750.	750 and under 1,000.	1,000 and under 1,250.	1,250 and over.	
United States	239	87	81	29	31	5	2	3	1	35,446
1. New Jersey:										
Paterson	84	26	36	11	10	1				10,475
Outside of Paterson	31	10	8	2	8	1		2		7,077
2. Pennsylvania	56	19	14	10	8	2	2		1	10,662
3. New York	39	20	12	5	2					2,867
4. Connecticut	5		2		2			1		1,894
5. Massachusetts	6	3	2			1				896
6. Rhode Island	4	3			1					533
7. New Hampshire	1			1						209
8. Delaware	2	1	1							191
9. Virginia	1		1							147
10. Maryland	1		1							144
11. North Carolina	2		2							125
12. Maine	1		1							120
13. Michigan	1		1							62
14. Illinois	2	2								84
15. Utah	2	2								8
16. California	1	1								2

ican silk manufacturers, has been the manufacture of velvet in this country on a paying basis. The American consumption of velvets and plushes is not so large as that of other weaves. It is estimated at a value of \$8,930,450 annually, but when we realize that mills in the United States are now supplying 55.5 per cent of this amount it becomes evident that the problem of successful production is being solved. The development during the past decade has been principally along the lines of medium grades of black and colored velvets, used largely for millinery and dress trimmings. In these grades the United States is now supplying 75 per cent of the trade consumption. There is a growing tendency to decided improvement in the better grades; also in the successful manipulation of "panne" velvets, and in various styles of fancy velvets, such as checks, stripes, and figures. The yardage of velvets produced in the census year was 5,122,249 yards, the reported value at the factory being \$2,479,903.

Germany has been most seriously affected by the competition of the United States in the last ten years. Lyon has well held its own, on account of its new fabrics, styled "velours panne" and "velours mousseline." Its supremacy over Crefeld is due in fact to its higher grades of velvet, produced by using pure silk instead of spun silk and cotton. Lyon continues to excel and control the bulk of the trade in all pile fabrics where the material is reeled silk.

The relative importance of the velvet trade with the United States from these foreign centers is shown by the following figures of their exports to the United States for the past four years.¹

YEAR.	From Lyon, velvets and plushes.	From Crefeld, silk velvets.	From Crefeld, cotton velvets.
1897	\$328,070	\$1,253,142	\$194,450
1898	345,717	601,849	153,855
1899	304,912	631,256	174,675
1900	498,558	802,876	235,711

PLUSHES.—The production of plushes amounted to 3,848,684 yards, the factory value being \$2,480,068. The relative positions of velvets and plushes as to the quantity of each manufactured have been reversed during the past decade. Ten years ago the seal plush and

¹Exports Declared for the United States, quarterly publication United States Department of State.

upholstery plush industry in the United States was in a flourishing condition, and continued so for some time; but in 1900 it was much less so, and at the time of writing this report the seal plush industry especially has suffered yet greater decline. The census of 1890 reported a product of velvets and plushes valued at \$3,141,026, but though no separate classification of the two items was then made, it was recognized that the output of plushes largely exceeded that of velvets.² At this census the yardage and factory cost of both descriptions of goods are given.

Seal plushes are used in the cloak, cape, cap, and trimmings trades. Sharp domestic competition finally reduced prices materially, but the benefit to consumers was of comparatively brief duration. Cheaper and yet cheaper grades of goods were made until, fashion no longer favoring the fabric, the demand declined as stated. The importation of these goods from England, where formerly the largest proportion of them was manufactured, has now entirely ceased.

The development of broad goods weaving in the United States is best illustrated by a comparison of the production of such goods in each census year since 1870, which is shown in the following statement, presenting the yardage, the value, and the per cent of increase in the quantity of broad silk goods manufactured in the United States at the periods mentioned, including tapestry and upholstery silks, velvets, and plushes, and embracing all silk goods and silk-mixed fabrics (woven on broad looms) in which silk is the material of chief value.

CENSUS YEAR.	Yards.	Value of products.	Per cent of increase in quantity.
1870	1,026,422	(¹)	.....
1880	10,856,284	\$11,224,595	957.7
1890	37,648,220	20,800,108	245.8
1900 ²	97,940,935	58,122,622	160.2

¹Not reported separately.

²The census of 1900 separates the yardage and value as follows: All silk, 68,437,218 yards, valued at \$42,573,279; and silk mixed, 29,503,717 yards, valued at \$15,549,343.

Table 8 presents, in detail, the production of broad silk goods by yardage, value, and average value per yard for the United States during the census year.

³Eleventh Census of the United States, Report on Manufacturing Industries, Part III, page 217.

TABLE 8.—SILK BROAD GOODS MANUFACTURED: 1900.

CLASSES.	TOTAL.			ALL-SILK BROAD GOODS.			SILK-MIXED BROAD GOODS.		
	Quantity (yards).	Value.	Average value per yard (cents).	Quantity (yards).	Value.	Average value per yard (cents).	Quantity (yards).	Value.	Average value per yard (cents).
Total	97,940,935	\$58,122,622	59.3	68,437,218	\$42,573,279	62.2	29,503,717	\$15,549,343	52.7
Plain and fancies	62,536,803	39,302,821	62.8	53,573,488	33,852,111	63.2	8,963,315	5,450,710	60.8
Jacquards	9,209,695	6,039,322	72.1	7,532,229	5,379,001	71.4	1,677,466	1,260,321	75.1
Piece-dyed	15,990,395	6,210,673	39.1	7,331,501	3,342,167	45.6	8,658,894	2,868,506	33.5
Velvets	5,122,249	2,479,903	48.4	.....	.....	.....	5,122,249	2,479,903	48.4
Plushes	3,848,684	2,480,068	64.4	.....	.....	.....	3,848,684	2,480,068	64.4
Tapestry and upholstery	1,333,119	1,009,835	75.7	.....	.....	.....	1,333,119	1,009,835	75.7

Table 9 presents a summary, by states, of establishments classified according to number of looms operating on velvets and plushes.

TABLE 9.—VELVET AND PLUSH WEAVING MILLS, CLASSIFIED BY NUMBER OF LOOMS: 1900.

STATES.	Total number of establishments.	ESTABLISHMENTS CLASSIFIED BY NUMBER OF LOOMS.				Total number of looms.
		Under 50.	50 and under 150.	150 and under 250.	250 and over.	
United States.....	15	4	8	1	2	1,648
1. Connecticut.....	6		4	1	1	787
2. Pennsylvania.....	4	2	1		1	499
3. New York.....	2		2			153
4. New Jersey:						
Paterson.....	2	1	1			86
Outside of Paterson.....	1	1				18

SILK RIBBONS.

Awards of gold and silver medals were made at the Paris Exposition of 1900 to American manufacturers of plain and faconné ribbons.

The invention of the high-speed ribbon loom, about ten years ago, was a great advance over the so-called "Swiss" and "German" power looms which were used exclusively in this country up to 1889. The new loom was first made in the United States, and in the last few years has reached a high state of perfection. Ease in leveling the harness, handling the warps, and the positive control of the take-up, which enable the looms to be run at continuous high speed, are the marked features of this invention. It has furnished occupation for a new class of labor, women being now generally and profitably employed in this particular grade of

work, whereas on the looms formerly in use male labor was a necessity.

It is not too much to say that the equipment of ribbon machinery in the United States is now equal to any commercial demand that may be made upon it in turning out all articles of ribbon known to the trade.

The ribbon looms reported were classified as follows:

Total	7,441
German looms, warps on top.....	4,471
High-speed looms	2,105
Jacquards.....	856
Hand looms.....	9

Table 10 presents a summary, by states, of establishments classified according to number of looms operating on ribbons.

TABLE 10.—SILK RIBBON WEAVING MILLS, CLASSIFIED BY NUMBER OF LOOMS: 1900.

STATES.	Total number of establishments.	ESTABLISHMENTS CLASSIFIED BY NUMBER OF LOOMS.					Total number of looms.
		Under 50.	50 and under 150.	150 and under 200.	200 and under 300.	500 and over.	
United States	115	65	39	5	5	1	7,441
1. New Jersey:							
Paterson.....	27	19	12	3	3		2,655
Outside of Paterson.....	5	4	1				261
2. New York.....	31	16	12	2		1	2,248
3. Pennsylvania.....	35	23	10		2		1,788
4. Connecticut.....	5	3	2				294
5. Massachusetts.....	1		1				144
6. Maryland.....	1		1				51

THROWING SPINDLES.

Table 11 presents a summary, by states, of establishments classified according to number of organzine and tram spindles.

TABLE 11.—MILLS CLASSIFIED BY NUMBER OF THROWING SPINDLES: 1900.

STATES.	Total number of estab- lish- ments.	ESTABLISHMENTS CLASSIFIED BY NUMBER OF THROWING SPINDLES.												Total number of throw- ing spin- dles.
		Under 2,500.	2,500 and under 5,000.	5,000 and under 7,500.	7,500 and under 10,000.	10,000 and under 12,500.	12,500 and under 15,000.	15,000 and under 20,000.	20,000 and under 25,000.	25,000 and under 40,000.	40,000 and under 45,000.	45,000 and under 50,000.	75,000 and over.	
United States	121	35	21	21	13	8	3	5	8	3	1	2	1	1,045,304
1. Pennsylvania	45	7	3	8	7	4	2	4	5	2	1	1	1	611,670
2. New Jersey:														
Paterson	29	10	7	7	2	1		1				1		171,410
Outside of Paterson.....	18	5	2	1		2	1		1					104,106
3. New York	12	3	4	3	2									47,964
4. Massachusetts	3	1		1					1					31,306
5. Connecticut	9	5	2		1	1								29,662
6. Virginia	2			1					1					28,372
7. North Carolina.....	2	1			1									9,680
8. New Hampshire.....	1		1											3,408
9. Delaware.....	1		1											3,264
10. Maine	1		1											2,622
11. Michigan	1	1												1,104
12. Maryland	1		1											648
13. California	1	1												88

The number of throwing spindles reported for this census, as shown in Table 11, is 1,045,304; these spindles are classified as follows:

Organzine, first time over.....	582,180
Organzine, second time over.....	345,145
Tram spindles.....	117,979

The total number of accessory spindles, as shown in Table 23, is 942,100, making an aggregate of 1,987,404, as against 1,087,395 similar spindles in 1890 and 426,530 in 1880.

Of the total number of throwing spindles reported at

this census, 58.5 per cent were located in Pennsylvania, the center of the throwing industry. It will be noticed that 20 establishments of the 45 reported in this state operate more than 10,000 spindles, and one as high as 75,000 spindles.

American "throwing" is done principally on belt spinners which are run from 11,000 to 12,000 turns a minute on first time over and 9,000 on second time over. The machines and organizations are inferior to none.

A review of the improvements effected in the past decade in "throwing" machinery will be found appended.

FINISHED SILK GOODS.

Owing to the differences in the schedules of inquiry and in the methods employed at the several censuses, and the changing conditions in the industry, necessitating changes in the classification of the manufactured products, it is not possible to present a table giving comparable items of production for this and preceding censuses.

At this census the aim has been to indicate the production by quantities (yardage and pounds) so far as was possible, as comparison by values is frequently misleading, owing to changes in the price of merchandise. The classification of the products of the loom by their commercial designations as fabrics, which was employed in former censuses, has been abandoned, for the reason that considerable quantities are now woven and sold in the grey, even the sellers, for example, not knowing whether the fabrics would be finished for dress goods, cloak linings, hat linings, or millinery, etc. By the method adopted the yardage of all silk fabrics or silk-mixed goods is shown for 1900. For this reason comparison of production with previous censuses is difficult as to special articles, but it is believed that the change is a wise one, as the former classification is no longer practicable. The following statements present for 1880, 1890, and 1900, respectively, the quantities and values of the finished or merchantable products:

FINISHED GOODS FOR THE CENSUS YEAR 1880.¹

	Quantity.	Value.
Total value.....		\$34,519,723
Sewing silk.....		776,120
Machine twist.....	821,523 pounds...	6,007,735
Floss silk.....		225,025
Dress goods.....		4,115,205
Satins.....		1,101,875
Tie silks and scarfs.....	10,856,284 yards...	606,675
Millinery silks.....		891,955
Other broad goods.....		627,595
Handkerchiefs.....		3,881,590
Ribbons.....	80,129,951 yards...	6,023,100
Laces.....		437,000
Braids and bindings.....		999,685
Fringes and dress trimmings.....		4,950,275
Cords, tassels, passementeries, and millinery trimmings.....		1,866,575
Upholstery and military trimmings.....		1,392,355
Coach lace and carriage trimmings.....		37,510
Undertakers', hatters', and fur trimmings.....		59,805
Mixed goods and silk values therein.....		519,643

¹ Tenth Census of the United States, Report on Silk Manufacture, by William C. Wyckoff, special agent, pages 25 and 26.

FINISHED GOODS FOR THE CENSUS YEAR 1890.¹

	Quantity.	Value.
Total value.....		\$69,154,599
Machine twist and sewing silk.....	1,119,825 pounds...	7,068,213
Fringe, knitting, embroidery, and floss silk.....	329,637 pounds...	1,849,631
Dress goods, figures and plain.....		15,188,184
Tailors' linings.....		8,011,437
Tie silks and scarfs.....	37,648,220 yards...	919,919
Other broad goods.....		1,928,086
Handkerchiefs.....		1,913,224
Velvets and plushes.....		8,141,026
Upholstery goods:		
Curtains.....		471,324
Tapestries.....		1,330,287
Other upholstery goods.....		1,910,721
Ribbons.....	25,737,211 pieces...	17,081,447
Laces.....		267,750
Braids and bindings.....		2,771,882
Gimps and trimmings.....		3,918,209
Dress and cloak trimmings.....		4,403,757
Military trimmings.....		282,600
Hosiery and knit goods:		
Shirts and drawers.....		26,421
Hosiery.....		141,183
Mittens, gloves, etc.....		897,904
Jersey cloth.....		90,664
Other products.....		602,330

¹ Eleventh Census of the United States, Report on Manufacturing Industries, Part III, pages 213 and 214.

FINISHED GOODS FOR THE CENSUS YEAR 1900.

	Quantity.	Value.
Total value.....		\$92,451,212
Machine twist.....	987,917 pounds...	5,997,974
Sewing, embroidery, and wash silks.....	477,658 pounds...	3,276,826
Fringe and floss silks.....	193,659 pounds...	690,982
Broad goods, total.....	97,940,935 yards...	58,125,622
Broad silks, all silk, and silk mixed:		
Plain and fancies.....	62,536,803 yards...	39,802,821
Jacquards.....	9,209,696 yards...	6,639,322
Piece-dyed.....	16,890,385 yards...	6,210,073
Velvets.....	5,122,249 yards...	2,479,503
Plushes.....	3,843,634 yards...	2,480,063
Upholstery and tapestry.....	1,333,119 yards...	1,009,835
Ribbons.....		18,467,179
Laces, nets, veils, veilings, etc.....		803,104
Braids and bindings.....		1,622,565
Dress, cloak, millinery, and military trimmings.....		2,295,010
All other products.....		1,268,950

COMPARATIVE STATISTICS BY STATES.

Table 12 is a comparative summary, by states, for 1880, 1890, and 1900, of the data reported under the principal heads of the inquiry.

In considering the comparative statistics shown in Table 12, it should be understood that the omission of silk hosiery and knit goods, and of braids and trimmings in which silk was a material of minor value, reduces the increase between 1890 and 1900. The large decrease in New York during the last decade is due, in part, to this omission, which affects, more or less, the statistics for the other states. A noticeable feature shown in Table 12 is the practical disappearance of hand looms and the marked increase in power looms. The number of spindles has increased, since 1880, 363.6 per cent.

The five leading states in silk manufacture at the last three censuses were New Jersey, Pennsylvania, New York, Connecticut, and Massachusetts. The relative

rank of these states with respect to the principal items of information presented in the table varied slightly from time to time as shown in the following statement, the number indicating the rank:

STATES.	NUMBER OF ESTABLISHMENTS.			CAPITAL.			AVERAGE NUMBER OF WAGE-EARNERS.			WAGES.			COST OF MATERIALS USED.			VALUE OF PRODUCTS.		
	1900	1890	1880	1900	1890	1880	1900	1890	1880	1900	1890	1880	1900	1890	1880	1900	1890	1880
New Jersey.....	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Pennsylvania.....	2	3	3	2	3	4	2	3	4	2	3	4	2	2	5	2	3	5
New York.....	3	1	1	4	2	2	3	2	2	3	2	2	4	3	2	3	2	2
Connecticut.....	4	4	4	3	4	3	4	4	3	4	4	3	3	4	3	4	4	3
Massachusetts.....	5	5	5	5	5	5	5	5	5	5	5	5	5	5	4	5	5	4

Based upon all essential considerations, the states included in the statement rank, at this census, in the order given. The greatest growth is noted in Pennsylvania, which, from a position of comparative insignificance in 1880, has advanced to second place at this census. This may be characterized as one of the prin-

cipal developments of the industry during the interval. It is a result of the abundance of suitable labor and cheap fuel in the eastern part of the state, advantages which continue to influence the establishment of new silk mills and the removal of old plants from other localities.

TABLE 12.—COMPARATIVE SUMMARY FOR THE UNITED STATES, BY STATES: 1880, 1890, AND 1900.

STATES.	Year.	Number of establishments.	Capital.	SALARIED OFFICIALS, CLERKS, ETC.		AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES.					Miscellaneous expenses.	Cost of materials used.	Value of products, including amount received for contract work.	Number of spindles.	NUMBER OF LOOMS.		
				Number.	Salaries.	Total number.	Total wages.	Men, 16 years and over.	Women, 16 years and over.	Children, under 16 years.					Total.	Power.	Hand.
United States	1900	483	\$81,082,201	2,657	\$3,134,352	65,416	\$20,982,194	24,206	34,797	6,413	\$10,264,208	\$62,406,666	\$107,256,258	1,987,404	44,480	44,257	173
	1890	472	51,007,537	1,531	1,917,877	49,382	17,762,441	17,602	28,914	2,866	4,259,623	51,004,425	87,293,454	1,087,395	22,569	20,822	1,747
	1880	382	19,125,300	(1)	(1)	31,337	9,146,705	9,375	16,396	5,566	(2)	22,467,701	41,033,045	426,530	8,474	5,321	3,153
California.....	1900	5	308,847	6	4,998	117	33,055	24	91	2	4,113	146,219	255,902	3,380	2	2	.....
	1890	9	112,283	11	15,276	203	68,290	49	152	2	10,438	146,406	271,912	2,817	36	1	35
	1880	5	164,300	(1)	(1)	151	41,400	20	106	25	(3)	80,995	159,175	350	24	.....	24
Connecticut.....	1900	88	12,166,775	323	403,423	6,514	2,392,873	2,763	3,685	166	637,450	7,198,008	12,378,981	160,743	2,975	2,975	.....
	1890	85	9,037,042	117	159,273	4,964	1,847,631	1,540	3,801	123	270,423	6,201,876	9,738,951	129,664	1,378	1,372	6
	1880	28	4,436,500	(1)	(1)	3,423	1,026,530	785	1,990	653	(3)	3,311,206	5,881,000	88,825	615	603	12
Illinois.....	1900	4	259,540	33	51,180	412	121,644	81	310	21	42,410	187,514	421,088	.....	84	27	7
	1890	10	422,096	49	54,314	756	241,322	157	589	10	85,761	314,855	785,845	732	126	44	82
	1880	5	82,000	(1)	(1)	259	72,195	67	135	57	(3)	125,895	244,150	.....	64	18	51
Maryland.....	1900	4	50,400	3	3,600	72	20,633	28	44	.....	3,708	34,305	100,361	6	14	14	.....
	1890	4	20,900	(1)	(1)	82	11,000	12	56	14	(2)	15,760	35,415	.....	39	.....	39
Massachusetts.....	1900	20	5,649,758	156	227,276	3,110	1,110,324	1,102	1,637	171	382,745	3,823,963	5,957,532	107,312	1,040	1,017	23
	1890	20	3,353,296	223	258,115	2,993	1,088,284	977	1,023	88	484,390	3,251,893	5,557,569	81,435	540	444	96
	1880	22	1,306,900	(1)	(1)	1,825	521,725	353	1,285	188	(2)	1,990,515	3,704,260	80,450	241	88	153
New Jersey.....	1900	180	29,285,792	959	1,144,512	24,157	9,232,532	11,279	11,679	1,199	4,896,595	21,631,118	39,966,662	536,065	20,572	20,557	15
	1890	132	16,309,927	472	541,570	17,445	6,634,610	7,773	8,773	899	1,356,137	17,908,883	30,760,371	359,364	11,724	11,487	237
	1880	106	6,952,325	(1)	(1)	12,549	4,177,745	4,696	5,360	2,493	(2)	9,678,536	17,122,230	210,783	4,553	2,956	1,597
New York.....	1900	92	9,800,207	363	514,439	7,861	2,861,818	3,149	4,299	413	1,601,527	6,570,037	12,706,246	136,703	5,268	5,175	93
	1890	185	11,165,918	432	601,336	12,719	4,933,093	4,466	7,983	280	1,123,671	10,174,818	19,417,796	154,969	4,940	3,888	1,062
	1880	151	4,696,775	(1)	(1)	9,633	2,590,025	2,405	5,459	1,769	(2)	5,331,804	10,170,140	67,271	2,086	1,095	991
North Carolina.....	1900	3	180,376	11	3,455	209	25,420	35	119	55	5,159	99,403	135,354	18,790	125	125	.....
	1890	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	1880	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ohio.....	1900	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	1890	3	27,830	4	2,512	36	11,173	8	28	.....	2,662	13,983	33,927	96	16	.....	16
	1880	6	24,700	(1)	(1)	135	12,550	21	73	41	(2)	19,495	53,110	.....	22	.....	22
Pennsylvania.....	1900	121	20,894,028	745	718,776	21,028	4,629,626	5,214	11,565	4,249	2,451,820	19,884,869	31,072,926	942,545	12,940	12,920	29
	1890	66	9,862,083	192	256,049	9,830	2,725,285	2,420	5,617	1,293	939,051	12,094,889	19,357,546	318,215	3,533	3,360	223
	1880	49	1,379,900	(1)	(1)	3,189	678,120	1,000	1,870	319	(2)	1,880,985	3,491,840	26,241	823	566	262
Rhode Island.....	1900	6	680,252	8	12,320	455	166,075	124	326	5	103,454	318,561	1,311,333	4,212	533	533	.....
	1890	3	122,256	8	8,507	186	53,471	49	107	30	17,427	149,703	229,062	3,393	43	43	.....
	1880	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Virginia.....	1900	3	594,359	12	12,678	478	105,056	144	228	101	15,300	720,525	981,680	41,798	147	147	.....
	1890	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	1880	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
All other states	1900	11	1,812,272	41	41,295	1,080	308,171	291	758	31	123,685	1,325,448	2,063,554	35,856	785	779	6
	1890	5	534,426	20	17,326	678	133,779	145	392	141	15,862	713,254	995,114	36,704	169	169	.....
	1880	6	61,000	(1)	(1)	85	15,415	16	62	7	(2)	82,510	111,725	8,610	2	.....	2

¹ Not reported separately.

² Not reported.

³ Included in "all other states."

⁴ Includes establishments distributed as follows: Delaware, 2; Maine, 1; Maryland, 2; Michigan, 2; New Hampshire, 2; Utah, 2.

⁵ Includes establishments distributed as follows: Maine, 1; Michigan, 1; Missouri, 1; North Carolina, 1; Virginia, 1.

⁶ Includes establishments distributed as follows: Kansas, 1; Maine, 1; Missouri, 1; New Hampshire, 1; Rhode Island, 1; Vermont, 1.

CAPITAL.

Table 13 is a comparative statement in detail of capital for 1890 and 1900, by states.

The value of land and buildings owned, as shown by Table 13, is \$12,250,905 as compared with \$6,904,628 in 1890. The estimated value of hired property as reported at the census of 1890 was \$10,335,160, for which \$734,268 was paid as rent for tenancy, or 7.1 per cent. In 1900 the amount reported as paid for rent of land and buildings was \$591,807, which, assuming that the earning power of property was the same, represented a capital value of \$8,335,310. The total amount of capital reported, \$81,082,201, does not include the

value of land and buildings rented. Compared with the census of 1890, the increase of aggregate capital is 59 per cent, and, specifically, land and buildings owned, 77.4 per cent; machinery, tools, and implements, 46.3 per cent; and cash and sundries, 60.7 per cent. The increase in the value of land and buildings owned, and the decrease in the value of land and buildings hired, as estimated, evidence the steadily growing prosperity of the industry. It is also interesting to note that in 1900 the value of finished goods produced for each dollar of capital invested was \$1.14, as compared with \$1.36 in 1890, and \$1.80 in 1880.

TABLE 13.—COMPARATIVE SUMMARY OF CAPITAL, BY STATES: 1890 AND 1900.

STATES.	Year.	Total.	Land.	Buildings.	Machinery, tools, and implements.	Cash and sundries.
United States	1900	\$81,082,201	\$2,045,093	\$10,205,812	\$20,750,449	\$48,080,847
	1890	51,007,587	1,601,660	5,212,968	14,181,680	29,921,229
California	1900	308,847	3,600	29,726	44,161	231,360
	1890	112,283			30,409	81,874
Connecticut	1900	12,166,775	282,294	1,597,352	2,061,799	8,225,330
	1890	9,037,042	152,589	1,143,200	1,617,538	6,123,715
Illinois	1900	259,540	15,000	25,000	95,959	123,581
	1890	422,096	38,000	60,000	106,200	222,896
Maryland	¹ 1900					
	1890	50,400	6,000	1,500	12,400	30,500
Massachusetts	1900	5,649,758	216,341	756,454	707,345	3,969,618
	1890	3,853,296	77,300	287,500	591,908	2,996,588
New Jersey	1900	29,285,792	733,367	2,966,084	7,297,856	18,288,485
	1890	16,809,927	590,919	1,579,160	5,039,564	9,600,284
New York	1900	9,800,207	202,188	586,224	3,061,252	5,950,593
	1890	11,165,918	544,002	832,240	3,612,758	6,176,918
North Carolina	1900	130,376	6,200	52,000	40,525	31,651
	¹ 1890					
Ohio	¹ 1900					
	1890	37,830	10,000	5,000	1,750	21,080
Pennsylvania	1900	20,894,023	491,598	3,688,545	6,690,158	10,017,722
	1890	9,362,063	236,850	1,225,652	2,941,679	4,957,582
Rhode Island	1900	680,252	24,955	96,224	165,032	394,041
	1890	122,256			70,364	51,892
Virginia	1900	594,359	12,600	174,440	210,200	197,119
	¹ 1890					
All other states	² 1900	1,312,272	57,000	233,763	870,162	651,347
	³ 1890	584,426	41,000	78,716	157,110	257,600

¹ Included in "all other states."

² Includes statistics reported by establishments distributed as follows: Delaware, 2; Maine, 1; Maryland, 2; Michigan, 2; New Hampshire, 2; Utah, 2.

³ Includes statistics reported by establishments distributed as follows: Maine, 1; Michigan, 1; Missouri, 1; North Carolina, 1; Virginia, 1.

WAGE-EARNERS AND OPERATIVES EMPLOYED.

Table 14 presents the number of wage-earners—men, women, and children—by states, from 1870 to 1900, inclusive, with the percentage that each is of the total number.

TABLE 14.—COMPARATIVE SUMMARY OF WAGE-EARNERS, BY STATES: 1870, 1880, 1890, AND 1900.

STATES.	Year.	NUMBER.				PER CENT.		
		Total.	Men, 16 years and over.	Women, 16 years and over.	Children, under 16 years.	Men, 16 years and over.	Women, 16 years and over.	Children, under 16 years.
United States	1900	65,416	24,206	34,797	6,413	37.0	53.2	9.8
	1890	49,382	17,602	28,914	2,866	35.6	58.6	5.8
	1880	31,337	9,375	16,396	5,566	29.9	52.3	17.8
	1870	6,649	1,734	3,529	1,386	26.1	53.1	20.8
California	1900	117	24	91	2	20.5	77.8	1.7
	1890	203	49	152	2	24.1	74.9	1.0
	1880	151	20	106	25	13.2	70.2	16.6
Connecticut	1900	6,514	2,763	3,585	166	42.4	55.0	2.6
	1890	4,964	1,640	3,301	123	31.0	66.5	2.5
	1880	3,428	785	1,990	653	22.9	58.0	19.1
	1870	1,703	466	1,003	234	27.4	58.9	13.7
Illinois	1900	412	81	310	21	19.7	75.2	5.1
	1890	766	157	589	10	20.8	77.9	1.3
	1880	269	67	185	57	25.9	52.1	22.0
Maryland	1900	72	28	44	14	38.9	61.1	17.1
	1890	82	12	56	14	14.6	68.3	17.1
Massachusetts	1900	3,110	1,102	1,837	171	35.4	59.1	5.5
	1890	2,993	977	1,928	88	32.6	61.4	5.0
	1880	1,826	353	1,285	188	19.3	70.4	10.3
	1870	453	97	286	70	21.4	63.1	15.5
New Jersey	1900	24,157	11,279	11,679	1,199	46.7	48.3	5.0
	1890	17,445	7,773	8,773	899	44.6	50.3	5.1
	1880	12,549	4,696	5,360	2,493	37.4	42.7	19.9
	1870	2,790	788	1,162	895	28.8	41.6	32.1
New York	1900	7,861	3,149	4,299	413	40.1	54.7	5.2
	1890	12,719	4,456	7,983	280	35.0	62.8	2.2
	1880	9,693	2,405	5,459	1,769	25.0	56.7	18.3
	1870	789	154	413	172	20.8	55.9	23.3
North Carolina	1900	209	35	119	55	16.8	56.9	26.3
	1890	.....	.....	.....	.....	.....	.....	.....
	1880	.....	.....	.....	.....	.....	.....	.....
	1870	.....	.....	.....	.....	.....	.....	.....
Ohio	1900	.....	.....	.....	.....	.....	.....	.....
	1890	86	8	28	.....	22.2	77.8	.....
	1880	135	21	73	41	15.5	64.1	30.4
	1870	.....	.....	.....	.....	.....	.....	.....
Pennsylvania	1900	21,028	5,214	11,565	4,249	24.8	55.0	20.2
	1890	9,330	2,420	5,617	1,293	25.9	60.2	13.9
	1880	3,189	1,000	1,870	319	31.4	58.6	10.0
	1870	936	266	655	15	28.4	70.0	1.6

¹ Included in "all other states."

TABLE 14.—COMPARATIVE SUMMARY OF WAGE-EARNERS, BY STATES: 1870, 1880, 1890, AND 1900—Continued.

STATES.	Year.	NUMBER.				PER CENT.		
		Total.	Men, 16 years and over.	Women, 16 years and over.	Children, under 16 years.	Men, 16 years and over.	Women, 16 years and over.	Children, under 16 years.
Rhode Island	1900	455	124	326	5	27.3	71.6	1.1
	1890	186	49	107	30	26.4	57.5	16.1
	1880	.....	.....	.....	.....	.....	.....	.....
	1870	.....	.....	.....	.....	.....	.....	.....
Virginia	1900	473	144	228	101	30.4	48.2	21.4
	1890	.....	.....	.....	.....	.....	.....	.....
	1880	.....	.....	.....	.....	.....	.....	.....
	1870	.....	.....	.....	.....	.....	.....	.....
All other states	1900	1,080	291	758	31	26.9	70.2	2.9
	1890	678	145	492	141	21.4	57.8	20.8
	1880	85	16	62	7	18.8	73.0	8.2
	1870	28	18	10	.....	64.3	35.7	.....

¹ Included in "all other states."

² Includes establishments distributed as follows: Delaware, 2; Maine, 1; Maryland, 2; Michigan, 2; New Hampshire, 2; Utah, 2.

³ Includes establishments distributed as follows: Maine, 1; Michigan, 1; Missouri, 1; North Carolina, 1; Virginia, 1.

⁴ Includes establishments distributed as follows: Kansas, 1; Maine, 1; Missouri, 1; New Hampshire, 1; Rhode Island, 1; Vermont, 1.

⁵ Includes establishments distributed as follows: New Hampshire, 1; Vermont, 1.

Table 14 shows that in 1870 children were 20.8 per cent of the total operatives in the United States, and in 1900, 9.8 per cent, a marked decrease. During the same period the percentage of women remained the same, while that of men increased from 26.1 per cent to 37 per cent. This decrease in the percentage of children took place between 1870 and 1890, for since 1890 the percentage has increased slightly. In some states the decrease in the percentage of children is even more marked, ranging from 32.1 per cent to 5 per cent in New Jersey. In contrast to this, the proportion of children in Pennsylvania has increased during the entire period. It has already been remarked that the prosperity of the throwing industry in this state is partly due to the cheap unskilled labor obtainable in the smaller towns, and this increase in the proportion of children employed corroborates the statement.

Table 15 presents the skilled and unskilled operatives, weavers, and spinners, winders, and warpers, including unskilled employees, by states, for 1900.

TABLE 15.—WAGE-EARNERS CLASSIFIED BY OCCUPATION, BY STATES: 1900.

STATES.	TOTAL.			WEAVERS.												SPINNERS, WINDERS, WARPERS, ETC.		
				Total.			Broad silks.			Ribbons.			Velvets and plushes.			All other.		
	Men.	Women.	Children.	Men.	Women.	Children.	Men.	Women.	Children.	Men.	Women.	Children.	Men.	Women.	Children.	Men.	Women.	Children.
United States	24,206	34,797	6,413	15,360	13,057	667	8,917	9,188	235	3,725	1,467	21	881	510	150	1,837	1,892	261
California	24	91	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	24	91	2
Connecticut	2,763	3,585	166	1,446	1,149	39	448	441	.....	21	200	7	565	141	.....	1,317	2,436	127
Illinois	81	310	21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	81	310	21
Massachusetts	1,102	1,837	171	811	282	8	301	208	.....	.....	40	.....	.....	.....	.....	791	1,555	163
New Jersey	11,279	11,679	1,190	7,992	4,818	116	5,491	3,548	38	1,762	502	3	48	5	.....	3,287	6,861	1,083
New York	3,149	4,299	413	2,373	1,497	98	899	824	2	1,014	203	10	109	20	.....	776	2,802	315
North Carolina	35	119	55	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	35	119	55
Pennsylvania	5,214	11,565	4,249	3,020	4,916	401	1,645	3,777	191	885	517	1	149	944	150	2,194	6,649	3,848
Rhode Island	124	326	5	104	156	.....	74	166	.....	.....	.....	.....	10	.....	.....	20	170	5
Virginia	144	228	101	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	144	228	101
All other states	291	768	31	114	189	5	69	184	4	43	5	.....	.....	.....	.....	177	569	26

¹ Includes the statistics reported by establishments distributed as follows: Delaware, 2; Maine, 1; Maryland, 2; Michigan, 2; New Hampshire, 2; Utah, 2.

Table 15, considered in connection with Tables 6, 8, 9, and 10, presenting the number of looms, spindles, etc., indicates in a measure the relative position of the several states with reference to the production of the various silk products.

COUNTIES LEADING IN SILK MANUFACTURE.

Table 16 shows the number of establishments, capital, number of wage-earners, total wages, and value of products in counties manufacturing a product exceeding \$1,000,000 in value.

TABLE 16.—COUNTIES MANUFACTURING PRODUCTS EXCEEDING \$1,000,000 IN VALUE: 1900.

COUNTIES.	Number of establishments.	Capital.	WAGE-EARNERS.		Value of products.
			Average number.	Total wages.	
Connecticut:					
Fairfield	5	\$1,207,927	903	\$354,205	\$1,657,954
Hartford	3	6,340,705	2,548	1,064,908	4,618,248
New London	6	2,180,524	1,181	440,427	2,316,810
Tolland	10	593,983	581	162,521	1,390,518
Massachusetts:					
Hampden ¹					
Hampshire	3	2,768,120	1,196	437,412	2,584,214
New Jersey:					
Hudson	19	6,581,756	4,708	1,825,996	7,925,620
Morris	5	723,766	857	248,500	1,424,837
Passaic	140	19,192,756	16,150	6,306,334	26,329,792
Warren	5	1,556,930	1,303	416,823	2,174,705
New York:					
New York	50	4,428,148	4,001	1,579,314	6,757,544
Kings	10	859,188	653	287,199	1,042,199
Queens	6	1,718,848	823	344,330	1,682,651
Pennsylvania:					
Blair ¹					
Lackawanna	14	2,392,256	3,313	528,433	4,185,179
Lancaster	5	524,367	1,396	284,524	1,622,494
Lehigh	13	3,321,009	3,614	894,152	4,780,909
Luzerne	8	1,115,449	1,207	229,520	1,513,833
Lycoming ¹					
Northampton	10	1,978,804	1,947	469,281	3,249,776
Northumberland ¹					
Philadelphia	28	3,813,532	2,506	826,456	4,531,794
Schuylkill ¹					
All other counties ²	9	4,820,575	3,244	861,495	7,264,660

¹Included in "all other counties."

²Includes counties having less than 3 establishments, distributed as follows: Massachusetts: Hampden, 2; Pennsylvania: Blair, 1; Lycoming, 2; Northumberland, 2; Schuylkill, 2.

The leading counties in silk manufacture, according to Table 16, are Passaic, Hudson, and Warren, N. J.;

New York, Kings, and Queens counties, which are comprised in the city of Greater New York; Lehigh, Philadelphia, Lackawanna, and Northampton, Pa.; Hartford and New London, Conn.; and Hampshire, Mass.

BRAIDS AND TRIMMINGS.

Table 17 presents, by states, the establishments manufacturing silk trimmings and braids, apportioning them among the silk, cotton, and woolen industries and showing the cost of the several textile materials used and the value of the products.

The figures appearing under the headings "Cotton" and "Wool" do not appear elsewhere in the silk tables. To properly present the entire braids and trimmings industry, however, it was necessary to include them.

It should also be noted that this table includes 19 establishments which, although manufacturing braids and trimmings as by-products, produce other silk goods of greater value, and are classified as silk manufactories.

In censuses prior to 1900 all establishments making braids and bindings, fringes and gimps, dress and cloak trimmings, millinery and military trimmings, etc., of which silk was a component material, were classed as silk establishments. At this census the number is limited to those which have reported silk as the material of greatest value. If, as in previous censuses, all establishments using silks were included, the gross product, as shown by Table 17, would be \$7,785,699, and the number of establishments 105. In 1880 the reported production was \$9,306,205; in 1890 it was \$11,325,948. At the present census \$4,059,053 is given as the product of 66 establishments classified as silk, \$1,615,707 as the production of 26 establishments classified as cotton, and \$2,110,939 as the production of 13 establishments classified as woolen.

The principal centers of the trimmings trade are New York city and Philadelphia, and the elimination of so many of these establishments from the silk tabulation in this census especially affects New York.

TABLE 17.—BRAIDS AND TRIMMINGS, WITH COST OF TEXTILE MATERIALS, CLASSIFIED BY PRINCIPAL TEXTILE COMPONENTS, BY STATES: 1900.

STATES.	Number of establishments.	TOTAL.					Number of establishments.	SILK.				
		Cost of textile materials.				Value of products.		Cost of textile materials.				Value of products.
		Total.	Silk.	Cotton.	Wool.			Total.	Silk.	Cotton.	Wool.	
United States.....	105	\$3,088,804	\$1,380,298	\$942,715	\$810,791	\$7,785,699	66	\$1,565,417	\$1,037,891	\$272,503	\$255,028	\$4,059,053
Connecticut	5	20,000	18,000	1,500	500	38,685	5	20,000	18,000	1,500	500	38,685
Illinois	4	160,210	69,421	40,063	50,726	421,088	4	160,210	69,421	40,063	50,726	421,088
Massachusetts	11	261,532	120,912	58,066	82,584	601,425	9	230,078	120,912	26,582	82,584	533,527
New Jersey	8	93,416	44,761	42,516	6,149	262,963	6	61,622	44,151	11,668	5,803	162,755
New York	51	1,375,774	501,691	394,989	479,094	3,484,980	28	455,625	316,464	84,126	55,045	1,374,305
Pennsylvania	21	1,026,777	442,363	399,881	185,043	2,798,278	9	491,787	335,783	102,334	53,670	1,300,413
All other states ¹	5	146,095	133,170	6,230	6,695	228,280	5	146,095	133,170	6,230	6,695	228,280

TABLE 17.—BRAIDS AND TRIMMINGS, WITH COST OF TEXTILE MATERIALS, CLASSIFIED BY PRINCIPAL TEXTILE COMPONENTS, BY STATES: 1900—Continued.

STATES.	COTTON.					WOOL.						
	Number of establishments.	Cost of textile materials.				Value of products.	Number of establishments.	Cost of textile materials.				Value of products.
		Total.	Silk.	Cotton.	Wool.			Total.	Silk.	Cotton.	Wool.	
United States.....	26	\$680,885	\$88,132	\$582,549	\$60,204	\$1,615,707	13	\$837,502	\$204,275	\$137,668	\$495,564	\$2,110,939
Connecticut.....												
Illinois.....												
Massachusetts.....	2	31,454		31,454		67,898						
New Jersey.....	2	31,794	600	30,848	346	100,208						
New York.....	13	319,796	29,182	241,430	49,175	678,017	10	600,353	156,055	69,424	374,874	1,382,659
Pennsylvania.....	9	297,841	58,350	228,808	10,683	769,584	3	237,149	48,220	68,239	120,690	728,281
All other states ¹												

¹ Includes establishments distributed as follows: California, 2; Michigan, 1; Rhode Island, 2.

SKEIN DYEING, PIECE DYEING, PRINTING, AND FINISHING.

The following tables present the statistics of dyeing, printing, and finishing silk goods and other textile yarns and silk-mixed fabrics, including both the work

done in silk manufacturing establishments and that done in establishments engaged exclusively in dyeing, printing, and finishing. Table 18 shows the statistics of skein dyeing; Table 19, piece dyeing; Table 20, printing; and Table 21, finishing.

TABLE 18.—SKEIN DYEING IN SILK MILLS AND DYEING PLANTS, FOR SILK MANUFACTURE, BY STATES: 1900.

STATES.	Number of establishments.	Amounts charged for work done in dyeing plants.	Aggregate.	SILK.						OTHER YARNS.					
				Total.	Reeled.		Spun.		Total.	Cotton.		Wool.			
					Colors.	Black.	Colors.	Black.		Colors.	Black.	Colors.	Black.		
United States ...	95	-----	Pounds. 12,175,988	Pounds. 9,875,477	Pounds. 5,551,313	Pounds. 3,398,871	Pounds. 621,043	Pounds. 309,250	Pounds. 2,300,511	Pounds. 1,067,589	Pounds. 1,049,215	Pounds. 100,658	Pounds. 83,049		
Total in silk mills	58		5,952,391	3,936,970	1,793,955	1,541,785	425,216	176,014	2,015,421	925,255	981,559	52,658	55,949		
Total in dyeing plants.	37	\$4,305,809	6,223,597	5,988,507	3,757,358	1,852,086	195,827	133,236	285,090	142,334	67,656	48,000	27,100		
Connecticut: Silk mills	17		1,787,934	1,223,435	511,298	445,999	203,181	62,957	564,499	113,830	450,669	-----	-----		
Massachusetts: Silk mills	8		1,150,790	707,432	263,700	350,083	71,151	22,498	443,358	122,109	224,642	45,658	50,949		
New Jersey: Silk mills	13		1,207,345	1,098,655	838,582	257,544	2,139	90	108,690	25,640	83,050	-----	-----		
Dyeing plants.....	22	3,927,829	5,064,504	5,057,639	3,175,932	1,661,078	132,286	88,343	6,865	3,834	3,031	-----	-----		
New York: Silk mills	10		483,921	188,124	98,910	54,431	26,783	8,000	295,797	261,322	25,475	5,000	4,000		
Dyeing plants.....	9	160,063	669,885	391,460	277,869	72,591	28,375	12,625	278,225	138,500	64,625	48,000	27,100		
Pennsylvania: Silk mills	5		883,035	285,958	29,320	68,023	110,100	78,515	597,077	400,354	196,723	-----	-----		
Dyeing plants.....	5	215,292	484,158	484,158	300,957	115,817	35,141	32,243	-----	-----	-----	-----	-----		
All other states: ¹ Silk mills	7		439,366	433,366	52,145	365,405	11,862	3,954	6,000	2,000	1,000	2,000	1,000		
Dyeing plants.....	1	2,625	5,250	5,250	2,600	2,600	25	25	-----	-----	-----	-----	-----		

¹ Includes establishments distributed as follows: California, 2; Illinois, 1; Maine, 1; Michigan, 2; Rhode Island, 1; Virginia, 1.

TABLE 19.—PIECE DYEING IN SILK MILLS AND DYEING PLANTS, FOR SILK MANUFACTURE, BY STATES: 1900.

STATES.	Number of establishments.	Amounts charged for work done in dyeing plants.	Total.	All silk.	Silk and spun.	Silk and cotton.	Silk and wool.
			Yards.	Yards.	Yards.	Yards.	Yards.
United States.....	28		40,464,911	21,150,585	2,044,630	17,238,471	51,225
Total in silk mills....	10		4,464,523	1,224,329	459,693	2,780,156	350
Total in dyeing plants.....	13	\$849,294	36,020,383	19,926,256	1,584,937	14,468,315	50,875
New Jersey: Silk mills.....	4		1,629,181	1,046,938	110,000	471,893	350
Dyeing plants.....	8	773,229	33,679,486	19,415,550	1,580,625	12,636,486	46,875
New York: Silk mills.....	2		538,310			538,310	
Dyeing plants.....	4	75,498	2,323,647	497,768		1,821,879	4,000
All other states ¹ : Silk mills.....	4		2,297,037	177,391	349,693	1,769,953	
Dyeing plants.....	1	567	17,250	12,938	4,312		

¹ Includes establishments distributed as follows: Connecticut, 2; Illinois, 1; Pennsylvania, 2.

TABLE 20.—SILK PRINTING IN SILK MILLS AND SILK-PRINTING PLANTS, FOR SILK MANUFACTURE, BY STATES: 1900.

STATES.	Number of establishments.	Amounts charged for work done in silk-printing plants.	Total.	Printed in warps.	PRINTED IN PIECES.		
					Silk.	Silk and spun.	Silk and cotton.
United States.....	12	.....	Yards. 10,239,606	Yards. 329,678	Yards. 4,965,893	Yards. 2,775,689	Yards. 2,168,846
Total in silk mills.....	4	.....	3,084,811	16,355	846,704	1,684,524	537,228
Total in silk-printing plants.....	8	\$419,870	7,154,795	313,323	4,119,189	1,091,165	1,631,118
New Jersey:							
Silk mills.....	2	.....	76,586	7,500	69,086	.....	.....
Silk-printing plants.....	4	354,148	5,702,500	313,323	3,723,543	1,055,165	610,469
All other states: ¹							
Silk mills.....	2	.....	3,008,225	8,855	777,618	1,684,524	537,228
Silk-printing plants.....	4	65,722	1,452,295	.....	395,646	36,000	1,020,649

¹ Includes establishments distributed as follows: Connecticut, 2; Massachusetts, 1; New York, 2; Pennsylvania, 1.

TABLE 21.—SILK FINISHING IN SILK MILLS AND SILK-FINISHING PLANTS, FOR SILK MANUFACTURE, BY STATES: 1900.

STATES.	Number of establishments.	Amounts charged for work done.	Total.	Total.	Silk.	Silk and cotton.	Silk and wool.
United States.....	54	.....	Yards. 133,463,540	Pieces. 2,228,346	Pieces. 1,462,594	Pieces. 765,569	Pieces. 183
Total in silk mills.....	38	.....	44,616,500	762,062	472,584	289,362	116
Total in finishing plants.....	16	\$981,740	88,847,040	1,466,284	990,010	476,207	67
Connecticut:							
Silk mills.....	7	.....	13,369,510	240,762	71,986	168,776	.....
New Jersey:							
Silk mills.....	15	.....	17,845,930	297,949	268,128	29,767	54
Silk-finishing plants.....	6	449,021	41,706,480	680,608	453,192	227,416	.....
New York:							
Silk mills.....	5	.....	4,937,520	82,292	67,240	15,052	.....
Silk-finishing plants.....	9	582,486	47,123,280	785,388	536,590	248,791	67
Pennsylvania:							
Silk mills.....	7	.....	7,336,140	122,269	57,161	65,046	62
All other states: ¹							
Silk mills.....	4	.....	1,127,400	18,790	8,069	10,721	.....
Silk-finishing plants.....	1	283	17,280	288	288	.....	.....

¹ Includes establishments distributed as follows: California, 1; Illinois, 1; Maine, 1; Rhode Island, 1; Utah, 1.

Owing to its importance as a distinct industry, the dyeing and finishing of textiles will be presented in a separate report at this census, as it was at the census of 1890. As the various operations of skein dyeing, piece dyeing, printing, and finishing are wholly or partly done in many silk manufacturing plants, a tabulation has been made, covering not only the returns from the independent or professional dye works, print works, and finishing plants, but also those from silk manufacturing plants, which, when combined, possess special interest for silk manufacturers, and, considered in conjunction with other tables presented in this report, embrace all the elements of the silk industry in the United States.

The tables present the number of establishments engaged in the different classes of work, the quantity of goods handled, and the amount charged for the work done by dyeing, printing, and finishing establishments. Skein dyeing embraces all the yarns dyed for the silk industry in the census year. Piece dyeing, printing, and finishing embrace broad goods only, and do not include sewing silk, veilings, veils, etc. Ribbons are not

included, as a given number of yards or pieces of ribbon without designating the width has no significance. It is to be understood, therefore, that the returns for piece dyeing, printing, and finishing deal only with plain and fancy broad silks, Jacquards, piece-dyed weaves, velvets, plushes, tapestries, and upholstery silks.

Data as to capital invested, operatives employed, wages paid, cost of materials used, and miscellaneous expenses of the independent or professional plants will be found in the separate report on "Dyeing and Finishing of Textiles." The principal object of the foregoing tables is to show the quantities of silk and other textile yarns and silk-mixed fabrics dyed, printed, and finished by and for silk manufacturers.

SKEIN DYEING.—Table 18 shows that there were 8,945,184 pounds of reeled silk, skein dyed in colors and black. The total consumption of reeled silk, including fringe and floss silk, in the census year was 9,828,754 pounds. The balance, 883,570 pounds, represents, with the exceptions noted below, goods woven in the grey and piece dyed.

There were 930,293 pounds of spun silk, skein dyed

in colors and black. The total consumption of spun silk was 1,774,124 pounds. The balance, 843,831 pounds, practically represents goods woven in the grey and piece dyed.

The returns show 2,116,804 pounds of cotton, skein dyed in colors and black. The total consumption of cotton yarns by the silk industry was 6,664,071 pounds. The balance, 4,547,267 pounds, largely represents piece-dyed mixed goods.

The returns show 183,707 pounds of woolen yarns, dyed in colors and black. The total consumption of wool and mohair yarns was 344,271 pounds. The balance, 160,564 pounds, represents piece-dyed mixed goods. "Other yarns" reported as raw materials in the census returns amount to 108,388 pounds.

The marked tendency in recent years to the production of silk-mixed goods, comprising silk, cotton, and wool, and the interchange of the several fibers in the textile industries, reference to which has been made elsewhere in this report, is illustrated by the returns tabulated. In the cotton textile industry the consumption of raw-silk and spun-silk yarns has increased from 51,434 pounds in 1890 to 560,680 pounds in 1900. In the wool textile industry and its several branches the consumption of such materials has increased from 255,494 pounds to 323,884 pounds, and in the hosiery and knit-goods industry an increase from 120,341 pounds in 1890 to 266,247 pounds in 1900 is reported. A considerable quantity of skein-dyed silk yarn is now used as warps by the cotton and woolen manufacturers of New England. The great development of electricity in the United States has utilized a very considerable quantity of skein-dyed silk yarns in covering electric wires.

PIECE DYEING, PRINTING, AND FINISHING.—In addition to the piece dyeing of domestic goods, very large quantities of Habutai silks from Japan figure in the returns as dyed and finished in the United States; also cotton-back satins in considerable quantities from Switzerland, Germany, and Lyon, France.

The redyeing and finishing in the United States of dress silks imported in colors, and later turned to other uses in the millinery and trimmings trade, and the re-finishing of imported taffetas to suit changed conditions of demand and use, help to account for the apparent large excess of yardage piece dyed and finished by professional plants over the figures of strictly domestic production of piece-dyed goods.

Another consideration is the probable fact that the production of double-width taffetas, 18-36 inches to 27-54 inches wide, in double pieces, may have been returned singly by the manufacturer and doubly by the dyer and finisher.

SILK PRINTING.—What has been said respecting the piece dyeing of imported goods equally applies to the printing branch of the industry. Foreign-made goods

imported in the grey are now printed here as successfully as in Europe.

The item "Amount charged for work done" in the tables indicates payments to the independent or professional establishments, as follows:

Skein dyeing.....	\$4,305,809
Piece dyeing.....	849,294
Printing.....	419,870
Finishing.....	981,740
Total.....	6,556,713

The proportion of this amount applicable to the silk manufacturers exclusively is included in the item "Contract work," under miscellaneous expenses, in the tables included in this report. From the foregoing description of the methods of the business it is plainly evident that a part of these charges was for account of importers of foreign silks in the piece, and of the domestic users of skein-dyed yarns in other industries. The reported expense of dyeing, finishing, and printing is not the total value of the work performed in these branches of the industry, but represents only the amount charged by the independent or professional establishments, and does not include the value of such work done by silk manufacturers. As one price per yard is charged by a number of concerns which do both piece dyeing and finishing, the apportionment of the returns between these processes was estimated. The principal object of the tabulation was, as stated, to report quantities under the designated headings. The price charged for "finishing" 88,829,760 yards by 15 professional establishments in New York and New Jersey is reported at \$981,457. The current price for finishing all silk broad goods is 1 cent per yard, and mixed goods 2½ cents per yard. Other prices current in this branch of the industry are as follows: Piece dyeing (including finishing), all silk, 2½ to 3 cents per yard, and mixed goods, double the price charged for all silk goods. Printing (including finishing), 5 to 7 cents per yard, and warp printing, 7 to 12 cents per yard. In broad goods the average yardage per piece is 60 yards. Some pieces measure only 30 yards, but the great bulk of the production is in 50-yard and 60-yard pieces, while all the foreign cotton-back satins dyed in the United States average 75 yards per piece.

CAPACITY OF AMERICAN MILLS.

There are now in the United States silk manufacturers who turn out over 100,000 pieces of 60 yards each per year, more than half being taffeta weaves; yarn dyers deliver uncharged silk in two days, black and colored organzine and tram, weighted 70 to 80 per cent, in five to six days and heavy charged silk in eight to fourteen days, it being possible to arrange for shorter deliveries when necessary. One yarn dyer is able to turn out and ship 4,500 pounds black and 3,000 pounds

colored daily. Finishing plants are now able to turn out 2,000 pieces per day. Formerly all piece-dyed goods made abroad were dyed in Europe and finished there, but since 1897 the piece-dyeing and printing branches in the United States have greatly enlarged their facilities, and now dye and print not only large quantities of domestic raw goods, but also some imported goods. The domestic production of piece-dyed goods as shown by the census returns is presented in the following statement:

	Quantity.	Value.
	<i>Yards.</i>	
All silk	7,331,501	\$3,342,187
Silk mixed	8,553,884	2,868,506
Total	15,890,385	6,210,693

During the last ten years every weave, article, and quality known to mechanical weaving, or which, through alterations on machinery or simplification in manufacturing, could be put in reach of power-loom weaving, have been manufactured in the United States. With the exception only of a few Lyon specialties, which for different reasons are not suitable for mechanical weaving, every style which the silk industry brings to the market is manufactured in the silk mill of to-day, viz:

Pure silk goods, silk and wool, and silk and cotton mixtures and spun-silk fabrics.

Warp prints of all descriptions and piece-dyed and printed goods in every variety.

Plain silks of all weaves; "fancies," from the simplest to the most complicated styles, and Jacquards, brochés, etc.

Light-weight goods, as chiffons, mousselines, marcelines, and the heaviest curtain and upholstery silks.

All the products of the various mills, including the great variety of dress silks, linings, and trimmings; goods for the cloak, necktie, and millinery trades; and silks for the manufacturers of silk waists, skirts, umbrellas, and parasols—all these give most convincing testimony to the many-sidedness of the American weaving mill. That the industry has in a comparatively short space of time achieved such good results may be attributed to the enterprise and intelligence of its leading men, who readily experiment with new and untried methods regardless of trouble and expense, even if there is only small hope of success.

The following is a statement in round numbers of the estimated value of the silk production of Europe and the United States in 1900, by countries, with the percentage that the production of each country forms of the total production. This statement includes only the value of finished goods, and not that of partially manufactured products. The several countries are presented in the order of their importance in the manufacture.

SILK PRODUCTION OF EUROPE AND THE UNITED STATES: 1900.¹

	Value of annual production.	Per cent of production.
France	\$122,000,000	80.9
United States	92,000,000	28.3
Germany	78,000,000	18.5
Switzerland	38,000,000	9.6
Russia (in Europe)	21,000,000	5.3
Austria	17,000,000	4.3
Great Britain	15,000,000	3.8
Italy	13,000,000	3.3
Spain and Portugal	4,000,000	1.0
Total	295,000,000	100.0

¹ International Universal Exposition at Paris: Report of United States Commissioner Peck: Report on Silk Fabrics, contributed by Franklin Allen, juror of the United States in the silk section (class 83). Government Printing Office, Washington, D. C., 1901, page 565.

RELATIVE POSITION OF FRANCE AND THE UNITED STATES.

The annual production of France is claimed to be \$122,000,000, distributed as follows:¹

Lyon	\$80,000,000
St. Etienne (ribbons)	20,000,000
Paris	6,000,000
Calais, Le Nord, etc	16,000,000

The Lyon manufactures, therefore, constitute nearly two-thirds of the production of France; they include, however, a considerable quantity of silk and cotton mixture (*mélangé*), the manufacture of which has been greatly developed at that city. The total is further swollen by including the foulards imported from Japan and China, which are valued at about 15,000,000 francs annually, and, being printed in Lyon, are returned as Lyon manufactures with a value of 20,000,000 francs. Strictly speaking, the value of the silk woven in another country should not be included in any correct statement of the gross volume of the local production. France now consumes somewhat less raw silk than the United States, her consumption being estimated by the Lyon Chamber of Commerce at 9,000,000 pounds, while that of the United States during the census year was 9,760,770 pounds. New York city, the only raw-silk market in America, now holds the first place among the raw-silk markets of the world, Shanghai alone excepted.

More raw silk is sold annually in New York than is consumed in France, which is the largest raw-silk consuming country of Europe. As to the selling value of the product, the United States ranks second, being surpassed by France, which still dominates, without serious competition, the world's markets in church ornaments and chasubles, and Parisian specialties representing the supremacy of Paris fashions for women's wear. Many

¹ From charts exhibited at the Paris Exposition of 1900, indicating the annual production of the principal silk manufacturing countries, prepared by Mr. Marius Morand, secretary of the Chamber of Commerce of Lyon.

of these are made on handlooms, the quantities required in different patterns and styles being so limited that their production in the United States by powerloom weaving would not be profitable.

WORLD'S RAW-SILK SUPPLY.

The quantity, character, and mercantile condition of the raw silk received from the several sources of supply are prime factors in the industry. The price of raw material also has an important influence. Wide variations in price are a great disadvantage. When, on the other hand, the maximum and minimum prices steadily maintain a narrow range the industry is benefited.

Likewise the stimulation of raw-silk production through the development of new centers of industrial activity in silk manufacture, as in the United States, is a general benefit. Steadier and more moderate prices follow increased production, as a rule, and these in time encourage the use of silk in ever-widening channels; the cost of raw silk to the consumer is thereby also greatly diminished. For instance, it is not so many years since the buyers of cocoons in Europe relied upon and received a profit of 10 to 20 francs a kilo for the

reeled silk, or 87½ cents to \$1.75 a pound, and in the United States, in the earlier days of the industry, the importers of raw silk confidently counted upon an equal profit. The manufacturers of the United States naturally began to import on their own account, and as a result of their competition with the importers the difference between the price here and the price abroad was reduced to less than \$1 per pound. It is sufficient to say that to-day the competition is so healthful, owing to the increasing rivalry to which the United States has so largely contributed, that a small difference in the price per pound often determines whether the purchase is effected here or abroad. In "thrown silk" the contrast is quite as great. Many men now living recall the time when the silk manufacturers paid as high as \$4.50 a pound for the process of "throwing" organzine silk. Now the common price paid is from 60 to 75 cents per pound, depending upon the condition in which the silk is reeled where produced.

Table 22 presents the total raw-silk production of the world, showing the production in detail of the several sources of supply, at five-year periods, from 1870 to 1900, inclusive, the weight being given in kilograms, and in the aggregate reduced to pounds.

TABLE 22.—WORLD'S PRODUCTION OF RAW SILK, IN KILOGRAMS AND IN POUNDS.

COUNTRIES.	1900	1895	1890	1885	1880 ¹	1875 ¹	1870 ²
Europe: Total	Kilograms. 4,277,000	Kilograms. 4,761,000	Kilograms. 3,830,000	Kilograms. 3,520,000	Kilograms. 3,608,000	Kilograms. 3,456,800	Kilograms. 3,817,000
Italy	3,363,000	3,509,000	2,880,000	2,810,000	.....	.....	3,180,000
France	500,000	898,000	618,000	483,000	.....	.....	637,000
Austria	278,000	266,000	267,000	142,000	.....	.....	.....
Spain	78,000	90,000	65,000	85,000	.....	.....	.....
Levant: Total	1,760,000	1,244,000	707,000	780,000	727,000	760,400	.....
Asia: Total production exported	10,730,000	8,027,000	6,783,000	5,676,000	6,242,000	5,399,700	3,589,400
China, Shanghai ³	4,756,000	3,858,000	2,914,000	2,695,000	.....	.....	1,680,400
China, Canton	2,263,000	1,394,000	1,529,000	774,000	.....	.....	1,018,000
Japan, Yokohama	3,371,000	3,076,000	2,180,000	1,846,000	.....	.....	423,000
India, Calcutta	350,000	199,000	210,000	361,000	.....	.....	468,000
Aggregate, kilograms	16,767,000	14,032,000	11,320,000	9,926,000	10,577,000	9,616,900	7,406,400
Aggregate, reduced to pounds	36,964,528	30,934,947	24,956,072	21,882,860	23,318,064	21,201,418	16,328,149

¹ Estimated from best information obtainable.

² Trustworthy figures of the world's supply prior to 1870 can not be given.

³ Tussah silk not included.

The following statement shows the quantity and invoice value of raw silk imported into the United States in each decennial year from 1860 to 1900, inclusive, and the average cost per pound, taken from the "Reports of the Bureau of Statistics of the United States Treasury Department:"

YEAR.	Pounds.	Invoice value.	Average cost per pound.
1860	297,877	\$1,840,676	\$4.50
1870	583,589	3,017,958	5.17
1880	2,562,286	12,024,699	4.69
1890	5,943,360	28,285,099	3.92
1900	11,259,310	44,649,672	3.96

A rise of \$1 per pound in the price to a country using, as the United States now does, about 10,000,000 pounds

annually, means, therefore, an increase of about \$10,000,000 in the cost of raw material, and must represent that much financial loss to the manufacturers, unless recouped from the consumer.

There have been great variations in the price meanwhile, as is shown by the following quotations:

In 1868 prices of raw silk averaged \$8.43 per pound, the highest prices of Blue Elephant Tsatlee, Best Italian No. 1, and Japan Maybash No. 2 averaging \$9.29 per pound.

In 1876 the highest prices of the same silks averaged \$9.10 per pound.

In 1894 the lowest prices prevailed, the lowest prices of the same silks averaging \$2.94 per pound. Canton Filature Best No. 2 was quoted at \$2.61 per pound. The world's supply in that year was 31,860,879 pounds.

The recognition by silk reelers of the standards of merit required by the most progressive silk manufacturers is also of great commercial and industrial importance. China and Japan are the two largest contributors to the world's supply from their surplus production. As a result of the close attention given by the progressive Japanese to the requirements of silk manufacturers in the United States, a much larger proportion of the raw silk consumed in the United States is supplied by Japan than by any other country. The percentage of raw silk that each principal producing country contributes to the world's supply, according to the statistics for 1900, shown in Table 22, also the percentage that each country contributes to the consumption of raw silk in the United States, as derived from the import statistics of the Treasury Department for the same period, are shown in the following statement:

COUNTRIES.	Per cent of contribution to world's supply.	Per cent of American consumption.
China	41.8	34.3
Japan	20.1	42.3
Italy	20.1	19.7
France	3.3	3.2
All other countries.....	14.7	0.5
	100.0	100.0

The production of raw silk in China is an absolutely unknown quantity. When prices in Europe and America are relatively high the supply increases surprisingly. When prices are normal or low the supply decreases. It is manifest, however, that by closer attention to the United States market China could greatly extend its raw-silk trade with this country. It is to be hoped that an effort will be successfully made to overcome the commercial indifference of Chinese merchants to the trade wants of their customers. The vast amount of capital invested and the large number of operatives employed in the silk industry throughout the world should be, it would seem, a commercial stim-

ulus to China, the greatest producer of raw silk, to perfect its silk-reeling processes by the application of skilled labor, so as to secure a much larger share than now of the profits of a business in which the country has so many natural advantages. The profit of her reelers would be greater if the output of her filatures were better adapted to the requirements of foreign consumers.

In Japan the domestic consumption of raw silk is usually estimated at about 50 per cent of the production, the remainder being exported.

In Italy the domestic consumption is probably about 15 per cent of the production, the remaining 85 per cent being exported to supply the silk manufacturers of France, Switzerland, Germany, Russia, England, and the United States.

DETAILED STATISTICS OF SILK MANUFACTURE.

The detailed statistics for the industry as reported are shown in Table 23 at the end of the report. This table presents separate totals for each state in which there were 3 or more establishments, and groups the statistics for other states so as not to disclose the operations of individual establishments. The establishments are classified according to the character of the ownership, which shows that 132 were owned by individuals, 154 by partnerships, and 197 by corporations. The employees are segregated so as to show for salaried officers and wage-earners separately the number and salaries or wages of men, women, and children, respectively, and also the average number of wage-earners employed during each month of the year. Separate totals of the different materials and products are shown. The number of machines, spindles, looms, etc., are presented, and the quantities of goods dyed, finished, and printed by silk manufacturing establishments performing such work; also the number of engines, water wheels, electric motors, and other power in use, with their horsepower. The 483 establishments are grouped according to the number of employees in each.

HISTORICAL AND DESCRIPTIVE.

The silk industry has reached the point where its future seems assured as a permanent branch of the textile industries of the United States, and, judged by the commercial effect that its establishment in this country has had upon improving and cheapening the processes of manufacture, and in lowering the cost of silk goods, every American can take pride in this industrial and commercial achievement.

The silk maker's art in the United States was transplanted from Europe, but, like many another transplanted art, it has taken such a firm hold on the business activities of the country that it has become thoroughly domesticated.

The beginning of the industry on this continent dates back to the Spanish conquest of Mexico in the Sixteenth century. At the beginning of the Seventeenth century King James I of England lent his royal favor by bestowing upon the London Company "plenty of silkworms, seed of his own store being the best," and by this company the "seed" was sent out to Jamestown, Va., as one of the means of helping the early colonists.¹

Simultaneously with this effort of King James to develop silk culture in England and America, Henry of Navarre (Henry IV of France) brought 14,000 mulberry trees from Italy, which were planted in the royal gardens of France.² Silkworm eggs were also procured from Italy, and other measures were taken by this patriotic king to encourage the nascent industry in France. It is interesting now to note that the prime minister of the King, the great Duke Sully, looked coldly upon this enterprise, arguing that "Luxury should be repressed, most certainly not encouraged." But the King had been converted to the idea by Oliver de Serres, whom the French honor as "the father of agriculture," and was not moved by the arguments of the minister. Sully, referring to this matter in his *Memoirs*, 1603, says: "I could not persuade him. 'Are these,' the King said to me, 'the good reasons you have to offer? I would much rather fight the King of Spain in three pitched battles than all those gentlemen of the robe, of the inkstand, and of the city, beside their wives and daughters, whom you will bring down upon me with your fantastic regulations.'"³

The industry, thus encouraged in France three hundred years ago, made notable progress both as to culture and manufacture. In America, notwithstanding the efforts of essayists and the premiums and bounties offered by colonial assemblies and by the English Parliament, the planters could not be stirred to much activity in raising silk. Silk culture by the colonists

would evidently have been a good thing for British manufacturers, but the record of history is that it had a fitful, uncertain existence. From 1750 to 1772, the period of its greatest activity before the Revolution, the export of raw silk averaged only 500 pounds per annum and rarely exceeded 1,000 pounds in a single year.⁴

For many years after the War of the Revolution premiums and bounties for planting mulberry trees and for producing raw silk were authorized by a number of states. In New England, New York, New Jersey, and Pennsylvania, especially, great interest was taken in the subject. Dr. Ezra Stiles, president of Yale College, at New Haven, Conn., and Dr. Benjamin Franklin, of Philadelphia, were among the most notable promoters of the movement. In December, 1825, the subject of silk culture began to receive national attention, being brought before Congress by a resolution of inquiry introduced by Mr. Miner, of Pennsylvania, and referred to the Committee on Agriculture. This committee reported favorably in the spring of 1826, the report including a resolution directing the Secretary of the Treasury to cause to be prepared a well-digested manual on the growth and manufacture of silk. Inquiries for information on the subject were sent out by the Secretary, Mr. Richard Rush, in 1826; and from the replies and other material a manual was compiled entitled "Letter from the Secretary of the Treasury," dated February 7, 1828. Six thousand copies were printed by order of Congress.⁵ This document became known as the "Rush Letter;" it contains 220 pages, besides illustrations of machinery, and is a carefully executed work.

This favorable action and the publication by Congress at the same session, and at many subsequent sessions, of other documents relating to silk culture, together with the serious consideration of the subject by the Congressional Committee on Manufactures, as well as by the Committee on Agriculture, enlisted general attention. Sericulture gained the public ear. Legislatures of several states passed bills for its encouragement, and a most determined effort was made to place silk growing on a paying basis. For ten years all went well. Silk conventions were held in Maryland, New Jersey, New York, and Connecticut, between December, 1838, and April, 1839, and there were many other gatherings devoted to the cause. What soon proved to be a disturbing element had, however, been introduced by an effort to supplant the white mulberry, *Morus alba*, on the leaves of which the worms had been fed, by the so-called Chinese mulberry, the *Morus multicaulis*, on account of the superior qualities claimed

¹ Silk Industry, Paris Exposition, 1867, by Hon. Elliott C. Cowdin, United States commissioner, Washington, D. C., 1868, page 7. Purchas, *His Pilgrimes*, Vol. IV, page 1777.

² Tenth Census of the United States, Report on Silk Manufacture, by William C. Wyckoff, special agent, page 1.

³ *Memoirs of Sully*, London, 1778, Vol. V, pages 150-159.

⁴ Tenth Census of the United States, Report on Silk Manufacture, by William C. Wyckoff, special agent, page 10.

⁵ H. R. Doc. 158, Twentieth Congress, first session.

for it. All the agricultural literature in the country soon became suffused with the descriptions of this wonderful tree. Speculation began, and prices of trees advanced far beyond their value. Large as were the anticipated profits of producing silk, they were insignificant as compared with the fortunes to be made by raising the new mulberry tree. Orchards of it were planted in every state in the Union. With increasing velocity the tide of speculation rose. Trees became of greater value than the silk which they could by any possibility be the means of producing. One writer says: "Prices ranged for trees produced from one bud or cutting and of a single season's growth, from 5 cents to 10, 20, 50 cents, \$1, and in some instances \$5 apiece."¹

The list of stock companies formed for raising and manufacturing silk at this period is very long, but as Mr. William C. Wyckoff, writing the report on Silk Manufactures for the Tenth Census of the United States (1880), says of them, "Their lives were very short." The bubble burst in 1839. Silk culturists and manufacturers had everywhere been swept into the rising current. As for the tree speculators, it is related that one who had been among the most successful sent an agent to France with \$80,000 to buy trees and cuttings in the winter of 1838-39. Before the whole of his purchase had arrived the crisis had come. The nurseryman had failed for so large a sum that he could never reckon up his indebtedness, and the next spring his *Multicaulis* trees were offered in vain to the neighboring farmers at \$1 a hundred for pea brush.²

Notwithstanding the favorable climatic conditions both in France and the United States for the growth of mulberry trees and the rearing of silk worms and cocoons, silk culture has dwindled in both countries, because more remunerative occupations are afforded by other lines of industry. Although in France the raisers of cocoons and reelers of silk are protected by a considerable bounty, payable by the French Government to her citizens as against the Italians, that country produces less than 4 per cent of the world's supply of raw silk. Her silk manufacturers are well content to purchase, as America does, the raw silk from Italy, Japan, and China, in all of which countries the ruling rates of wages are much less than in France and very much less than in the United States. Both France and the United States pursue the same fiscal policy of admitting raw silk free of duty and therefore both are on a par in this respect. Under this policy France produces only a small portion of the raw silk needed for its silk manufactures, while in the United States silk culture, which was introduced simultaneously to its stimulation in France three hundred years ago, practically ceased to exist in 1844, although since that date sporadic attempts to revive it have been made in Cali-

fornia and more recently in Kansas and at Salt Lake City, Utah.

Meanwhile, step by step, but slowly, improvements have been effected here in the manufacture of silk goods. The making of sewing silk became a household industry in New England, at first by hand, and later by machinery. The manufacture of silk trimmings of various kinds was commenced in 1815 at Philadelphia, and ribbons in 1829, at Baltimore.³ The invention of the sewing machine in the United States developed a demand for "machine twist," a silk thread specially suited for use on sewing machines and first applied to that purpose in February, 1852. These goods, together with fringes, gimps, and tassels, and a few ribbons, continued to be the principal products of the silk industry in the United States until the outbreak of the Civil War.

One of the foremost silk manufacturers of the United States, the first vice-president of the Silk Association of America, in a recently published treatise on the silk textile industry, correctly sets forth the reasons for its powerful development in recent years, as follows:⁴

As reasons for the rapid as well as powerful development of the United States silk industry, notwithstanding the competition of well-introduced imported goods and the splendid organization of the importers, and in spite of the mistrust which was felt by consumers for a long time against the domestic goods, we find:

1. The natural capability of the American merchant and manufacturer, his common sense, enterprise, and self-confidence.
2. The capital which is always ready to support enterprise in this country in the form of extensive and liberal credits.
3. The support which is given all these undertakings by the people, by the city and state governments in form of tax privileges, donations of lots, putting up mill buildings, and renting same at a low rate of interest; even in some cases by subscribing a certain amount of the necessary working capital.
4. The intellectuality of the American technician, who through his inventions of time-saving machinery, which are simply constructed and easy to handle, is, perhaps, unequaled. The operative also is moderate and his common sense makes him especially fit for the manufacturing business.
5. The easy intercourse between manufacturer and dealer which enables the first to get fully and promptly acquainted with the needs and wants of the consumer.

The last point can not be too strongly emphasized. In a large sense the American manufacturer is his own merchant and distributor. He is in close touch with the dealers and retailers, knows what they want, and manufactures accordingly. Silk manufacturers abroad (especially in France and Switzerland) are fully aware of this requisite to successful trade. The closer silk manufacturers get to the consumer, the greater the success they achieve. When to this genius for trade is added the unconquerable energy and persevering inventiveness of the silk manufacturer in the United States; the superior intelligence and push of the operatives, both skilled and unskilled; the perfection of methods

¹ The Silk Industry of the United States from 1766 to 1874, by A. T. Lilly, Florence, Mass., 1875, page 8.

² The Silk Industry of America, by L. P. Brockett, M. D., New York, 1876, page 40.

³ Manual of American Silk Trade, 1873, by Franklin Allen, secretary of the Silk Association of America, New York, pages 22-23.

⁴ Twenty-ninth Annual Report of the Silk Association of America, New York, March 26, 1891, pages 48 and 49.

by "throwsters" in rapidity, certainty, and economy; the simplicity of high-speed looms in weaving; quick deliveries and perfectly satisfactory work in yarn dyeing, piece dyeing, finishing, and printing; and the ready adoption, at whatever cost, of every improvement known anywhere in silk manufacturing, the general excellence of the product manufactured in the United States, and its consequent success, is accounted for.

In England the silk industry has suffered a great decline since 1860. In recent years leading manufacturers there have emphasized the importance of specially organized technical schools for the education of artisans and for teaching drawing and designing to selected pupils. In the United States every large silk plant is a school of design, a teacher of scientific and technical education. All such plants have a corps of skillful designers, and many are in touch with artists and establishments abroad, whence is derived the latest information concerning novelties in all lines of manufacture. Skillful chemists are likewise attached to these plants, and, in fact, all processes of the industry proceed simultaneously under one management. To the clerk and workman is given a certain independence and freedom of action, no restraint being put upon his enterprise. Fulfillment of his duty is all that is required. That such a system improves the working methods and produces better results is plainly evident from the census figures.

IMPROVEMENTS IN THROWING AND WEAVING MACHINERY.

THROWING.—The past decade has not been marked by many changes in the throwing of silk. Efforts have been concentrated upon increasing labor efficiency, in saving waste, and similar economies, demanded by the constantly decreasing scale of prices. Larger mills have been built and equipped with the most modern appliances for heating, lighting, power, and manufacturing; smaller mills have been consolidated into larger establishments, thus lessening the general expenses; antiquated and worn-out equipments have been replaced by modern and more economical machines, the constant effort being to reduce cost of production. The success achieved has not, however, kept pace with the reduction in price of the product; and the throwster during these years has been confronted more or less with the problem of constantly increasing wages demanded by operatives, and decreasing prices paid by the manufacturers.

As regards machinery, the principal efforts have been to save space and processes; winding frames have been improved so as to produce more perfectly wound spools at higher speed, and obviate the necessity for redrawing. In the latest improved winding frame the bobbin is carried by a spindle having two heads resting upon the driving wheels, its bearings being supported upon inclined planes that sustain most of the weight, yet force the spindle into sufficient contact with the friction

wheel to secure a positive drive, the double support allowing high speed without throwing out the spindle.

Double-decking the winding frame has also been adopted by some to economize space and has some merits, though not generally adopted.

The doubling frame has also been perfected, allowing the work to be done at about double the speed and with better results; the old "flyer" and "jack-pin" system has been displaced by a cap on the bobbin, by means of which the thread can be drawn off naturally and the desired tension applied alike upon the assembled threads.

In spinning, the belt system, so called, where the spindles are driven by contact with an endless belt instead of with bands, has been adopted in all new installations. The many advantages of this type of frame were at once recognized, and at the present date over one-half of the spinning spindles in the country are of this system, although only first practically introduced in 1889. This belt-drive system adapted to the modern self-oiling spindle instantly won favor and adoption. A double-deck machine of this type quickly followed, giving double the number of spindles in the same space, still further solving the problem of economy and being generally adopted. In 1895 a combined spinner and doubler was designed, and it was soon evident that this invention had solved another great expense-saving problem and at the same time effected an improvement in the quality of the product. In the few years the last system has been practically upon the market 90,000 spindles have been put in use, or 15 per cent of the total number of first-time spindles. The system has, moreover, been introduced into several foreign countries, and it has been adopted by the technical schools of England and Switzerland as the most practical system of spinning organzine. This is a very substantial acknowledgment of the superiority of United States machinery for silk throwing over that of the rest of the world.

During the past ten years efforts have been made to solve the problem of spinning, doubling, and twisting organzine in one process, which have finally resulted in the production of a practical machine, but of the old band-drive system. A machine for this system of the belt-drive type, for which is claimed greater simplicity combined with increased effectiveness, has also been designed. It is too early as yet to say what the future of these machines will be, but they promise a large percentage of saving in the cost of production, with a decided improvement in quality, and at the same time a reduction in the cost of the equipment of a plant.

While during the past decade there have not been such great changes in throwing appliances as distinguished previous decades, there have been many marked improvements on the lines so briefly mentioned, and it can be said, from personal observation in many of the largest spinning mills in Europe, that in every step of

this branch of the silk industry the United States excels; our operatives tend a larger number of spindles; and, in spite of the higher wages paid here, the cost of production, pound for pound, aside from fuel and rents, will in nearly every case prove to be the lowest in the world.

The results from improvements in throwing machinery during the past decade can therefore be broadly summed up in the statement that these improvements have made possible a saving of about 40 per cent in the floor space needed and about 20 per cent in cost of production over the older system, figuring all the savings resulting from less floor space, power, and processes required to turn out a corresponding amount of work.

WEAVING.—The rapid strides made in the development of the power loom, together with the skill of American labor, have made the substitution of power looms for hand looms, which has been a noticeable feature of the industry for the last three decades, especially marked during the past decade, so much so that the statistics indicate the practically complete supersession of the hand loom by the power loom, there being in use, as reported, but 173 of the former as compared with 44,257 of the latter.

There are in successful operation in the silk mills of the United States to-day nearly two and a half times as many power looms as there were ten years ago. While improvements have been made constantly in the construction of these power looms ever since their introduction, probably the past ten years have witnessed the most rapid strides in this direction. These improvements have resulted in the production of a loom of high efficiency, equipped with mechanical devices designed for the saving of both time, labor, and material, such as the numerous multipliers, two-weave, leno, swivel, embroidery motions, and many other devices, all arranged to operate automatically, by the use of which marvelous results may be obtained.

Formerly the accomplishment of some of the above results, if possible at all on the power loom, required the use of a long pattern or indicator chain. Some of the principal progress has consisted in the invention of devices for facilitating the saving of such materials as this pattern or indicator chain. By dispensing with this long and cumbersome attachment the loom is made capable of much higher speed.

Among the multipliers particularly worthy of mention, in addition to the well-known multiplier for the box chain, whereby any shuttle box may be called at will, and any color used as long as desired, is the so-called two-weave multiplier, by the use of which two distinct weaves are produced in the loom and indicated from the same pattern chain.

Another multiplier, known as the manifold multiplier, consists of a mechanical device which, when used in addition to the two-weave motion, makes it possible to

produce three or more distinct weaves in the loom; each weave may be entirely different from the others. In fact, there is hardly any limit to the number of weaves that may be produced by the use of this mechanism, the change from one weave to the other being made automatically when the loom is in full operation.

Among the many other improvements, the progress made in producing leno effects might be mentioned. Present methods and attachments for producing this class of work are far in advance of the old methods, resulting in much saving of doup and in less breakage of warp threads. The old method of using two beams, one for the whip thread and one for the standard thread, is now generally superseded by taking all the threads from one beam, unless the pattern calls for a design in which the whip thread is longer than the standard thread. Slackeners are used only on such threads as require them, instead of rocking the whole warp beam.

The lappet motion has also been successfully applied to different types of looms during recent years, and at the present time these motions are built with one, two, three, and four bars or rows of needles, producing some beautiful effects on the surface of the goods.

The cross-weave loom produces a novel open-work effect in the woven fabric. A series of forked needles engages, as desired, selected groups of warp threads and crosses them over adjacent groups previous to the forming of the shed. After the passing of the shuttle and the beating up of the lay, the warp threads resume their normal position for plain weaving until again called for the cross-over process. A recent improvement produces an undulating or wavy effect by virtue of a movable reed, whose dents are inclined at different angles instead of being parallel, alternate groups of dents spreading upward, and intermediate groups spreading downward, so that the gradual raising and lowering of the reed produces a spreading of the warp threads at one point and a closing up at another.

The embroidery loom was especially designed for the purpose of making a figure on a light ground of cloth while the cloth is being woven, without waste of stock or material. Although the ground may be a light weight of goods, the figure is thick and compact in appearance. This effect can not be produced on a regular broad-silk loom, as the filling, when not wanted to show in the figure, must be buried in the body of the goods, and, moreover, for this reason there is a considerable waste of material.

Swivel looms built to-day have one, two, or three banks of swivel shuttles, so that it is possible to put as many as three colors in each figure at will with almost no loss or waste of material.

The principal difference between the swivel and embroidery looms as built to-day is that in the former the figures are usually arranged a certain distance apart in the goods, while in the latter a figure the entire width of the goods may be made if desired.

Outside of these special features there are many types of what might be termed standard looms used to-day for the manufacture of broad silks. In this connection special mention should be made of the improvement by which all classes of taffeta effects, formerly made on hand looms only, are now successfully made on power looms.

The highest type of loom designed for best grades of fabrics, both plain and fancy, is fitted with a positive head motion by which the harnesses or shafts are positively raised and lowered. The dobby loom is similar in construction to the above-mentioned loom, but a dobby is substituted in place of the positive head motion, the harness shafts being raised by the dobby but pulled down by springs. The cam loom, the harness shafts being controlled by cams which are positive in their action, is somewhat limited in weaves and designs by reason of the weave being dependent on these cams. On the two first-mentioned classes of looms almost any weave may be produced, the head motion or the dobby being controlled by means of a pattern chain which can be changed or made over at will. On the Jacquard loom the weave is controlled entirely by the Jacquard. On all of these types of looms shuttle-box motions of different capacities may be employed, allowing the use of from one to seven colors.

In the Jacquard, which forms so important a factor in the production of broad silks, there has been nearly as much improvement as in the loom itself, particularly as regards the saving of cards and increased speed. The present double-cylinder cross-border machine accomplishes about the same result on the loom as does the manifold multiplier described above. Attachments are now added to the Jacquard so that, through a suitable intermediate mechanism, the pattern or box chain is not required at all on the loom, the Jacquard cards being so punched that the shuttle boxes are controlled by the Jacquard, thus obviating the possibility of the Jacquard getting out of time with the shuttle boxes of the loom.

In addition to the many improvements referred to in looms designed for broad silks, the changes that have taken place in the development of the ribbon loom must not be overlooked. These looms, as built to-day, are capable of very high speed, and show a great advance over the "Swiss" and "German" types of looms which were almost universally used in this country ten or fifteen years ago. The modern ribbon loom was first designed and built in this country and has been constantly improved, until to-day it has reached a very high state of perfection. Under the old method of handling the warp it was necessary to employ men on the looms. Under the present arrangement of the loom the warp is placed on beams similar to broad-silk looms, and each individual warp is let off automatically from each beam, making it entirely unnecessary for the weaver to go behind the loom for this purpose.

The best type of ribbon loom, the high-speed auto-

matic, embodies all the latest improvements of construction; it is adapted to high-grade Jacquard work, where high speed has been slow of adoption, and to single-shuttle Jacquard work on labels, etc.; it has the automatic let-off system for the warps, is capable of a more uniform weave than the old machine, and has greater productive capacity.

There has recently been perfected a very efficient silk-velvet ribbon loom which is destined to fill a very important place in the ribbon industry. This loom will produce the best quality of silk-velvet ribbon at a very high speed for this class of work, the pile being cut automatically in the loom. It is one of the latest triumphs of American skill in the art of weaving.

The modern power loom is the result of much study and inventive genius, and with it to-day can be produced many fabrics which ten years ago it was impossible to make except by hand. Nowhere has this development been so pronounced and successful as in the United States.

DATE OF THE ESTABLISHMENT OF THE SILK INDUSTRY IN CITIES, TOWNS, ETC.

Incident to the growth of the industry, silk mills have been established in nearly all the New England and Middle states and in some of the Western and Southern states. Pennsylvania has been the greatest gainer in this respect during the last decade. Delaware, Virginia, and North Carolina have also attracted silk mills by liberal inducements to manufacturers.

The dates of starting the silk industry in the Nineteenth century in some of the more important places in various states, and the classes of goods, are shown in the following statement. It should be understood that in order to avoid duplication of towns in this statement only the first date at which any branch of the industry was inaugurated is given. Thus, in Philadelphia, when W. H. Horstman commenced the manufacture of dress trimmings, 1815 is mentioned, whereas the commencement there of the manufacture of sewing silk in 1843 and of ribbons in 1852 are omitted.

YEAR.	Place.	Class of goods.
PENNSYLVANIA.		
1815.....	Philadelphia	Dress trimmings.
1879.....	Scranton	Tram and organzine.
1880.....	Hawley	Tram, organzine, and broad silks.
1881.....	Allentown.....	Broad silks.
1881.....	Darby	Spun-silk yarns.
1883.....	Easton	Tram and organzine.
1886.....	Bethlehem	Tram and organzine.
1886.....	Catasauqua.....	Spun silk, laces, and braids.
1886.....	Harrisburg	Tram, organzine, and broad silks.
1886.....	East Mauch Chunk.....	Tram, organzine, broad silks, and ribbons.
1886.....	South Bethlehem.....	Tram, organzine, and broad silks.
1886.....	Stroudsburg	Tram and organzine.
1886.....	Wilkesbarre	Surah and figured pongees.
1887.....	Honesdale.....	Tram, organzine, broad silks, and ribbons.
1887.....	Pittston.....	Tram and organzine.
1887.....	Pottsville.....	Tram, organzine, and broad silks.
1887.....	Reading	Tram and organzine.
1888.....	Altoona	Tram and organzine.
1888.....	Bloomsburg	Tram, organzine, and broad silks.
1888.....	Weatherly.....	Tram and organzine.
1891.....	Carlisle	Tram and organzine.
1891.....	Eden	Silk and cotton curtains.

YEAR.	Place.	Class of goods.	YEAR.	Place.	Class of goods.
PENNSYLVANIA—continued.			NEW JERSEY—continued.		
1862.	Columbia.	Tram, organzine, and broad silks.	1880.	Hackensack.	Broad silks.
1862.	Hanover.	Silk ribbons.	1881.	Dover.	Tram and organzine.
1863.	Emaus.	Broad silks.	1886.	Phillipsburg.	Broad and dress silks.
1863.	Williamsport.	Broad silks.	1887.	Hackettstown.	Tram and organzine.
1864.	Hallstead.	Ribbons and narrow fabrics.	1888.	Stirling.	Broad silks.
1865.	Carbondale.	Tram and organzine.	1888.	Midland Park.	Tie and dress silks.
1865.	Taylor.	Tram and organzine.	1888.	Port Oram.	
1866.	Avoca.	Tram and organzine.	1889.	Lakeview.	Silk linings and dress silks.
1866.	Marietta.	Dress silks.	1889.	Pompton Lakes.	
1866.	Sunbury.	Broad silks.	1890.	Guttenberg.	Umbrella silks, veils and veiling, and black taffetas.
1867.	Alburtis.	Brocades.			
1867.	Bath.	Dress and tie silks.	1891.	Lodi.	Dyeing and finishing silk piece goods.
1867.	Danville.	Tram and organzine.	1891.	Washington.	Taffetas, furriers' satin, and brocades.
1867.	Ephrata.	Broad silks.	1893.	Summit.	Broad silks.
1867.	Fleetwood.	Broad silks.	1894.	Jersey City.	Dress silks.
1867.	Freeland.	Tram and organzine.	1895.	Bulvidere.	Tram and organzine.
1867.	Plymouth.	Tram and organzine.	1895.	Watsessing.	Dress silks and linings.
1867.	Pottstown.	Sewing silk.	1896.	Newton.	Broad silks.
1867.	Titusville.	Ribbons.	1898.	Passaic.	Silk veilings.
1868.	Athens.	Broad and tie silks.	1899.	Plainfield.	Dress silks.
1868.	Coatesville.	Tram, organzine, and broad silks.	1900.	Hillsdale.	Broad silks.
1868.	Dunmore.	Plain and dress silks.			
1868.	Hazleton.	Umbrella silks.			
1868.	Jermyn.	Tram and organzine.			
1868.	Lancaster.	Broad silks.			
1868.	Newberry.	Dress goods.			
1868.	New Holland.	Broad and tie silks.			
1868.	New Hope.	Broad silks.			
1868.	Parsons.	Tram and organzine.			
1868.	Phoenixville.	Tram, organzine, and ribbons.			
1868.	West Pittston.	Tram and organzine.			
1868.	York.	Tram, organzine, and ribbons.			
1869.	Aquashicola.	Ribbons.			
1869.	Dickson City.	Tram, organzine, handkerchiefs, and mufflers.			
1869.	Forest City.	Organzine.			
1869.	Kutztown.	Tram and organzine.			
1869.	Lansdale.	Dress and umbrella silks.			
1869.	Leighton.	Ribbons.			
1869.	Lock Haven.	Broad silks.			
1869.	Reynoldsville.	Broad silks.			
1869.	Richland Center.	Broad silks.			
1869.	Shamokin.	Pongees and surahs.			
1869.	Topton.	Dress and tie silks.			
1900.	Bradford.	Tram and organzine.			
1900.	Butler.	Dress silks.			
1900.	Meadville.	Broad silks.			
1900.	Pennsburg.	Ribbons.			
1900.	Renovo.	Broad silks.			
1900.	Weissport.	Tram and organzine.			
1900.	White Haven.	Tram and organzine.			
MARYLAND.			ILLINOIS.		
1829.	Baltimore.	Ribbons.	1864.	Chicago.	Dress trimmings.
1889.	Hagerstown.	Ribbons.	1899.	Alpine.	Silk curtains.
1898.	Ilchester.	Pongees.			
MASSACHUSETTS.			NEW YORK.		
1882.	Northampton.	Sewing silk.	1830.	New York.	Dress trimmings.
1834.	Boston.	Dress trimmings.	1841.	Auburn.	Sewing silk.
1834-38.	Florence.	Sewing silk.	1866.	Oneida.	Sewing silk.
1835.	Dedham.	Sewing silk.	1871.	Brooklyn.	Silk laces.
1840.	Canton.	Sewing silk.	1872.	College Point.	Ribbons.
1848.	Skinnerville.	Sewing silk.	1882.	Sloatsburg.	Spun silk.
1874.	Holyoke.	Sewing silk, braids, and linings.	1885.	Hornellsville.	Tram and organzine.
1878.	Pittsfield.	Sewing silk.	1886.	Fultonville.	Silk gloves and mittens.
1880.	Springfield.	Silk and mohair braids.	1887.	Norwich.	Ribbons.
1882.	Athol.	Sewing silk.	1887.	Whitehall.	
1884.	Worcester.	Silk bindings and picot ribbons.	1888.	Long Island City.	Silk plushes.
1886.	Newton Upper Falls.	Spun-silk yarns.	1889.	Mattawan.	Tram and organzine.
1890.	Sandwich.	Silk and mohair braids.	1889.	Spring Valley.	Tram, organzine, and sewing silk.
			1891.	Clark Mills.	Seal plushes.
			1892.	Elmira.	Tram and organzine.
			1892.	Delhi.	Broad silks.
			1892.	West New Brighton.	Labels, etc.
			1892.	Unionville.	Ribbons.
			1892.	Port Plain.	Tram and organzine.
			1893.	Newburg.	Pongees, surah, taffetas, linings, and broad silks.
			1896.	Watertown.	Dress silks.
			1897.	Port Jervis.	Tram and organzine.
			1897.	Yonkers.	Ribbons.
			1899.	Fort Hunter.	Novelties and linings.
			1899.	Glendale.	Ribbons.
			1899.	Haverstraw.	Dress silks.
			1899.	Oneonta.	Broad silks.
			CALIFORNIA.		
			1870.	San Francisco.	Sewing silk and fringe silk.
			MAINE.		
			1874.	Westbrook.	Spool silks.
			UTAH.		
			1884.	Salt Lake City.	Handkerchiefs and dress goods.
			OHIO.		
			1886.	Piqua.	Silk hosiery.
			1893.	Toledo.	Knit goods.
			MICHIGAN.		
			1887.	Belding.	Sewing silk.
			1899.	Detroit.	Mittens, gloves, and hosiery.
			WISCONSIN.		
			1887.	Janesville.	Silk underwear.
			1899.	Milwaukee.	Knit goods.
			VIRGINIA.		
			1888.	Petersburg.	Spinning and dyeing.
			1889.	Fredericksburg.	Tram and organzine.
			1900.	Norfolk.	Broad and tie silks.
			NORTH CAROLINA.		
			1888.	Wadesboro.	Tram and organzine.
			1899.	Fayetteville.	Dress and tie silks.
			1900.	Roanoke Rapids.	Wide pongees.
			RHODE ISLAND.		
			1889.	Pawtucket.	Silk-mixed linings.
			1897.	Newport.	Elastic webbing.
			1899.	Wyoming.	Lining silks.
			1900.	Bristol.	Curtains and portières
			NEW HAMPSHIRE.		
			1891.	Contoocook.	Tram and organzine.
			1898.	Newmarket.	Silk and cotton mulls and pongees.
			1898.	Lewiston.	Underwear.
			1900.	Lisbon.	Cotton and silk covered wire.
			DELAWARE.		
			1899.	Dover.	Dress silks.
			1899.	Wilmington.	Black and colored taffetas.

TABLE 23.—SILK AND SILK GOODS, INCLUDING

	United States.	California.	Connecticut.	Illinois.
1 Number of establishments.....	488	5	38	4
2 Character of organization:				
3 Individual.....	182	3	14	1
4 Firm and limited partnership.....	154	1	4	3
5 Incorporated company.....	197	1	20	2
6 Established during the decade.....	272	3	10	1
6 Established during the census year.....	48		1	
7 Capital:				
8 Total.....	\$81,082,201	\$308,847	\$12,166,775	\$259,540
9 Land.....	\$2,045,093	\$3,600	\$282,294	\$15,000
10 Buildings.....	\$10,205,812	\$29,726	\$1,597,352	\$25,000
11 Machinery, tools, and implements.....	\$20,750,449	\$44,161	\$2,061,799	\$95,959
11 Cash and sundries.....	\$48,080,847	\$231,860	\$8,225,330	\$123,581
12 Proprietors and firm members.....	477	6	23	1
13 Salaried officials, clerks, etc.:				
14 Total number.....	2,657	6	323	33
14 Total salaries.....	\$3,184,352	\$4,998	\$403,423	\$51,180
15 Officers of corporations—				
16 Number.....	304		29	5
16 Salaries.....	\$709,771		\$103,090	\$13,000
17 General superintendents, managers, clerks, and salesmen—				
18 Total number.....	2,353	6	291	28
18 Total salaries.....	\$2,364,581	\$4,998	\$300,333	\$38,180
19 Men—				
20 Number.....	2,078	5	257	24
20 Salaries.....	\$2,240,552	\$4,530	\$284,352	\$85,200
21 Women—				
22 Number.....	275	1	37	4
22 Salaries.....	\$124,029	\$468	\$15,981	\$2,980
23 Wage-earners, including pieceworkers, and total wages:				
24 Greatest number employed at any one time during the year.....	75,110	142	7,400	507
25 Least number employed at any one time during the year.....	56,959	82	5,883	315
25 Average number.....	65,410	117	6,514	412
26 Wages.....	\$20,982,194	\$33,055	\$2,392,878	\$121,644
27 Men, 16 years and over—				
28 Average number.....	24,206	24	2,763	81
28 Wages.....	\$10,699,483	\$14,436	\$1,350,543	\$43,475
29 Women, 16 years and over—				
30 Average number.....	34,797	91	3,585	310
30 Wages.....	\$9,377,696	\$18,119	\$1,013,498	\$73,919
31 Children, under 16 years—				
32 Average number.....	6,413	2	166	21
32 Wages.....	\$905,015	\$500	\$28,832	\$4,250
Average number of wage-earners, including pieceworkers, employed during each month:				
33 Men, 16 years and over—				
34 January.....	24,197	25	2,677	82
35 February.....	24,729	26	2,710	82
36 March.....	25,024	26	2,708	88
37 April.....	25,200	23	2,785	86
38 May.....	24,752	23	2,745	86
39 June.....	23,855	22	2,618	66
40 July.....	23,800	18	2,719	65
41 August.....	23,829	22	2,730	75
42 September.....	23,797	24	2,855	81
43 October.....	23,749	26	2,947	88
44 November.....	23,801	27	2,967	86
44 December.....	23,747	27	2,701	81
45 Women, 16 years and over—				
46 January.....	34,742	98	3,501	319
47 February.....	35,340	95	3,581	367
48 March.....	36,221	91	3,659	363
49 April.....	36,088	86	3,719	356
50 May.....	35,352	86	3,658	298
51 June.....	34,402	82	3,534	265
52 July.....	33,822	64	3,542	238
53 August.....	34,137	88	3,515	253
54 September.....	34,045	91	3,497	288
55 October.....	34,309	99	3,589	340
56 November.....	34,517	108	3,662	335
56 December.....	34,639	105	3,566	306
57 Children, under 16 years—				
58 January.....	6,260	2	149	21
59 February.....	6,267	2	155	23
60 March.....	6,410	2	164	23
61 April.....	6,564	1	169	27
62 May.....	6,537	1	164	25
63 June.....	6,502	1	164	19
64 July.....	6,417	1	163	15
65 August.....	6,381	1	164	14
66 September.....	6,386	1	170	19
67 October.....	6,349	2	170	22
68 November.....	6,421	2	179	23
68 December.....	6,454	2	177	21
69 Weavers:				
70 Broad silk—				
71 Men.....	8,917		448	
71 Women.....	9,188		441	
71 Children.....	285			
72 Ribbons—				
73 Men.....	3,725		21	
74 Women.....	1,467		200	
74 Children.....	21		7	
75 Velvets and plushes—				
76 Men.....	881		565	
76 Women.....	510		141	
77 Children.....	150			
78 Other—				
79 Men.....	1,837		412	
79 Women.....	1,892		367	
80 Children.....	261		32	

BRAIDS AND TRIMMINGS, BY STATES: 1900.

Massachusetts.	New Jersey.	New York.	North Carolina.	Pennsylvania.	Rhode Island.	Virginia.	All other states. ¹	
20	180	92	3	121	6	3	11	1
6	51	32	1	19	8	1	1	2
8	63	34	2	47	3	1	1	3
11	66	26	2	55	3	1	9	4
6	107	53	2	79	3	1	6	5
1	11	8	2	22	1		1	6
\$5,649,758	\$29,285,792	\$9,800,207	\$130,376	\$20,894,023	\$680,252	\$594,359	\$1,312,272	7
\$216,341	\$733,367	\$202,133	\$6,200	\$491,598	\$24,955	\$12,000	\$57,000	8
\$756,454	\$2,960,084	\$586,224	\$52,000	\$3,688,545	\$96,224	\$174,440	\$233,763	9
\$707,345	\$7,297,856	\$3,061,252	\$40,825	\$6,696,158	\$165,032	\$210,200	\$370,162	10
\$3,969,618	\$18,288,485	\$5,950,593	\$31,651	\$10,017,722	\$394,041	\$197,119	\$651,847	11
11	197	94	1	131	3	2	8	12
156	969	363	11	745	8	12	41	13
\$227,276	\$1,144,512	\$514,439	\$3,455	\$718,776	\$12,320	\$12,678	\$41,295	14
20	98	41	6	88	3	1	13	15
\$51,850	\$269,368	\$163,891	\$875	\$144,462	\$9,200	\$1,000	\$13,035	16
136	861	322	5	657	5	11	28	17
\$175,426	\$875,144	\$350,548	\$2,580	\$574,314	\$3,120	\$12,078	\$28,260	18
115	787	298	5	549	4	10	24	19
\$166,772	\$840,337	\$338,784	\$2,580	\$523,243	\$2,320	\$11,314	\$26,120	20
21	74	24		108	1	1	4	21
\$8,654	\$34,807	\$11,764		\$46,071	\$800	\$364	\$2,140	22
3,465	27,162	9,330	265	24,424	563	518	1,334	23
2,953	20,784	6,563	255	18,496	365	429	834	24
3,110	24,157	7,861	209	21,028	455	473	1,080	25
\$1,110,324	\$9,232,582	\$2,861,818	\$25,420	\$4,629,626	\$166,675	\$105,055	\$303,171	26
1,102	11,279	3,149	35	5,214	124	144	291	27
\$506,282	\$5,296,102	\$1,509,660	\$8,827	\$1,718,537	\$82,240	\$61,294	\$108,037	28
1,837	11,679	4,299	119	11,565	326	228	758	29
\$562,989	\$3,731,827	\$1,293,875	\$13,331	\$2,363,123	\$83,664	\$31,885	\$191,466	30
171	1,199	418	55	4,249	5	101	31	31
\$41,053	\$204,603	\$58,283	\$3,262	\$547,916	\$771	\$11,877	\$3,668	32
1,067	11,247	3,266	38	5,262	109	187	287	33
1,094	11,540	3,361	38	5,326	118	147	287	34
1,099	11,676	3,429	38	5,492	114	150	294	35
1,100	11,699	3,366	48	5,534	108	149	302	36
1,089	11,605	3,165	48	5,455	123	145	268	37
1,057	11,324	2,865	38	5,322	124	148	271	38
1,078	11,305	2,839	20	5,077	128	147	261	39
1,095	11,237	3,032	20	5,064	125	143	286	40
1,116	10,984	3,095	20	5,043	131	145	303	41
1,144	10,786	3,136	38	5,005	133	145	309	42
1,153	10,791	3,101	38	5,054	137	145	302	43
1,131	11,070	3,077	38	5,027	138	134	323	44
1,776	11,696	4,492	138	11,617	224	221	660	45
1,855	11,861	4,501	138	11,788	231	221	702	46
1,951	12,055	4,693	138	12,019	256	222	769	47
1,984	12,012	4,515	153	11,989	276	221	772	48
1,870	11,946	4,145	153	11,573	330	212	777	49
1,732	11,701	3,920	133	11,747	350	249	684	50
1,697	11,688	3,944	60	11,204	354	241	745	51
1,737	11,564	4,132	50	11,455	346	239	763	52
1,732	11,378	4,268	50	11,243	269	240	783	53
1,585	11,261	4,376	138	11,145	384	229	827	54
1,821	11,427	4,324	138	11,270	391	222	801	55
1,841	11,561	4,266	138	11,364	400	218	814	56
143	1,164	408	54	4,184	3	101	31	57
157	1,157	406	54	4,163	3	104	43	58
158	1,175	428	54	4,243	3	108	47	59
170	1,230	445	59	4,316	4	103	40	60
168	1,221	430	59	4,326	4	112	27	61
165	1,203	408	54	4,363	4	93	28	62
170	1,212	411	54	4,256	10	102	23	63
167	1,219	398	54	4,238	9	95	22	64
176	1,216	397	54	4,219	8	101	25	65
193	1,190	390	54	4,202	3	96	27	66
195	1,201	420	54	4,212	3	103	29	67
190	1,202	421	54	4,256	3	100	28	68
301	5,491	899		1,845	74		59	69
208	3,548	824	38	3,777	156	12	184	70
	38	2		191			4	71
40	1,762	1,014		885			43	72
	502	203		617			5	73
	8	10		1				74
	48	109		149	10			75
	5	20		344				76
				350				77
10	691	351		341	20		12	78
34	703	450		278				79
8	75	86		69			1	80

¹Includes establishments distributed as follows: Delaware, 2; Maine, 1; Maryland, 2; Michigan, 2; New Hampshire, 2; Utah, 2.

TABLE 23.—SILK AND SILK GOODS, INCLUDING

	United States.	California.	Connecticut.	Illinois.
Spinners, etc.:				
81 Men	7,332	11	1,268	
82 Women	19,513	60	1,900	
83 Children	4,955		227	
Miscellaneous expenses:				
84 Total	\$10,264,208	\$4,113	\$637,450	\$42,410
85 Rent of works	\$591,807	\$2,220	\$30,202	\$7,950
86 Taxes, not including internal revenue	\$238,116	\$680	\$36,506	\$1,974
87 Rent of offices, insurance, interest, and all sundry expenses not hitherto included	\$2,863,986	\$1,213	\$353,489	\$19,720
88 Contract work	\$6,570,290		\$217,253	\$12,766
Materials used:				
89 Total cost	\$62,406,665	\$146,219	\$7,198,008	\$187,514
Silk—				
90 Raw, pounds	9,780,770	30,425	1,159,961	
91 Cost	\$40,721,877	\$113,885	\$4,537,720	
92 Spun, pounds	1,550,291	725	502,558	4,225
93 Cost	\$3,406,059	\$2,380	\$998,566	\$12,724
94 Artificial, pounds	6,056			10
95 Cost	\$10,380			\$55
96 Waste, pounds	1,667,195		749,036	
97 Cost	\$734,539		\$404,183	
Other textile yarns—				
98 Cotton, pounds	6,444,208	8,500	1,187,863	255,247
99 Cost	\$1,830,550	\$2,675	\$388,836	\$36,950
100 Mercerized cotton, pounds	219,861	650	1,642	7,178
101 Cost	\$165,658	\$555	\$1,416	\$3,113
102 Wool, pounds	239,461	150	401	65,190
103 Cost	\$167,770	\$150	\$329	\$35,702
104 Mohair, pounds	104,810	380	1,236	6,992
105 Cost	\$107,365	\$545	\$1,543	\$10,024
106 Other, pounds	108,388		2,024	7,250
107 Cost	\$134,986		\$4,506	\$10,000
Silk purchased in partially manufactured form—				
108 Organzine and tram, pounds	2,388,404	980	31,041	4,713
109 Cost	\$10,539,632	\$7,320	\$154,831	\$21,149
110 Fringe and floss, pounds	67,984	250	743	8,905
111 Cost	\$274,408	\$1,100	\$4,161	\$29,593
112 Fuel	\$548,493	\$1,382	\$90,937	\$2,500
113 Rent of power and heat	\$135,509	\$600	\$5,930	\$530
114 Mill supplies	\$994,769	\$8,684	\$155,952	\$1,824
115 All other materials	\$2,406,123	\$3,371	\$427,544	\$23,250
116 Freight	\$228,622	\$3,472	\$21,334	
Raw silk thrown under contract:				
117 Organzine, pounds	2,831,456		184,270	
118 Tram, pounds	1,967,203		69,588	
Products:				
119 Total value	\$107,256,258	\$255,902	\$12,378,981	\$421,088
120 Organzine and tram made for sale, pounds	2,468,387	2,000	37,000	
121 Value	\$11,167,191	\$8,000	\$502,520	
122 Spun silk yarn made for sale, pounds	437,459		166,205	
123 Value	\$1,026,227		\$398,671	
124 Machine twist, pounds	987,917	22,742	545,428	
125 Value	\$5,997,974	\$163,742	\$3,354,546	
126 Sewing, embroidery, and wash silks, pounds	477,656	5,200	145,032	
127 Value	\$3,276,526	\$17,400	\$977,213	
128 Fringe and floss silks, pounds	261,648		95,806	
129 Value	\$971,390		\$217,043	
Broad silk goods—				
Plain and fancies—				
130 All silk, yards	53,573,488	800	1,435,439	
131 Value	\$33,852,111	\$800	\$1,075,106	
132 Silk mixed, yards	8,963,315		415,648	
133 Value	\$5,450,710		\$269,937	
Jacquard—				
134 All silk, yards	7,532,229	800	7,563	
135 Value	\$5,379,001	\$800	\$3,905	
136 Silk mixed, yards	1,677,466		93,264	
137 Value	\$1,260,321		\$63,117	
Piece-dyed—				
138 All silk, yards	7,331,501		3,371,127	
139 Value	\$3,342,167		\$1,534,724	
140 Silk mixed, yards	8,558,884		147,833	
141 Value	\$2,368,506		\$98,720	
Other broad goods—				
142 Velvets, yards	5,122,249		4,261,208	
143 Value	\$2,479,903		\$2,087,639	
144 Plushes, yards	3,848,684		1,011,457	
145 Value	\$2,480,068		\$687,679	
146 Tapestries, yards	321,978		69,978	
147 Value	\$180,503		\$84,503	
148 Upholstery, yards	1,011,141			
149 Value	\$329,332			
Ribbons and laces—				
150 Ribbons, value	\$18,467,179		\$655,807	
151 Laces, nets, veils, veiling, etc., value	\$803,104			
152 Embroideries, value	\$57,625	\$1,000		
153 Fringes and gimps, value	\$444,787	\$4,000		\$16,477
154 Braids and bindings, value	\$1,522,565	\$6,500	\$38,685	\$249,002
Trimmings—				
155 Tailors', value	\$26,624			\$6,000
156 Ladies', value	\$912,361	\$6,000		\$13,461
157 Cloak, value	\$241,560	\$3,200		\$31,000
158 Milliners', value	\$615,012	\$5,000		\$35,000
159 Military, value	\$54,666	\$3,100		\$6,346
160 Other trimmings products, value	\$188,853	\$6,000		\$3,802
161 Other products, value	\$1,027,472	\$180	\$192,744	
162 Received for contract work	\$2,387,220	\$200	\$136,362	

BRAIDS AND TRIMMINGS, BY STATES: 1900—Continued.

Massachusetts.	New Jersey.	New York.	North Carolina.	Pennsylvania.	Rhode Island.	Virginia.	All other states. ¹	
449	3,180	501	34	1,587	20	131	151	81
1,186	6,722	2,070	73	6,481	151	216	564	82
158	813	206	54	3,370	2	101	24	83
\$382,745	\$4,896,595	\$1,601,527	\$5,159	\$2,451,820	\$103,454	\$15,300	\$123,635	84
\$13,837	\$241,838	\$182,323	\$2,000	\$96,547	\$13,925		\$965	85
\$29,583	\$97,065	\$27,537	\$86	\$30,330	\$3,013	\$1,168	\$3,524	86
\$179,306	\$1,120,458	\$612,228	\$1,873	\$610,872	\$7,916	\$12,697	\$44,214	87
\$160,019	\$3,436,634	\$879,389	\$1,200	\$1,708,071	\$78,600	\$1,435	\$74,932	88
\$3,823,963	\$21,631,118	\$6,570,037	\$99,403	\$19,884,869	\$818,561	\$720,525	\$1,326,448	89
720,485	3,155,334	914,265	20,200	3,238,285	102,691	164,200	254,924	90
\$2,898,545	\$13,514,501	\$3,814,768	\$99,282	\$13,531,837	\$490,750	\$653,045	\$1,073,994	91
40,136	178,735	263,200	1,100	477,643	51,616		30,553	92
\$96,583	\$333,612	\$502,322	\$3,030	\$979,506	\$136,404		\$80,882	93
170		5,350		526				94
\$420		\$6,790		\$3,115				95
418,355		287,880		186,424	25,000		500	96
\$177,480		\$86,900		\$62,476	\$3,000		\$500	97
480,220	757,486	1,556,545		1,759,759	409,636		28,652	98
\$144,520	\$304,481	\$369,716		\$465,812	\$122,800		\$4,760	99
4,708	122,053	61,560		30,070	2,000			100
\$3,783	\$90,013	\$42,432		\$23,121	\$1,200			101
96,667	16,940	45,527		8,717	2,667		3,002	102
\$69,060	\$15,042	\$36,040		\$3,743	\$2,000		\$2,504	103
17,405		29,697		47,600			1,500	104
\$27,632		\$23,776		\$35,645			\$3,000	105
1,971	480	24,167		31,323			41,173	106
\$12,991	\$170	\$14,364		\$24,097			\$68,768	107
17,681	1,299,012	197,781		871,235	5,711		310	108
\$81,010	\$5,702,506	\$839,657		\$3,701,840	\$29,730		\$1,539	109
675	473	20,606		34,727	1,600			110
\$3,287	\$1,816	\$38,813		\$137,338	\$8,000			111
\$35,205	\$179,280	\$55,635	\$2,382	\$158,409	\$4,676		\$5,417	112
\$3,467	\$63,932	\$40,051		\$15,979	\$1,500		\$1,610	113
\$78,435	\$257,824	\$158,119	\$766	\$277,693	\$1,787	\$37,311	\$16,539	114
\$179,347	\$909,191	\$412,922	\$983	\$364,891	\$14,137	\$17,000	\$33,487	115
\$11,448	\$53,750	\$21,532	\$1,910	\$94,812	\$2,577	\$6,492	\$6,195	116
8,000	585,722	117,981		1,332,758	16,599	67,220	26,906	117
	651,900	204,400	73,000	926,915		27,710	5,690	118
\$5,957,532	\$39,966,662	\$12,706,246	\$135,354	\$31,072,926	\$1,311,333	\$981,680	\$2,068,554	119
1,855	816,646	48,263	7,800	1,723,791		277,032		120
\$7,765	\$1,500,000	\$207,500	\$33,062	\$8,011,155		\$892,129		121
104,000		92,046		75,148				122
\$270,400		\$216,503		\$140,658				123
269,241		46,500		43,476			60,535	124
\$1,413,004		\$240,405		\$285,288			\$540,989	125
170,423		18,528		74,475			64,000	126
\$1,246,445		\$113,468		\$461,800			\$440,500	127
20,964	16,611			128,262				128
\$147,778	\$64,444			\$542,130				129
665,153	28,268,970	3,859,029	105,000	17,887,478			1,351,619	130
\$766,054	\$18,871,325	\$2,516,445	\$31,000	\$10,002,648			\$588,673	131
2,020,101	2,331,493	1,047,130		669,377	2,367,437		112,129	132
\$1,437,799	\$1,680,091	\$558,361		\$310,200	\$1,119,150		\$75,163	133
	6,451,655	108,410		908,001			60,800	134
	\$4,722,532	\$115,250		\$505,714			\$30,800	135
	1,466,355	61,426		56,421				136
	\$1,154,305	\$19,008		\$23,831				137
	1,694,675	22,000		1,775,255		59,760	408,684	138
	\$905,942	\$84,561		\$586,443		\$40,904	\$189,593	139
20,384	381,000	2,447,570		5,562,097				140
\$12,434	\$154,500	\$1,039,489		\$1,563,363				141
	111,077	9,515		740,449				142
	\$62,935	\$4,757		\$324,572				143
	555,842	528,795		1,752,590				144
	\$315,540	\$362,191		\$1,114,653				145
	2,000			250,000				146
	\$9,000			\$37,000				147
	231,037	623,843		156,261				148
	\$396,850	\$222,105		\$210,877				149
\$92,000	\$8,341,721	\$4,883,011		\$4,368,399			\$126,241	150
\$33,533	\$423,267	\$377,047		\$2,800				151
\$28,087		\$23,092		\$170,685				152
\$338,339	\$162,695	\$388,391		\$119,573	\$169,480			153
\$8,124							\$12,500	154
\$68,385		\$389,510		\$397,505			\$7,500	155
\$389		\$21,000		\$181,521			\$4,000	156
		\$261,000		\$344,012				157
\$220		\$30,000		\$15,000				158
\$6,000	\$160	\$95,784		\$72,107				159
\$21,053	\$434,501	\$133,622	\$39,893	\$171,349	\$8,400		\$25,750	160
\$9,278	\$766,844	\$238,218	\$26,399	\$1,070,133	\$14,294	\$48,647	\$26,845	161

¹ Includes establishments distributed as follows: Delaware, 2; Maine, 1; Maryland, 2; Michigan, 2; New Hampshire, 2; Utah, 2.

TABLE 23.—SILK AND SILK GOODS, INCLUDING

	United States.	California.	Connecticut.	Illinois.
Machinery:				
163 Spindles, total number.....	1,987,404	3,380	160,748	.....
Organzine—				
164 First time over, number.....	582,180	.....	15,686	.....
165 Second time over, number.....	345,146	.....	8,720	.....
166 Tram, number.....	117,979	88	5,256	.....
167 Cleaning or polishing, number.....	6,526	44	2,102	.....
168 Doubling, number.....	186,075	456	14,048	.....
169 Quilling, number.....	87,742	50	7,861	.....
170 Reeling, number.....	52,158	84	4,340	.....
171 Spinning and twisting, number.....	168,189	1,660	66,753	.....
172 Winding, number.....	442,410	1,008	86,477	.....
Looms—				
Power—				
178 Total number.....	44,257	2	2,975	27
Plain—				
174 36 inches or over reed space, number.....	13,077	.....	1,660	.....
175 Under 36 inches reed space, number.....	16,161	.....	777	27
176 German (warps on top) ribbons, number.....	4,471	.....	95	.....
177 High-speed ribbons, number.....	2,105	.....	194	.....
Jacquards—				
178 Ribbons, number.....	856	.....	5	.....
179 Broad silks, number.....	7,587	2	244	.....
Hand—				
180 Total number.....	173	.....	.....	7
Plain—				
181 36 inches or over reed space, number.....	32	.....	.....	.....
182 Under 36 inches reed space, number.....	127	.....	.....	7
Jacquards—				
183 Ribbons, number.....	9	.....	.....	.....
184 Broad silks, number.....	5	.....	.....	.....
Other machines—				
Power—				
Knitting—				
185 Warp, number.....	108	.....	.....	8
186 Knitting or crochet, number.....	127	1	.....	7
187 Roundhead, number.....	21	.....	.....	.....
188 Swiss-ribbed, number.....	14	.....	.....	.....
189 Milanese or traverse, number.....	6	.....	.....	.....
190 Beavers, number.....	343	.....	54	.....
191 Braiders, number.....	15,305	21	1,005	3,809
192 Chenille, number.....	130	3	1	9
193 Curtain, number.....	1	.....	.....	.....
Embroidery—				
194 Shuttle or power, number.....	104	.....	.....	.....
195 Hand-stitched, number.....	20	.....	.....	.....
196 Gimp mills, number.....	122	.....	1	7
197 Lavers or lace, number.....	64	.....	.....	.....
198 Sewing, number.....	550	2	15	10
199 Slide cord, number.....	152	3	.....	18
200 Spooling tables, number.....	743	18	288	16
201 Twist, number.....	64	5	.....	2
202 Warping, number.....	3,589	2	187	.....
203 Other power machines, number.....	99	.....	1	.....
Hand—				
204 Beavers, number.....	6	1	.....	.....
205 Braiders, number.....	19	.....	.....	.....
206 Chenille, number.....	30	12	.....	.....
Embroidery—				
207 Hand-stitched, number.....	2	.....	.....	.....
208 Lavers or lace, number.....	1	.....	.....	.....
209 Sewing, number.....	79	2	3	6
210 Slide cord, number.....	8	8	.....	.....
211 Spooling tables, number.....	144	.....	81	.....
212 Twist, number.....	16	.....	.....	.....
213 Warping, number.....	796	2	7	5
214 Other hand machines, number.....	61	.....	15	.....
Dyeing, finishing, and printing:				
Skeln dyeing—				
Silk—				
215 Colors, pounds.....	1,793,655	750	511,298	.....
216 Black, pounds.....	1,541,785	26,972	445,999	.....
Spun—				
217 Colors, pounds.....	425,216	.....	203,181	.....
218 Black, pounds.....	176,014	.....	62,957	.....
Cotton—				
219 Colors, pounds.....	925,255	.....	113,630	.....
220 Black, pounds.....	981,559	.....	450,669	.....
Wool—				
221 Colors, pounds.....	52,658	.....	.....	.....
222 Black, pounds.....	55,949	.....	.....	.....
Piece dyeing—				
223 All silk, yards.....	1,224,329	.....	177,991	.....
224 Silk and spun, yards.....	459,693	.....	349,693	.....
225 Silk and cotton, yards.....	2,780,156	.....	1,077,664	.....
226 Silk and wool, yards.....	850	.....	.....	.....
Finishing—				
227 All silk, pieces.....	472,584	40	71,986	.....
228 Silk and cotton, pieces.....	289,862	.....	168,776	.....
229 Silk and wool, pieces.....	116	.....	.....	.....
Printing—				
230 Printed in warps, yards.....	16,355	.....	8,855	.....
Printed in pieces—				
231 All silk, yards.....	846,704	.....	777,618	.....
232 Silk and spun, yards.....	1,684,524	.....	1,684,524	.....
233 Silk and cotton, yards.....	537,228	.....	637,228	.....

BRAIDS AND TRIMMINGS, BY STATES: 1900—Continued.

Massachusetts.	New Jersey.	New York.	North Carolina.	Pennsylvania.	Rhode Island	Virginia	All other states. ¹	
107,312	536,065	136,703	18,790	942,545	4,212	41,798	35,856	163
20,088	153,312	25,205	5,000	340,298	.....	16,696	5,892	164
9,632	92,190	14,352	2,000	205,781	.....	8,400	4,070	165
1,586	30,014	8,404	2,680	65,591	.....	3,276	1,084	166
467	1,023	1,389	.....	799	102	.....	600	167
11,040	50,587	12,977	2,900	85,535	560	4,498	2,474	168
1,910	35,961	9,232	2,000	30,468	60	.....	710	169
3,524	13,367	4,102	158	24,956	80	404	1,143	170
36,782	6,074	15,522	.....	27,181	1,890	1,556	10,781	171
22,283	153,537	45,517	4,052	161,946	1,520	6,968	9,102	172
1,017	20,557	5,175	125	12,920	533	147	779	173
451	4,573	1,510	125	3,709	465	147	437	174
422	7,282	1,175	.....	6,166	68	.....	244	175
144	1,601	1,594	.....	986	.....	.....	51	176
.....	882	425	.....	604	.....	.....	.....	177
.....	433	223	.....	195	.....	.....	.....	178
.....	5,786	248	.....	1,260	.....	.....	47	179
23	15	93	.....	29	.....	.....	6	180
.....	7	4	.....	18	.....	.....	3	181
23	8	81	.....	8	.....	.....	.....	182
.....	.....	6	.....	3	.....	.....	.....	183
.....	.....	2	.....	.....	.....	.....	3	184
.....	.....	54	.....	46	.....	.....	.....	185
17	.....	39	.....	63	.....	.....	.....	186
14	.....	9	.....	12	.....	.....	.....	187
.....	.....	5	.....	.....	.....	.....	.....	188
6	97	52	1	128	.....	.....	5	189
2,876	744	3,889	.....	1,381	1,400	.....	180	190
4	1	50	.....	62	.....	.....	.....	191
.....	.....	.....	.....	1	.....	.....	.....	192
.....	.....	.....	.....	.....	.....	.....	.....	193
20	.....	84	.....	.....	.....	.....	.....	194
5	.....	24	.....	.....	.....	.....	.....	195
4	44	33	.....	28	.....	.....	.....	196
.....	14	60	.....	.....	.....	.....	.....	197
9	112	295	.....	103	.....	.....	4	198
81	.....	31	.....	19	.....	.....	.....	199
108	51	49	.....	132	4	.....	82	200
5	7	26	.....	7	.....	.....	12	201
97	1,700	410	8	1,102	37	9	37	202
.....	40	41	.....	17	.....	.....	.....	203
.....	1	1	.....	2	.....	.....	1	204
.....	2	17	.....	.....	.....	.....	.....	205
.....	.....	18	.....	.....	.....	.....	.....	206
.....	.....	1	.....	2	.....	.....	.....	207
.....	85	17	.....	15	.....	.....	1	208
.....	.....	.....	.....	.....	.....	.....	.....	209
.....	16	28	.....	19	.....	.....	.....	210
.....	2	5	.....	1	.....	.....	.....	211
6	804	263	.....	206	.....	.....	3	212
33	1	12	.....	.....	.....	.....	.....	213
.....	.....	.....	.....	.....	.....	.....	.....	214
263,700	338,582	98,910	.....	29,320	.....	.....	51,395	215
350,033	257,844	54,481	.....	68,023	.....	210,000	123,433	216
71,151	2,139	26,783	.....	110,100	9,912	.....	1,950	217
22,498	90	8,000	.....	78,515	3,304	.....	650	218
122,109	25,640	261,322	.....	400,354	.....	.....	2,000	219
224,642	83,050	25,475	.....	196,723	.....	.....	1,000	220
45,658	.....	5,000	.....	.....	.....	.....	2,000	221
50,949	.....	4,000	.....	.....	.....	.....	1,000	222
.....	1,046,938	.....	.....	.....	.....	.....	.....	223
.....	110,000	.....	.....	.....	.....	.....	.....	224
.....	471,893	588,310	.....	692,289	.....	.....	.....	225
.....	350	.....	.....	.....	.....	.....	.....	226
.....	268,128	67,240	.....	57,161	130	.....	7,899	227
.....	29,767	15,052	.....	65,046	10,721	.....	.....	228
.....	54	.....	.....	62	.....	.....	.....	229
.....	7,500	.....	.....	.....	.....	.....	.....	230
.....	69,086	.....	.....	.....	.....	.....	.....	231
.....	.....	.....	.....	.....	.....	.....	.....	232
.....	.....	.....	.....	.....	.....	.....	.....	233

¹ Includes establishments distributed as follows: Delaware, 2; Maine, 1; Maryland, 2; Michigan, 2; New Hampshire, 2; Utah, 2.

TABLE 23.—SILK AND SILK GOODS, INCLUDING

	United States.	California.	Connecticut.	Illinois.
Comparison of products:				
234 Number of establishments reporting for both years.....	378	5	35	3
235 Value for census year.....	\$101,474,146	\$255,902	\$12,200,415	\$419,088
236 Value for preceding business year.....	\$90,107,761	\$237,451	\$9,640,107	\$364,896
Power:				
237 Number of establishments reporting.....	475	5	38	4
238 Total horsepower.....	61,395	89	5,490	122
Owned—				
Engines—				
239 Steam, number.....	421	2	56	2
240 Horsepower.....	45,959	82	4,364	100
241 Gas or gasoline, number.....	19		2	
242 Horsepower.....	323		88	
243 Water wheels, number.....	117		18	
244 Horsepower.....	6,666		813	
245 Electric motors, number.....	135		6	
246 Horsepower.....	3,998		75	
247 Other power, horsepower.....	8			
Rented—				
248 Electric, horsepower.....	624	7	100	
249 Other kind, horsepower.....	3,817		50	22
250 Furnished to other establishments, horsepower.....	508		7	
Establishments classified by number of persons employed, not including proprietors and firm members:				
251 Total number of establishments.....	483	5	38	4
252 No employees.....	2	1		
253 Under 5.....	20			1
254 5 to 20.....	66	2	6	
255 21 to 50.....	83	1	7	
256 51 to 100.....	95	1	5	
257 101 to 250.....	123		14	3
258 251 to 500.....	60		3	
259 501 to 1,000.....	28		2	
260 Over 1,000.....	6		1	

BRAIDS AND TRIMMINGS, BY STATES: 1900—Continued.

Massachusetts.	New Jersey.	New York.	North Carolina.	Pennsylvania.	Rhode Island.	Virginia.	All other states. ¹	
17	142	80	1	81	5	2	7	234
\$5, 874, 880	\$38, 364, 902	\$12, 264, 525	\$26, 399	\$28, 129, 885	\$1, 226, 588	\$940, 776	\$1, 761, 636	235
\$4, 605, 428	\$36, 205, 469	\$11, 543, 103	\$16, 723	\$24, 872, 399	\$532, 246	\$855, 306	\$1, 234, 693	236
19	180	87	3	121	6	3	9	237
4, 536	17, 122	5, 246	455	25, 227	250	1, 683	1, 175	238
24	111	45	3	152	3	16	7	239
2, 205	12, 471	3, 118	455	21, 670	190	580	728	240
.....	4	7	.....	6	.....	.....	.....	241
.....	46	56	.....	133	.....	.....	.....	242
28	88	15	.....	5	1	5	7	243
2, 089	1, 245	852	.....	620	30	695	872	244
5	85	17	.....	54	.....	18	.....	245
205	1, 158	135	.....	2, 017	.....	408	.....	246
.....	.....	.....	.....	8	.....	.....	.....	247
.....	244	73	.....	180	.....	.....	20	248
86	1, 958	1, 012	.....	599	30	.....	60	249
1	210	80	.....	110	.....	.....	100	250
.....
20	180	92	3	121	6	3	11	251
.....	1	.....	.....	.....	.....	.....	.....	252
3	7	6	.....	2	.....	.....	1	253
2	27	17	.....	9	.....	.....	1	254
5	35	15	1	16	1	1	1	255
2	36	20	.....	26	2	.....	3	256
3	39	24	2	34	.....	1	3	257
2	19	10	.....	22	1	1	2	258
3	14	.....	.....	9	.....	.....	.....	259
.....	2	.....	.....	3	.....	.....	.....	260

¹ Includes establishments distributed as follows: Delaware, 2; Maine, 1; Maryland, 2; Michigan, 2; New Hampshire, 2; Utah, 2.

Twelfth Census of the United States.

CENSUS BULLETIN.

No. 162.

WASHINGTON, D. C.

April 28, 1902.

AGRICULTURE.

VERMONT.

Hon. WILLIAM R. MERRIAM,
Director of the Census.

SIR: I have the honor to transmit herewith, for publication in bulletin form, the statistics of agriculture in the state of Vermont, taken in accordance with the provisions of section 7 of the act of March 3, 1899. This section requires that—

The schedules relating to agriculture shall comprehend the following topics: Name of occupant of each farm, color of occupant, tenure, acreage, value of farm and improvements, acreage of different products, quantity and value of products, and number and value of live stock. All questions as to quantity and value of crops shall relate to the year ending December thirty-first next preceding the enumeration.

A "farm," as defined by the Twelfth Census, includes all the land, under one management, used for raising crops and pasturing live stock, with the wood lots, swamps, meadows, etc., connected therewith. It includes also the house in which the farmer resides, and all other buildings used by him in connection with his farming operations.

The farms of Vermont, June 1, 1900, numbered 33,104, and had a value of \$83,071,620, of which amount \$37,257,715, or 44.9 per cent, represents the value of buildings, and \$45,813,905, or 55.1 per cent, the value of land and of improvements other than buildings. On the same date the value of farm implements and machinery was \$7,538,490, and of live stock \$17,841,317. These values, added to that of farms, give \$108,451,427, the "total value of farm property."

The products derived from domestic animals, poultry, and bees, including animals sold and animals slaughtered on farms, are referred to in this bulletin as "animal products." The total value of all such products, to-

gether with the value of all crops, is termed "total value of farm products." This value for 1899 was \$33,570,892, of which amount \$15,400,613, or 45.9 per cent, represents the value of animal products, and \$18,170,279, or 54.1 per cent, the value of crops including forest products.

The total value of farm products for 1899 exceeds that for 1889 by \$13,205,912, or 64.8 per cent. A large part of this increase is doubtless due to a more detailed enumeration in 1900 than in 1890. The gross farm income is obtained by deducting from the total value of farm products, the value of products fed to live stock on the farms of the producers. In 1899, the reported value of products fed was \$11,576,590, leaving \$21,994,302 as the gross farm income for that year. The percentage which this amount is of the total value of farm property, is referred to in this bulletin as the "percentage of income upon investment." For Vermont in 1899 it was 20.3 per cent.

As no reports of expenditures for taxes, interest, insurance, feed for stock, and similar items have been obtained by any census, no statement of net farm income can be given.

The statistics presented in this bulletin will be treated in greater detail in the final report on agriculture in the United States, which will be published about June 1, 1902. The present publication is designed to present a summarized advance statement for Vermont.

Very respectfully,

L. G. Powers.

Chief Statistician for Agriculture.

AGRICULTURE IN VERMONT.

GENERAL STATISTICS.

The total land area of Vermont is 9,135 square miles, or 5,846,400 acres, of which 4,724,440 acres, or 80.8 per cent, are included in farms. The state lies within the Connecticut River valley on the east and the Champlain-Hudson valley on the west. The Green Mountains divide the state into nearly equal portions and render the surface everywhere irregular and broken.

Although the soil in many places is stony and sterile, much of it is productive. The valleys and the lower hills are suitable for cultivation, and the higher hills and mountains furnish excellent pasturage. Much attention is given to dairying and the raising of improved stock. The best tracts of arable land are in the western part of the state.

NUMBER AND SIZE OF FARMS.

The following table gives, by decades since 1850, the number of farms, the total and average acreage, and the per cent of farm land improved.

TABLE 1.—FARMS AND FARM ACREAGE: 1850 TO 1900.

YEAR.	Number of farms.	NUMBER OF ACRES IN FARMS.				Per cent of farm land improved.
		Total.	Improved.	Unimproved.	Average.	
1900.....	33,104	4,724,440	2,126,624	2,597,816	142.7	45.0
1890.....	32,573	4,396,646	2,655,943	1,739,703	134.9	60.4
1880.....	35,522	4,882,588	3,286,461	1,596,127	137.5	67.3
1870.....	33,827	4,528,804	3,073,257	1,455,547	133.9	67.9
1860.....	31,556	4,274,414	2,823,157	1,451,257	135.5	66.0
1850.....	29,763	4,125,822	2,601,409	1,524,413	138.6	63.1

The number of farms increased steadily until the decade 1880 to 1890, when there was a decrease amounting to 8.3 per cent. In the last decade the number increased 1.6 per cent and in 1900 was 11.2 per cent greater than in 1850. The total farm acreage varied in a similar manner, but the increase in the last decade was at a greater rate, amounting to 7.5 per cent. The average size of farms was greater in 1900 than in any previous census year in the half century, and the increase in the last decade was greater than in any other. The variations have not been very marked, some

decades showing an increase and others a decrease in average size. The acreage of improved land reported by the census has decreased since 1880, and especially during the last decade. As a result it constituted in 1900 a much smaller percentage of the total farm acreage than it did in any previous census year.

FARM PROPERTY AND PRODUCTS.

Table 2 presents a summary of the principal statistics relating to farm property and products for each census year beginning with 1850.

TABLE 2.—VALUES OF SPECIFIED CLASSES OF FARM PROPERTY, AND OF FARM PRODUCTS: 1850 TO 1900.

YEAR.	Total value of farm property.	Land, improvements, and buildings.	Implements and machinery.	Live stock.	Farm products. ¹
1900.....	\$108,451,427	\$83,071,620	\$7,538,490	\$17,841,317	\$33,570,892
1890.....	101,805,370	80,427,490	4,783,560	16,644,320	20,364,380
1880.....	130,811,490	100,316,010	4,879,285	16,586,195	22,082,656
1870 ²	168,506,189	130,367,075	5,250,279	23,888,835	34,647,027
1860.....	114,196,989	94,289,045	3,665,955	16,241,989	-----
1850.....	78,749,737	63,807,227	2,789,282	12,643,228	-----

¹ For year preceding that designated.
² Values for 1870 were reported in depreciated currency. To reduce to specie basis of other figures they must be diminished one-fifth.
³ Includes betterments and additions to live stock.

Though the total value of farm property reported for 1900 is less than that for 1860, 1870, or 1880, there has been an increase of 37.7 per cent since 1850 and of 6.5 per cent, or \$6,646,057, since 1890. Of this sum \$2,644,130, or 39.8 per cent, represents the increase in the value of land and buildings; \$2,804,930, or 42.2 per cent, in that of implements and machinery; and \$1,196,997, or 18.0 per cent, in that of live stock. The increases in the value of implements and machinery and in the value of farm products are doubtless due in part to a more complete enumeration in 1900 than heretofore.

COUNTY STATISTICS.

Table 3 gives an exhibit of general agricultural statistics by counties.

TABLE 3.—NUMBER AND ACREAGE OF FARMS, AND VALUES OF SPECIFIED CLASSES OF FARM PROPERTY, JUNE 1, 1900, WITH VALUE OF PRODUCTS OF 1899 NOT FED TO LIVE STOCK, AND EXPENDITURES IN 1899 FOR LABOR AND FERTILIZERS, BY COUNTIES.

COUNTIES.	NUMBER OF FARMS.		ACRES IN FARMS.		VALUES OF FARM PROPERTY.				Value of products not fed to live stock.	EXPENDITURES.	
	Total.	With build-ings.	Total.	Improved.	Land and improve-ments (ex-cept build-ings).	Buildings.	Imple-ments and machinery.	Live stock.		Labor.	Fertiliz-ers.
The State -----	33,104	32,558	4,724,440	2,126,024	\$45,813,905	\$37,257,715	\$7,538,490	\$17,841,317	\$21,994,802	\$3,133,140	\$447,065
Addison -----	2,714	2,688	403,587	243,582	5,339,660	3,882,310	606,790	1,736,295	1,856,682	270,110	23,845
Bennington -----	1,660	1,642	270,609	112,673	2,604,380	2,103,870	301,580	776,144	1,159,718	195,340	19,330
Caledonia -----	2,579	2,558	348,641	167,169	2,857,980	2,609,750	694,090	1,420,004	1,812,902	252,390	41,730
Chittenden -----	2,101	2,077	200,737	166,808	4,806,550	3,648,190	617,190	1,454,020	1,725,179	318,720	28,820
Essex -----	878	866	158,970	58,319	899,780	780,070	174,720	475,353	540,323	78,000	10,000
Franklin -----	2,581	2,518	360,862	160,500	5,227,860	3,468,980	662,150	1,722,241	2,123,643	317,450	31,210
Grand Isle -----	494	493	47,096	35,665	1,174,900	766,780	102,850	249,964	324,848	50,730	1,650
Lamoille -----	1,620	1,602	219,754	78,487	1,565,610	1,877,410	860,880	730,762	900,206	101,970	29,500
Orange -----	3,150	3,087	425,691	184,906	2,768,050	2,670,250	655,640	1,401,166	1,737,560	223,900	43,800
Orleans -----	2,926	2,868	385,001	204,401	3,423,310	2,694,290	786,670	1,592,756	2,036,705	219,230	35,530
Rutland -----	2,930	2,872	458,282	206,093	5,080,025	4,104,085	612,530	1,737,088	2,191,581	324,470	33,270
Washington -----	2,910	2,867	378,497	143,931	3,435,280	2,721,980	621,310	1,478,722	1,830,502	250,480	47,060
Windham -----	2,765	2,719	428,806	141,581	3,059,080	2,711,270	597,900	1,303,842	1,726,416	214,860	51,800
Windsor -----	3,796	3,701	547,817	222,509	3,570,990	3,721,480	744,190	1,762,960	2,028,087	315,490	49,480

In the last decade the changes in the number of farms have been small. Five counties show decreases, the greatest loss, 5.3 per cent, being in Chittenden county. The greatest gain, 7.6 per cent, was in Orange county.

The percentage of total land area included in farms in 1900 varied from 35.9 in Essex county to 97.0 in Orange county. The average size of farms ranged from 95.3 acres in Grand Isle county to 181.1 in Essex county. Every county shows a gain since 1890 in total farm area, except Grand Isle where there was a loss of 0.3 per cent. The greatest gain, 12.6 per cent, was in Essex county. The improved farm area, however, decreased in every county except Orleans, where there was an increase of 2.2 per cent. The greatest loss, amounting to 32.2 per cent, was in Windham county.

The total value of farms did not change greatly in the decade from 1890 to 1900. Only four counties report losses, the greatest being in Lamoille county, where it amounted to 8.0 per cent. The greatest rate of increase, 11.6 per cent, was in Caledonia county. All counties report large increases in the value of implements and machinery, and but four counties report smaller values for live stock than in 1890. The greatest increase, that in Franklin county, amounted to 25.5 per cent.

The average expenditure per farm for labor, including the value of board furnished, varied from \$63 in Lamoille county to \$152 in Chittenden county. All counties show much larger amounts expended for fertilizers in 1899 than ten years before. The average per farm in 1899 varied from \$3.34 in Grand Isle county to \$18.73 in Windham county.

FARM TENURE.

Table 4 gives a comparative exhibit of farm tenure for 1880, 1890, and 1900. In Table 5 the tenure of farms for 1900 is given by race of farmer, farms operated by owners being subdivided into 4 groups designated as farms operated by "owners," "part owners," "owners and tenants," and "managers." These groups comprise, respectively:

(1) Farms operated by individuals who own all the land they cultivate; (2) farms operated by individuals who own a part of the land and rent the remainder from others; (3) farms operated under the joint direction and by the united labor of two or more individuals, one owning the farm or a part of it, and the other, or others, owning no part, but receiving for supervision or labor a share of the products; and (4) farms operated by individuals who receive for their supervision and other services a fixed salary from the owners.

The farms operated by tenants are divided into two groups designated as farms operated by "cash tenants" and "share tenants." These groups comprise respectively: (1) Farms operated by individuals who pay a rental in cash or a stated amount of labor or farm produce; (2) farms operated by individuals who pay as rental a stated share of the products.

TABLE 4.—NUMBER AND PER CENT OF FARMS OF SPECIFIED TENURES: 1880 TO 1900.

YEAR.	Total number of farms.	NUMBER OF FARMS OPERA- TED BY—			PER CENT OF FARMS OPERA- TED BY—		
		Owners. ¹	Cash tenants.	Share tenants.	Owners. ¹	Cash tenants.	Share tenants.
1900 -----	33,104	28,284	2,424	2,396	85.5	7.3	7.2
1890 -----	32,573	27,816	2,301	2,456	85.4	7.1	7.5
1880 -----	35,522	30,760	2,164	2,598	86.6	6.1	7.3

¹ Including "part owners," "owners and tenants," and "managers."

TABLE 5.—NUMBER OF FARMS, JUNE 1, 1900, CLASSIFIED BY RACE OF FARMER AND BY TENURE.

RACE.	Total number of farms.	Owners.	Part owners.	Owners and tenants.	Managers.	Cash tenants.	Share tenants.
The State...	33,104	25,982	1,373	314	615	2,424	2,396
White -----	33,096	25,976	1,372	314	615	2,423	2,396
Colored -----	8	6	1			1	

In the decade from 1880 to 1890 the number of farms

operated by owners decreased, but in the last decade there was an increase of 1.7 per cent, which, however, was not sufficient to bring the number up to that of 1880, the twenty-year period showing a net decrease of 8.0 per cent. The number of cash tenants has increased in each decade, while that of share tenants has decreased, indicating a growing sentiment in favor of cash tenure. In 1890 the per cent of farms operated by "owners" was 85.4. In 1900 the aggregate number of farms operated by the four subclasses comprising "owners" constituted 85.5 per cent of all farms. Consequently there has been no material change in the decade in the relative number of farms operated by owners and by tenants, although in the preceding decade there was a decrease from 86.6 per cent to 85.4 per cent.

Of the farmers of the state, June 1, 1900, 78.5 per cent were "owners;" 4.1 per cent, "part owners;" 1.0 per cent, "owners and tenants;" 1.9 per cent, "managers;" and 14.5 per cent were tenants.

No previous census has reported the number of farms operated by "part owners," "owners and tenants," or "managers," but it is believed that the number conducted by the last-named class is constantly increasing.

OWNERSHIP OF RENTED FARMS.

The ownership of 4,504 of the 4,820 rented farms was ascertained by the enumerators; that of 316 was unreported. The titles to the 4,504 farms are vested in 4,167 owners, an average of approximately 108 farms to every 100 owners. Of the 4,167 owners, 3,927 possess 1 farm each; 238, from 2 to 6; and the remaining 2 own 7 and 19, respectively.

Of the 4,167 owners, 3,666, possessing 3,983 farms, reside in Vermont, and the owners of 3,561 live in the county in which their property is located. Of the non-resident owners, 422 live in the North Atlantic states; 35 in the North Central states; 24 in the Western states; 9 in the South Atlantic states; 1 in a South Central state; and 10 in foreign countries. The total value of the 521 farms owned by nonresidents is \$1,286,101, an average of \$2,469 per farm, as compared with an average of \$1,384 for all farms in the state.

FARMS CLASSIFIED BY RACE OF FARMER AND BY TENURE.

Tables 6 and 7 present the principal statistics for farms classified by race of farmer and by tenure.

TABLE 6.—NUMBER AND ACREAGE OF FARMS, AND VALUE OF FARM PROPERTY, JUNE 1, 1900, CLASSIFIED BY RACE OF FARMER AND BY TENURE, WITH PERCENTAGES.

RACE OF FARMER, AND TENURE.	Number of farms.	NUMBER OF ACRES IN FARMS.			VALUE OF FARM PROPERTY.	
		Average.	Total.	Per cent.	Total.	Per cent.
The State.....	33,104	142.7	4,724,440	100.0	\$108,451,427	100.0
White farmers.....	33,096	142.7	4,723,194	100.0	108,391,077	99.9
Colored farmers.....	8	155.8	1,246	(¹)	60,350	0.1
Owners.....	25,982	134.5	3,495,313	74.0	79,201,557	73.0
Part owners.....	1,373	204.9	281,293	5.9	5,699,050	5.3
Owners and tenants.....	314	181.5	57,005	1.2	1,354,390	1.2
Managers.....	615	213.7	131,449	2.8	4,824,940	4.4
Cash tenants.....	2,424	180.5	316,239	6.7	6,782,470	6.3
Share tenants.....	2,396	185.0	443,141	9.4	10,589,020	9.8

¹ Less than one-tenth of 1 per cent.

TABLE 7.—AVERAGE VALUES OF SPECIFIED CLASSES OF FARM PROPERTY, AND AVERAGE GROSS INCOME PER FARM, WITH PER CENT OF GROSS INCOME ON TOTAL INVESTMENT IN FARM PROPERTY, CLASSIFIED BY RACE OF FARMER AND BY TENURE.

RACE OF FARMER, AND TENURE.	AVERAGE VALUES PER FARM OF—					Per cent of gross income on total invest- ment in farm property.
	Farm property, June 1, 1900.				Gross income (products of 1899 not fed to live stock).	
	Land and im- prove- ments (except build- ings).	Build- ings.	Imple- ments and ma- chinery	Live stock.		
The State-----	\$1,384	\$1,125	\$228	\$539	\$664	20.3
White farmers-----	1,383	1,125	228	539	664	20.3
Colored farmers-----	5,375	1,275	179	715	1,271	16.9
Owners-----	1,256	1,062	223	507	636	20.9
Part owners-----	1,738	1,390	305	718	884	21.3
Owners and tenants-----	1,917	1,401	270	725	861	20.0
Managers-----	3,507	2,962	462	914	1,029	13.1
Cash tenants-----	1,213	934	171	480	559	20.0
Share tenants-----	2,126	1,344	226	724	829	18.8

Farms operated by cash tenants have the smallest average area, 180.5 acres, and those operated by managers, the largest, 213.7 acres. Many of the latter are adjuncts of public institutions, while others are conducted by wealthy individuals in connection with their summer homes. Such farms, as a rule, are favorably located and highly improved, and the average values of the several classes of farm property are generally higher for this than

for any other group of farms classified by tenure. The ratio which the gross income of these farms bears to the total value of their farm property is, however, smaller than for the other groups. This is due to the high average valuation of land and buildings and to the fact that many of these farms are not cultivated primarily for profit.

Of the 101 farms containing 1,000 acres or over, 67 are operated by owners, 14 by managers, 8 by part owners, 6 by cash tenants, 4 by share tenants, and 2 by owners and tenants.

FARMS CLASSIFIED BY AREA.

Tables 8 and 9 present the principal statistics for farms classified by area.

TABLE 8.—NUMBER AND ACREAGE OF FARMS, AND VALUE OF FARM PROPERTY, JUNE 1, 1900, CLASSIFIED BY AREA, WITH PERCENTAGES.

AREA.	Number of farms.	NUMBER OF ACRES IN FARMS.			VALUE OF FARM PROPERTY.	
		Average.	Total.	Per cent.	Total.	Per cent.
The State.....	33,104	142.7	4,724,440	100.0	\$108,451,427	100.0
Under 8 acres.....	224	1.9	436	(¹)	247,300	0.2
8 to 9 acres.....	1,378	6.0	8,281	0.2	1,911,470	1.8
10 to 19 acres.....	1,683	14.0	23,559	0.5	2,536,480	2.3
20 to 49 acres.....	3,511	34.4	120,740	2.6	6,147,680	5.7
50 to 99 acres.....	6,512	71.9	468,227	9.9	13,691,980	12.6
100 to 174 acres.....	10,215	130.0	1,328,066	28.1	30,817,970	27.9
175 to 259 acres.....	5,512	208.7	1,150,449	24.4	24,144,027	22.3
260 to 499 acres.....	3,431	329.2	1,129,561	23.9	21,785,800	20.1
500 to 999 acres.....	536	602.4	322,903	6.8	5,061,830	4.7
1,000 acres and over.....	101	1,705.1	172,218	3.6	2,606,890	2.4

¹Less than one-tenth of 1 per cent.

TABLE 9.—AVERAGE VALUES OF SPECIFIED CLASSES OF FARM PROPERTY, AND AVERAGE GROSS INCOME PER FARM, WITH PER CENT OF GROSS INCOME ON TOTAL INVESTMENT IN FARM PROPERTY, CLASSIFIED BY AREA.

AREA.	AVERAGE VALUES PER FARM OF—					Per cent of gross income on total investment in farm property.
	Farm property, June 1, 1900.				Gross income (products of 1899 not fed to live stock).	
	Land and improvements (except buildings).	Buildings.	Implementations and machinery.	Live stock.		
The State.....	\$1,384	\$1,125	\$228	\$539	\$664	20.3
Under 8 acres.....	282	674	53	95	197	17.9
8 to 9 acres.....	421	791	65	110	149	10.7
10 to 19 acres.....	549	730	89	133	182	12.1
20 to 49 acres.....	693	749	110	199	268	15.3
50 to 99 acres.....	859	779	149	315	409	19.5
100 to 174 acres.....	1,206	1,005	231	526	671	22.6
175 to 259 acres.....	1,882	1,391	314	793	950	21.7
260 to 499 acres.....	2,877	1,954	405	1,114	1,307	20.6
500 to 999 acres.....	4,412	2,902	520	1,610	1,827	19.3
1,000 acres and over.....	12,783	8,720	1,095	2,613	2,755	10.7

The group of medium-sized farms, containing from 100 to 174 acres each, comprise a greater number of farms and

a larger aggregate farm area and farm value than any other group. With the exception of a slight variation in the case of buildings, the average values of the several forms of farm property advance as the size of farms increases. For farms of less than 50 acres each, the value of buildings exceeds that of the land and improvements other than buildings.

The average gross incomes per acre for the various groups are as follows: Farms under 3 acres, \$101.56; 3 to 9 acres, \$24.77; 10 to 19 acres, \$12.99; 20 to 49 acres, \$7.80; 50 to 99 acres, \$5.69; 100 to 174 acres, \$5.16; 175 to 259 acres, \$4.55; 260 to 499 acres, \$3.97; 500 to 999 acres, \$3.03; and 1,000 acres and over, \$1.62. The high gross income per acre for farms of less than 3 acres is due to the fact that the group is largely composed of florists' establishments, vegetable farms, and city dairies, the incomes of which are determined not so much by the acreage of land used as by the capital invested in buildings, implements, and live stock, and the amounts expended for labor and fertilizers.

FARMS CLASSIFIED BY PRINCIPAL SOURCE OF INCOME.

In Tables 10 and 11 farms are classified by principal source of income. If the value of the hay and grain raised on any farm exceeds that of any other crop and constitutes at least 40 per cent of the total value of products not fed to live stock, the farm is classified as a "hay and grain" farm. If vegetables are the leading crop, constituting 40 per cent of the value of products, it is a "vegetable" farm. The farms of the other groups are classified in accordance with the same general principle. "Miscellaneous" farms are those whose operators do not derive 40 per cent of their income from any one class of farm products. Farms with no income in 1899 are classified according to the agricultural operations upon other farms in the same locality.

TABLE 10.—NUMBER AND ACREAGE OF FARMS, AND VALUE OF FARM PROPERTY, JUNE 1, 1900, CLASSIFIED BY PRINCIPAL SOURCE OF INCOME, WITH PERCENTAGES.

PRINCIPAL SOURCE OF INCOME.	Number of farms.	NUMBER OF ACRES IN FARMS.			VALUE OF FARM PROPERTY.	
		Average.	Total.	Per cent.	Total.	Per cent.
The State.....	33,104	142.7	4,724,440	100.0	\$108,451,427	100.0
Hay and grain.....	2,519	115.7	291,369	6.2	6,528,640	6.0
Vegetables.....	679	51.5	34,944	0.7	1,207,100	1.1
Fruit.....	204	65.5	13,363	0.3	598,690	0.6
Live stock.....	7,323	134.8	987,107	20.9	22,499,010	20.7
Dairy produce.....	16,700	152.0	2,538,948	53.7	63,251,427	58.3
Tobacco.....	38	146.4	5,564	0.1	139,340	0.1
Sugar.....	45	82.0	3,691	0.1	75,730	0.1
Flowers and plants.....	28	11.0	308	(¹)	164,400	0.2
Nursery products.....	5	113.0	565	(¹)	32,925	(¹)
Miscellaneous.....	5,563	152.5	848,581	18.0	18,954,165	12.9

¹Less than one-tenth of 1 per cent.

TABLE 11.—AVERAGE VALUES OF SPECIFIED CLASSES OF FARM PROPERTY, AND AVERAGE GROSS INCOME PER FARM, WITH PER CENT OF GROSS INCOME ON TOTAL INVESTMENT IN FARM PROPERTY, CLASSIFIED BY PRINCIPAL SOURCE OF INCOME.

PRINCIPAL SOURCE OF INCOME.	AVERAGE VALUES PER FARM OF—					Per cent of gross income on total investment in farm property.
	Farm property, June 1, 1900.				Gross income (products of 1899 not fed to live stock).	
	Land and improvements (except buildings).	Buildings.	Implements and machinery.	Live stock.		
The State.....	\$1,384	\$1,125	\$228	\$539	\$664	20.3
Hay and grain.....	1,334	971	105	182	349	13.5
Vegetables.....	787	759	104	178	267	15.0
Fruit.....	1,107	1,483	130	215	438	14.9
Live stock.....	1,221	1,103	221	527	602	19.6
Dairy produce.....	1,589	1,261	267	671	787	20.8
Tobacco.....	1,374	1,403	281	609	1,207	32.9
Sugar.....	739	536	160	248	286	14.0
Flowers and plants.....	2,791	2,748	244	88	1,900	32.4
Nursery products.....	3,820	2,480	137	128	10,226	155.3
Miscellaneous.....	1,091	843	193	381	563	22.5

For the several classes of farms the average values per acre of products not fed to live stock are: Flowers and plants, \$172.70; nursery stock, \$90.50; tobacco, \$8.24; fruit, \$6.69; vegetables, \$5.18; dairy, \$5.17; live stock, \$4.47; hay and grain, \$3.02; sugar, \$2.88; and miscellaneous products, \$3.69.

The wide variations shown in the average gross income and in percentage of gross income upon investment are due largely to the fact that in computing gross income no deduction is made for expenditures. For florists' establishments, nurseries, and market gardens, the average expenditure for such items as labor and fertilizers represents a far greater percentage of the gross income than in the case of "hay and grain," "live-stock," or "miscellaneous" farms. Were it possible to present the average net income, the variations shown would be comparatively slight.

FARMS CLASSIFIED BY REPORTED VALUE OF PRODUCTS NOT FED TO LIVE STOCK.

Tables 12 and 13 present data relating to farms classified by the reported value of products not fed to live stock, or gross income.

TABLE 12.—NUMBER AND ACREAGE OF FARMS, AND VALUE OF FARM PROPERTY, JUNE 1, 1900, CLASSIFIED BY REPORTED VALUE OF PRODUCTS NOT FED TO LIVE STOCK, WITH PERCENTAGES.

VALUE OF PRODUCTS NOT FED TO LIVE STOCK.	Number of farms.	NUMBER OF ACRES IN FARMS.			VALUE OF FARM PROPERTY.	
		Average.	Total.	Per cent.	Total.	Per cent.
The State.....	33,104	142.7	4,724,440	100.0	\$108,451,427	100.0
\$0.....	133	80.6	10,718	0.2	322,650	0.3
\$1 to \$49.....	676	44.9	30,319	0.7	770,740	0.7
\$50 to \$99.....	1,619	40.6	65,760	1.4	1,846,260	1.7
\$100 to \$249.....	6,258	64.5	408,480	8.5	9,352,630	8.6
\$250 to \$499.....	8,027	107.7	864,627	18.3	17,184,650	15.8
\$500 to \$999.....	9,756	161.4	1,574,884	33.3	33,079,700	30.5
\$1,000 to \$2,499.....	6,013	250.4	1,505,948	31.9	37,465,567	34.6
\$2,500 and over.....	622	432.0	268,704	5.7	8,429,230	7.8

TABLE 13.—AVERAGE VALUES OF SPECIFIED CLASSES OF FARM PROPERTY, AND AVERAGE GROSS INCOME PER FARM, WITH PER CENT OF GROSS INCOME ON TOTAL INVESTMENT IN FARM PROPERTY, CLASSIFIED BY REPORTED VALUE OF PRODUCTS NOT FED TO LIVE STOCK.

VALUE OF PRODUCTS NOT FED TO LIVE STOCK.	AVERAGE VALUES PER FARM OF—					Per cent of gross income on total invest- ment in farm property.
	Farm property, June 1, 1900.				Gross income (products of 1899 not fed to live stock).	
	Land and im- prove- ments (except build- ings).	Build- ings.	Imple- ments and ma- chinery.	Live stock.		
The State.....	\$1,384	\$1,125	\$228	\$539	\$664	20.3
\$0.....	1,485	687	70	184		
\$1 to \$19.....	451	549	50	90	89	3.4
\$50 to \$99.....	433	553	58	96	75	6.6
\$100 to \$249.....	607	622	94	172	172	11.5
\$250 to \$499.....	857	797	156	331	366	17.1
\$500 to \$999.....	1,399	1,189	255	598	704	20.8
\$1,000 to \$2,499.....	2,738	1,965	421	1,107	1,460	23.4
\$2,500 and over.....	6,144	4,310	879	2,219	3,506	25.9

The 133 farms reporting no gross income in 1899 vary in size from less than 3 acres to 500 acres. Of this number 106 are operated by owners. The high average values of farm property for this group indicate that many of these farms were summer homes, held for pleasure and not for profit. Some, however, were partially abandoned farms, while others were farms that had changed hands shortly

prior to the enumeration, and the persons in charge, June 1, 1900, could not give any definite information concerning the products of the preceding year. To this extent the reports fall short of giving a complete exhibit of farm income in 1899.

LIVE STOCK.

At the request of the various live-stock associations of the country, a new classification of domestic animals was adopted for the census of 1900. The age grouping for neat cattle was determined by their present and prospective relations to the dairy industry and to the supply of meat products. Horses and mules are classified by age, and neat cattle and sheep by age and sex. The new classification permits a very close comparison with the figures published in previous census reports.

Table 14 presents a summary of live-stock statistics.

TABLE 14.—NUMBER OF DOMESTIC ANIMALS, FOWLS, AND BEES ON FARMS, JUNE 1, 1900, WITH TOTAL AND AVERAGE VALUES, AND NUMBER OF DOMESTIC ANIMALS NOT ON FARMS.

LIVE STOCK.	Age in years.	ON FARMS.			NOT ON FARMS.
		Num-ber.	Value.	Average value.	Num-ber.
Calves.....	Under 1.....	101,584	\$566,130	\$5.57	882
Steers.....	1 and under 2.....	11,266	151,763	13.47	138
Steers.....	2 and under 3.....	8,128	185,658	22.84	92
Steers.....	3 and over.....	5,178	261,661	50.53	120
Bulls.....	1 and over.....	15,211	260,725	17.14	35
Heifers.....	1 and under 2.....	68,664	889,081	12.95	649
Cows kept for milk.....	2 and over.....	270,194	7,740,908	28.65	6,898
Cows and heifers not kept for milk.....	2 and over.....	21,715	472,874	21.78	137
Colts.....	Under 1.....	2,480	65,888	26.45	124
Horses.....	1 and under 2.....	3,852	181,727	47.18	134
Horses.....	2 and over.....	79,100	5,072,082	64.05	20,107
Mule colts.....	Under 1.....	88	1,815	34.61	-----
Mules.....	1 and under 2.....	13	630	48.46	6
Mules.....	2 and over.....	280	19,902	71.08	25
Asses and burros.....	All ages.....	25	915	36.60	5
Lambs.....	Under 1.....	114,409	226,021	1.98	829
Sheep (ewes).....	1 and over.....	168,292	597,117	3.55	574
Sheep (rams and wethers).....	1 and over.....	13,875	58,261	4.20	42
Swine.....	All ages.....	95,080	620,169	6.52	5,420
Goats.....	All ages.....	102	444	4.35	49
Fowls: ¹					
Chickens ²		806,451			
Turkeys.....		22,689	421,195		
Geese.....		5,187			
Ducks.....		8,836			
Bees (swarms of).....		12,886	46,953	3.66	
Value of all live stock.....			17,841,317		

¹ The number reported is of fowls over 3 months old. The value is of all, old and young.

² Including Guinea fowls.

The total value of all live stock on farms was \$17,841,317, of which 43.4 per cent represents the value of dairy cows; 15.6 per cent, that of other neat cattle; 29.8 per cent, that of horses; and 11.2 per cent, that of all other live stock.

As in other New England states, the value of steers 3 years old and over is comparatively high; this class includes the valuable working oxen still used in some parts of the state.

No reports were received concerning the value of live stock not on farms, but it is probable that such animals

had higher average values than those on farms. Allowing the same averages, however, the total value of all live stock in the state, exclusive of poultry and bees not on farms, would be approximately \$19,389,400.

CHANGES IN LIVE STOCK KEPT ON FARMS.

The following table shows the changes since 1850 in the number of the most important domestic animals.

TABLE 15.—NUMBER OF SPECIFIED DOMESTIC ANIMALS ON FARMS: 1850 TO 1900.

YEAR.	Dairy cows.	Other neat cattle.	Horses.	Mules and asses.	Sheep. ¹	Swine.
1900.....	270,194	231,746	85,531	356	182,167	95,090
1890.....	231,419	163,869	89,969	330	333,947	92,083
1880.....	217,033	186,072	75,215	283	439,870	76,884
1870.....	180,285	140,560	65,015	252	580,347	46,345
1860.....	174,667	195,783	69,071	43	752,201	52,912
1850.....	146,128	202,720	61,057	218	1,014,122	66,296

¹ Lambs not included.

Since 1850 there has been a steady increase in the number of dairy cows, the gain for the half century being 84.9 per cent, and for the last decade 16.8 per cent. The 101,584 calves reported in 1900 are included in the above table, with "other neat cattle." It is uncertain whether calves were included under this head in the reports for previous census years. If not, they should be deducted from the total given for 1900 in making comparisons with previous reports. A decrease would then be shown in the number of "other neat cattle" in keeping with that shown for each decade since 1850, except the decade from 1870 to 1880.

The number of horses reported in 1900 was 4.9 per cent less than in 1890, but 40.1 per cent greater than in 1850. Mules and asses are few in number but show a steady increase since 1860. Sheep were about one-sixth as numerous in 1900 as in 1850. The decrease has been continuous, amounting to approximately 25 per cent for each decade up to the last, when the rate of decrease was 45.5 per cent, almost double that of any previous decade. The number of swine decreased from 1850 until 1870, after which date there was a rapid increase until 1890. The last decade shows a gain of 3.3 per cent.

In comparing the poultry report for 1900 (see Table 14) with that for 1890, it should be borne in mind that in 1900 the enumerators were instructed not to report fowls less than three months old, while in 1890 no such limitation was made. This fact explains, to a great extent, the decrease in the number of turkeys, ducks, and geese and the small increase in the number of chickens. Compared with the figures for 1890, the present census shows decreases in the number of fowls as follows: Turkeys, 68.6 per cent; ducks, 32.3 per cent; and geese, 52.1 per cent.

ANIMAL PRODUCTS.

Table 16 is a summarized exhibit of the animal products of agriculture.

TABLE 16.—QUANTITIES AND VALUES OF SPECIFIED ANIMAL PRODUCTS, AND VALUES OF POULTRY RAISED, ANIMALS SOLD, AND ANIMALS SLAUGHTERED ON FARMS IN 1899.

PRODUCTS.	Unit of measure.	Quantity.	Value.
Wool.....	Pounds.....	1,334,253	\$268,967
Mohair and goat hair.....	Pounds.....	5	2
Milk.....	Gallons.....	1142,042,223	29,321,389
Butter.....	Pounds.....	18,834,706	
Cheese.....	Pounds.....	406,659	
Eggs.....	Dozens.....	6,271,880	959,965
Poultry.....			689,109
Honey.....	Pounds.....	182,278	27,290
Wax.....	Pounds.....	8,652	
Animals sold.....			2,786,137
Animals slaughtered.....			1,347,754
Total.....			15,400,613

¹Comprises all milk produced, whether sold, consumed, or made into butter or cheese.

²Comprises the value of milk sold and consumed and of butter and cheese made.

The animal products of the state in 1899 were valued at \$15,400,613, or 45.9 per cent of the value of all farm products and 70.0 per cent of the gross farm income. Of the above amount, 60.5 per cent represents the value of dairy products; 26.9 per cent, that of animals sold or slaughtered on farms; 10.7 per cent, that of poultry and eggs; and 1.9 per cent, that of wool, mohair, honey, and wax.

DAIRY PRODUCE.

The steady growth of population and the increasing popularity of its summer resorts have largely increased the demand for dairy products in Vermont. The present importance of this industry is shown by the fact that in 1899 the proprietors of 16,700 farms, or more than half of the farms of the state, derived their principal income from dairy produce. The production of milk in 1899 was 51,329,993 gallons greater than in 1889, a gain of 56.6 per cent. The quantity of milk sold in 1899 was 57,566,012 gallons, or approximately nine times as great as in 1879. The quantity sold in 1889 was not separately reported.

Of the \$9,321,389 given in Table 16 as the value of all dairy products in 1899, \$1,310,960, or 14.1 per cent, represents the value of such products consumed on farms, and \$8,010,429, or 85.9 per cent, the amount realized from sales. Of the latter sum, \$4,262,877 was derived from the sale of 57,566,012 gallons of milk; \$3,111,783, from 15,822,671 pounds of butter; \$595,692, from 1,591,237 gallons of cream; and \$40,077, from 374,240 pounds of cheese.

The production of butter on farms increased steadily from 1850 to 1880, but since that date has decreased, the rate for the last decade being 19.2 per cent. The production of cheese has decreased steadily and rapidly since 1850

and was in 1899 less than one-twentieth that reported for 1849. These decreases are due principally to the establishment of creameries and cheese factories and to the increased consumption of milk and cream in cities.

POULTRY AND EGGS.

The total value of the products of the poultry industry in 1899 was \$1,649,074, of which amount 41.8 per cent represents the value of fowls raised and 58.2 per cent that of eggs produced. Since 1889 the number of dozens of eggs produced has increased 1,756,750, or 38.9 per cent.

WOOL.

The production of wool has decreased steadily for half a century and the clip of 1899 was little more than one-third that of 1849. The decrease in the last decade was 784,630 pounds, or 37.0 per cent. The average weight of fleeces, however, has increased from 5.8 pounds in 1879 to 7.0 pounds in 1899, indicating an improvement in the grade of sheep kept.

HORSES AND DAIRY COWS ON SPECIFIED CLASSES OF FARMS.

Table 17 presents, for the leading groups of farms, the number of farms reporting horses and dairy cows, the total number of these animals, and the average number per farm. In computing the averages presented, only those farms which report the kind of animals under consideration are included.

TABLE 17.—HORSES AND DAIRY COWS ON SPECIFIED CLASSES OF FARMS, JUNE 1, 1900.

CLASSES.	HORSES.			DAIRY COWS.		
	Farms reporting.	Number.	Average per farm.	Farms reporting.	Number.	Average per farm.
Total.....	29,965	85,581	2.9	29,277	270,194	9.2
White farmers.....	29,960	85,513	2.9	29,271	270,163	9.2
Colored farmers.....	5	18	3.6	6	41	6.8
Owners ¹	25,079	70,110	2.8	24,468	210,765	8.6
Managers.....	480	2,475	5.2	479	5,977	12.5
Cash tenants.....	2,152	5,926	2.8	2,084	19,588	9.4
Share tenants.....	2,254	7,020	3.1	2,246	33,864	15.1
Under 20 acres.....	2,291	3,309	1.4	2,162	3,528	1.6
20 to 99 acres.....	8,831	17,726	2.0	8,722	37,766	4.3
100 to 174 acres.....	9,608	26,537	2.8	9,531	85,407	9.0
175 to 259 acres.....	5,310	18,428	3.5	4,952	69,501	14.0
260 acres and over.....	3,930	19,531	5.0	3,900	73,992	19.0
Hay and grain.....	1,273	3,416	2.7	928	4,150	4.5
Vegetable.....	556	1,096	2.0	326	798	2.4
Fruit.....	143	294	2.1	95	406	4.8
Live stock.....	6,697	19,999	3.0	6,290	39,309	6.2
Dairy produce.....	16,156	47,456	2.9	16,700	199,603	12.0
Miscellaneous ²	5,140	13,270	2.6	4,938	25,928	5.3

¹Including "part owners" and "owners and tenants."

²Including florists' establishments, nurseries, tobacco farms, and sugar farms.

CROPS.

The following table gives the statistics of the principal crops grown in 1899.

TABLE 18.—ACREAGES, QUANTITIES, AND VALUES OF THE PRINCIPAL FARM CROPS IN 1899.

CROPS.	Acres.	Unit of measure.	Quantity.	Value.
Corn	60,633	Bushels	2,322,450	\$1,180,505
Wheat	1,796	Bushels	34,650	29,078
Oats	73,372	Bushels	2,742,140	941,711
Barley	12,162	Bushels	380,940	187,004
Rye	2,264	Bushels	31,950	18,012
Buckwheat	9,910	Bushels	196,010	90,275
Grass seed		Bushels	165	286
Clover seed		Bushels	3	10
Hay and forage	1,006,495	Tons	1,336,499	10,544,825
Tobacco	158	Pounds	291,390	43,073
Hops	6	Pounds	4,400	375
Dry beans	2,404	Bushels	27,172	51,629
Dry peas	408	Bushels	6,945	7,730
Potatoes	28,353	Bushels	3,547,829	1,333,730
Sweet potatoes	4	Bushels	306	176
Onions	111	Bushels	31,492	16,908
Miscellaneous vegetables	5,020			354,835
Maple sugar		Pounds	4,779,870	464,132
Maple sirup		Gallons	160,918	134,821
Small fruits	416			85,121
Grapes	155	Centals	2,401	27,035
Orchard fruits	142,794	Bushels	1,191,429	3450,429
Nuts				2,044
Forest products				2,108,518
Flowers and plants	38			58,575
Seeds	2			463
Nursery products	74			49,625
Miscellaneous				9,363
Total	1,246,465			18,170,279

¹ Estimated from number of vines or trees.

² Including value of raisins, wine, etc.

³ Including value of cider, vinegar, etc.

Of the total value of crops, hay and forage contributed 58.0 per cent; cereals, 13.5 per cent; forest products, 11.6 per cent; vegetables, including potatoes and onions, 9.4 per cent; maple sirup and sugar, 3.3 per cent; fruits and nuts, 3.0 per cent; and other products, 1.2 per cent.

The average yield of hay and forage was 1.3 tons per acre and the average values were \$7.89 per ton and \$10.48 per acre. The acreage devoted to hay and forage was 80.7 per cent of the total area in crops, but yielded only 58.0 per cent of the total receipts. The average values per acre of other crops were as follows: Flowers and plants, \$1,541.45; nursery products, \$670.61; small fruits, \$204.62; onions, \$152.32; miscellaneous vegetables, \$70.68; potatoes, \$47.04; cereals, \$15.28; and orchard fruits, \$10.53. The crops yielding the highest returns per acre were grown upon very highly improved land. Their production required a relatively great amount of labor and large expenditures for fertilizers.

Maple sugar and sirup were reported in 1900 by 9,811 farmers, the average value of the product per farm being \$61.05. Orleans, Franklin, Caledonia, and Lamoille were the leading counties, and reported over one-half of the total production. The production of 1900 was but one-third that of 1890, each county showing a decrease of at least 50 per cent.

CEREALS.

Table 19 is an exhibit of the changes in cereal production since 1849.

TABLE 19.—ACREAGE AND PRODUCTION OF CEREALS: 1849 TO 1899.

PART 1.—ACREAGE.

YEAR. ¹	Barley.	Buckwheat.	Corn.	Oats.	Rye.	Wheat.
1899	12,152	9,910	60,633	73,372	2,264	1,796
1889	16,427	13,429	41,790	101,582	3,379	8,397
1879	10,552	17,649	55,249	99,548	6,319	20,748

¹ No statistics of acreage were secured prior to 1879.

PART 2.—BUSHELS PRODUCED.

YEAR	Barley.	Buckwheat.	Corn.	Oats.	Rye.	Wheat.
1899	380,940	196,010	2,322,450	2,742,140	31,950	34,650
1889	420,761	271,216	1,700,688	3,316,141	43,256	164,720
1879	267,625	356,618	2,014,271	3,742,282	71,733	337,257
1869	117,333	415,096	1,699,882	3,602,430	73,346	454,703
1859	79,211	225,415	1,525,411	3,630,267	139,271	437,037
1849	42,150	209,819	2,032,896	2,307,734	176,233	535,955

The steady decreases shown in the production of wheat and rye indicate that the decreases in the acreages devoted to these grains have been continuous since 1850. The beginning of the decline in the production of other cereals, however, is more recent, the highest point for oats having been reached in 1879, and that for barley in 1889. In the last decade the acreage under corn increased 45.1 per cent, while other cereals show decreases as follows: Barley, 26.0 per cent; buckwheat, 26.2 per cent; oats, 27.8 per cent; rye, 33.0 per cent; wheat, 78.6 per cent. The total acreage in cereals decreased 13.4 per cent.

In 1899, 45.8 per cent of the total area in cereals was devoted to oats; 37.9 per cent, to corn; 7.6 per cent, to barley; 6.2 per cent, to buckwheat; 1.4 per cent, to rye; and 1.1 per cent, to wheat.

The acreage given for cereals does not include 17,924 acres of grain cut green for hay, nor 39,520 acres devoted to corn, nonsaccharine sorghum, and similar crops grown for forage or ensilage.

ORCHARD FRUITS.

The changes in orchard fruits since 1890 are shown in the following table.

TABLE 20.—CLASSIFIED ORCHARD TREES AND FRUITS: 1890 AND 1900.

FRUITS.	NUMBER OF TREES.		BUSHELS OF FRUIT.	
	1900.	1890.	1899.	1889.
Apples	1,675,131	1,723,096	1,176,822	1,213,405
Apricots	64	210		
Cherries	13,850	6,777	1,069	164
Peaches	4,993	1,966	967	80
Pears	28,357	22,652	10,239	16,101
Plums and prunes	22,856	9,394	1,529	746

The value of the orchard products of 1899 was \$450,429. The counties whose orchard products were valued at more than \$25,000 are: Windham, \$117,935; Bennington, \$49,596; Windsor, \$42,306; Rutland, \$34,086; Washington, \$30,371; and Orleans, \$25,067.

In 1890, 97.7 per cent of all fruit trees in the state

were apple trees, and in 1900, 95.9 per cent. The number of apple trees decreased 3.1 per cent in the decade, the counties showing decreases being Franklin, Orange, Rutland, Washington, Windham, and Windsor, the leading apple-growing counties.

Apricot trees were very few in 1890, and still fewer in 1900. Cherry trees have greatly increased in number, all counties except Caledonia sharing in the gain. In 1890, 98.6 per cent of all peach and nectarine trees in the state were in Windham county, and although other counties have made rapid gains, it still has 68.7 per cent of the total number. The gain for the state was 154.0 per cent, and for Windham county, 76.8 per cent. The number of pear trees increased 25.2 per cent, and that of plum and prune trees, 143.3 per cent.

In addition to the number of trees shown in Table 20, 857 unclassified fruit trees were reported with 803 bushels of fruit. The value of orchard products given above includes the value of 9,998 barrels of cider, 1,881 barrels of vinegar, and 12,420 pounds of dried fruits.

VEGETABLES, SMALL FRUITS, AND GRAPES.

The value of all vegetables grown in the state in 1899, including potatoes, sweet potatoes, and onions, was \$1,705,650, of which 78.2 per cent represents the value of potatoes. Aside from the land devoted to potatoes, sweet potatoes, and onions, 5,020 acres were used in growing miscellaneous vegetables. Of this area the products of 3,709 acres were not reported in detail. Of the 1,311 acres which were fully reported, 799 acres were devoted to sweet corn; 127, to cabbages; 64, to turnips; 50, to beets; and 271, to other vegetables.

The total area used in growing small fruits was 416 acres, and the value of the fruit produced was \$85,121, an average of \$204.62 per acre. Of the total area, 232 acres, or 55.8 per cent, were devoted to strawberries and yielded 598,020 quarts. The acreage and production of other berries were as follows: Blackberries and dewberries, 47 acres and 84,990 quarts; currants, 30 acres and 50,490 quarts; gooseberries, 3 acres and 4,500 quarts; raspberries and Logan berries, 91 acres and 176,440 quarts; and other small fruits, 13 acres and 15,820 quarts.

Grapes were grown in 1899 by 2,057 farmers, who obtained 2,401 centals of fruit from 24,715 vines. The total value of the grape crop, including the value of 160 gallons of wine made on farms, was \$7,035.

FLORICULTURE.

The proprietors of 28 of the 43 establishments where flowers were grown for market in 1899 made commercial floriculture their principal business. They had a capital of \$164,400 invested, of which \$78,150 represents the value of land; \$76,950, the value of buildings; \$6,820, the value of implements; and \$2,480, the value of live stock. Their income in 1899 was \$53,193, of which \$50,543 was derived from flowers and foliage plants and \$2,650 from other products. During the year they expended \$10,965 for labor and \$1,655 for fertilizers.

LAND UNDER GLASS.

An aggregate of 298,710 square feet of glass was reported by 116 florists and farmers. The 28 florists reported a glass surface of 215,977 square feet, equivalent to 161,985 square feet of land under glass. The proprietors of the remaining 88 farms used land under glass principally for growing vegetables, and had an average of about 1,554 square feet.

NURSERIES.

An income of \$51,130 was reported by the 5 nurserymen of the state, of which amount \$48,530 was derived from the sale of nursery stock and \$2,600 from other products. The value of the land and buildings of these farms was \$31,500; implements, \$785; and live stock, \$640. The amount expended for labor was \$4,860, and for fertilizers, \$432.

LABOR AND FERTILIZERS.

The total expenditure for labor on farms in 1899, including the value of board furnished, was \$3,133,140, an average of \$95 per farm. The average was highest for the most intensively cultivated farms, being \$972 for nurseries, \$392 for florists' establishments, \$178 for tobacco farms, \$113 for dairy farms, \$92 for live-stock farms, \$84 for fruit farms, \$54 for hay and grain farms, \$42 for vegetable farms, and \$35 for sugar farms. "Managers" expended an average of \$395; "share tenants," \$108; "owners," \$86; and "cash tenants," \$72. White farmers expended \$95 per farm and colored farmers \$85.

Fertilizers purchased in 1899 cost \$447,065, an average of \$14 per farm, and twice the amount expended in 1889. The average expenditure for nurseries was \$86; for tobacco farms, \$62; for florists' establishments, \$59; for dairy farms, \$16; for vegetable and live-stock farms, \$11; for fruit farms, \$10; for hay and grain farms, \$6; and for sugar farms, \$4.

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MANUFACTURES.

PENNSYLVANIA.

HON. WILLIAM R. MERRIAM,

Director of the Census.

SIR: I transmit herewith, for publication in bulletin form, the statistics of manufacturing and mechanical industries for the state of Pennsylvania for the census year 1900, taken in accordance with the provisions of section 7 of the act of March 3, 1899. This section requires that "The schedules of inquiries relating to the products of manufacturing and mechanical establishments shall embrace the name and location of each establishment; character of organization, whether individual, cooperative, or other form; date of commencement of operations; character of business or kind of goods manufactured; amount of capital invested; number of proprietors, firm members, copartners, or officers, and the amount of their salaries; number of employees, and the amount of their wages; quantity and cost of materials used in manufactures; amount of miscellaneous expenses; quantity and value of products; time in operation during the census year; character and quantity of power used; and character and number of machines employed."

In each of the above particulars the requirements of the law have been observed, but certain of the data thus elicited are reserved for publication in the final volumes.

There were 138 cities and boroughs in the state withdrawn from the enumerators and their manufacturing statistics collected by special agents, in accordance with the further provision of section 7 of the census act. Wherever the phrase "urban manufactures" is used in this bulletin, it applies only to those cities and boroughs which were withdrawn from the enumerators and committed to special agents, and only to manufacturing establishments within the corporate limits of such places.

Twenty cities and boroughs in Pennsylvania contain a population exceeding 20,000 each: Allegheny, Allentown, Altoona, Chester, Easton, Erie, Harrisburg, Johnstown, Lancaster, McKeesport, Newcastle, Norristown, Philadelphia, Pittsburg, Reading, Scranton, Shenandoah, Wilkesbarre, Williamsport, and York.

The manufacturing statistics of these 20 cities and

boroughs are presented by specified industries, and the statistics of Allegheny, Allentown, Altoona, Chester, Erie, Harrisburg, Johnstown, Lancaster, McKeesport, Philadelphia, Pittsburg, Reading, Scranton, Wilkesbarre, Williamsport, and York are presented in comparison with the returns of the Eleventh Census. The statistics of Easton, Newcastle, Norristown, and Shenandoah were not shown separately in 1890, and comparisons with that year are, therefore, not possible in these cases.

Professor Albert S. Bolles, of Haverford College, rendered valuable assistance in the preparation of the text for the accompanying report.

The statistics of Pennsylvania are presented in 9 tables: Table 1 showing comparative figures for the state at the several censuses; Table 2 showing all the industries of the state divided between hand trades and the manufactures proper, and also the statistics of governmental establishments, educational, eleemosynary, and penal institutions, and establishments with a product of less than \$500, which three latter classes were not reported at previous censuses; Table 3 showing the statistics of the 25 leading industries of the state for 1890 and 1900; Table 4 showing the totals for the cities of Allegheny, Allentown, Altoona, Chester, Erie, Harrisburg, Johnstown, Lancaster, McKeesport, Philadelphia, Pittsburg, Reading, Scranton, Wilkesbarre, Williamsport, and York at the censuses of 1890 and 1900; Table 5 showing the urban manufactures of the state in comparison with the totals for the entire state and the state exclusive of the cities and boroughs withdrawn from the enumerators; Table 6 showing the statistics for the state by counties; Table 7 showing the statistics for the state by specified industries; Table 8 showing the statistics for the cities and boroughs of Allegheny, Allentown, Altoona, Chester, Easton, Erie, Harrisburg, Johnstown, Lancaster, McKeesport, Newcastle, Norristown, Philadelphia, Pittsburg, Reading, Scranton, Shenandoah, Wilkesbarre, Williamsport, and York by specified industries; and Table 9 showing the totals for all industries in each of the cities and boroughs withdrawn from the enumerators (exclusive of those shown in Table 8).

Table 1 shows the growth of manufactures in Pennsylvania for the half century which terminates with the Twelfth Census. The manufacturing statistics of the censuses prior to 1850 were too imperfect and fragmentary in character to make it proper to reproduce them in such a table as a measure of industrial growth in the first half of the century. Owing to changes in the method of taking the census, comparisons between the earlier and later decades, represented in Table 1, should be drawn only in the most general way. Nevertheless, the rate of growth in Pennsylvania manufactures may be fairly inferred from the figures given.

In drafting the schedules of inquiry for the census of 1900 care was taken to preserve the basis of comparison with prior censuses. Comparison may be made safely with respect to all the items of inquiry except those relating to capital, salaried officials, clerks, etc., and their salaries, the average number of employees, and the total amount of wages paid. Live capital, that is, cash on hand, bills receivable, unsettled ledger accounts, raw materials, stock in process of manufacture, finished products on hand, and other sundries, was first called for at the census of 1890. No definite attempt was made, prior to the census of 1890, to secure a return of live capital invested.

Changes were made in the inquiries relating to employees and wages in order to eliminate defects found to exist on the form of inquiry adopted in 1890. At the census of 1890 the average number of persons employed during the entire year was called for, and also the average number employed at stated weekly rates of pay, and the average number was computed for the actual time the establishments were reported as being in operation. At the census of 1900 the greatest and least numbers of employees were reported, and also the average number employed during each month of the year. The average number of wage-earners (men, women, and children) employed during the entire year was ascertained by using 12, the number of calendar months, as a divisor into the total of the average numbers reported for each month. This difference in the method of ascertaining the average number of wage-earners during the entire year may have resulted in a variation in the number, and should be considered in making comparisons.

At the census of 1890 the number and salaries of proprietors and firm members actively engaged in the business or in supervision were reported, combined with clerks and other officials. In cases where proprietors and firm members were reported without salaries, the amount that would ordinarily be paid for similar services was estimated. At the census of 1900 only the number of proprietors and firm members actively engaged in the industry or in supervision was ascertained, and no salaries were reported for this class. It is therefore impossible to compare the number and salaries of salaried officials of any character for the two censuses.

Furthermore, the schedules for 1890 included in the wage-earning class, overseers, foremen, and superintendents (not general superintendents or managers), while the census of 1900 separates from the wage-earning class such salaried employees as general superintendents, clerks, and salesmen. It is possible and probable that this change in the form of the question has resulted in eliminating from the wage-earners, as reported by the present census, many

high-salaried employees included in that group for the census of 1890.

In some instances, the number of proprietors and firm members, shown in the accompanying tables, falls short of the number of establishments reported. This is accounted for by the fact that no proprietors or firm members are reported for corporations or cooperative establishments.

The reports show a capital of \$1,551,548,712 invested in manufactures and mechanical industries in the 52,185 establishments reporting for the state of Pennsylvania. This sum represents the value of land, buildings, machinery, tools, and implements, and the live capital utilized, but does not include the capital stock of any of the manufacturing corporations of the state. The value of the products is returned at \$1,834,790,860, to produce which involved an outlay of \$48,605,173 for salaries of officials, clerks, etc.; \$332,072,670 for wages; \$184,344,269 for miscellaneous expenses, including rent, taxes, etc.; and \$1,042,434,599 for materials used, mill supplies, freight, and fuel. It is not to be assumed, however, that the difference between the aggregate of these sums and the value of the products is, in any sense, indicative of the profits in the manufacture of the products during the census year. The census schedule takes no cognizance of the cost of selling manufactured articles, or of interest on capital invested, or of the mercantile losses incurred in the business, or of depreciation in plant. The value of the product given is the value as obtained or fixed at the shop or factory. This statement is necessary in order to avoid erroneous conclusions from the figures presented.

The value of products for the state of Pennsylvania, \$1,834,790,860, is the gross value, and not the net or true value. The difference between these two should be carefully noted. The gross value is found by adding the value of products in the separate establishments. But the finished product of one establishment is often the raw material for another. In such cases the value of the former reappears in the latter, and thus the original cost of certain materials may be included several times in the gross value. The net or true value is found by subtracting from the gross value the value of all materials purchased in a partly manufactured form. In this way the duplications in the gross value are eliminated.

At the census of 1890 the schedule was so framed that it was impossible to find the net or true value. In the present census the schedule asked for the value of the materials in two classes, those purchased in the crude state and those purchased in the partly manufactured form. From the answers to these questions the net or true value of products may be computed. Thus, for Pennsylvania, the gross value of products for 1900 was \$1,834,790,860. The value of materials purchased in a partly manufactured form was \$729,919,230. The difference, \$1,104,871,630, is the net or true value of products, and represents the value of all crude materials used, together with the increase in value resulting from the various processes of manufacture.

Very respectfully,



Chief Statistician for Manufactures.

PENNSYLVANIA.

Table 1 shows the manufacturing and mechanical industries of the state of Pennsylvania as returned at the censuses of 1850 to 1900, inclusive, with the percentages of increase for each decade. This table also presents the average number of wage-earners employed by manufactur-

ing establishments, in comparison with the total population of the state, and the value of the land and buildings owned and reported by manufacturers as capital, in comparison with the assessed value of all real estate and improvements.

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	52,185	89,839	81,232	87,200	22,868	21,605	32.7	26.0	116.0	66.8	3.5
Capital	\$1,551,548,712	\$991,243,115	\$474,510,998	\$406,821,845	\$190,055,904	\$94,473,810	56.5	108.9	16.6	114.1	101.2
Salaries of officials, clerks, etc., number	47,439	250,169	(3)	(3)	(3)	(3)	15.4				
Salaries	\$48,608,173	\$42,215,788	(3)	(3)	(3)	(3)	15.1				
Wage-earners, average number	733,834	570,393	387,072	319,487	222,132	146,766	28.7	47.4	21.2	43.8	51.4
Total wages	\$332,072,670	\$263,375,215	\$134,055,904	\$127,976,594	\$60,369,165	\$37,163,232	26.1	96.5	4.8	112.0	82.4
Men, 16 years and over	574,606	400,939	251,359	250,543	182,593	124,688	24.7	62.1	10.8	40.5	46.4
Wages	\$293,697,372	\$236,614,013	(3)	(3)	(3)	(3)	24.1				
Women, 16 years and over	126,933	87,035	78,046	48,712	39,539	22,078	44.9	19.2	67.1	10.6	79.1
Wages	\$33,067,828	\$23,367,951	(3)	(3)	(3)	(3)	41.6				
Children, under 16 years	39,135	22,419	29,667	19,232	(3)	(3)	47.8	24.4	51.3		
Wages	\$5,307,470	\$3,403,251	(3)	(3)	(3)	(3)	56.0				
Miscellaneous expenses	\$134,344,269	\$74,841,458	(4)	(4)	(4)	(4)	79.5				
Cost of materials used	\$1,042,434,599	\$773,734,637	\$465,020,568	\$421,197,673	\$153,477,698	\$87,206,377	34.7	66.4	10.4	174.4	78.0
Value of products, including custom work and repairing	\$1,834,790,860	\$1,331,794,901	\$744,818,445	\$711,894,344	\$290,121,188	\$155,044,910	37.8	78.8	4.6	145.4	87.1
Total population	6,802,034	5,258,014	4,282,891	3,621,951	2,906,215	2,311,786	19.9	22.8	21.6	21.2	25.7
Wage-earners engaged in manufactures	733,834	570,393	387,072	319,487	222,132	146,766	28.7	47.4	21.6	43.8	51.4
Per cent of total population	11.6	10.8	9.0	9.1	7.6	6.3	35.5	32.6	43.7	91.0	81.2
Assessed value of real estate	\$2,766,829,685	\$2,042,016,599	\$1,540,007,937	\$1,071,680,934	\$561,192,980	\$427,865,600	52.2				
Value of land and buildings invested in manufactures ⁷	\$375,804,375	\$246,972,567	(8)	(8)	(8)	(8)					
Per cent of assessed value	13.6	12.1									

¹ Decrease.

² Includes proprietors and firm members, with their salaries; number only reported in 1900. (See Table 7.)

³ Not reported separately.

⁴ Not reported.

⁵ Exclusive of 81 Indians and other persons on Indian reservations, which classes were not included at previous censuses.

⁶ As given in the Annual Report of the Secretary of Internal Affairs, 1900.

⁷ Does not include value of rented property.

Table 1 shows that there has been a large growth in the manufacturing and mechanical industries of Pennsylvania during the half century. The population during these years increased from 2,311,786 to 6,802,034, while the average number of wage-earners employed in manufacturing establishments increased from 146,766 to 733,834, embracing, in 1900, 11.6 per cent of the entire population, compared with 6.3 per cent in 1850. Probably the best indication of the importance of the wage-earning class is afforded by the greatest number employed at any one time during the year. In 1900 this was 928,522, or 14.7 per cent of the total population of the state. The greatest percentage of increase in the value of products, 145.4, is shown for the decade ending with 1870, but the greatest absolute increase, \$586,976,456, was between the years 1880 and 1890. The absolute increase during the decade ending with the year 1900, \$502,995,959, was greater than that shown for any other state of the United States.

In 1840 and in 1850 Pennsylvania ranked third in the United States in manufacturing and mechanical industries, but at all succeeding censuses its rank has been second. In the amount of power used in manufacturing—an index

of the factory system proper—Pennsylvania has ranked first since 1870, using in that year 15.5 per cent of the total power used in the United States and 16.4 per cent in 1900.

Among the various causes which contributed to the early development of manufacturing in Pennsylvania, the favorable location of the state for marketing its manufactured products must be given a very important place. No other state touches the Atlantic seacoast, the Great Lake system, and the navigable waters of the Ohio-Mississippi Valley. Before the construction of railroads, when the densest population was along the Atlantic coast and in the valleys of the Mississippi and Ohio rivers, this location proved a great stimulus to manufacturing. Many of the manufacturers of Philadelphia and vicinity sold their products in the states immediately to the south, while the iron, steel, lumber, and leather industries of the western part of the state, as well as the woolen industry generally, were greatly stimulated by the market for their products afforded by the settlements along the Ohio and Mississippi rivers. The first steam vessel launched on these waters was built at Pittsburg, in 1811, and regular communication was shortly afterwards established between Pittsburg and the Southern states. Communication in the interior

of the state was improved between 1826 and 1839 by the construction of a network of canals and canalized rivers aggregating 578 miles in length—a greater mileage than that of any other state except New York and Ohio. After the building of railroads, many of these canals were abandoned, but the stimulus they gave to manufacturing is evidenced by the fact that of the 12 leading manufacturing cities in the state in 1900, 9 were touched by these canals, while 2 of the remaining 3 were located on the navigable waters of the Delaware and Allegheny rivers. In railroad mileage Pennsylvania ranked second in the United States in 1899, with 10,181 miles of road in operation.¹

Few states have been so favored as Pennsylvania in natural resources. The raw materials for many kinds of manufactures are abundant, the state ranking high in the production of lumber, tanbark, tobacco, cereals, crude petroleum, and iron ore. It not only has fuel sufficient for its extensive manufactures, but ships an immense surplus each year to other states. The annual coal production of Pennsylvania between the years 1880 and 1899 was each year more than one-half of the total for the United States.² Natural gas has been used in the state for manufacturing purposes since 1874.³ This fuel is without a rival for the manufacture of glass, the puddling of iron, the heating of large furnaces in the manufacture of steel, and the roasting of ores.⁴ In 1899 it was used for manufacturing in Pennsylvania in 50 rolling mills and steel works, 75 glass works, and 1,111 other establishments. Although many of the gas fields prominent twelve years ago are now almost exhausted, and the value of the production in 1899 amounted to less than one-half that of

1888, the state still ranked second in production. Partly as a result of these abundant supplies of fuel, the use of waterpower has been relatively of less importance in Pennsylvania than in most other states, and has declined very much in recent years. In 1870 the waterpower was 141,982 horsepower, or 39 per cent of the total power, while in 1900 it had declined to 86,223 horsepower and represented but 4.6 per cent of the total. The use of waterpower was confined very largely to the manufacture of flouring and grist mill products, lumber and timber products, and paper and wood pulp, the amount used in these three industries constituting 82.7 per cent of the total waterpower used in the state.

At the end of the last century manufacturing in Philadelphia and the adjacent parts of Pennsylvania was very much stimulated by the activity of one man, Benjamin Franklin, whose interests extended to the promotion of almost every form of industry. The Society of Arts, the American Philosophical Society, and other similar associations in Philadelphia were active at this time, offering prizes for inventions which were desired in various lines of manufacturing. The Centennial Exposition, held in Philadelphia in 1876, was a great benefit to the industries of the state, and in 1883, a textile department was added to the Pennsylvania Museum and School of Industrial Art.⁵ More recently, the Philadelphia Commercial Museum has been organized, for the purpose of assisting American manufacturers to enter the foreign market with their products.

Table 2 divides the industries of the state between the hand trades and the manufactures proper. This table also gives the statistics for governmental establishments, educational, eleemosynary, and penal institutions, and establishments with a product of less than \$500; these were not reported at previous censuses, and therefore are omitted from the other tables and their use confined to Table 2.

⁵ Report of the Secretary of Internal Affairs of Pennsylvania, Part III, Industrial Statistics, 1888, page E1.

TABLE 2.—SUMMARY FOR ALL ESTABLISHMENTS.

CLASSES.	Number of establishments.	Capital.	Proprietors and firm members.	WAGE-EARNERS.		Miscellaneous expenses.	COST OF MATERIALS USED.				Value of products, including custom work and repairing.
				Average number.	Total wages.		Total.	Purchased in raw state.	Purchased in partially manufactured form.	Fuel, freight, etc.	
Total	63,228	\$1,562,286,508	70,254	737,258	\$332,881,798	\$134,671,739	\$1,043,912,345	\$240,529,582	\$781,218,337	\$63,161,476	\$1,888,987,038
Hand trades ¹	20,799	53,748,704	23,061	59,196	29,735,786	22,815,039	50,489,016	1,183,050	48,297,303	1,008,663	134,678,795
Governmental establishments	3	3,199,131		307	307,913	14,875	261,004		251,936	9,128	588,062
Educational, eleemosynary, and penal institutions	17	3,763,917		676	371,551	26,726	369,255	39,888	299,072	30,300	816,007
Establishments with a product of less than \$500	11,023	3,774,748	11,418	2,351	129,664	285,869	847,427	99,328	748,099		2,792,109
All other establishments	31,886	1,497,800,008	35,775	674,688	302,336,884	111,529,230	991,945,588	248,207,271	681,621,927	62,116,885	1,700,112,065

¹ Includes bicycle and tricycle repairing, 502; blacksmithing and wheelwrighting, 4,509; boots and shoes, custom work and repairing, 2,580; carpentering, 1,846; clothing, men's, custom work and repairing, 2,231; clothing, women's, dressmaking, 1,196; dyeing and cleaning, 184; furniture, cabinetmaking, repairing, and upholstering, 710; lock and gun smithing, 197; masonry, brick and stone, 608; millinery, custom work, 1,344; painting, house, sign, etc., 1,512; paper hanging, 889; plastering and stuccowork, 207; plumbing, and gas and steam fitting, 1,552; sewing machine repairing, 32; taxidermy, 10; typewriter repairing, 3; watch, clock, and jewelry repairing, 1,187.

Of the 63,228 establishments of all classes shown in this table, 31,822, or 50.3 per cent, were small shops included in the groups of "hand trades" and "establishments with a product of less than \$500." The value of the products of these establishments, consisting principally of the sums received for custom work and repairing, amounted to

\$137,470,904, or only 7.5 per cent of the total value of the products of the state.

In addition to the 63,228 active establishments in the state during the census year, with a capital of \$1,562,286,508, shown in Table 2, there were 349 idle establishments, with a capital of \$10,751,710, divided as follows:

INDUSTRIES.	Number of idle establishments.	Capital.	INDUSTRIES.	Number of idle establishments.	Capital.
Bicycles and tricycles	2	\$36,500	Leather, tanned, curried, and finished	13	\$807,866
Brass castings and brass finishing	1	20,717	Liquors, distilled	8	122,230
Brick and tile	26	660,512	Liquors, malt	1	15,000
Cheese, butter, and condensed milk, factory product	8	15,675	Lumber and timber products	35	201,223
Clothing, men's, factory product	1	12,000	Lumber, planing mill products, including sash, doors, and blinds	10	49,855
Coke	4	59,200	Marble and stone work	3	48,500
Cooperage	1	38,000	Masonry, brick and stone	1	20,000
Explosives	3	23,300	Paints	8	16,600
Flouring and grist mill products	32	155,270	Paper and wood pulp	2	154,000
Foundry and machine shop products	11	262,480	Paving and paving materials	4	30,089
Fruits and vegetables, canning and preserving	3	24,750	Pottery, terra cotta, and fire-clay products	4	211,200
Furniture, factory product	2	65,500	Pumps, not including steam pumps	1	10,000
Gas and lamp fixtures	1	16,800	Roofing and roofing materials	3	84,500
Glass	19	1,968,582	Silk and silk goods	7	235,381
Hosiery and knit goods	9	61,843	Soap and candles	1	30,000
Ice, manufactured	2	117,000	Tin andterne plate	2	76,000
Iron and steel	88	4,455,269	Woolen goods	20	255,100
Iron and steel, forgings	1	15,000	All other industries	63	118,596
Iron and steel, pipe, wrought	1	257,672			

TABLE 3.—COMPARATIVE SUMMARY OF TWENTY-FIVE LEADING INDUSTRIES.

INDUSTRIES.	Year.	Number of establishments.	Capital.	WAGE-EARNERS.		Miscellaneous expenses.	Cost of materials used.	Value of products, including custom work and repairing.
				Average number.	Total wages.			
Total for selected industries for state	1900	15,665	\$1,111,294,443	478,780	\$221,138,148	\$86,050,020	\$780,436,743	\$1,291,000,950
	1890	12,613	723,558,973	381,760	174,023,856	51,900,172	580,818,362	935,303,641
Increase, 1890 to 1900		3,052	387,735,470	97,020	47,114,792	34,158,848	199,618,381	355,697,309
Per cent of increase		24.2	53.6	25.4	27.1	65.8	34.4	38.0
Per cent of total of all industries in state	1900	0.0	71.6	65.2	66.6	64.1	74.9	70.4
	1890	32.1	73.0	66.9	66.1	69.8	75.1	72.2
Boots and shoes, factory product	1900	146	6,860,480	9,144	3,111,113	572,624	8,210,816	13,285,938
	1890	158	5,894,799	7,616	3,094,582	811,684	5,012,096	10,354,850
Cars and general shop construction and repairs by steam railroad companies.	1900	144	19,182,001	28,554	15,825,640	3,280,079	23,147,574	43,065,171
	1890	61	17,475,056	22,649	12,301,884	82,909	15,822,037	28,769,728
Cars, steam railroad, not including operations of railroad companies.	1900	11	33,828,723	5,840	3,111,556	1,265,456	12,188,811	19,230,910
	1890	16	7,060,466	4,535	1,833,407	465,900	6,496,258	10,080,722
Cheese, butter, and condensed milk, factory product	1900	749	3,038,128	976	445,708	116,195	8,711,635	10,290,006
	1890	300	1,322,384	766	267,147	61,605	4,433,395	5,319,434
Chemicals	1900	100	22,756,656	4,278	2,198,243	931,869	6,803,769	13,034,384
	1890	71	16,618,032	3,284	1,096,148	461,270	8,138,493	13,144,210
Clothing, men's, factory product	1900	481	10,446,107	10,497	4,422,074	2,137,272	12,212,763	23,389,048
	1890	337	15,009,046	7,075	3,298,517	4,053,254	14,780,351	26,732,343
Clothing, women's, factory product	1900	230	5,197,094	8,311	2,606,024	629,266	6,269,950	11,694,580
	1890	80	1,819,002	2,989	766,094	249,188	2,281,471	3,903,596
Coke	1900	89	20,213,147	9,283	4,516,651	1,227,259	11,678,079	22,282,358
	1890	98	12,000,820	5,855	2,902,892	256,268	7,280,566	10,415,628
Electrical apparatus and supplies	1900	63	20,967,587	7,817	4,002,737	1,647,426	11,372,739	19,112,665
	1890	10	475,169	209	90,952	22,767	430,899	674,565
Flouring and grist mill products	1900	2,719	19,516,993	2,195	1,061,809	667,372	30,566,466	36,639,423
	1890	2,226	21,079,642	8,373	1,269,991	865,898	33,238,981	39,478,076
Foundry and machine shop products	1900	1,260	154,958,750	62,828	33,109,521	6,890,037	62,336,770	127,292,440
	1890	886	69,121,468	33,247	21,483,669	3,672,073	29,276,186	67,587,025
Glass	1900	119	28,287,187	19,420	10,287,491	1,867,879	6,435,463	22,011,180
	1890	99	20,459,049	18,510	8,728,520	911,178	5,294,992	17,179,137
Iron and steel:								
Total	1900	291	309,729,222	110,864	61,908,405	17,845,789	283,142,785	434,445,200
	1890	311	223,556,407	92,473	49,550,605	9,769,125	180,220,237	264,571,624
Blast furnaces	1900	77	72,512,725	16,075	8,038,016	3,269,022	64,095,277	101,575,487
	1890	116	57,411,570	15,612	7,084,303	2,684,071	57,222,481	75,239,203
Forges and bloomeries	1900	5	87,465	125	52,901	3,174	186,859	281,589
	1890	9	281,036	252	109,768	11,620	467,212	618,231
Rolling mills and steel works	1900	209	287,129,082	94,664	53,817,488	14,573,593	218,800,649	332,588,174
	1890	186	165,868,801	76,609	42,366,539	7,072,838	122,530,544	188,714,190
Iron and steel, pipe, wrought	1900	10	11,698,057	3,675	1,678,961	148,202	11,583,470	15,383,693
	1890	14	18,849,616	9,170	4,294,989	811,216	20,597,881	30,249,795

TABLE 3.—COMPARATIVE SUMMARY OF TWENTY-FIVE LEADING INDUSTRIES—Continued.

INDUSTRIES.	Year.	Num- ber of estab- lish- ments.	Capital.	WAGE-EARNERS.		Miscella- neous expenses.	Cost of materials used.	Value of products, including custom work and repairing.
				Average number.	Total wages.			
Leather, tanned, curried, and finished	1900	254	\$57,320,227	13,396	\$5,457,518	\$2,432,724	\$42,403,508	\$55,615,009
	1890	410	30,165,420	10,956	5,222,421	1,650,023	35,641,274	49,981,716
Liquors:								
Total	1900	281	69,524,514	4,976	3,134,590	15,704,954	8,178,458	34,520,358
	1890	208	28,781,116	3,548	2,364,469	6,921,010	7,787,284	22,698,423
Liquors, distilled	1900	78	5,840,034	471	250,348	2,665,583	1,568,569	5,357,615
	1890	40	2,624,761	400	295,026	2,054,485	1,826,202	4,339,689
Liquors, malt	1900	208	63,684,480	4,505	2,884,242	13,039,371	6,609,889	29,162,748
	1890	168	26,166,355	3,148	2,129,443	4,866,575	6,461,082	18,358,734
Lumber and timber products	1900	2,338	47,832,548	13,510	5,550,163	930,687	20,777,869	35,749,965
	1890	1,948	45,107,300	19,598	5,440,480	1,404,992	15,677,103	29,087,970
Lumber, planing mill products, including sash, doors, and blinds.	1900	542	14,191,248	7,472	3,516,550	698,816	9,441,629	16,736,839
	1890	467	14,094,095	7,888	4,219,264	626,568	10,492,181	18,398,688
Paper and wood pulp	1900	78	16,424,107	4,840	1,089,128	1,089,321	6,374,815	12,267,900
	1890	72	9,404,772	2,951	1,256,840	646,472	4,646,456	7,838,299
Petroleum, refining	1900	38	26,580,504	3,299	1,681,603	640,429	27,513,735	34,977,706
	1890	55	17,082,606	3,284	1,508,592	543,668	15,006,919	18,498,777
Printing and publishing:								
Total	1900	1,795	38,667,775	16,991	8,546,517	5,510,178	9,952,198	36,455,629
	1890	1,487	29,749,695	15,009	8,013,445	7,293,717	8,415,911	34,408,493
Book and job	1900	740	14,226,342	7,190	3,357,306	1,841,852	3,873,618	12,833,204
	1890	478	13,072,177	6,051	2,980,861	2,446,564	3,840,578	13,444,459
Music	1900	13	489,288	236	94,442	47,045	108,792	373,845
	1890	17	607,170	146	75,622	94,057	126,519	427,496
Newspapers and periodicals	1900	1,042	23,952,145	9,565	5,094,769	3,621,281	5,969,788	23,249,080
	1890	992	16,070,348	8,812	4,956,962	4,758,106	4,448,814	20,536,538
Slaughtering:								
Total	1900	111	6,548,577	1,609	920,190	526,972	21,601,810	25,238,772
	1890	242	6,180,789	1,582	772,422	816,572	18,575,330	21,991,604
Slaughtering and meat packing, wholesale	1900	68	6,009,347	1,383	738,932	372,368	15,128,096	17,826,697
	1890	114	4,828,593	1,004	540,940	215,850	11,669,651	14,110,303
Slaughtering, wholesale, not including meat packing	1900	43	539,230	286	186,258	154,604	6,473,714	7,412,075
	1890	128	1,352,196	578	231,482	100,722	6,905,679	7,881,801
Sugar and molasses, refining	1900	7	23,902,552	1,249	647,592	604,871	33,668,440	36,163,817
	1890	10	7,118,245	1,450	694,195	584,892	41,836,095	46,599,754
Textiles:								
Total	1900	1,102	127,318,858	102,213	32,772,556	11,841,157	98,371,800	153,782,087
	1890	1,028	98,326,609	79,579	27,205,879	6,102,735	80,074,416	134,001,269
Carpets and rugs, other than rag	1900	98	17,957,607	12,919	5,330,643	1,671,015	13,773,788	23,113,058
	1890	142	15,129,619	12,418	5,246,179	820,434	13,548,371	22,886,416
Cotton goods (including cotton small wares)	1900	178	24,331,965	17,011	6,057,286	2,057,143	13,176,718	25,447,697
	1890	158	16,884,936	12,666	4,888,017	730,125	10,485,247	18,431,778
Dyeing and finishing textiles	1900	105	7,679,906	4,716	2,065,752	556,083	8,174,507	7,038,012
	1890	83	6,296,340	3,855	1,596,565	419,456	2,395,482	5,240,761
Felt goods	1900	3	186,445	75	30,490	11,678	88,715	160,633
	1890	3	242,207	165	101,272	10,780	138,736	322,800
Hosiery and knit goods	1900	319	15,743,981	21,540	5,825,783	1,884,722	10,928,113	21,896,063
	1890	236	9,121,632	15,453	4,262,299	741,956	8,720,363	16,944,287
Shoddy	1900	26	972,070	368	148,240	57,728	1,009,944	1,448,886
	1890	18	640,382	302	116,459	50,805	1,205,258	1,638,770
Silk and silk goods	1900	121	20,894,023	21,028	4,629,626	2,451,820	19,884,869	31,072,926
	1890	66	9,362,003	9,380	2,725,285	939,051	12,094,389	19,357,546
Wool hats	1900	13	750,798	634	255,313	19,501	663,468	1,106,076
	1890	17	1,048,804	1,013	307,425	58,490	747,700	1,444,180
Woolen goods	1900	193	19,405,505	13,721	5,091,932	1,444,778	15,374,544	25,889,344
	1890	264	21,671,137	15,562	5,290,374	1,356,208	19,198,990	29,378,010
Worsted goods	1900	51	19,396,558	10,201	3,337,491	1,686,689	14,737,134	22,109,392
	1890	41	13,929,489	9,815	3,172,004	975,930	11,539,880	17,861,776
Tobacco:								
Total	1900	2,712	16,218,401	25,483	8,545,748	6,911,686	12,496,866	33,355,932
	1890	2,025	11,782,350	18,550	5,751,412	3,814,563	9,362,600	22,387,910
Chewing, smoking, and snuff	1900	20	1,765,589	257	102,895	451,248	423,245	1,247,897
	1890	11	1,347,228	282	104,217	372,956	507,282	1,355,121
Cigars and cigarettes	1900	2,664	13,836,363	25,045	8,404,687	6,448,701	11,570,888	31,483,141
	1890	1,967	9,471,276	17,335	5,496,557	3,362,955	7,299,732	19,978,429
Stepping and rehandling	1900	23	616,494	181	38,666	11,742	502,733	625,394
	1890	47	943,846	383	150,638	78,652	1,555,536	2,054,360

The 25 leading industries of the state in 1900, as shown in Table 3, embraced 15,665 establishments, or 30 per cent of the total number in the state; used a capital of \$1,111,294,443, or 71.6 per cent of the total; gave em-

ployment to 478,780 wage-earners, or 65.2 per cent of the total number; and paid \$221,138,148, or 66.6 per cent of the total wages. The value of their products was \$1,291,000,950, or 70.4 per cent of the total. In the dis-

cussion of Table 3, which follows, these industries are ranked with reference to the value of their products.

Table 3 shows that the manufacture of iron and steel is the most important industry in the state. The 291 establishments reported in 1900 gave employment to 110,864 wage-earners, or 15.1 per cent of the wage-earners employed in the state, and the products were valued at \$434,445,200, or 23.7 per cent of the total value of the products of the state. In 1890 there were 311 establishments, 92,473 wage-earners, and products valued at \$264,571,624. The increase in the value of products during the decade was \$169,873,576, or 64.2 per cent.

From a very early period Pennsylvania has ranked first in this industry. In 1880 the value of its iron and steel products amounted to 49.1 per cent of the total for the United States, and in 1900 to 54 per cent. Allegheny county, which includes the cities of Pittsburgh, McKeesport, and Duquesne, was the most important center for the industry in 1900. Other important centers were Johnstown and Newcastle. Iron had been made in several of the other colonies before its manufacture was attempted in Pennsylvania. The industry had its beginning under the encouragement of William Penn. In a book published in Philadelphia in 1692 it was stated that a small amount of iron had been made in the state, but the location was not specified.¹ The first successful attempt to establish works in Pennsylvania for the manufacture of iron was made in 1716, when Thomas Rutter, a smith, erected a bloomery forge on Manatawny Creek, in Berks county, about three miles above Pottstown. In 1738-29 the colony exported 274 tons of pig iron to England. In 1756 Pennsylvania was spoken of as "the most advanced of all the American colonies in regard to its iron works." The industry was greatly stimulated by the discovery of immense deposits of magnetic iron ore in the Cornwall ore hills, near the city of Lebanon. Beginning in 1788 there was a considerable development of the industry in the Juniata Valley, in the south central part of the state, the pig and bar iron manufactured being sold chiefly in Pittsburgh, to which point it was carried partly on the backs of horses and partly on flatboats, until the canals were built between the years 1826 and 1839.² The first blast furnace west of the Allegheny Mountains was erected on Jacob's Creek, in Fayette county, south of Pittsburgh, in 1789, and was blown in 1790.³ This was the great iron center of western Pennsylvania far into the Nineteenth century, supplying Pittsburgh and the Ohio and Mississippi valleys with pig iron and castings for many years. A blast furnace erected at Pittsburgh about the year 1792 was soon abandoned, because no ore could be found in the vicinity, and the expense of transporting it from a distance was too great.⁴ It was not until 1859 that pig iron was again made in Pittsburgh,

the Clinton Furnace having been built and blown in that year. In 1812 a rolling mill was built at Pittsburgh, and in 1829 there were 8 rolling mills in Allegheny county.

Practically all the furnaces operated in the state prior to 1840 used charcoal as fuel. About that year the use of mineral fuel was introduced, and the modern era of the industry began. With the immense coal supplies of the state available as fuel, the production of charcoal pig iron declined until in 1900 it amounted to only 4,341 tons. Anthracite coal was used first, and for many years was more important than bituminous fuel, but since 1875 this relation has been reversed. In 1880 bituminous coal and coke pig iron constituted 34.9 per cent of the total production, as compared with 61.3 per cent in 1890 and 76.1 per cent in 1900. In the latter year almost all the pig iron made with bituminous fuel was produced with coke alone, very little bituminous coal being mixed with the coke. There are extensive deposits of iron ore in the state, and these local ores were used almost exclusively, up to the middle of the century. Since then the production of iron ore has greatly increased, amounting to 1,009,327 long tons in 1899, when the state ranked fourth in the United States,⁵ but these ores supplied but a small part of the blast furnaces of the state, the more important source of supply, in recent years, being the mines in the Lake Superior district. This ore was first used in a blast furnace in the United States near Sharon, Pa., in 1853. In 1855 the Sault Ste. Marie Canal was opened, and the great development of the Lake Superior iron ore trade began.⁶ Of the 18,251,804 long tons of iron ore shipped from these mines in 1899, 15,222,187 tons were received at the eleven Lake Erie ports, the greater part of this being shipped directly to Pennsylvania.⁷ To control deliveries and freight rates, one Pennsylvania steel company has built a railroad connecting its works at Pittsburgh with Lake Erie.

As a result of these two important changes—the increased use of bituminous as compared with anthracite fuel, and the increased use of Lake Superior iron ores as compared with the Pennsylvania ores—the localization of the iron industry in the state has been considerably changed. The anthracite coal region is in the eastern part of the state, chiefly in Luzerne, Lackawanna, and Schuylkill counties, and the iron ore deposits are located here and in the southern parts of the state.⁸ Until about the middle of the century the center of iron manufactures also was here. During recent years, however, as a result of the causes just named, the greatest production has come to be in the western part of the state, chiefly in the Pittsburgh district. Here the blast furnaces are nearer the Lake Superior ore, and are favored by their proximity to the abundant coke of the Connellsville region, which is equal, if not superior, to

¹Tenth Census of the United States, Manufactures, folios 807, 809, and 814.

²Ibid., folios 817 and 820.

³Iron in all Ages, by J. M. Swank, Second Edition, 1892, page 214.

⁴Tenth Census of the United States, Manufactures, folio 821.

⁵United States Geological Survey: Mineral Resources, 1899, Metallic Products, Coal, and Coke, page 34.

⁶Tenth Census of the United States, Manufactures, folios 843 and 844.

⁷United States Geological Survey: Mineral Resources, 1899, Metallic Products, Coal, and Coke, pages 57, 60, and 62.

⁸Ibid., pages 46 and 487.

any other coke produced in the United States. The western part of the state has been further favored by the abundant production of natural gas in that region. This fuel is very largely used in the rolling mills of the state, its cost during the census year constituting 22.3 per cent of the total cost of fuel.

The development of the steel manufacture in Pennsylvania was slow. It had been attempted about 1750, and in 1805 there were 2 steel furnaces in the state which produced annually 150 tons of steel. In 1810 only 917 tons were produced in the United States, of which amount 531 tons were produced in 5 furnaces in Pennsylvania. Three years later there was a steel furnace in Pittsburg, the first in that city. While there was a considerable increase in the quantity, the quality was variable until 1860, when crucible cast steel of the highest grade was made in Pittsburg as a regular product.¹ This triumph marks the establishment of a new industry. The manufacture of Bessemer steel was begun in Pennsylvania in 1867, an establishment at Steelton, in Dauphin county, being the third in the United States to use this process. The first steel rails made in the United States upon order, in the way of regular business, were manufactured in the same year at Johnstown.² The most characteristic development in the steel industry of Pennsylvania during the last fifteen years has been the increasing importance of open-hearth as compared with Bessemer steel.

Closely allied to the iron and steel industry is the manufacture of tin and terne plate, the statistics of which are shown in Table 7. There were 25 establishments engaged in this industry in 1900, with 1,578 wage-earners, and products valued at \$12,530,991. The state ranked first in this manufacture, the value of its products amounting to 39.3 per cent of the total for the United States. Tin and terne plate was first regularly made in the United States in 1872, at an establishment in Pittsburg, but the great development of the industry has taken place since 1890.

The manufacture of textiles ranks second among the industries of the state, with 1,102 establishments, 102,213 wage-earners, and products valued at \$158,782,087. In 1890 there were 1,028 establishments, 79,579 wage-earners, and products valued at \$134,001,269. The increase in the value of products during the decade was \$24,780,818, or 18.5 per cent.

Pennsylvania ranked second in the United States in this industry in 1900, by far the larger part of the operations being confined to the city of Philadelphia, which is the greatest textile center in the country.

Of the several branches of the industry, the manufacture of silk stood first in the value of products in 1900. In 1880 Pennsylvania ranked fifth in this manufacture in the United States, having 8.5 per cent of the total value of products for the country. In 1900 it ranked second, with 29 per cent of the total. The industry was carried on

most extensively at Philadelphia, Scranton, Allentown, and Easton. Silk culture was recommended and encouraged very early in the history of the state, and a filature for reeling silk from cocoons was opened in Philadelphia in 1750, under the patronage of Benjamin Franklin and others. Considerable quantities of sewing silk were made in families, and to Susanna Wright, of Columbia, Lancaster county, a Quaker of some literary fame, a premium was awarded in 1770 for reeling and weaving, from home-grown cocoons, a piece of "mantua" sixty yards long, from which a dress was made for Queen Charlotte.³ In 1793 the making of fringes, coach laces, and tassels was begun in Philadelphia, and in 1815 the industry was expanded to include silk trimmings, naval sashes, ribbons, and braids. Power looms were introduced about 1837, for weaving ribbon and other narrow goods. One establishment soon became the most extensive producer of trimmings in the United States, having made gold lace several years before its manufacture was attempted in Europe. Excellent black silk plush was made in Philadelphia in 1831, and figured silk vestings and other woven goods at Economy about the same time. About 1839 the culture of silk was abandoned, and attention confined to the manufacture, which has advanced steadily, the greatest growth being between the years 1880 and 1890. During the last decade many localities have offered financial inducements to attract the industry. At many of the establishments in recent years the operations consist entirely in "throwing," the thrown silk being sent to other states to be woven into cloth.

In 1880 Pennsylvania ranked sixth in the United States in the manufacture of cotton goods, having 5.7 per cent of the total value of products for the United States. In 1900 the state ranked fifth, with 7.0 per cent of the total. The industry was carried on in 1900 most extensively at Philadelphia and Chester. As early as 1775 a spinning jenny of 24 threads was put into operation in Philadelphia, and in 1782 Samuel Wetherall advertised for sale probably the first factory-made jeans, fustians, and everlastings made in the United States.⁴ In 1810, 611,481 yards of cotton goods of household manufacture were produced in the state, 233,232 yards of which were made in the county of Philadelphia. The industry was reported, however, for almost every county in the state. In addition 65,326 yards were made in 6 mills in Philadelphia county. A plant for the manufacture of "Nottingham lace" was established at Wilkesbarre in 1886, and operated with considerable success. In 1891 the manufacture was begun in Philadelphia, and in 1895 and 1896 plants were built at Scranton and Columbia. In 1899 there were 9 lace plants in the United States, 7 of which were located in Pennsylvania.⁵ The use of cotton for decorative fabrics originated in Philadelphia, where it has been brought to

¹Tenth Census of the United States, Manufactures, folio 858.

²Ibid., folio 862.

³Eighth Census of the United States, Manufactures, Introduction, pages xcix, c, and cii.

⁴Ibid., page xv.

⁵Report of the Secretary of Internal Affairs of Pennsylvania, Part III, Industrial Statistics, 1899, pages 54 to 57.

great perfection, cotton tapestries and chenille curtains being most conspicuous in this line.

In 1870 Pennsylvania ranked second in the manufacture of woolen goods, having 17.7 per cent of the total value of the products for the United States. The state ranked second in 1900 also, with 21.4 per cent of the total. The industry was carried on in 1900 almost entirely in the city of Philadelphia. The manufacture of woolen goods was established in Pennsylvania, on the banks of the Schuylkill River, by English settlers, and was characterized in the early days by the large number of small, independent factories, many of which used hand looms.¹ In 1810, 30,666 yards of woolen cloth were manufactured in the factories of the state, and the industry was carried on also in households in almost every county, 997,346 yards of cloth being thus manufactured. There were 213 fulling mills in operation, which reported 687,383 yards of cloth fulled, and 340 carding mills, which reported 1,940,350 pounds of wool carded. In 1850 Pennsylvania produced more yarn than any other state. This was consumed chiefly by the hand-loom weavers of that and the Western states. In 1860 all-wool and mixed cassimeres, satinets, Kentucky jeans, twills, tweeds, and flannels were manufactured in Philadelphia in large quantities, and were sold largely in the West. With the concentration of the industry in the city of Philadelphia, there has been a gradual subdivision of the manufacture. This has created a large number of independent subordinate industries, carried on in separate establishments. The mills of this city excel in various products, especially in women's dress goods novelties.²

The growth of the carpet industry in Pennsylvania has been remarkable. In 1850 the state ranked third, with products valued at 21 per cent of the total for the United States. In 1870 it ranked first, with 44.8 per cent of the total, and in 1900 first, with 48 per cent of the total. The industry was carried on in 1900 almost entirely in the city of Philadelphia. Carpets were seldom seen in the United States before the Revolution. As early as 1791, however, a factory was in operation at Philadelphia, making Turkey and Axminster carpets.³ In 1810, 9,034 yards of carpets were manufactured in Pennsylvania, 7,501 yards of which were made in Philadelphia. In 1857 there were more than a hundred carpet manufacturers in this city using hand looms, and one manufacturer using power looms. The first successful power loom for weaving ingrain carpets was invented by a New England man, and the New England manufacturers refused for a long time to allow it to be used outside of their mills.⁴ It was, therefore, not until 1868, when the Murkland power loom was introduced, that Philadelphia was placed on an equal footing with New England in this industry. Between the years 1880

and 1890 great improvements were made in the weaving and designing of ingrain carpets, due largely to the importation of some remarkably beautiful specimens of these carpetings from England.

Ingrain carpets have always been the most important product of the Philadelphia factories. Desultory attempts were made to manufacture finer fabrics,⁵ but as late as 1870 there was not a Brussels loom in operation in the state, although they had been in practical use in the New England states for years. Probably more ingrain carpets are now made in this city than in any other city in the world. The manufacture of Venetian carpeting—a striped fabric for halls and stairs—was for many years an extensive branch of the Philadelphia industry. This has now almost disappeared, due to the decreased cost of tapestry Brussels carpeting, which has taken its place. The first tapestries manufactured in Pennsylvania were made in Philadelphia in 1873, and tapestry weaving has since become a very considerable feature of the Philadelphia industry.⁶ The manufacture of Smyrna rugs was introduced from England about 1876, and was soon brought to great perfection in Philadelphia. Since the invention of the power “setting machine,” the cost of manufacture has been very much reduced.

In 1870 Pennsylvania ranked second in the manufacture of worsted goods, with 35.7 per cent of the total value of products for the United States; and third in 1900, with 18.4 per cent of the total. The industry was carried on in 1900 almost entirely in the city of Philadelphia. The first power-combing worsted mills in this city were established about 1860, making nothing but yarns. At this time the industry received its greatest stimulus, through the introduction of the Noble comb from England, a machine which made possible the use of short, fine wools for worsted yarns.⁷

Pennsylvania has ranked second in the manufacture of hosiery and knit goods since 1870, having in that year 28.8 per cent of the total value of products for the United States, and 22.9 per cent in 1900. Philadelphia is the leading center of the industry. It differs from the other great center, Cohoes, N. Y., and its neighboring towns, in that the products in Philadelphia are chiefly hosiery, while the New York mills produce mostly underwear. The German Palatines who settled in Germantown about 1698 appear to have introduced the manufacture of hosiery into the United States. At the semiannual fairs established by William Penn in Philadelphia, the German hosiery exhibit was always a striking feature.⁸ In 1810, 107,508 pairs of stockings were manufactured in Pennsylvania, 53,981 of which were made in Philadelphia county. In 1858 there were 700 hand-knitting frames in operation in the city of Philadelphia. Some of the most famous and successful knitting machines have been invented in this

¹ Eighth Census of the United States, Manufactures, Introduction, page xxxiii.

² Report of the Secretary of Internal Affairs of Pennsylvania, Part III, Industrial Statistics, 1890, pages 94 and 96.

³ Eighth Census of the United States, Manufactures, Introduction, pages liv and lviii.

⁴ Report of the Secretary of Internal Affairs of Pennsylvania, Part III, Industrial Statistics, 1889, pages D14 to D18.

⁵ Report of the Secretary of Internal Affairs of Pennsylvania, Part III, Industrial Statistics, 1889, pages D9, D41, and D45.

⁶ Ibid., pages D38 and D43.

⁷ Ibid., 1888, page D1.

⁸ Eighth Census of the United States, Manufactures, Introduction, pages xlii and xlv.

city. A peculiarity of the industry in Philadelphia in early days—the carrying on of knitting as a house occupation by hand-frame operatives—has persisted somewhat to the present time. While Pennsylvania has a representation of large mills unequalled by any other state except New York, it has also a large number of establishments located within its borders which employ very few machines, and use knitting merely as an outlet for some other business or manufacturing enterprise.

The dyeing and finishing of textiles in Pennsylvania is centered chiefly in the city of Philadelphia. Calico printing from wooden blocks was carried on in this city as early as 1788, when John Hewson, sr., assisted by a loan of £200 from the state, began operations at Dyottsville, within the present limits of Philadelphia. The cloth was spread out on a table and the stamping done by hand.¹ In 1803 there were 3 print works in Philadelphia, printing annually 300,000 pounds of calico. It was in 1809 that cotton goods were first printed in the United States upon engraved copper rollers. This was done at the printing and bleaching works of Thorp, Siddle & Co., near Philadelphia, the machinery being imported from England. In 1810 there were 40 dyers in Pennsylvania, 8 of whom were in Philadelphia county. In 1822 the engraving of metallic rollers for calico printing was begun in Philadelphia by Mason & Baldwin, who took out patents in 1827 for biting figures on steel cylinders.

A machine for reducing rags to shoddy was patented by a Philadelphia manufacturer about the beginning of the century, and shortly afterwards an attempt was made to make shoddy at this point, but the industry did not assume importance until about the middle of the century.²

Reading and the adjoining village of Mohn's Store constitute the chief center in the United States for the manufacture of wool hats.³ In 1786 it was estimated that 160,000 wool hats were made in the state, and Berks county, which includes the city of Reading, was even at that time the chief center.⁴ In 1860, 474,924 wool and mixed hats were manufactured, the state leading all others in this industry. The decline in recent years has been due to the increased use of rabbits' fur instead of wool in the manufacture of hats.

There were 1,260 establishments engaged in 1900 in the manufacture of foundry and machine shop products, the industry third in rank, with 62,828 wage-earners, and products valued at \$127,292,440. In 1890 there were 886 establishments, 38,247 wage-earners, and products valued at \$67,587,025. The increase in the value of products during the decade was \$59,705,415, or 88.3 per cent. Allied to this industry is the manufacture of iron and steel wrought pipe, in which there were 10 establishments

engaged in 1900, with 3,675 wage-earners, and products valued at \$15,883,693. In 1890 there were 14 establishments, 9,170 wage-earners, and products valued at \$30,249,795. The decrease in the value of products during the decade was \$14,866,102, or 49.1 per cent. Pennsylvania has always held high rank in the foundry and machine shop industry, and especially so in certain of the products. The state ranked first in the number of steam locomotives built in 1900, producing more than one-half of the total for the United States; second in metal-working machinery; and second in pumping machinery. In 1831, one year after the first locomotive was built in the United States for actual work, locomotive building was begun at Philadelphia, and in 1832 "Old Ironsides" was completed for the Germantown and Norristown Railroad Company. This locomotive had a stiff wooden frame, and its driving wheels had wooden spokes. This pioneer company is still in existence, and has now a capacity of over a thousand locomotives per year. The exportation of locomotives from Pennsylvania to European markets began in 1845, and has continued increasingly up to the present time. In 1865 works were organized in Pittsburg which still exist, and have now a capacity of 300 locomotives per year.⁵

What was probably the first stove made in the United States, a "jamb stove," was manufactured by Christopher Sauer, of Germantown, between 1730 and 1740.⁶ In 1742 Franklin invented his stove, the pieces of which were cast in a new furnace near Reading. The name of this furnace, "Warwick," was cast on the front of each stove.⁷ The first printing press made in the United States came from the shop of Adam Ramage, in Philadelphia, about 1795.⁸ In 1810 there were 2 printing-press factories in this city, reporting products valued at \$26,000, and 2 manufactories of hydraulic engines, reporting products valued at \$25,000. The cannon balls used by General Jackson at the battle of New Orleans were cast in works built in Fayette county in 1797. Hollow ware, Dutch ovens, stoves, sugar kettles, skillets, pots, grates, irons, and plow castings also were made. A portion of these goods was consumed in the state, and the remainder shipped down the Ohio and Mississippi rivers.⁹ In 1836 there were 18 foundries, engine factories, and machine shops in the city of Pittsburg.

Numerous other iron and steel products are made in large quantities in Pennsylvania, the statistics being shown in Table 7 under the classifications, bridges, and iron-work, architectural and ornamental.

There were 254 establishments engaged in the tanning, currying, and finishing of leather in 1900, with 13,896 wage-earners, and products valued at \$55,615,009. In

¹ Eighth Census of the United States, Manufactures, Introduction, page xviii.

² Ibid., page xxxiv.

³ Report of the Secretary of Internal Affairs of Pennsylvania, Part III, Industrial Statistics, 1899, pages 109 and 110.

⁴ Eighth Census of the United States, Manufactures, Introduction, page clviii.

⁵ One Hundred Years of American Commerce, Vol. II, pages 337 and 338.

⁶ Ibid., page 357.

⁷ Tenth Census of the United States, Manufactures, folio 810.

⁸ One Hundred Years of American Commerce, Vol. II, page 650.

⁹ Tenth Census of the United States, Manufactures, folios 814 and 821.

1890 there were 410 establishments, 10,956 wage-earners, and products valued at \$49,931,716. The increase in the value of products during the decade was \$5,683,293, or 11.4 per cent. In 1880 Pennsylvania ranked second in this industry, having 18.9 per cent of the total value of the products for the United States; and first in 1900, with 27.3 per cent of the total. The industry was carried on in 1900 most extensively at Philadelphia and in Tioga, Elk, Potter, and Clearfield counties. In 1810 there were 715 tanneries in the state, with products valued at \$1,599,044. The value of products was large in Philadelphia, York, and Lancaster counties, but the industry was carried on in almost every county in the state. The process of tanning by the use of chemicals was brought to perfection at Philadelphia shortly after 1856, and within five years led to the development of an establishment which, in 1895, was reported to be the largest leather manufactory in the world.¹ Upon the exhaustion of the hemlock bark in the southeastern part of New York state, some years after the Civil War, tanners turned their attention to the vast hemlock forests of central and northern Pennsylvania, and a great development in the leather industry followed.² Hemlock bark and chemicals were the leading tanning materials used in the state in 1900.

There were 144 establishments engaged in the car construction and general shop work of steam railroad companies in 1900, with 28,554 wage-earners, and products valued at \$43,065,171. In 1890 there were 61 establishments, 22,649 wage-earners, and products valued at \$28,769,728. The increase in the value of products during the decade was \$14,295,443, or 49.7 per cent. Pennsylvania ranked first in this industry in 1900, the value of its products amounting to 19.7 per cent of the total for the United States.

Allied to this is the manufacture of steam railroad cars other than by railroad companies. There were 11 establishments engaged in this industry in 1900, with 5,840 wage-earners, and products valued at \$19,260,910. In 1890 there were 15 establishments, 4,535 wage-earners, and products valued at \$10,080,722. The increase in the value of products during the decade was \$9,180,188, or 91.1 per cent. Pennsylvania ranked second in this industry in 1900, and the value of its products amounted to 21.3 per cent of the total for the United States.

In these two classes of establishments 167 passenger cars, valued at \$200,400, and 23,697 freight cars, valued at \$12,968,113, were manufactured during the census year. Establishments operated by steam railroad companies were located at Altoona, Reading, Philadelphia, and other cities, while car construction by other establishments was carried on most extensively at Allegheny, Pittsburg, and Berwick.

There were 2,719 establishments engaged in the manufacture of flouring and grist mill products in 1900, with 2,195 wage-earners, and products valued at \$36,639,423. In 1890 there were 2,226 establishments, 3,378 wage-

earners, and products valued at \$39,478,076. The decrease in the value of products during the decade was \$2,838,653, or 7.2 per cent. In 1900 the industry was carried on most extensively in Dauphin, Lancaster, Berks, and York counties. In 1899 Pennsylvania ranked thirteenth in the production of corn and twelfth in the production of wheat.³ In 1810 flour and grist milling was carried on in almost every county in the state, the value of products of the "wheat mills" being reported at \$10,800,290. At that time Northampton produced more flour than any other county.

There were 1,795 establishments engaged in printing and publishing in 1900, with 16,991 wage-earners, and products valued at \$36,455,629. In 1890 there were 1,487 establishments, 15,009 wage-earners, and products valued at \$34,408,493. The increase in the value of products during the decade was \$2,047,136, or 5.9 per cent. Pennsylvania ranked second in the printing and publishing of newspapers and periodicals in 1900, and the value of its products amounted to 10.4 per cent of the total for the United States. The first printing press in Pennsylvania was erected in Philadelphia, in 1686, four years after the first English settlement was made in the colony. The publication of magazines and other periodicals was attempted by Franklin as early as 1741. In 1810 it was estimated that half a million volumes were printed annually in Philadelphia.⁴ The first Bible printed in the United States, except those printed in the Indian language, was from the press of Christopher Sauer, at Germantown, in 1743. The descendants of this early printer are still publishers in the city of Philadelphia. For fifty years after the Revolution this city was unquestionably first in the printing industry, the first daily paper in the United States having been established there in 1784. Shortly after the beginning of the century 110 wooden presses were in operation in Philadelphia—a larger number than in any other English-speaking city in the world except London.⁵ The growth of book publishing was promoted by annual fairs and auction sales established in 1802 by the American Company of Booksellers, and held for a while alternately in New York and Philadelphia. In 1810, 73 newspapers were published in Pennsylvania, 8 of which were daily papers—a larger number than was published in New York state at that time.⁶ In 1817 "The Columbian," a hand press, was invented by George Clymer, of Pennsylvania, and was introduced in the following year into England, where it remained in use until 1860. It was the first press built in the United States capable of printing both sides of a newspaper at once.

There were 7 establishments engaged in the refining of sugar and molasses in 1900, with 1,249 wage-earners, and products valued at \$36,163,817. In 1890 there were 10 establishments, 1,459 wage-earners, and products valued at \$46,599,754. The decrease during the decade was

³ Yearbook of the United States Department of Agriculture, 1899, pages 765 and 766.

⁴ Eighth Census of the United States, Manufactures, Introduction, pages cxxxv, cxxxvii, and cxxxviii.

⁵ One Hundred Years of American Commerce, Vol. I, pages 309 and 314.

⁶ Ibid., page 167.

¹ One Hundred Years of American Commerce, Vol. II, page 497.

² Report of the Secretary of Internal Affairs of Pennsylvania, Part III, Industrial Statistics, 1892, page A11.

\$10,435,937, or 22.4 per cent. This industry has always been confined very largely to Philadelphia, because the raw sugar used is brought chiefly from foreign markets. In 1810, 10 sugar refineries were in operation in this city, with products valued at \$605,600. In 1840 there were 3 small refineries, located in alleys and side streets and operated by rude and unscientific methods.¹ In 1866 the first sugar refinery was built on the Delaware River front. This marked a new era in the industry, with better transportation facilities, improved machines, and scientific methods of operation. In 1890 the largest of the refineries in Philadelphia had a capacity of 7,000 barrels per day, and used more raw sugar each year than was produced in the United States. The raw cane sugar was brought chiefly from the West Indies, Brazil, Demerara, and the East Indies, and large cargoes of raw beet sugar were brought from Germany and other countries.

There were 2,838 establishments engaged in the manufacture of lumber and timber products in 1900, with 13,510 wage-earners, and products valued at \$35,749,965. In 1890 there were 1,948 establishments, 19,598 wage-earners, and products valued at \$29,087,970. The increase in the value of products during the decade was \$6,661,995, or 22.9 per cent.

Although the production of lumber has increased since 1870, the state has fallen in rank. In that year it stood second, having 13.8 per cent of the total value of products for the United States, while in 1900 it stood fourth, with but 6.3 per cent of the total. Hemlock, the principal variety of lumber cut in 1900, constituted 73 per cent of the total amount produced in the state. This wood, despised twenty years ago except for tanbark, is being rapidly exhausted, though it is still found in considerable quantities in northern Pennsylvania.² Oak, white pine, poplar, and spruce ranked next to hemlock in importance, in the order named. The lumber industry is carried on most extensively in Lycoming, Potter, Elk, McKean, Jefferson, and Forest counties—Williamsport, Bradford, and South Williamsport being important centers. Of the 4 plants in the United States which produced more than 100,000,000 feet of lumber, board measure, during the census year, 1 was located in Pennsylvania.

In 1810, 73,847,640 feet of lumber were sawed in the state, chiefly in Northumberland, Luzerne, Chester, Warren, and Philadelphia counties. In addition to this, 700,000 feet of mahogany were sawed in 21 sawmills in the state. As early as 1804 large amounts of lumber were handled at Pittsburg, and about 1819, in a St. Louis price list, mention is made of pine boards brought from Pittsburg in flatboats, selling at \$8 per 100 feet. In 1838 the first large mills were erected at Williamsport, but the boom which afterwards supplied forty or fifty mills was not built until 1850. Lumber was sent down the Ohio River in large quantities until about 1876, by which time the

pine of northern Pennsylvania had become nearly exhausted.³ Between 1860 and 1874 there was a marked development in the industry. Timber was cut extravagantly and for a time it was feared the state's timber supply would be entirely exhausted. The panic of 1873 completely paralyzed the industry and checked this waste.⁴ Since that time there has been a gradual rise in the price of lumber, due to the decreasing supplies, and the forests have been cleared with more discretion.

There were 38 establishments engaged in the refining of petroleum in 1900, with 3,299 wage-earners, and products valued at \$34,977,706. In 1890 there were 55 establishments, 3,284 wage-earners, and products valued at \$18,498,777. The increase in the value of products during the decade was \$16,478,929, or 89.1 per cent. Pennsylvania ranked first in this industry both in 1870 and in 1900, the value of its products constituting 56.6 per cent of the total for the United States in the former year, and 28.2 per cent in the latter. In 1900 the industry was carried on most extensively at Philadelphia and in Venango county. Petroleum has been known in Pennsylvania from very early times, and in the census of 1810, 550 gallons of "spring oil" were reported for Venango county. Until Drake's invention, in 1858, at Titusville, by which oil was obtained from driven wells, all supplies had been gotten from springs and surface wells.⁵ In 1899 the production of crude petroleum in the state amounted to 13,053,603 barrels, or 22.9 per cent of the total for the United States.⁶ This amount was somewhat less, however, than the amount of crude petroleum used in the refineries of the state during the census year, considerable quantities of crude oil being received from neighboring states. In the days of railroad transportation of petroleum, freight charges were so heavy that it was economical to carry on refining near the wells, and the region about Pittsburg and Oil City was filled with numerous small works, the first refinery at the former city having been established in 1855. After the introduction of pipe lines, in 1875, the cost of transportation was so much reduced that it became advantageous to ship the crude oil to large refineries on the seaboard, near New York, Philadelphia, and Baltimore, and on the shores of Lake Erie, near Buffalo and Cleveland.⁷

There were 281 establishments engaged in the manufacture of liquors in 1900, with 4,976 wage-earners, and products valued at \$34,520,358. In 1890 there were 203 establishments, 3,548 wage-earners, and products valued at \$22,698,423. The increase in the value of products during the decade was \$11,821,935, or 52.1 per cent. The production of malt liquors has come to be by far the most important branch of the liquor industry, although in the

³ One Hundred Years of American Commerce, Vol. I, page 197.

⁴ Report of the Secretary of Internal Affairs of Pennsylvania, Part III, Industrial Statistics, 1876-77, page 654.

⁵ One Hundred Years of American Commerce, Vol. I, pages 204-206.

⁶ United States Geological Survey: Mineral Resources, 1899, Nonmetallic Products, except Coal and Coke, page 12.

⁷ One Hundred Years of American Commerce, Vol. I, page 209.

¹ Report of the Secretary of Internal Affairs of Pennsylvania, Part III, Industrial Statistics, 1890, pages D2 and D18.

² One Hundred Years of American Commerce, Vol. I, page 200.

early years of the century the production of distilled liquors was more important. In 1900 Pennsylvania ranked second in the malt liquor industry, having 12.3 per cent of the total value of the products for the United States. The industry was carried on in 1900 most extensively at Philadelphia, Pittsburg, Allegheny, and Scranton. The state ranked fifth in distilled liquor production in 1900, its value of products amounting to 5.5 per cent of the total for the United States. The industry was carried on in 1900 most extensively in Westmoreland, Allegheny, and Fayette counties.

Distilling was carried on to a considerable extent about the middle of the last century. The attempt of the United States Government to collect the first internal-revenue tax upon distilled spirits resulted, in 1794, in the uprising in the western part of Pennsylvania, known as the "Whiskey Rebellion." In 1810, 6,552,284 gallons of whiskey were reported for the state, the largest production being in Lancaster and Philadelphia counties, although the industry was carried on in almost every county in the state.

There were 2,712 establishments engaged in the manufacture of tobacco in 1900, with 25,483 wage-earners, and products valued at \$33,355,932. In 1890 there were 2,025 establishments, 18,550 wage-earners, and products valued at \$23,387,910. The increase in the value of products during the decade was \$9,968,022, or 42.6 per cent. In 1899 Pennsylvania produced tobacco leaf to the value of \$2,959,304, ranking sixth in the United States. The manufacture was extensive as early as 1810, during which year 29,061,000 "American cigars" were manufactured in Pennsylvania, nearly the entire quantity being made in Philadelphia. In addition to these, more than three million "Spanish cigars" were manufactured.

There were 111 establishments engaged in the slaughtering industry in 1900, with 1,669 wage-earners, and products valued at \$25,238,772. In 1890 there were 242 establishments, 1,582 wage-earners, and products valued at \$21,991,604. The increase in the value of products during the decade was \$3,247,168, or 14.8 per cent. The branch of the industry which includes meat packing is by far the more important of the two, and was carried on during the census year chiefly at Philadelphia, Allegheny, and Pittsburg.

There were 481 establishments engaged in the factory manufacture of men's clothing in 1900, with 10,497 wage-earners, and products valued at \$23,389,043. In 1890 there were 337 establishments, 7,675 wage-earners, and products valued at \$26,732,348. The decrease in the value of products during the decade was \$3,343,305, or 12.5 per cent. Allied to this industry is the factory manufacture of women's clothing, in which there were 230 establishments engaged in 1900, with 8,311 wage-earners, and products valued at \$11,694,580. In 1890 there were 80 establishments, 2,989 wage-earners, and products valued at \$3,908,596. The increase in the value of products during the decade was \$7,790,984, or 199.6 per cent. The manufacture of men's clothing was carried on in the state as a hand trade early in the Eighteenth century. In 1718 the tailors of Philadelphia applied to the state for an act of

incorporation.¹ In the early years of the industry in this city, clothing was sent out into the country to be sewed by the wives and daughters of farmers during the winter.² The factory industry began in the United States about 1820, and shortly after that date several establishments were in operation in Philadelphia, shipping their products to the Southern states. In 1860 the value of men's clothing manufactured in Pennsylvania exceeded that of all New England, Philadelphia contributing three-fourths of the entire product. The manufacture of women's clothing assumed importance in the United States about the year 1845, and in 1860 there were 4 establishments in the city of Philadelphia, with products valued at \$345,000.

There were 89 establishments engaged in the manufacture of coke in 1900, with 9,283 wage-earners, and products valued at \$22,282,358. In 1890 there were 98 establishments, 5,855 wage-earners, and products valued at \$10,415,628. The increase in the value of products during the decade was \$11,866,730, or 113.9 per cent. Pennsylvania has long ranked first in this industry, the production in 1880 amounting to 84.2 per cent of the total for the United States, and in 1900 to 62.6 per cent of the total. For twenty years the Connellsville district, famous for both the quantity and the quality of its coke, has contributed each year, with one exception, over 50 per cent of the entire production of the United States.³ The yield of coal in coke rose from 65.5 per cent in 1880 to 69.4 per cent in 1899, while the value fell from \$1.79 per ton in 1880 to \$1.64 in 1899. An average of 1,676 carloads of coke leave this district each day. The quality of the coal used is such that it needs little or no preparation before being charged into the ovens.

There were 119 establishments engaged in the manufacture of glass in 1900, with 19,420 wage-earners, and products valued at \$22,011,130. In 1890 there were 99 establishments, 18,510 wage-earners, and products valued at \$17,179,137. The increase in the value of products during the decade was \$4,831,993, or 28.1 per cent. Pennsylvania has long led all other states in this manufacture, having 51.8 per cent of the total value of the products for the United States in 1870, and 38.9 per cent in 1900. The industry was carried on in 1900 most extensively in Allegheny, Westmoreland, Washington, and Armstrong counties, in the western part of the state. Glass making has been stimulated in this section by abundant supplies of bituminous coal and natural gas, and by deposits of glass sand in Juniata and Fayette counties, equal in quality to that found anywhere else in the world, and by the abundance of fire clay suitable for furnaces, found in western Pennsylvania and eastern Ohio.⁴

Mention was made by William Penn, in 1683, of a glass-house in Pennsylvania, but its location was not stated.

¹ Eighth Census of the United States, Manufactures, Introduction, pages ix, lxiii, lxxxiii.

² One Hundred Years of American Commerce, Vol. II, page 563.

³ United States Geological Survey: Mineral Resources, 1899, Metallic Products, Coal, and Coke, pages 594, 598, 599, and 600.

⁴ Tenth Census of the United States, Manufactures, folios 1066, 1074, and 1075.

The first glass works west of the Allegheny Mountains was built by Albert Gallatin at New Geneva, on the Monongahela River, probably in 1797. About the same time a glasshouse was established at Pittsburg, and was the first works to use coal as a fuel.¹ In 1810 there were 8 glass factories in Pennsylvania, with products valued at \$144,800, the greatest production being shown for Allegheny county.

The most important event in the glass industry in recent years was the introduction of natural gas as fuel. The first successful use of this fuel in the manufacture of glass was at a large plate glass establishment at Creighton, near Pittsburg, in 1888.² Many small towns where natural gas was discovered offered land and bonuses to induce the establishment of glass works within their limits, and the building of glasshouses progressed rapidly.³ During the census year the cost of natural gas constituted 71.5 per cent of the total cost of fuel used in the glass industry. During the same year glass of various kinds, valued at \$107,958, was exported from establishments in Pennsylvania to England, South America, Canada, Australia, and New Zealand. These figures include only glass sold directly from the factory to foreign consumers.

There were 63 establishments engaged in the manufacture of electrical apparatus and supplies in 1900, with 7,817 wage-earners, and products valued at \$19,112,665. In 1890 there were 10 establishments, 209 wage-earners, and products valued at \$674,565. The increase in the value of products during the decade was \$18,438,100, or 2,733.8 per cent.

There were 542 establishments engaged in the manufacture of planing mill products in 1900, with 7,472 wage-earners, and products valued at \$16,736,839. In 1890 there were 467 establishments, 7,888 wage-earners, and products valued at \$18,398,688. The decrease in the value of products during the decade was \$1,661,849, or 9 per cent.

There were 146 establishments engaged in the factory manufacture of boots and shoes in 1900, with 9,144 wage-earners, and products valued at \$13,235,933. In 1890 there were 158 establishments, 7,616 wage-earners, and products valued at \$10,354,850. The increase in the value of products during the decade was \$2,881,083, or 27.8 per cent. Pennsylvania ranked fourth in this industry in 1890, having 4.7 per cent of the total value of products for the United States; and fifth in 1900, with 5.1 per cent of the total. In 1900 the industry was centered at Philadelphia, Carlisle, and Allentown. The manufacture was carried on in the state as early as 1698, the workers being known as cordwainers.⁴ In 1810, 1,327,776 pairs of boots, shoes, and slippers were manufactured in the state, 709,833 pairs of which were made in Philadelphia county. In 1851 an ingenious machine for pegging boots and shoes was patented

and put into operation at Pittsburg. In 1860 fine shoes were manufactured in Philadelphia, where the industry was stimulated by the large manufacture of fine calf and morocco leather.

There were 100 establishments engaged in the manufacture of chemicals in 1900, with 4,278 wage-earners, and products valued at \$13,034,384. In 1890 there were 71 establishments, 3,284 wage-earners, and products valued at \$13,144,210. The decrease in the value of products during the decade was \$109,826, or eight-tenths of 1 per cent. The industry was carried on in 1900 most extensively at Philadelphia and in Allegheny county. Oil of vitriol was manufactured in Philadelphia as early as 1793. By 1830 this city was the chief center of the chemical industry in the United States,⁵ and in 1880 Pennsylvania led all other states in the manufacture of sulphuric acid, sulphate of ammonia, and white lead, contributing more than one-fourth of the production of sulphuric acid in the United States.⁶

There were 73 establishments engaged in the manufacture of paper and wood pulp in 1900, with 4,840 wage-earners, and products valued at \$12,267,900. In 1890 there were 72 establishments, 2,951 wage-earners, and products valued at \$7,838,299. The increase in the value of products during the decade was \$4,429,601, or 56.5 per cent. Pennsylvania ranked third in this industry in 1880, having 10.1 per cent of the total value of products for the United States; and fourth in 1900, with 9.6 per cent of the total. In 1900 the industry was carried on most extensively in Philadelphia, York, Erie, Blair, and Elk counties. The first paper mill in the United States was established near Germantown in 1693. Printing, writing, and wrapping paper were manufactured.⁷ About 1728 a mill was erected on Chester Creek, Delaware county. This mill supplied the press of Benjamin Franklin, and made the bank-note paper used for Continental currency. The paper manufacture in Philadelphia and vicinity was greatly promoted by the enterprise of the printers and booksellers, especially by Benjamin Franklin, who stated in 1787 that he had been interested in the establishment of 18 paper mills, and that there were 48 such mills then in operation in the state. In 1816 the first steam paper mill in the United States began operations in Pittsburg, with an engine of 16 horsepower, and 40 employees.

The increasing demand for paper made it necessary to develop some new material for the production of fiber, and in this Pennsylvania has had an important part. In 1830 Wooster and Holmes, of Meadville, Pa., took out patents for making paper from whitewood and hemlock. The process of producing white paper from straw was developed at Flat Rock Mills in 1854. In 1857 J. A. Roth, of Philadelphia, patented the process of treating wood fibers with a combination of sulphuric acid and chlorine bleaching agents. In 1868 M. L. Keen, of Royersford, Pa.,

¹ One Hundred Years of American Commerce, Vol. I, pages 274 and 275.

² United States Geological Survey: Mineral Resources, 1885, page 172.

³ One Hundred Years of American Commerce, Vol. I, page 282.

⁴ Eighth Census of the United States, Manufactures, Introduction, pages lxx, lxxi, and lxxii.

⁵ One Hundred Years of American Commerce, Vol. II, page 429.

⁶ Tenth Census of the United States, Manufactures, folio 993.

⁷ Eighth Census of the United States, Manufactures, Introduction, pages cxxiii, cxxiv, cxxv, and cxxviii.

patented a boiler for making pulp from wood, and in the following year Richard Magee, of Philadelphia, patented a method of coating writing paper.¹ In the early part of the century the paper mills of Pennsylvania produced all the paper required by the newspapers of the state.² At present nearly all the paper so used is produced in other states. This change has been due chiefly to the comparatively limited waterpower of Pennsylvania, and to a lack of spruce, the wood best adapted to news paper manufacturing. Most of the mills in Pennsylvania are producing book paper by the chemical treatment of wood, the power required not being an important factor.

There were 749 establishments engaged in the factory manufacture of cheese, butter, and condensed milk in 1900, with 976 wage-earners, and products valued at \$10,290,006. In 1890 there were 800 establishments, 766 wage-earners, and products valued at \$5,319,434. The increase in the value of products during the decade was \$4,970,572, or 93.4 per cent. In 1900 Pennsylvania ranked fifth in this industry, having 7.9 per cent of the total value of products for the United States. The chief centers were Chester, Lancaster, Montgomery, Bucks, and Berks counties. There were 943,773 dairy cows reported during the census year, the state ranking fifth in the United States.

In addition to the industries included in Table 3, attention is directed to an important industry—iron and steel shipbuilding—the statistics for which appear only in Table 7, since comparable statistics for 1890 are not available. There were 3 establishments engaged in this industry in 1900, with 6,820 wage-earners, and products valued at \$14,085,395. Pennsylvania ranked first in the industry in 1900, having 28 per cent of the total value of products for the United States. The industry is practically confined to the Delaware River in and near Philadelphia, and its great development is due to the proximity of this sec-

tion to the great iron manufacturing establishments of the state; to the depth of the river close up to the shipyards; to the fresh water of the river giving comparative immunity from rust; and to the mild winters, which allow outside work on vessels. The beginning of shipbuilding in Philadelphia was almost coincident with the settlements made under William Penn.³ In 1775 Philadelphia was the leading center for the building of ships, its preeminence being due to the immense shipping trade carried on between that city and the West Indies. In 1793 twice as many ships were built in Philadelphia as in any other locality in the United States.⁴ The first steamboat in this country was launched on the Delaware River in 1786, and in 1809 steam navigation began its continuous existence at this point. In 1869 the Reading Railroad Company built 14 iron steamboats to be used in their coast coal trade. From that date wooden shipbuilding in Pennsylvania declined, and in 1900 it was an insignificant part of the whole industry. Next to the Clyde River, in Scotland, the Delaware River is now the greatest shipbuilding stream in the world. Builders on this river have been prominent in the construction of war vessels for the Government. The first six ships of the Navy were designed by a Philadelphia shipbuilder, Joshua Humphreys, and of the steel ships recently built for the Navy, more have been constructed at Philadelphia than at any other point.

URBAN MANUFACTURES.

Table 4 shows the totals for the manufacturing and mechanical industries of the cities of Allegheny, Allentown, Altoona, Chester, Erie, Harrisburg, Johnstown, Lancaster, McKeesport, Philadelphia, Pittsburg, Reading, Scranton, Wilkesbarre, Williamsport, and York as returned at the censuses of 1890 and 1900, with the percentages of increase.

¹ Report of the Secretary of Internal Affairs of Pennsylvania, Part III, Industrial Statistics, 1876-1877, page 806.

² Ibid., 1897, page 65.

³ Report of the Secretary of Internal Affairs of Pennsylvania, Part III, Industrial Statistics, 1891, page C8 ff.

⁴ One Hundred Years of American Commerce, Vol. I, page 119.

TABLE 4.—COMPARATIVE SUMMARY, ALLEGHENY, ALLENTOWN, ALTOONA, CHESTER, ERIE, HARRISBURG, JOHNSTOWN, LANCASTER, McKEESPORT, PHILADELPHIA, PITTSBURG, READING, SCRANTON, WILKESBARRE, WILLIAMSPORT, AND YORK, 1890 AND 1900, WITH PER CENT OF INCREASE.

	Year.	Number of establishments.	Capital.	WAGE-EARNERS.		Miscellaneous expenses.	Cost of materials used.	Value of products, including custom work and repairing.
				Average number.	Total wages.			
The State	1900	52,185	\$1,551,548,712	733,834	\$332,072,670	\$134,344,269	\$1,042,434,599	\$1,834,790,860
Per cent of increase	1890	39,339	991,243,115	570,393	263,375,215	74,841,458	773,734,637	1,331,794,901
		32.7	56.5	28.7	26.1	79.5	34.7	37.8
Allegheny	1900	893	50,122,503	20,804	10,352,502	5,120,269	20,478,781	54,136,967
Per cent of increase	1890	675	22,253,243	11,857	5,916,525	1,728,571	14,231,755	26,878,979
		32.3	125.2	75.5	75.0	195.2	107.1	101.4
Allentown	1900	491	11,936,971	8,447	3,150,970	1,310,643	9,846,047	16,047,722
Per cent of increase	1890	382	6,977,091	5,293	1,910,882	582,875	5,102,911	8,876,565
		28.5	71.9	59.6	64.9	146.0	92.9	90.9
Altoona	1900	230	8,103,819	8,090	4,610,828	350,501	8,376,488	14,250,656
Per cent of increase	1890	208	7,955,423	6,216	3,440,293	241,121	6,133,222	10,497,019
		10.6	1.9	30.1	34.3	45.4	36.6	35.8
Chester	1900	315	18,977,710	7,682	3,462,196	1,222,400	9,261,886	16,421,725
Per cent of increase	1890	201	9,397,033	6,559	2,807,341	608,831	6,844,825	11,864,899
		56.7	102.0	17.1	23.3	100.8	35.3	38.4
Erie	1900	644	20,418,016	9,339	4,574,625	1,197,411	9,107,305	19,053,202
Per cent of increase	1890	236	12,812,594	6,463	3,248,366	718,157	6,145,680	12,765,768
		172.9	59.4	44.5	40.8	66.7	48.2	49.3
Harrisburg	1900	446	8,749,516	7,362	2,949,544	646,950	9,402,516	16,064,597
Per cent of increase	1890	475	6,716,074	6,814	2,947,291	423,757	5,432,757	10,538,444
		16.1	30.3	16.6	0.1	50.9	73.1	52.4
Johnstown	1900	248	16,940,450	6,116	3,213,189	1,922,080	14,445,126	22,559,890
Per cent of increase	1890	113	13,280,296	5,369	2,879,569	789,343	18,137,331	18,422,989
		119.5	27.6	13.9	11.6	143.5	10.0	22.5
Lancaster	1900	738	10,303,464	9,349	3,323,748	1,193,997	8,342,709	16,370,281
Per cent of increase	1890	599	7,091,814	7,330	2,219,917	691,291	6,306,495	11,361,535
		23.2	40.5	27.5	49.7	72.7	32.3	44.1
McKeesport	1900	180	17,876,016	7,605	4,370,381	428,226	22,309,161	37,074,136
Per cent of increase	1890	118	10,979,812	6,078	3,189,558	737,562	10,617,333	17,432,721
		52.5	62.8	25.1	37.0	141.9	110.1	112.7
Philadelphia	1900	15,887	476,529,407	246,445	111,847,076	55,575,685	326,877,441	603,466,526
Per cent of increase	1890	18,166	375,249,715	234,647	113,306,173	39,615,476	311,645,804	577,234,446
		112.5	27.0	5.0	1.3	40.3	4.9	4.5
Pittsburg	1900	1,938	193,162,900	69,977	36,684,568	15,293,017	116,833,174	203,261,251
Per cent of increase	1890	1,420	108,868,838	52,963	29,889,486	7,561,199	69,892,195	126,859,657
		36.5	78.3	32.1	22.7	102.3	67.2	60.2
Reading	1900	843	27,975,628	19,165	7,544,950	5,085,456	19,089,332	36,902,511
Per cent of increase	1890	435	14,033,374	12,211	4,780,470	1,042,366	12,009,332	20,855,165
		93.8	98.6	56.9	57.8	387.9	59.0	76.9
Scranton	1900	710	19,954,525	12,669	5,191,522	1,857,881	18,411,022	27,646,418
Per cent of increase	1890	177	16,237,271	8,825	3,928,834	874,621	16,922,753	24,341,745
		301.1	22.9	43.6	32.1	112.4	8.8	13.6
Wilkesbarre	1900	438	10,501,537	5,977	2,286,676	1,142,358	5,167,777	10,758,348
Per cent of increase	1890	270	5,598,139	4,141	1,808,226	573,640	4,026,579	7,746,371
		62.2	87.6	44.3	26.5	97.4	28.3	38.9
Williamsport	1900	396	9,863,811	5,595	2,065,930	517,059	6,420,337	11,199,600
Per cent of increase	1890	302	12,335,423	5,653	2,271,531	626,646	5,919,284	11,107,037
		31.1	120.0	1.0	9.1	117.5	8.5	0.8
York	1900	464	9,640,784	7,785	2,679,175	798,453	6,078,070	11,961,706
Per cent of increase	1890	350	8,842,453	3,669	1,320,418	358,635	3,170,840	6,068,223
		32.6	150.9	112.2	102.9	122.6	91.7	100.4
Total for 16 cities	1900	24,861	911,622,057	452,407	208,316,875	93,662,386	619,447,172	1,118,075,536
Per cent of increase	1890	24,127	638,778,093	383,588	185,864,885	57,134,091	497,538,650	902,751,563
		3.0	43.8	17.9	12.1	63.9	24.5	23.9
Per cent of 16 cities to total for state	1900	47.6	58.8	61.6	62.7	69.7	59.4	60.9
	1890	61.3	63.9	67.2	70.6	76.3	64.3	67.8

¹ Decrease.

It appears from Table 4 that there has been a considerable increase during the past decade in the combined manufactures of these 16 cities. The number of establishments increased from 24,127 to 24,861, or 3 per cent; the average number of wage-earners from 383,588 to 452,407, or 17.9 per cent; and the value of products from \$902,751,563 to \$1,118,075,536, or 23.9 per cent. The percentage of increase in each of these particulars was smaller in these 16 cities than in the state as a whole. The city of McKeesport shows the most rapid growth, the value of products having increased from \$17,432,721 to \$37,074,136, or 112.7 per cent. In Philadelphia, the leading manufacturing city, the number of establishments decreased from 18,166 to 15,887, or 12.5 per cent. The average number of wage-earners increased, however, from 234,647 to 246,445, or 5 per cent; and the value of products from \$577,234,446 to \$603,466,526, or 4.5 per cent. The number of establishments, number of wage-earners, and value of products in this city constituted 30.4, 33.6, and 32.0 per cent, respectively, of the totals for the state.

In Philadelphia the leading manufacturing industries were foundry and machine shop products; sugar and molasses, refining; carpets and rugs, other than rag; petroleum, refining; and clothing, men's, factory product.

In Pittsburg, the city second in rank, the leading manufacturing industries were iron and steel; foundry and machine shop products; electrical apparatus and supplies; ironwork, architectural and ornamental; and iron and steel, pipe, wrought.

In Allegheny, the city third in rank, the leading manufacturing industries were cars, steam railroad, not including operations of railroad companies; iron and steel; foundry and machine shop products; pickles, preserves, and sauces; and slaughtering and meat packing, wholesale.

In McKeesport, the city fourth in rank, the leading manufacturing industries were iron and steel; tin andterne plate; iron and steel, pipe, wrought; bottling; and lumber, planing mill products, including sash, doors, and blinds.

In Reading, the city fifth in rank, the leading industries were iron and steel; cars and general shop construction and repairs by steam railroad companies; foundry and machine shop products; tobacco, cigars and cigarettes; and hardware.

In Scranton, the city sixth in rank, the leading manufacturing industries were iron and steel; silk and silk goods; foundry and machine shop products; liquors, malt; and cars and general shop construction and repairs by steam railroad companies.

In Johnstown, the city seventh in rank, the leading manufacturing industries were iron and steel; foundry and machine shop products; pottery, terra cotta, and fire-clay products; liquors, malt; and tin andterne plate.

In Erie, the city eighth in rank in Table 4, but tenth in rank in the state, the leading manufacturing industries

were foundry and machine shop products; paper and wood pulp; lumber, planing mill products, including sash, doors, and blinds; flouring and grist mill products; and liquors, malt.

In Allentown, the city ninth in rank in Table 4, but eleventh in rank in the state, the leading manufacturing industries were iron and steel; silk and silk goods; foundry and machine shop products; boots and shoes, factory product; and slaughtering and meat packing, wholesale.

In Chester, the city tenth in rank in Table 4, but twelfth in rank in the state, the leading manufacturing industries were iron and steel; cotton goods; iron and steel, pipe, wrought; shipbuilding, iron and steel; and worsted goods.

In Lancaster, the city eleventh in rank in Table 4, but thirteenth in rank in the state, the leading manufacturing industries were umbrellas and canes; tobacco, cigars and cigarettes; confectionery; cotton goods; and iron and steel.

In Harrisburg, the city twelfth in rank in Table 4, but fourteenth in rank in the state, the leading manufacturing industries were iron and steel; cars and general shop construction and repairs by steam railroad companies; foundry and machine shop products; boots and shoes, factory product; and slaughtering and meat packing, wholesale.

In Altoona, the city thirteenth in rank in Table 4, but fifteenth in rank in the state, the leading manufacturing industries were cars and general shop construction and repairs by steam railroad companies; foundry and machine shop products; lumber, planing mill products, including sash, doors, and blinds; printing and publishing, newspapers and periodicals.

In York, the city fourteenth in rank in Table 4, but seventeenth in rank in the state, the leading manufacturing industries were foundry and machine shop products; tobacco, cigars and cigarettes; paper hangings; iron and steel, nails and spikes, cut and wrought, including wire nails; and carriages and wagons.

In Williamsport, the city fifteenth in rank in Table 4, but eighteenth in rank in the state, the leading manufacturing industries were lumber and timber products; boots and shoes, rubber; silk and silk goods; clothing, men's, factory product; and leather, tanned, curried, and finished.

In Wilkesbarre, the city sixteenth in rank in Table 4, but twentieth in rank in the state, the leading manufacturing industries were silk and silk goods; cotton goods; foundry and machine shop products; liquors, malt; and wirework, including wire rope and cable.

Table 5 presents the totals for the manufacturing industries of the 133 cities and boroughs withdrawn from the enumerators, places them in comparison with the totals for the entire state and the state exclusive of these cities and boroughs, and shows their rank in population and in value of products.

TABLE 5.—URBAN MANUFACTURES.

	Number of establishments.	Capital.	Proprietors and firm members.	WAGE-EARNERS.		Miscellaneous expenses.	Cost of materials used.	PRODUCTS.			POPULATION.		
				Average number.	Total wages.			Value.	Rank.	Per cent of total.	Total.	Rank.	Per cent of total.
Total for state	52,185	\$1,551,548,712	58,886	733,834	\$332,072,670	\$134,344,269	\$1,042,431,599	\$1,834,790,860	-----	100.0	16,302,034	-----	100.0
Total for urban manufactures	33,449	1,170,694,661	37,969	585,923	265,871,261	113,427,652	803,732,711	1,437,923,545	-----	78.4	3,202,439	-----	50.8
Allegheny	893	50,122,503	1,040	20,801	10,352,502	5,120,269	29,478,781	51,136,967	8	3.0	129,896	8	2.1
Allentown	491	11,996,971	617	8,447	3,150,970	1,310,643	9,846,047	16,947,722	11	0.9	85,416	12	0.6
Altoona	230	8,108,819	267	8,000	4,619,828	350,501	8,376,488	14,250,656	15	0.8	38,973	10	0.6
Ashland	54	807,871	65	168	85,640	9,779	132,909	274,765	125	(2)	6,438	65	0.1
Athens	51	843,719	54	589	220,250	54,356	618,956	1,012,183	88	0.1	3,749	102	0.1
Bangor	73	804,517	81	944	348,687	110,955	552,647	1,230,350	81	0.1	4,106	94	0.1
Beaver Falls	119	6,367,196	110	2,231	1,022,075	303,189	3,780,051	6,245,501	29	0.3	10,054	42	0.2
Bellefonte	42	874,076	71	506	219,770	46,731	1,175,668	1,652,436	82	0.1	4,216	91	0.1
Berwick	33	2,446,463	28	1,335	780,505	111,067	2,808,813	4,372,953	41	0.2	3,916	97	0.1
Bethlehem	106	1,871,072	117	1,265	826,954	240,028	995,368	1,832,219	65	0.1	7,293	68	0.1
Birdsboro	26	1,095,356	30	861	335,450	58,240	1,321,574	2,026,928	58	0.1	2,264	126	(2)
Bloomsburg	45	2,093,473	69	1,029	328,385	106,093	978,508	1,732,559	67	0.1	6,170	68	0.1
Bradford	121	2,724,303	132	1,437	893,037	875,170	3,111,916	5,643,152	33	0.3	15,654	24	0.2
Bradford	149	2,674,380	183	1,965	1,031,949	224,962	2,011,858	4,101,339	45	0.2	15,029	25	0.2
Bridgeport	28	1,954,100	24	838	265,209	66,292	1,358,235	1,821,585	66	0.1	3,097	112	(2)
Bristol	72	3,616,181	72	2,027	751,033	332,920	2,577,508	4,008,248	46	0.2	7,104	61	0.1
Bufler	129	1,696,396	159	1,003	505,468	144,796	749,216	1,877,419	63	0.1	10,853	40	0.2
Carbondale	92	1,618,034	103	1,138	387,528	100,701	572,101	1,394,602	75	0.1	13,536	29	0.2
Carlisle	109	1,125,635	129	1,885	415,986	83,436	1,249,456	2,131,239	57	0.1	9,626	44	0.2
Carnegie	58	465,830	55	381	231,519	67,192	434,660	909,890	93	0.1	7,330	56	0.1
Catsaqua	68	3,136,958	63	1,548	592,026	190,598	1,660,319	3,197,297	47	0.2	3,963	96	0.1
Chambersburg	107	863,037	124	793	283,676	62,527	633,952	1,127,423	85	0.1	8,861	50	0.1
Charleroi	62	2,395,002	65	1,270	671,371	278,059	700,669	1,871,505	64	0.1	5,930	70	0.1
Chester	315	18,977,710	327	7,682	3,462,196	1,222,400	9,261,886	16,421,725	12	0.9	33,988	14	0.5
Coatesville	70	4,772,487	73	1,854	840,322	219,305	3,752,864	6,356,079	28	0.4	5,721	74	0.1
Columbia	142	2,403,571	141	2,729	968,288	160,051	2,837,765	4,729,477	38	0.3	12,316	36	0.2
Connellsville	121	1,283,667	149	916	495,761	50,344	1,449,338	2,380,137	52	0.1	7,160	60	0.1
Conshohocken	55	3,957,818	51	1,951	896,797	219,482	2,303,063	4,451,230	40	0.2	6,762	73	0.1
Corapolis	20	471,294	19	397	171,916	35,336	305,093	731,840	100	(2)	2,555	121	(2)
Corry	109	830,727	112	585	255,129	65,053	493,058	1,061,464	87	0.1	5,369	79	0.1
Danville	92	2,836,268	107	2,414	855,306	227,030	2,759,707	4,317,776	42	0.2	8,042	53	0.1
Darby	45	1,963,579	54	744	270,921	78,369	570,393	1,152,278	84	0.1	3,429	108	0.1
Dubois	56	1,513,316	74	893	355,925	89,756	1,229,312	1,926,391	61	0.1	9,375	46	0.1
Dunmore	53	1,336,477	51	893	354,922	180,407	662,486	1,472,675	71	0.1	12,583	33	0.2
Duquesne	19	14,368,059	24	1,497	1,075,152	435,851	14,611,842	20,365,667	9	1.1	9,036	48	0.1
East Mauch Chunk	21	801,135	19	383	76,257	66,965	478,814	685,394	102	(2)	3,458	105	0.1
Easton	285	4,829,879	323	3,912	1,516,525	485,029	3,794,496	6,746,078	25	0.4	25,228	18	0.4
Ephrata	66	370,198	74	501	130,323	65,227	308,958	634,359	107	(2)	2,451	123	(2)
Erie	644	20,418,016	718	9,339	4,574,625	1,197,411	9,107,305	19,053,202	10	1.0	52,733	6	0.8
Etna	37	3,701,681	37	1,709	865,992	64,848	2,516,585	5,055,269	32	0.3	5,384	78	0.1
Franklin	120	4,523,916	156	768	354,318	1,506,361	1,826,916	6,046,218	31	0.3	7,317	57	0.1
Greencastle	26	48,526	29	61	19,476	78,369	49,673	94,622	130	(2)	1,463	132	(2)
Greenville	79	1,998,509	90	999	544,612	65,003	1,116,066	1,900,471	62	0.1	4,814	85	0.1
Hamburg	62	416,757	77	369	118,515	20,950	383,291	627,209	109	(2)	2,315	124	(2)
Hanover	85	766,387	113	849	282,267	78,399	557,542	1,153,492	83	0.1	5,302	80	0.1
Harrisburg	446	8,749,516	464	7,362	2,949,544	646,950	9,402,516	16,064,697	14	0.9	50,167	8	0.8
Hawley	28	716,812	34	448	140,953	21,825	897,627	809,724	96	(2)	1,925	128	(2)
Hazleton	141	1,488,290	156	1,049	341,769	166,935	520,222	1,478,593	70	0.1	14,280	26	0.2
Holidaysburg	38	167,649	41	197	77,786	8,931	190,979	332,022	122	(2)	2,998	114	(2)
Homestead	52	2,591,815	68	1,030	439,247	59,737	725,729	1,444,245	72	0.1	12,554	35	0.2
Honesdale	71	1,357,399	81	680	238,684	90,242	714,659	1,235,425	80	0.1	2,804	117	(2)
Huntingdon	68	1,062,520	75	550	208,583	82,972	571,414	971,674	90	0.1	6,053	69	0.1
Johnstown	218	16,940,450	316	6,116	3,213,189	1,922,080	14,445,126	22,550,890	7	1.2	35,936	11	0.6
Lancaster	738	10,803,464	855	9,349	3,323,748	1,198,997	8,342,709	16,370,281	13	0.9	41,459	9	0.7
Lansford	24	208,116	22	283	119,815	3,728	200,274	318,517	121	(2)	4,888	83	0.1
Lebanon	219	7,756,390	247	5,613	2,245,809	350,716	6,512,892	10,167,455	21	0.6	17,628	22	0.3
Lehigh	42	648,281	44	380	99,715	38,955	414,945	691,705	101	(2)	4,029	89	0.1
Lewisburg	36	389,487	40	260	82,927	11,286	310,212	469,221	114	(2)	3,457	106	0.1
Lewistown	61	1,011,949	69	563	223,705	41,760	562,710	984,234	80	0.1	4,451	90	0.1
McKeesport	180	17,876,016	199	7,605	4,370,381	428,226	22,369,161	37,074,136	4	2.0	34,227	13	0.6
McKees Rocks	31	14,990,471	32	2,055	1,206,476	539,720	2,517,940	4,288,935	43	0.2	6,352	66	0.1
Manhans City	99	607,059	112	471	131,582	119,879	230,276	648,645	104	(2)	13,504	30	0.2
Manheim	58	157,490	59	334	76,903	36,158	273,015	450,698	117	(2)	2,019	127	(2)
Marietta	37	849,538	33	674	210,151	33,986	651,529	1,125,701	86	0.1	2,469	122	(2)
Mauch Chunk	34	366,370	35	323	143,714	22,802	251,282	506,252	112	(2)	4,029	95	0.1
Meadville	135	1,415,733	151	1,445	648,020	77,057	1,099,379	2,159,110	56	0.1	10,291	41	0.2
Mechanicsburg	58	482,155	60	444	173,840	22,811	636,083	1,067,798	106	(2)	3,841	98	0.1
Media	40	235,997	41	170	75,309	27,418	87,575	279,430	123	(2)	3,075	113	(2)
Middletown	50	2,323,876	49	1,572	556,818	52,608	3,269,223	5,198,286	35	0.3	5,608	75	0.1
Millvale	37	319,149	38	119	70,609	80,649	174,499	406,389	115	(2)	6,736	64	0.1
Milton	60	1,950,893	69	1,421	584,674	86,020	1,885,416	2,912,209	50	0.2	6,175	67	0.1
Minersville	36	75,177	38	84	25,290	11,821	87,705	167,798	126	(2)	4,815	84	0.1
Monongahela	58	805,861	65	438	288,310	56,285	337,720	841,155	95	0.1	5,173	82	0.1
Nanticoke	73	328,414	88	207	73,161	47,640	184,244	339,678	118	(2)	12,116	37	0.2
New Brighton	68	2,903,449	77	1,482	590,589	108,077	1,003,463	2,195,552	55	0.1	6,820	63	0.1
Newcastle	216	13,308,220	252	4,992	3,226,669	491,336	13,046,842	21,046,842	5	1.1	28,339	17	0.4
New Haven	22	40,401	25	46	20,941	44,473	44,473	90,002	131	(2)	1,532	130	(2)
New Holland	23	76,843	27	81	39,894	86,196	78,425	165,687	128	(2)	902	133	(2)
Norristown	210	4,069,449	227	3,429	1,168,942	43,854	2,467,861	4,821,745	37	0.3	22,265	19	0.4
Northumberland	16	238,768	18	267	74,940	6,766	224,827	350,928	120	(2)	2,748	119	(2)

¹ Includes 81 Indians and other persons on Indian reservations, which classes were not included at previous censuses.

² Less than one-tenth of 1 per cent.

TABLE 5.—URBAN MANUFACTURES—Continued.

	Number of establishments.	Capital.	Proprietors and firm members.	WAGE-EARNERS.		Miscellaneous expenses.	Cost of materials used.	PRODUCTS.			POPULATION.		
				Average number.	Total wages.			Value.	Rank.	Per cent of total.	Total.	Rank.	Per cent of total.
Oil City	158	\$4,578,237	189	1,992	\$1,038,173	\$161,228	\$4,742,848	\$6,710,886	27	0.4	13,264	81	0.2
Orwigsburg	27	268,522	84	453	133,189	15,625	408,423	618,223	105	(1)	1,518	131	(1)
Pen Argyl	31	392,615	58	336	177,873	46,437	219,184	537,322	111	(1)	2,784	118	(1)
Philadelphia	15,887	476,529,407	18,062	246,445	111,847,076	55,575,685	326,877,441	603,463,525	1	32.9	1,293,097	1	20.5
Phoenixville	92	6,482,025	91	2,566	1,099,719	232,963	3,202,965	4,992,772	36	0.3	9,190	47	0.1
Pittsburg	1,038	193,162,900	2,253	69,977	36,684,563	15,293,017	116,833,174	203,261,251	2	11.1	321,616	2	5.1
Pittston	95	1,038,797	100	505	222,840	98,686	722,800	1,261,500	79	0.1	12,556	34	0.2
Plymouth	101	579,553	98	923	213,437	95,935	362,488	803,728	87	(1)	13,649	36	0.2
Pottstown	144	4,922,856	164	3,659	1,251,229	386,985	5,263,759	8,111,486	25	0.4	13,695	27	0.2
Pottsville	206	3,383,237	232	1,967	671,179	383,317	3,620,129	5,354,633	34	0.3	15,710	23	0.2
Rankin	12	4,962,854	8	1,622	983,867	713,589	5,437,357	8,607,680	24	0.5	3,775	100	0.1
Reading	843	27,975,628	989	19,165	7,544,950	5,085,456	19,089,332	36,902,511	5	2.0	78,961	5	1.3
Rochester	47	2,228,337	59	1,433	589,516	104,262	470,450	1,440,567	73	0.1	4,688	86	0.1
St. Clair	31	94,863	42	213	47,506	2,225	57,673	146,277	129	(1)	4,638	88	0.1
Sayre	46	1,341,905	52	1,261	591,238	40,764	1,170,326	1,945,797	60	0.1	5,243	81	0.1
Schuylkill Haven	53	545,701	59	702	259,499	15,605	1,105,426	1,497,484	69	0.1	3,654	106	0.1
Seranton	710	19,954,525	771	12,669	5,191,522	1,857,881	18,411,022	27,046,418	6	1.5	102,026	4	1.6
Shamokin	143	971,130	154	1,068	313,057	130,080	905,421	1,656,606	68	0.1	18,202	21	0.3
Sharon	96	6,140,725	112	3,145	1,601,748	470,574	6,751,806	9,865,089	22	0.5	8,916	40	0.1
Sharpsburg	103	1,053,416	117	1,213	609,946	81,074	1,854,014	2,950,668	49	0.2	6,842	62	0.1
Sharpville	21	3,657,100	22	912	531,309	229,576	4,220,305	6,238,801	30	0.3	2,970	116	(1)
Shenandoah	78	874,067	88	210	88,555	95,920	180,224	479,336	113	(1)	20,321	90	0.3
Shippensburg	54	203,081	70	284	71,437	17,233	136,803	301,727	119	(1)	8,228	111	0.1
Slatingsburg	54	756,751	61	926	362,384	49,291	131,121	947,737	92	0.1	3,773	101	0.1
South Bethlehem	127	8,733,185	126	5,544	2,390,100	931,898	5,301,034	10,964,911	19	0.6	13,241	32	0.2
South Williamsport	15	586,673	14	386	146,218	41,671	141,671	620,446	108	(1)	3,328	109	0.1
Spring City	47	509,362	46	432	198,485	19,573	280,200	655,974	103	(1)	2,566	120	(1)
Steelton	55	6,315,833	51	4,871	2,127,334	941,119	10,005,789	14,204,954	16	0.8	12,086	38	0.2
Stroudsburg	55	461,770	63	544	232,046	25,142	589,797	950,845	91	0.1	3,450	107	0.1
Summit Hill	14	34,078	16	29	11,105	745	27,342	51,323	132	(1)	2,986	115	(1)
Sunbury	76	2,101,602	76	1,140	441,531	177,578	1,860,184	2,254,609	54	0.1	9,810	43	0.2
Susquehanna	82	810,076	81	1,187	613,508	18,938	685,438	1,416,927	74	0.1	3,313	99	0.1
Tamaqua	64	917,124	65	564	229,728	87,826	388,937	847,064	94	0.1	7,267	59	0.1
Tarentum	55	2,192,747	58	1,420	628,233	254,885	755,042	1,980,947	59	0.1	5,472	76	0.1
Taylor	12	170,549	12	197	30,375	29,742	95,113	166,438	127	(1)	4,215	92	0.1
Titusville	113	2,550,452	127	1,204	522,749	216,767	1,657,275	2,905,202	48	0.2	8,244	51	0.1
Towanda	89	678,021	111	559	185,477	35,055	358,155	782,433	99	(1)	4,663	87	0.1
Turtle Creek	14	11,800	15	15	9,710	1,494	21,825	45,078	133	(1)	3,262	110	0.1
Tyrone	69	1,098,861	80	560	243,711	62,286	670,868	1,805,899	78	0.1	5,847	71	0.1
Uniontown	130	872,549	157	743	323,863	90,407	632,238	1,348,936	77	0.1	7,341	55	0.1
Warren	119	2,869,020	138	1,270	585,590	350,190	2,357,681	4,152,859	44	0.2	8,043	52	0.1
Washington	150	2,897,671	174	2,206	1,052,616	461,068	2,303,113	4,667,330	39	0.3	7,470	54	0.1
Watsonstown	21	257,571	20	280	91,651	11,747	288,200	459,670	116	(1)	1,898	129	(1)
Waynesboro	61	3,984,774	61	1,103	507,628	265,093	1,072,213	2,731,059	51	0.2	5,396	77	0.1
West Bethlehem	17	148,990	22	69	29,214	19,928	174,573	276,939	124	(1)	3,465	104	0.1
West Chester	112	1,244,188	127	740	351,087	164,169	459,559	1,878,362	76	0.1	9,521	45	0.2
West Pittston	35	567,287	36	299	123,238	127,444	242,730	621,996	110	(1)	5,846	72	0.1
Wilkesbarre	438	10,501,537	520	5,977	2,286,676	1,142,358	5,167,777	10,758,348	20	0.6	51,721	7	0.8
Wilkesburg	131	1,049,083	159	655	464,107	644,594	897,931	2,295,846	53	0.1	11,886	39	0.2
Williamsport	396	9,863,811	439	5,595	2,065,930	517,059	6,420,337	11,199,600	18	0.8	28,757	16	0.5
Wilmerding	10	19,546,553	9	2,015	1,353,869	636,488	2,592,726	9,171,384	23	0.5	4,179	93	0.1
Wrightsville	34	462,672	38	427	133,735	31,909	470,759	781,452	98	(1)	2,166	125	(1)
York	461	9,640,784	564	7,785	2,679,175	798,453	6,078,070	11,961,706	17	0.7	33,708	15	0.5
Total for state exclusive of urban manufactures	18,736	380,854,051	20,867	149,911	66,201,409	20,916,617	238,701,888	396,867,315	-----	21.6	3,099,595	-----	49.2
Per cent of urban manufactures to total for state	64.1	75.4	64.5	79.6	80.1	84.4	77.1	78.4	-----	-----	50.8	-----	-----

(1) Less than one-tenth of 1 per cent.

Of the 52,185 establishments in the state, 33,449, or 64.1 per cent, were located in these 133 cities and boroughs. They furnished employment to 583,923 wage-earners, or 79.6 per cent of the total number; and the value of their products, \$1,437,923,545, formed 78.4 per cent of the total for the state.

Table 6 shows the totals for the state by counties.

Table 7 shows the totals for the state by specified industries.

Table 8 shows the totals for the cities and boroughs of Allegheny, Allentown, Altoona, Chester, Easton, Erie, Harrisburg, Johnstown, Lancaster, McKeesport, New-castle, Norristown, Philadelphia, Pittsburg, Reading, Seranton, Shenandoah, Wilkesbarre, Williamsport, and York by specified industries.

Table 9 shows the totals for all industries in the cities and boroughs withdrawn from the enumerators, exclusive of those shown in Table 8.

TABLE 6.—MANUFACTURES

1	COUNTIES AND MANUFACTURING AND MECHANICAL INDUSTRIES.	Number of establishments.	CAPITAL.					Proprietors and firm members.	SALARIED OFFICIALS, CLERKS, ETC.		AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES.	
			Total.	Land.	Buildings.	Machinery, tools, and implements.	Cash and sundries.		Number.	Salaries.	Total.	
											Average number.	Wages.
	The State.....	52, 185	\$1,551,548,712	\$148,768,571	\$227,035,804	\$392,150,856	\$789,593,481	58,836	47,439	\$48,605,173	733,831	\$322,072,670
2	Adams.....	350	1,385,415	125,651	229,143	274,807	755,814	389	45	30,262	1,386	371,140
3	Allegheny.....	4, 145	401,558,644	35,949,245	48,813,156	94,117,699	223,178,514	4,740	9,547	9,981,618	128,382	69,345,233
4	Armstrong.....	266	8,442,201	706,933	2,338,763	3,263,128	2,133,377	299	118	189,361	8,814	1,652,769
5	Beaver.....	359	15,262,391	1,009,302	2,985,303	4,639,903	6,607,883	385	416	489,223	7,095	3,143,341
6	Bedford.....	286	8,469,344	678,755	678,362	469,458	1,612,769	332	49	45,000	1,114	438,339
7	Berks.....	1,699	37,279,817	2,968,360	6,970,987	9,177,828	18,153,642	1,980	1,301	1,131,101	25,379	9,676,954
8	Blair.....	486	11,016,060	725,487	2,354,182	4,295,118	4,541,273	567	503	398,547	10,676	5,718,785
9	Bradford.....	538	5,979,273	1,049,949	1,267,003	1,178,842	2,483,379	653	173	129,360	3,272	1,314,753
10	Bucks.....	735	8,504,273	368,260	1,359,953	2,504,423	4,271,637	790	217	185,500	5,600	1,052,187
11	Butler.....	344	2,027,912	250,813	452,851	905,247	1,019,501	414	56	59,922	1,346	657,853
12	Cambria.....	472	20,244,523	1,582,647	3,759,657	7,855,021	7,047,196	572	470	523,810	7,511	3,791,541
13	Cameron.....	48	3,307,343	1,013,930	288,484	800,745	1,674,284	49	52	44,827	507	253,299
14	Carbon.....	237	4,179,459	298,110	1,400,967	1,111,103	1,369,279	231	149	125,456	3,287	1,090,329
15	Center.....	292	2,978,386	554,818	759,783	986,597	986,188	336	90	74,481	1,514	589,497
16	Chester.....	924	18,014,467	1,263,295	3,274,707	4,915,435	8,561,030	978	663	464,100	8,034	3,485,780
17	Clarion.....	202	1,177,286	274,375	145,604	289,419	467,888	243	88	24,424	593	206,555
18	Clearfield.....	318	12,502,450	3,625,454	1,235,542	1,544,822	6,006,632	368	168	156,939	3,916	1,626,745
19	Clinton.....	218	6,823,684	731,380	990,195	1,308,917	2,798,192	262	157	133,467	2,561	1,039,906
20	Columbia.....	304	5,721,489	382,583	1,185,117	1,563,527	2,650,262	338	144	140,729	3,028	1,277,387
21	Crawford.....	600	5,618,988	360,752	940,130	1,796,008	2,522,098	705	208	191,451	3,373	1,446,226
22	Cumberland.....	421	5,193,136	882,639	680,123	990,320	2,640,054	470	200	181,130	3,138	971,920
23	Dauphin.....	869	19,080,076	1,370,372	2,988,071	4,237,283	10,484,350	931	871	823,443	15,430	6,198,786
24	Delaware.....	602	30,315,934	2,083,260	5,011,424	9,586,434	18,634,816	639	520	777,671	13,923	5,833,786
25	Elk.....	188	15,917,430	3,294,826	2,111,749	2,793,939	7,836,906	194	208	214,870	3,302	1,454,740
26	Erie.....	1,068	23,330,186	1,671,221	4,051,380	6,268,945	11,338,640	1,216	786	785,531	11,263	5,339,638
27	Fayette.....	559	16,300,498	399,632	2,226,379	6,818,216	6,356,271	648	478	405,420	7,663	3,948,274
28	Forest.....	83	3,527,417	1,065,296	184,242	620,941	1,656,939	122	45	38,473	756	349,015
29	Franklin.....	419	6,224,095	328,857	715,352	954,266	4,315,620	460	193	184,328	2,778	1,140,705
30	Fulton.....	81	229,861	42,827	51,460	78,090	57,484	109	4	1,145	59	22,027
31	Greene.....	118	360,301	41,395	78,521	111,184	120,198	160	8	1,140	147	52,717
32	Huntingdon.....	259	2,481,604	340,132	439,097	672,860	1,029,515	279	78	47,404	1,375	451,395
33	Indiana.....	278	3,143,971	846,351	315,203	797,310	1,185,107	353	59	45,871	1,499	650,147
34	Jefferson.....	310	8,213,413	1,811,351	1,243,572	1,446,032	3,712,458	369	88	86,800	2,439	1,102,346
35	Junata.....	121	429,776	47,038	101,885	140,794	137,059	149	11	7,464	214	77,850
36	Lackawanna.....	1,010	24,638,039	2,645,732	4,642,993	6,266,540	10,982,774	1,070	839	978,328	15,582	6,243,633
37	Lancaster.....	2,213	20,058,299	1,507,967	3,875,152	5,227,804	9,442,376	2,419	748	602,823	17,786	6,015,903
38	Lawrence.....	339	15,536,065	889,537	2,624,702	7,718,845	4,802,981	383	295	330,001	6,185	3,849,976
39	Lebanon.....	492	9,764,771	770,351	2,800,391	2,942,359	3,751,670	562	305	302,237	7,691	2,979,635
40	Lehigh.....	1,043	26,254,303	2,328,543	7,445,807	6,200,897	10,279,056	1,252	687	640,083	16,463	6,223,386
41	Luzerne.....	1,290	19,351,784	1,479,177	3,405,914	7,028,968	7,437,725	1,382	721	724,960	12,674	4,753,888
42	Lycoming.....	762	19,780,841	3,102,086	2,097,112	3,552,898	11,028,205	849	584	507,265	8,923	3,401,701
43	McKean.....	416	11,235,795	1,466,622	1,596,953	2,674,296	5,497,924	474	299	316,794	5,163	2,888,152
44	Mercer.....	382	12,969,239	749,041	2,771,468	3,848,909	5,599,821	449	232	250,368	5,696	3,023,551
45	Mifflin.....	190	4,032,288	198,903	632,679	1,233,873	1,966,838	216	82	92,087	1,995	814,428
46	Monroe.....	195	2,360,281	412,414	476,305	545,099	927,463	221	63	48,417	1,162	417,913
47	Montgomery.....	1,199	30,774,139	2,289,362	4,903,712	7,838,437	15,747,628	1,285	1,076	1,135,724	17,619	7,754,381
48	Montour.....	137	2,928,748	123,629	321,656	1,144,106	1,339,367	157	74	75,998	2,449	870,516
49	Northampton.....	1,016	33,557,215	3,300,689	4,848,971	9,759,826	15,611,729	1,120	837	890,671	17,461	7,012,067
50	Northumberland.....	476	6,720,821	506,063	1,115,997	1,810,131	3,288,690	516	270	211,353	4,719	1,645,938
51	Perry.....	167	2,311,743	350,539	400,431	453,942	1,106,881	185	38	54,044	786	299,988
52	Philadelphia.....	15,887	476,529,407	43,726,855	64,859,709	118,918,281	254,024,562	18,062	19,113	20,154,836	246,445	111,847,676
53	Pike.....	49	814,997	74,080	52,970	66,020	121,947	64	8	3,150	134	47,838
54	Potter.....	240	10,631,130	3,780,061	691,415	1,284,080	4,875,574	245	122	127,656	3,005	1,197,895
55	Schuylkill.....	944	9,329,209	803,923	2,408,534	3,081,838	5,084,914	1,048	845	235,339	6,301	2,219,313
56	Snyder.....	108	373,361	84,433	67,972	114,273	156,683	124	3	1,100	232	62,815
57	Somerset.....	311	2,612,194	922,123	809,044	654,604	756,423	367	67	49,800	1,519	588,051
58	Sullivan.....	90	3,185,827	920,086	485,909	460,896	1,318,436	92	27	31,824	660	242,338
59	Susquehanna.....	395	2,198,411	242,480	483,248	923,068	549,614	404	71	42,435	2,300	1,050,928
60	Tioga.....	379	6,791,517	1,005,144	1,187,425	847,725	3,151,223	418	84	83,939	1,663	678,328
61	Union.....	152	1,081,338	159,247	186,455	322,172	463,464	177	28	14,054	512	172,691
62	Venango.....	408	14,290,046	601,503	1,246,284	3,342,060	9,099,019	494	346	519,417	3,424	1,752,044
63	Warren.....	351	7,909,203	582,449	873,447	1,697,769	4,755,538	421	149	142,417	2,710	1,132,676
64	Washington.....	552	8,298,768	597,401	1,767,587	2,548,042	3,885,738	632	306	312,836	4,915	2,568,423
65	Wayne.....	282	3,778,858	375,946	557,677	870,398	1,974,337	306	120	92,679	2,047	749,041
66	Westmoreland.....	624	31,587,664	1,857,142	4,149,666	11,352,275	14,228,641	662	811	993,557	14,535	8,050,020
67	Wyoming.....	178	2,046,437	336,105	245,895	381,812	1,132,625	198	31	25,486	593	233,167
68	York.....	1,706	17,621,371	1,528,363	2,921,464	4,468,849	8,702,705	1,905	655	602,607	14,128	4,563,987

TABLE 7.—MANUFACTURES BY

1	All industries.....	52, 185	\$1,551,548,712	\$148,768,571	\$227,035,804	\$392,150,856	\$789,593,481	58,836	47,439	\$48,605,173	733,834	\$322,072,670
2	Agricultural implements.....	50	4,102,327	184,407	554,284	440,382	2,923,254	64	197	133,549	1,564	688,041
3	Ammunition.....	4	100,608	2,300	8,450	3,875	85,983	4	5	8,460	245	45,411
4	Artificial feathers and flowers.....	25	545,056	42,700	33,500	49,680	419,176	35	42	52,948	873	208,869
5	Artificial limbs.....	12	35,545	700	550	18,640	18,656	13	12	5,512	41	19,863
6	Artists' materials.....	4	50,626	4,500	12,000	8,195	25,930	5	8	4,832	28	9,764

BY COUNTIES: 1900.

AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES—continued.						MISCELLANEOUS EXPENSES.						COST OF MATERIALS USED.				Value of products, including custom work and repairing.	
Men, 16 years and over.		Women, 16 years and over.		Children, under 16 years.		Total.	Rent of works.	Taxes, not including internal revenue.	Rent of offices, interest, etc.	Contract work.	Total.	Principal materials, including mill supplies and freight.	Fuel and rent of power and heat.				
Average number.	Wages.	Average number.	Wages.	Average number.	Wages.												
574,606	\$293,697,372	126,093	\$33,067,823	33,135	\$5,307,470	\$184,344,269	\$10,814,621	\$4,444,216	\$86,207,684	\$32,877,748	\$1,042,434,599	\$995,673,525	\$46,761,074	\$1,831,790,860			
878	268,572	454	97,402	54	5,166	232,858	12,715	3,007	211,088	6,043	1,171,897	1,145,063	26,834	2,177,105	2		
116,416	66,568,755	8,814	2,173,237	3,122	613,241	28,657,982	1,275,778	1,180,283	20,939,192	5,262,679	255,073,508	240,077,637	14,995,871	433,837,410	3		
3,383	1,588,034	339	47,836	92	16,849	523,100	33,225	34,133	445,592	10,150	3,862,084	3,398,210	463,874	7,169,257	4		
5,622	2,803,474	812	246,356	661	93,511	730,516	23,391	26,731	602,727	23,667	6,672,702	6,268,751	404,011	13,459,848	5		
1,069	431,075	19	4,366	26	2,898	168,584	9,521	12,966	145,210	887	2,258,815	2,064,993	193,822	3,351,056	6		
18,641	8,172,571	5,229	1,304,729	1,509	199,654	5,724,218	227,803	116,457	2,069,751	3,310,207	27,064,902	25,502,407	1,562,495	49,977,253	7		
9,804	5,545,303	616	135,310	256	35,172	501,385	55,467	22,850	360,330	62,738	11,525,174	11,110,029	415,145	19,606,238	8		
2,915	1,248,289	291	66,259	66	10,205	212,465	36,620	18,171	149,631	8,043	4,211,326	4,155,478	55,848	6,704,935	9		
3,489	1,438,176	1,645	440,282	466	73,729	889,242	52,294	20,855	764,361	45,732	6,242,830	6,063,792	179,038	10,653,339	10		
1,215	628,855	88	20,187	43	8,311	184,059	13,690	19,955	105,028	45,886	1,475,193	1,392,093	83,100	3,130,125	11		
7,280	3,738,289	115	29,899	116	23,353	2,042,531	267,269	71,825	1,620,993	82,444	16,049,417	14,635,435	1,413,982	25,606,094	12		
489	249,326	15	3,723	3	250	190,017	16,430	11,453	149,858	12,276	1,584,166	1,469,973	114,193	2,175,069	13		
2,372	986,521	587	75,637	328	28,171	234,375	19,369	14,885	144,897	55,524	3,430,983	3,245,688	184,295	5,461,339	14		
1,423	570,719	62	14,111	29	4,667	116,163	16,436	10,301	87,156	2,270	1,980,133	1,645,070	335,063	3,424,681	15		
6,767	3,205,247	940	223,890	327	56,643	941,104	63,186	30,941	702,407	141,570	12,542,675	11,859,655	683,020	21,103,894	16		
469	1,855,592	97	16,402	27	4,561	52,236	3,565	6,911	41,704	56	771,865	753,258	18,607	1,403,737	17		
3,801	1,597,611	55	12,591	90	16,543	361,833	17,146	48,596	294,437	1,704	5,449,488	5,341,902	107,586	8,848,483	18		
2,215	1,083,159	321	57,110	28	9,727	280,535	15,838	18,855	267,828	28,014	2,838,500	2,796,075	42,434	5,279,055	19		
2,435	1,164,551	459	92,308	134	20,628	269,114	15,009	11,036	188,943	64,226	4,762,212	4,638,115	124,097	7,665,729	20		
2,928	1,339,296	428	105,068	17	1,862	484,332	34,679	16,175	373,191	60,287	4,387,340	4,269,713	117,627	7,724,001	21		
2,060	774,097	977	188,365	101	9,458	223,747	29,380	9,221	169,833	15,813	2,860,843	2,803,240	57,604	4,980,616	22		
12,721	5,694,145	2,359	462,362	350	42,279	2,013,921	198,312	57,868	1,625,360	182,381	25,141,437	23,325,171	1,816,266	39,417,393	23		
9,944	4,748,326	3,083	923,514	896	161,946	1,806,179	122,518	67,372	1,286,243	530,046	16,483,059	15,770,714	712,345	28,444,940	24		
3,111	1,408,594	149	30,848	42	6,238	700,629	9,616	58,931	605,459	26,623	6,431,211	6,272,652	158,559	10,375,315	25		
10,134	5,072,833	861	216,694	268	50,611	1,845,778	119,965	77,288	1,018,987	129,538	11,935,878	11,032,053	363,825	23,156,994	26		
7,395	3,889,543	177	40,296	91	18,435	1,169,594	45,815	128,415	967,231	28,133	10,434,506	10,076,360	358,146	19,544,100	27		
751	347,885	3	760	2	400	79,098	1,749	22,641	48,658	6,050	1,931,287	1,925,867	5,420	2,962,051	28		
2,408	1,073,515	295	58,180	75	9,010	387,898	23,920	10,308	294,885	58,790	2,805,703	2,762,001	43,702	5,738,390	29		
57	21,627			2	400	3,035	565	1,026	1,894	50	167,354	166,118	1,236	261,692	30		
122	47,798	22	4,295	3	624	14,939	3,139	1,918	9,847	35	319,126	313,926	5,200	520,258	31		
1,142	401,259	180	43,586	53	6,550	170,336	15,690	10,202	144,304	200	1,443,193	1,385,347	57,846	2,483,832	32		
1,324	619,821	88	15,612	87	14,712	36,182	6,480	9,823	79,779	150	2,055,229	2,007,190	48,039	3,292,532	33		
2,238	1,053,217	179	34,314	72	14,815	359,352	21,004	25,605	299,893	12,250	4,341,031	4,135,792	205,239	7,028,416	34		
169	69,043	39	8,390	6	417	16,282	2,407	1,870	12,005	378,697	378,697	378,697	4,832	597,578	35		
10,717	5,405,462	3,482	639,660	1,383	198,411	2,265,740	186,645	111,247	1,441,952	625,896	20,873,504	19,758,004	1,116,506	32,510,627	36		
11,033	4,538,691	5,319	1,266,887	1,434	210,322	2,243,109	135,217	57,071	1,774,587	276,234	17,873,086	16,802,807	570,879	31,886,944	37		
5,709	3,748,612	280	75,944	106	25,420	588,401	34,471	61,220	470,991	21,719	15,524,722	14,051,830	1,472,892	24,153,160	38		
6,079	2,572,194	1,307	359,986	305	47,455	576,101	91,844	21,947	449,701	9,609	9,355,079	7,721,406	1,633,673	14,586,154	39		
12,242	5,361,620	3,121	710,695	1,100	151,071	2,041,644	151,209	62,828	1,297,692	529,855	17,593,067	15,833,723	1,769,344	31,250,205	40		
7,987	3,934,731	3,537	689,363	1,150	129,794	1,961,538	152,681	61,564	1,399,771	347,572	10,346,885	10,175,787	171,098	21,095,711	41		
6,747	2,872,278	1,781	472,263	395	57,160	935,022	81,608	46,624	753,908	52,882	11,054,680	10,900,446	154,234	18,945,237	42		
4,833	2,806,387	213	58,230	117	23,535	581,629	30,969	33,877	485,479	31,304	6,109,707	5,884,384	225,323	11,966,132	43		
5,508	2,984,977	145	31,637	43	6,940	886,629	20,267	38,984	742,280	90,092	13,883,440	11,707,614	2,175,826	21,001,413	44		
1,850	786,673	100	22,381	45	5,374	148,229	8,510	6,232	120,122	13,365	2,008,755	1,886,068	122,687	3,621,281	45		
920	377,146	141	26,007	101	14,760	82,328	10,383	6,942	65,003		1,368,899	1,328,334	40,565	2,288,725	46		
13,113	6,687,991	3,688	928,013	818	138,377	2,049,505	372,412	56,277	1,546,007	74,809	23,154,709	21,961,056	1,193,653	40,691,273	47		
2,003	814,154	209	35,808	237	20,554	231,821	10,949	8,397	211,075	1,400	2,876,488	2,601,844	274,644	4,492,949	48		
14,174	6,348,493	2,403	528,482	884	135,092	2,484,190	675,816	71,732	1,312,343	424,299	15,040,341	13,489,634	1,550,707	30,811,623	49		
3,468	1,416,684	1,053	209,015	198	21,239	517,068	41,577	16,165	278,739	180,587	5,593,958	5,480,179	113,779	9,118,742	50		
699	286,677	153	3,840	72	9,466	55,527	3,666	7,611	44,128	500	1,417,408	1,315,723	101,685	2,063,516	51		
172,011	91,540,677	61,688	18,151,177	12,746	2,155,822	55,575,685	5,607,288	1,222,710	23,978,408	19,767,279	326,877,441	320,684,140	6,193,301	603,466,526	52		
132	47,608			2	230	6,298	700	1,879	3,719		108,654	107,363	1,291	219,475	53		

TABLE 7.—MANUFACTURES BY

MANUFACTURING AND MECHANICAL INDUSTRIES.		Number of establishments.	CAPITAL.					Proprietors and firm members.	SALARIED OFFICIALS, CLERKS, ETC.		AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES.	
			Total.	Land.	Buildings.	Machinery, tools, and implements.	Cash and sundries.		Number.	Salaries.	Total.	
											Average number.	Wages.
7	Awnings, tents, and sails.....	75	\$240,367	\$3,825	\$6,600	\$38,488	\$191,454	84	16	\$11,190	287	\$127,705
8	Babbitt metal and solder.....	6	74,671	4,400	8,250	7,800	59,723	7	2	1,400	19	10,103
9	Bags, other than paper.....	3	41,255			9,250	32,000	6	2	2,620	29	10,425
10	Bags, paper.....	12	217,407	5,000	6,772	46,860	158,745	9	14	13,924	163	52,575
11	Baking and yeast powders.....	8	56,350	1,200	5,000	12,450	38,700	7	19	12,970	32	12,006
12	Baskets, and rattan and willow ware.....	57	120,751	6,640	16,809	26,456	71,849	60	5	3,120	190	66,652
13	Bells.....	3	29,400	2,000	8,500	12,000	6,900	4	2	1,080	7	2,535
14	Belting and hose, leather.....	9	488,337	8,500	32,570	61,252	386,015	13	25	15,077	87	52,880
15	Bicycle and tricycle repairing.....	502	578,683	29,200	55,455	213,310	280,738	571	30	16,889	418	171,893
16	Bicycles and tricycles.....	24	1,559,957	78,930	211,840	422,635	837,552	26	110	91,681	947	431,309
17	Billiard tables and materials.....	5	47,435	4,000	3,000	1,935	38,500	6	2	1,500	17	9,986
18	Blacking.....	12	391,804	20,500	36,688	45,225	292,391	12	59	59,674	146	49,485
19	Blacksmithing and wheelwrighting.....	4,509	5,182,393	1,015,703	1,388,122	835,040	1,888,528	4,789	21	13,184	2,766	1,894,095
20	Blinding.....	7	38,175	6,800	8,200	4,875	18,300	10			19	6,759
21	Bone, ivory, and lampblack.....	12	725,535	148,608	177,422	230,871	109,139	15	15	16,650	66	37,857
22	Bookbinding and blank book making.....	111	1,470,816	11,150	34,100	593,964	891,662	139	92	94,233	1,606	638,363
23	Boot and shoe cut stock.....	7	145,944	3,725	5,500	9,318	127,421	11	10	7,000	72	22,221
24	Boot and shoe uppers.....	16	44,230	16,350	16,150	2,665	9,035	21	1	700	31	14,938
25	Boots and shoes, custom work and repairing.....	2,580	1,098,111	182,765	291,400	265,664	355,282	2,611	22	12,604	901	358,417
26	Boots and shoes, factory product.....	146	6,869,489	279,602	660,300	1,369,513	4,611,065	209	663	579,794	9,144	3,111,113
27	Bottling.....	492	3,012,944	448,554	560,694	498,220	1,505,476	538	180	104,522	1,243	628,835
28	Boxes, cigar.....	101	992,528	60,510	159,365	216,035	547,617	128	36	21,690	1,170	318,538
29	Boxes, fancy and paper.....	87	1,977,711	130,350	242,125	651,224	954,011	101	126	109,546	3,443	877,873
30	Boxes, wooden packing.....	59	1,211,133	229,180	181,616	257,631	639,756	66	56	47,092	865	352,535
31	Brass castings and brass finishing.....	58	2,796,234	260,725	376,777	583,387	1,631,345	66	137	141,195	961	435,638
32	Brassware.....	23	1,108,936	159,089	106,150	381,330	457,417	23	73	74,777	683	251,279
33	Bread and other bakery products.....	2,443	10,983,714	1,975,996	3,246,297	3,023,254	2,740,167	2,552	1,031	720,625	7,338	3,254,393
34	Brick and tile.....	385	10,596,823	2,790,468	2,885,801	2,108,046	2,716,508	507	209	247,674	6,733	2,626,291
35	Bridges.....	12	4,136,499	310,720	277,012	714,763	2,834,014	8	99	120,318	1,999	1,201,192
36	Bronze castings.....	4	448,181	87,500	50,500	44,425	315,766	3	23	35,490	137	82,722
37	Brooms and brushes.....	167	1,026,032	74,905	89,415	108,445	763,267	206	88	61,956	925	348,130
38	Buttons.....	21	537,488	24,500	47,580	200,052	285,856	30	42	39,152	1,140	321,473
39	Calcium lights.....	3	12,039			4,700	7,339	8	1	1,020	7	2,886
40	Card cutting and designing.....	16	39,132	3,000	2,600	40,779	52,753	21	1	520	113	51,540
41	Carpentering.....	1,816	12,574,714	1,119,406	1,164,102	1,043,084	9,248,172	2,143	438	354,379	13,266	7,611,982
42	Carpets and rugs, other than rag.....	93	17,957,607	986,875	2,705,050	5,294,886	9,020,693	103	336	875,483	12,919	5,330,643
43	Carpets, rag.....	250	460,148	73,872	107,525	61,510	154,211	275	20	7,401	472	145,949
44	Carpets, wood.....	4	88,699			6,550	32,649	9	10	5,430	57	24,634
45	Carriage and wagon materials.....	57	2,574,074	196,925	411,731	709,031	1,256,387	75	87	106,835	1,454	691,490
46	Carriages and sleds, children's.....	8	287,893	1,000	15,000	35,669	216,194	11	28	25,244	307	120,597
47	Carriages and wagons.....	872	8,043,315	1,397,475	2,025,796	919,800	4,800,244	1,064	217	206,649	5,166	2,497,452
48	Cars and general shop construction and repairs by steam railroad companies.....	144	19,182,091	2,128,668	5,760,904	4,888,929	6,427,505		1,065	810,857	28,554	15,825,640
49	Cars and general shop construction and repairs by street railroad companies.....	10	766,450	285,585	212,600	184,826	183,439		22	18,230	1,005	573,654
50	Cars, steam railroad, not including operations of railroad companies.....	11	33,828,723	944,900	1,780,000	1,424,505	29,679,228	6	414	426,399	5,540	3,111,556
51	Charcoal.....	6	48,529	26,050	1,750	1,820	13,909	5	1	480	110	23,125
52	Cheese and butter, urban dairy products.....	5	11,682	2,500	4,500	3,150	1,582	7	2	480	8	991
53	Cheese, butter, and condensed milk, factory product.....	749	3,038,128	126,836	896,458	1,268,416	741,423	692	127	45,596	976	445,708
54	Chemicals.....	100	22,756,656	2,030,346	3,939,376	6,709,182	10,077,752	54	415	572,846	4,278	2,198,243
55	China decorating.....	26	51,389	12,100	6,650	6,907	25,782	25	8	2,170	33	13,731
56	Chocolate and cocoa products.....	3	793,671	45,000	170,000	126,343	458,328	3	48	35,238	123	40,307
57	Cleansing and polishing preparations.....	13	37,650	400	900	4,780	31,570	13	25	15,594	16	5,687
58	Cloth, sponging and refinishing.....	8	51,339	8,000	5,000	19,481	18,855	3	4	8,990	50	21,750
59	Clothing, horse.....	9	203,464		75	15,706	187,633	12	13	11,940	206	66,764
60	Clothing, men's, custom work and repairing.....	2,231	6,711,201	684,728	789,500	343,505	4,943,378	2,549	363	273,713	7,710	3,410,804
61	Clothing, men's, factory product.....	481	10,446,107	408,840	452,936	394,780	9,189,551	659	831	819,176	10,497	4,422,074
62	Clothing, men's, factory product, buttonholes.....	18	16,495			12,190	4,305	19	1	760	140	47,763
63	Clothing, women's, dressmaking.....	1,196	1,175,030	104,935	182,908	147,299	739,844	1,807	72	56,412	8,866	1,110,978
64	Clothing, women's, factory product.....	239	5,197,034	40,650	89,900	526,376	4,549,168	346	596	524,528	8,311	2,693,024
65	Coffee and spice, roasting and grinding.....	59	1,280,994	91,550	120,850	211,436	857,158	77	139	186,886	341	153,148
66	Coffins, burial cases, and undertakers' goods.....	22	2,016,721	230,132	498,100	257,079	1,031,410	27	74	71,009	665	281,413
67	Coke.....	89	20,213,147	744,341	1,501,105	12,460,419	5,507,282	40	518	481,133	9,283	4,512,651
68	Combs.....	6	107,559	12,100	5,400	25,544	64,515	12	1	250	185	65,070
69	Confectionery.....	694	5,948,237	742,030	1,239,749	1,449,406	2,512,022	793	745	537,003	5,244	1,513,861
70	Coopers.....	113	1,884,174	854,420	384,253	174,701	1,020,800	139	42	30,793	1,058	479,258
71	Cordage and twine.....	16	4,550,999	284,873	414,400	994,884	2,856,842	21	76	87,164	1,507	488,888
72	Cork, cutting.....	10	1,488,433	126,100	179,364	178,846	999,623	9	43	73,326	1,538	401,592
73	Corsets.....	14	78,470	2,300	1,500	16,965	57,705	14	11	13,100	157	52,152
74	Cotton goods.....	154	22,336,121	1,198,575	3,864,273	8,152,753	9,675,520	207	515	677,303	15,507	6,602,339
75	Cotton small wares.....	24	1,945,844	107,560	215,500	627,758	995,085	84	50	61,620	1,444	454,947
76	Cotton waste.....	10	278,905	18,560	23,100	44,925	186,380	11	8	10,430	78	41,950

SPECIFIED INDUSTRIES: 1900—Continued.

AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES—continued.						MISCELLANEOUS EXPENSES.					COST OF MATERIALS USED.			Value of products, including custom work and repairing.	
Men, 16 years and over.		Women, 16 years and over.		Children, under 16 years.		Total.	Rent of works.	Taxes, not in- cluding internal revenue.	Rent of offices, interest, etc.	Contract work.	Total.	Principal materials, including mill supplies and freight.	Fuel and rent of power and heat.		
Average number.	Wages.	Average number.	Wages.	Average number.	Wages.										
175	\$97,743	110	\$29,632	2	\$330	\$29,587	\$18,159	\$190	\$11,238		\$312,662	\$310,872	\$1,790	\$662,659	7
19	10,103					2,149	1,880	148	621		146,025	144,934	1,091	189,810	8
8	4,650	21	5,775			2,446	1,924	45	477		85,220	81,970	250	180,208	9
92	37,213	71	15,362			12,976	4,632	276	8,068		338,480	335,621	2,859	501,335	10
21	10,266	9	1,565	2	175	8,355	3,600	70	4,685		57,355	56,358	997	107,260	11
144	57,234	37	8,161	9	1,257	9,479	4,210	328	4,941		72,961	72,133	828	196,121	12
7	2,535					651	120	109	422		7,046	6,031	1,015	15,525	13
85	52,520			2	360	14,553	6,075	408	8,070		470,004	467,456	2,548	665,955	14
386	167,087			32	4,746	77,529	57,247	1,604	17,048	\$1,630	351,822	339,645	12,177	956,499	15
591	419,958	29	7,280	27	4,131	128,931	10,597	1,700	110,834	5,800	1,065,461	1,050,195	15,266	1,855,043	16
17	9,986					2,185	1,068	80	1,037		24,565	24,485	80	51,837	17
48	28,017	88	24,671	10	1,747	48,054	9,832	1,159	37,063		289,389	286,282	3,107	510,536	18
2,716	1,386,706			50	7,839	258,025	168,200	31,624	55,315	2,886	1,888,575	1,762,062	126,513	6,904,109	19
9	4,189	3	800	7	1,750	1,526	630	281	665		20,416	20,071	312	42,805	20
66	37,857					67,524	4,750	2,021	59,862	891	83,739	82,389	1,350	309,397	21
770	420,062	759	207,684	77	10,617	129,827	67,257	1,027	46,545	14,998	697,613	684,386	13,227	1,993,483	22
47	17,300	20	4,500	5	420	1,879	1,202	95	582		431,693	430,011	1,682	523,844	23
26	12,066	5	2,272			2,250	796	306	998	150	39,626	39,361	265	70,488	24
872	350,663	19	5,921	13	1,833	236,373	189,727	7,477	28,435	10,731	837,287	817,066	20,221	2,708,357	25
5,291	2,157,786	3,239	838,589	614	114,738	572,624	48,953	10,193	509,079	4,399	8,210,846	8,158,589	52,257	13,235,933	26
1,225	624,852	9	2,294	9	1,692	457,857	88,578	145,015	228,848	416	7,135,046	7,113,515	21,531	9,637,949	27
519	182,344	586	128,824	65	7,570	43,963	6,596	3,066	31,301		909,900	896,344	13,556	1,553,005	28
748	316,619	2,260	501,658	435	59,596	158,142	58,038	4,652	95,452		1,260,423	1,237,328	23,095	2,986,118	29
820	345,062	21	2,944	24	3,929	51,197	13,621	5,167	32,416		1,344,918	1,330,687	14,231	2,117,029	30
955	493,143	5	2,250	1	245	174,232	18,209	7,644	147,612	767	2,043,566	2,004,188	39,378	3,862,135	31
513	217,912	77	19,041	93	14,326	79,652	12,055	2,907	64,490	200	409,414	396,441	12,973	981,081	32
5,997	2,959,484	1,041	236,570	390	58,645	1,009,193	311,933	76,899	619,906	455	11,055,386	10,715,752	339,634	20,784,011	33
6,433	2,568,282	2	270	298	67,789	535,007	112,412	84,100	343,219	45,876	1,137,944	1,121,621	856,323	5,951,415	34
1,989	1,198,192			10	3,000	177,423	1,870	5,708	97,212	72,635	3,867,058	3,807,381	59,677	6,991,565	35
136	82,566	1	156			44,314	1,800	1,011	39,973	1,580	876,182	868,056	8,126	1,146,074	36
681	303,330	179	34,588	65	10,262	68,922	30,011	2,245	31,770	4,896	941,190	933,346	7,844	1,769,172	37
347	166,892	711	141,601	82	12,980	17,683	7,715	1,233	8,555	180	403,106	396,475	6,631	999,353	38
7	2,886					1,432	1,004		428		3,286	2,768	518	17,774	39
106	51,520	3	2,400	4	620	6,877	3,030	128	2,183	1,536	37,244	36,446	798	150,414	40
13,241	7,635,911		520	24	5,551	16,289,156	127,438	36,635	278,017	15,840,166	15,591,271	15,550,637	40,634	46,580,575	41
6,608	3,269,567	5,461	1,926,024	850	135,052	1,671,015	107,624	35,151	1,248,594	279,646	13,773,788	13,588,025	235,763	28,118,058	42
404	133,597	59	11,335	9	1,017	32,547	10,533	2,135	9,513	10,366	332,151	328,236	3,915	697,338	43
57	24,634					10,618	3,710		6,908		76,273	74,856	1,417	163,148	44
1,417	685,671			37	5,819	93,747	4,730	8,408	78,609	2,000	1,144,743	1,110,351	34,362	2,496,955	45
237	104,622	45	11,375	25	4,600	41,787	7,780	647	33,300		221,318	219,618	1,700	474,650	46
5,082	2,481,857	17	3,919	67	11,676	393,101	87,260	38,407	240,027	27,407	3,215,741	3,134,481	81,260	8,342,662	47
23,372	15,779,638	144	88,974	38	7,028	3,280,079	225	61,366	265,622	2,952,866	23,147,574	22,790,489	357,085	43,065,171	48
1,005	578,654					14,819	100	9,087	5,632		595,020	589,127	6,493	1,244,518	49
5,753	3,083,636			87	27,920	1,265,456	20,804	20,806	823,846	400,000	12,188,811	11,992,884	195,927	19,260,910	50
110	23,125					6,626		42	4,550	2,034	28,383	28,083	300	69,705	51
3	991					452	222	36	194		8,411	8,136	275	18,959	52
922	435,101	35	8,629	19	1,978	116,195	23,828	11,868	79,344	1,155	8,711,635	8,602,063	109,572	10,290,006	53
4,055	2,136,905	211	59,036	12	2,302	931,869	16,881	50,838	861,657	2,438	6,805,769	6,240,847	564,922	13,034,584	54
20	10,531	11	2,992	2	208	5,085	4,029	426	1,095	135	39,196	37,402	1,704	89,216	55
76	30,700	37	8,644	10	963	43,686	600	2,061	41,022		870,360	861,663	8,697	1,039,032	56
12	4,477	4	1,210			10,106	1,671	68	8,367		21,754	21,200	464	65,323	57
49	21,650			1	100	7,431	2,280	170	4,981		2,558	1,205	1,293	52,518	58
53	21,096	116	29,126	37	6,532	30,953	6,125	58	1,970	22,800	319,700	318,472	1,238	474,366	59
4,998	2,702,849	2,606	693,142	106	14,813	1,039,909	529,128	20,985	292,438	247,858	5,195,433	5,141,322	54,111	13,374,712	60
5,024	2,962,561	5,115	1,400,067	358	59,446	2,137,272	251,787	10,102	869,728	1,505,660	12,212,763	12,159,198	53,565	23,389,043	61
76	31,212	49	14,456	15	2,095	8,959	2,614		1,345		18,383	15,579	804	102,181	62
265	165,008	3,568	942,108	33	3,802	203,551	161,152	4,147	36,428	1,824	1,248,625	1,225,811	17,814	3,741,180	63
1,961	1,057,678	6,188	1,524,493	182	23,853	629,266	151,184	6,772	870,080	101,280	6,269,950	6,229,816	40,134	11,694,580	64
253	130,060	86	22,300	2	188	90,830	23,645	3,913	62,772		1,981,504	1,958,330	23,174	2,769,056	65
520	258,780	138	21,787	8	846	74,654	6,331	6,659	61,614		584,627	576,327	8,300	1,214,488	66
9,278	4,515,749			5	902	1,227,259	32,177	186,344	995,882	12,856	11,678,079	11,555,923	122,156	22,282,358	67
139	55,451	30	6,682	16	2,987	6,274	1,992	255	4,027		116,655	113,813	2,842	220,312	68
2,150	929,639	2,422	492,274	672	97,948	608,386	176,190	27,168	404,458	570	5,854,998	5,762,462	102,546	10,361,878	69
944	453,868			114	25,390	153,695	25,287	8,866	35,854	88,698	1,958,021</				

TABLE 7.—MANUFACTURES BY

MANUFACTURING AND MECHANICAL INDUSTRIES.		Number of establishments.	CAPITAL.					Proprietors and firm members.	SALARIED OFFICIALS, CLERKS, ETC.		AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES.	
			Total.	Land.	Buildings.	Machinery, tools, and implements.	Cash and sundries.		Number.	Salaries.	Total.	
											Average number.	Wages.
77	Crucibles.....	5	\$617,074	\$33,300	\$107,601	\$105,780	\$370,693	11	7	\$12,049	69	\$39,688
78	Cutlery and edge tools.....	81	2,037,680	189,074	485,553	514,852	838,201	41	53	59,062	1,005	445,543
79	Dentists' materials.....	18	1,288,171	120,003	217,000	210,028	741,143	20	70	79,131	630	327,117
80	Druggists' preparations, not including prescriptions.....	18	4,542,682	195,203	460,906	424,117	3,462,459	19	333	358,870	1,190	415,871
81	Dyeing and cleaning.....	184	493,303	125,025	147,390	126,478	94,410	198	40	20,680	402	180,739
82	Dyeing and finishing textiles.....	105	7,679,906	783,612	1,230,133	2,388,629	8,287,532	155	216	260,277	4,716	2,065,752
83	Dye stuffs and extracts.....	12	1,778,173	121,450	273,179	537,993	845,551	5	36	60,686	257	118,544
84	Electrical apparatus and supplies.....	63	20,967,587	362,348	2,406,873	2,924,239	15,274,157	48	616	836,960	7,817	4,002,737
85	Electrical construction and repairs.....	132	552,207	32,500	9,975	90,298	419,464	168	67	60,611	597	327,443
86	Electroplating.....	49	150,919	6,000	8,400	86,762	54,757	66	6	4,976	230	86,996
87	Emery wheels.....	6	509,163	10,900	57,201	133,138	307,824	2	26	26,116	75	39,626
88	Enameling and enameled goods.....	10	140,150	10,500	28,600	47,810	53,210	10	21	10,243	101	33,323
89	Engraving and die-sinking.....	50	52,387			34,000	18,387	58	1	1,040	68	35,407
90	Engraving, steel, including plate printing.....	36	384,911	18,750	28,000	193,528	144,633	52	53	53,350	557	239,487
91	Engraving, wood.....	19	55,360	5,500	8,000	8,525	43,335	23	1	1,000	24	12,961
92	Envelopes.....	5	176,084			78,498	97,586	9	19	13,858	139	47,707
93	Explosives.....	36	2,819,458	110,466	891,515	943,102	1,874,375	17	132	130,394	629	320,362
94	Fancy articles, not elsewhere specified.....	36	282,367	4,600	14,390	65,535	197,872	46	40	17,731	420	105,197
95	Felt goods.....	3	186,445	6,150	53,800	68,050	58,445	4	6	6,336	75	30,490
96	Fertilizers.....	51	3,802,754	490,711	681,345	508,872	2,121,866	43	137	200,755	765	361,873
97	Files.....	14	1,650,414	139,824	336,980	573,621	600,039	17	39	57,666	1,149	445,015
98	Flags and banners.....	1	51,950	5,000	21,200	2,244	23,505	4	4	2,352	25	9,028
99	Flavoring extracts.....	30	199,837	15,700	18,925	17,659	147,553	39	25	18,062	54	22,677
100	Flouring and grist mill products.....	2,719	10,616,933	2,673,364	5,073,724	5,741,177	6,028,728	8,210	270	206,091	2,195	1,061,869
101	Food preparations.....	50	834,109	77,675	137,333	188,410	450,691	61	128	77,229	495	182,145
102	Foundry and machine shop products.....	1,260	154,958,750	14,285,139	22,327,171	33,052,633	85,293,807	1,354	4,664	5,170,370	62,828	33,199,521
103	Foundry supplies.....	11	640,144	221,050	66,643	133,534	219,017	8	31	35,270	129	69,579
104	Fruits and vegetables, canning and preserving.....	89	820,206	88,216	77,555	101,658	302,977	43	35	25,309	468	123,179
105	Fur goods.....	51	671,021	92,450	18,820	27,401	601,850	53	61	20,882	260	136,213
106	Fur hats.....	20	5,726,259	848,940	1,368,267	736,549	2,772,263	22	180	269,619	2,890	1,187,272
107	Furnishing goods, men's.....	43	794,942	11,500	16,930	120,179	616,363	65	147	151,830	2,125	639,006
108	Furniture, cabinetmaking, repairing, and upholstering.....	710	1,402,784	150,140	273,425	170,823	802,399	797	51	35,637	1,262	335,583
109	Furniture, factory product.....	192	7,715,730	669,527	1,214,073	1,660,300	4,471,921	296	514	478,087	6,412	2,732,359
110	Furs, dressed.....	3	37,245	12,000	13,030	7,120	5,125	5	5		19	13,400
111	Galvanizing.....	10	1,259,029	80,804	100,936	166,857	921,012	9	22	22,749	338	136,463
112	Gas and lamp fixtures.....	30	1,679,799	52,900	75,230	303,983	1,242,686	32	123	134,386	1,618	501,031
113	Gas and oil stoves.....	9	233,487	35,500	30,500	52,657	116,880	7	20	17,538	142	69,933
114	Gas, illuminating and heating.....	89	47,812,637	2,654,006	2,881,006	31,235,121	10,530,904	577	577	457,092	3,141	1,506,266
115	Gas machines and meters.....	12	2,161,805	111,500	559,500	320,500	1,570,306	8	59	57,616	872	435,272
116	Glass.....	119	28,287,187	2,589,597	8,021,796	7,683,311	9,992,183	81	842	1,110,888	19,420	10,287,401
117	Glass, cutting, staining, and ornamenting.....	67	605,984	26,000	51,822	107,987	419,575	80	75	65,870	944	412,147
118	Gloves and mittens.....	4	28,050	500	4,500	4,650	19,300	6	8	1,800	43	9,759
119	Glue.....	11	2,191,144	128,862	276,262	199,850	1,594,670	13	24	39,320	549	218,642
120	Gold and silver, leaf and foil.....	8	408,894	53,800	92,900	47,602	214,492	12	6	5,268	189	87,730
121	Gold and silver, reducing and refining, not from the ore.....	6	38,565	6,000	10,000	14,163	8,412	4	3	2,094	7	4,216
122	Graphite and graphite refining.....	4	75,425	1,500	8,100	35,000	30,825	1	4	6,500	27	10,637
123	Grease and tallow.....	38	1,850,818	132,334	339,700	399,599	508,715	39	40	46,850	347	178,606
124	Hairwork.....	37	122,655	35,000	17,000	9,350	61,305	41	2	1,500	98	35,007
125	Hand knit goods.....	8	15,795	1,075	1,200	2,770	10,750	9	41		41	8,400
126	Hand stamps.....	27	207,217	11,000	7,509	91,146	97,571	31	24	21,543	130	65,083
127	Hardware.....	49	5,264,174	599,380	757,892	1,336,634	2,510,408	48	272	220,855	4,065	1,604,362
128	Hardware, saddlery.....	6	21,850	1,500	1,550	4,230	17,100	7	3	2,166	37	13,356
129	Hat and cap materials.....	6	88,200	12,000	8,000	6,630	62,600	8	2	1,500	27	11,350
130	Hats and caps, not including fur hats and wool hats.....	33	660,965	38,150	41,500	110,797	478,438	108	67	60,459	998	353,676
131	Hosiery and knit goods.....	319	15,713,951	721,967	1,593,387	5,599,572	7,532,055	867	688	638,483	21,540	5,825,783
132	House furnishing goods, not elsewhere specified.....	19	496,641	81,500	84,400	86,969	288,772	30	37	22,216	284	87,994
133	Ice, manufactured.....	73	8,259,801	1,253,130	1,539,675	4,712,816	774,270	51	246	169,993	980	537,748
134	Ink, printing.....	7	471,006	73,000	47,000	75,099	276,007	7	29	60,824	78	47,947
135	Ink, writing.....	7	37,804	2,050	1,850	11,400	22,504	8	3	3,124	21	9,328
136	Instruments, professional and scientific.....	36	1,254,738	58,000	166,950	359,903	704,885	53	105	119,175	751	366,570
137	Iron and steel.....	291	339,729,222	23,030,601	46,719,423	94,760,497	145,788,701	180	5,068	6,184,780	110,864	61,908,405
138	Iron and steel, bolts, nuts, washers, and rivets.....	15	3,169,800	480,120	340,005	1,170,296	1,179,379	18	76	56,591	1,948	602,502
139	Iron and steel, forgings.....	24	2,568,629	239,784	163,718	805,869	1,355,408	27	91	133,250	1,392	777,557
140	Iron and steel, nails and spikes, cut and wrought, including wire nails.....	13	2,059,954	121,688	288,430	1,049,928	600,038	8	57	53,489	856	312,026
141	Iron and steel, pipe, wrought.....	10	11,698,057	880,048	2,814,582	3,966,839	4,580,593	1	121	151,100	3,675	1,678,661
142	Ironwork, architectural and ornamental.....	93	7,621,623	851,695	638,288	1,235,141	4,886,496	102	855	330,183	4,085	2,066,160
143	Ivory and bone work.....	6	89,190	1,000	3,000	24,500	60,690	6	6	7,000	107	39,454
144	Japanning.....	6	25,880	2,000	8,000	3,870	12,810	7	1	300	23	8,753
145	Jewelry.....	22	884,952	15,000	5,000	119,098	545,854	28	60	38,987	434	200,798
146	Jewelry and instrument cases.....	6	54,750			13,300	41,450	8	5	2,560	76	28,928

SPECIFIED INDUSTRIES: 1900—Continued.

AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES—continued.						MISCELLANEOUS EXPENSES.					COST OF MATERIALS USED.				Value of products, including custom work and repairing.
Men, 16 years and over.		Women, 16 years and over.		Children, under 16 years.		Total.	Rent of works.	Taxes, not in- cluding internal revenue.	Rent of offices, interest, etc.	Contract work.	Total.	Principal materials, including mill supplies and freight.	Fuel and rent of power and heat.		
Average number.	Wages.	Average number.	Wages.	Average number.	Wages.										
69	\$39,688					\$10,746	\$1,200	\$1,638	\$7,908		\$301,583	\$893,130	\$8,453	\$1,146,807	77
978	441,968	9	\$2,013	18	\$1,562	76,569	1,784	3,692	71,068	\$25	461,576	412,486	49,090	1,212,665	78
388	283,680	234	92,317	8	1,120	57,210	12,946	5,102	39,162		981,064	968,833	12,231	1,828,976	79
395	212,358	788	202,283	7	1,230	531,699	26,581	3,843	441,275	60,000	2,031,841	2,013,351	21,490	3,969,064	80
254	135,361	142	44,309	6	1,069	65,286	24,273	4,939	32,799	3,275	103,314	89,788	18,626	603,241	81
4,013	1,905,718	346	93,706	357	66,328	556,083	68,990	28,293	455,595	3,205	3,174,507	2,823,064	351,443	7,038,012	82
251	117,169	5	1,250	1	125	158,252	1,785	3,272	153,134	61	661,444	638,997	22,447	1,269,246	83
6,600	3,677,780	1,054	294,236	163	30,721	1,647,426	50,943	30,674	1,318,786	247,023	11,372,739	11,220,120	152,619	19,112,665	84
582	323,732	2	500	13	3,211	88,191	30,224	602	25,875	31,490	833,076	823,739	4,337	1,632,981	85
180	82,326	9	2,951	11	1,719	19,122	13,850	155	5,117		60,888	53,098	7,790	259,365	86
74	39,210	1	416			37,556	1,080	519	35,957		63,064	57,356	5,708	209,295	87
63	25,907	32	6,508	6	908	4,806	1,428	352	2,858	168	48,443	44,501	3,942	127,005	88
62	34,326	2	450	4	631	9,197	7,530	11	1,423	233	14,145	12,800	1,345	130,508	89
342	208,797	199	58,466	16	2,224	53,756	19,969	709	32,078	1,000	186,289	181,520	4,769	805,890	90
28	12,808			1	156	7,416	1,878	148	890	4,500	4,155	4,081	74	49,055	91
33	14,930	100	31,841	6	936	14,169	7,720	132	6,317		101,916	99,083	2,833	213,486	92
598	312,357	27	7,405	4	600	200,371	3,215	10,889	186,267		1,500,252	1,467,531	32,721	2,695,180	93
135	51,901	237	46,929	48	6,367	21,920	11,724	307	8,889	1,000	226,976	224,516	2,460	509,190	94
74	29,890	1	600			11,678	1,200	410	10,068		88,715	84,216	4,499	160,633	95
764	351,773			1	100	238,324	15,023	10,414	203,364	9,523	2,584,272	2,529,728	54,544	3,614,320	96
845	874,379	164	46,359	140	24,307	111,768	4,124	4,704	102,666	274	457,756	418,767	38,989	1,236,436	97
6	3,073	19	5,955			1,375	620	191	664		24,694	24,379	315	66,811	98
42	19,165	11	2,840	1	72	22,241	6,743	503	12,945	2,050	153,619	152,741	878	326,475	99
2,180	1,059,307			15	2,562	667,372	171,032	95,731	400,199	350	80,566,466	30,347,301	219,165	36,639,423	100
353	148,355	128	31,410	14	2,380	115,861	13,698	2,676	99,437		985,316	962,471	22,845	1,611,869	101
62,096	33,045,261	180	35,481	602	118,779	6,830,037	385,694	430,572	5,672,375	341,396	62,336,770	60,379,209	1,957,561	127,292,440	102
129	69,579					15,557	1,190	2,359	12,008		399,113	385,664	13,449	684,152	103
211	81,345	206	35,833	51	6,001	53,788	3,527	1,409	58,700	152	499,353	492,338	7,015	801,250	104
87	74,487	166	60,676	7	1,050	65,605	34,623	973	29,759	250	402,009	399,729	2,280	876,435	105
2,043	984,782	714	182,606	133	19,884	351,729	9,536	6,986	315,322	19,885	1,866,866	1,824,251	42,615	4,248,352	106
274	142,586	1,615	455,506	236	40,974	62,110	22,300	891	38,919		1,927,214	1,921,609	5,605	3,171,757	107
1,074	577,547	171	55,428	17	2,608	203,985	93,406	5,768	47,551	57,260	942,485	928,971	13,514	2,704,917	108
6,146	2,689,388	80	10,347	186	26,624	462,206	81,494	21,697	344,657	14,358	4,443,877	4,369,373	74,504	9,804,677	109
19	13,400					710	40	195	475		1,985	1,561	424	22,560	110
381	136,188			7	1,275	23,541	4,656	2,347	16,538		1,890,097	1,287,110	12,987	1,847,611	111
963	487,639	41	9,950	14	3,406	148,592	44,797	3,076	97,219	3,500	869,548	849,731	19,817	1,928,898	112
133	68,159	4	804	5	1,000	15,718	4,003	480	10,155	1,020	200,790	198,301	2,489	351,307	113
3,143	1,506,146	21	120			1,113,998	436,500	50,329	627,109		3,150,655	3,095,008	55,647	7,870,662	114
848	430,476	21	4,250	3	546	46,731	6,465	2,186	37,780	300	680,817	666,534	14,283	1,550,606	115
15,136	9,333,261	1,546	414,250	2,738	534,980	1,867,879	12,465	100,888	1,723,445	31,331	6,435,463	5,013,691	1,421,772	22,011,130	116
739	863,485	161	42,487	44	6,175	56,323	24,434	1,659	29,327	903	449,952	433,070	16,882	1,262,988	117
16	4,800	27	4,959			833	223	40	620		20,737	20,534	203	42,236	118
609	207,737	15	4,405	25	6,500	176,093	133	13,426	162,264	270	1,240,467	1,170,022	70,445	1,699,667	119
137	73,794	44	12,304	8	1,632	4,072	729	1,792	1,551		341,534	339,879	1,655	483,192	120
6	3,956	1	200			3,240	1,884	81	1,325		90,679	90,255	424	114,109	121
27	10,637					2,672	1,371	184	1,117		16,645	13,889	2,756	59,374	122
347	178,006					138,946	9,228	5,652	124,066		1,887,860	1,846,004	41,356	2,501,671	123
16	10,714	81	25,011	1	182	11,665	7,441	864	3,020	340	47,605	46,759	846	148,829	124
108	60,997	44	8,400			1,000	856	42	178	524	7,650	7,605	45	33,363	125
		11	2,200	11	1,886	18,480	8,840	367	9,273		51,883	49,427	2,456	207,628	126
3,466	1,493,762	258	50,097	371	54,503	221,804	11,191	22,368	187,785	460	1,833,381	1,759,827	73,554	4,843,866	127
85	13,096			2	260	1,585	654	74	857		17,425	16,363	1,063	48,955	128
17	8,966	7	1,760	3	624	4,282	2,870	360	1,052		99,586	99,460	126	136,821	129
350	201,869	601	149,919	17	1,883	56,004	25,930	1,099	26,235	2,740	803,741	797,403	6,338	1,682,442	130
3,725	1,599,766	13,739	3,648,805	4,076	577,212	1,884,722	107,905	26,416	1,042,198	708,203	10,928,113	10,750,770	177,343	21,896,063	131
104	36,873	171	49,493	9	1,628	56,664	6,638	1,730	39,401	8,850	433,990	429,430	4,560	600,252	132
980	537,748					290,339	24,474	24,748	241,079	38	392,484	156,929	235,555	2,038,504	133
76	47,427	1	260	1	260	83,477	2,705	1,072	29,700		204,482	199,089	5,393	407,966	134
15	7,764	6	1,624			4,854	2,224	50	2,580		23,262	23,054	208	49,638	135
654	319,103	120	46,394	7	1,068	134,728	18,787	2,143	113,938		479,624	463,174	16,450	1,328,101	136
109,420	61,600,400	308	62,801	1,136	245,204	17,845,789	1,165,741	745,165	15,327,353	607,530	283,142,735	253,605,188	29,537,597	484,445,200	137
1,735	556,235	21	8,750	192	37,517	114,984	6,060	11,704	97,220		2,108,225	2,036,096	72,129	3,502,375	138
1,814	763,550			78	14,407	145,228	7,969	7,003	122,089	8,217	1,945,801	1,842,725	103,076	3,369,543	139
726	285,148	114	24,481	16	2,447	42,061	980	2,740	37,716	625	818,003	784,725	33,278	1,497,715	140
3,625	1,671,443			50	7,518	148,202	25,800	16,480	105,922		11,586,470	11,297,580	288,890	15,383,693	141
4,066	2,061,305			19	4,855	372,541	32,906	21,498	272,987	45,150	6,969,203	6,864,877	104,326	10,434,292	142
92	85,154	12	3,790	3	510	2,416	1,673	55	688		70,537	69,622	915	156,719	143
19	7,973	1	280	3</											

TABLE 7.—MANUFACTURES BY

MANUFACTURING AND MECHANICAL INDUSTRIES.		Number of establishments.	CAPITAL.					Proprietors and firm members.	SALARIED OFFICIALS, CLERKS, ETC.		AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES.	
			Total.	Land.	Buildings.	Machinery, tools, and implements.	Cash and sundries.		Number.	Salaries.	Total.	
											Average number.	Wages.
147	Jute and jute goods	5	\$1,611,510	\$156,798	\$222,550	\$288,656	\$993,506	4	14	\$16,824	\$1,118	\$272,694
148	Kaolin and other earth grinding	33	1,691,435	108,680	183,714	231,838	1,217,203	35	44	73,272	572	214,690
149	Kindling wood	15	1,102,378	19,675	110,050	643,297	329,851	7	38	34,332	836	292,224
150	Labels and tags	9	88,195	2,000	8,000	47,200	35,995	10	10	9,436	87	18,427
151	Lamps and reflectors	18	580,779	26,350	102,033	171,125	281,251	21	34	46,332	334	176,014
152	Lapidary work	3	8,860			700	8,163	3	6		4	8,000
153	Lasts	5	100,676	18,600	19,922	21,491	41,260	5	4	4,184	72	36,914
154	Lead, bar, pipe, and sheet	7	1,006,766	128,000	93,000	250,395	535,371	10	36	47,693	141	74,958
155	Leather goods	27	877,231	63,400	44,450	95,521	676,560	42	101	103,891	1,180	365,638
156	Leather, tanned, curried, and finished	254	57,320,227	8,818,195	7,730,782	3,782,119	36,991,181	260	506	643,895	13,396	5,457,618
157	Lime and cement	251	15,567,849	1,988,800	2,926,305	6,516,068	4,187,176	262	203	203,594	4,559	1,783,718
158	Liquors, distilled	73	5,840,034	337,340	1,322,203	598,451	3,532,037	99	97	123,339	471	250,318
159	Liquors, malt	205	63,684,480	6,270,152	17,290,687	12,476,071	27,647,570	171	816	1,474,092	4,605	2,884,242
160	Liquors, vinous	3	130,631	2,700	16,700	2,231	109,000	3			7	1,700
161	Lithographing and engraving	27	1,248,118	41,500	55,500	740,237	410,881	84	61	73,884	747	330,223
162	Lock and gun smithing	197	436,909	99,570	85,027	98,149	154,163	215	9	5,222	311	141,689
163	Looking-glass and picture frames	181	737,579	21,912	28,750	81,028	602,889	221	110	69,093	596	253,482
164	Lumber and timber products	2,338	47,882,548	19,339,297	1,862,845	7,993,810	18,632,096	3,078	506	429,011	13,610	5,650,168
165	Lumber, planing mill products, including sash, doors, and blinds	542	14,191,248	1,778,264	1,816,081	2,378,087	8,218,813	765	527	450,097	7,472	3,516,650
166	Malt	8	804,377	99,000	142,000	44,224	519,653	8	15	26,200	55	29,880
167	Mantels, slate, marble, and marbleized	6	65,378	4,700	8,800	8,235	48,638	5	12	9,570	40	23,220
168	Marble and stone work	339	8,065,083	1,375,372	854,718	1,025,774	5,809,219	444	246	261,475	6,654	3,012,062
169	Masonry, brick and stone	608	8,335,592	837,450	937,221	765,544	5,815,377	735	293	282,732	11,355	6,068,076
170	Matches	5	109,905	5,850	24,185	60,052	30,318	2	6	6,088	30	29,854
171	Mattresses and spring beds	78	986,421	69,150	122,853	128,664	670,754	90	93	69,370	791	301,202
172	Millinery and lace goods	41	670,499	97,000	48,500	81,864	443,135	50	75	57,053	946	805,195
173	Millinery, custom work	1,344	3,264,454	429,930	567,442	59,575	2,107,447	1,544	446	153,662	2,913	820,005
174	Mineral and soda waters	233	1,966,872	128,930	214,738	558,066	1,070,090	296	163	87,102	746	289,331
175	Mirrors	15	353,184	17,200	37,088	69,845	229,101	10	36	34,895	380	141,337
176	Models and patterns	67	397,946	10,300	22,575	118,439	246,632	86	14	14,220	897	246,666
177	Monuments and tombstones	390	1,712,125	328,398	194,286	169,044	1,020,397	474	44	27,524	923	552,760
178	Mucilage and paste	16	277,955		2,500	36,007	239,448	19	37	37,079	92	27,871
179	Musical instruments and materials, not specified	20	433,740	25,700	49,400	63,977	299,669	27	14	8,030	152	77,000
180	Musical instruments, organs and materials	17	526,281	25,428	72,180	38,062	390,616	23	19	31,235	274	149,788
181	Musical instruments, pianos and materials	14	863,099	67,100	121,200	72,436	602,363	13	45	60,061	438	265,267
182	Needles and pins	4	15,665	250	1,150	8,500	5,765	6	1	720	18	7,976
183	Oil, linseed	4	879,628	75,600	141,740	168,944	493,344	2	36	30,038	111	59,914
184	Oil, not elsewhere specified	32	3,921,835	162,690	130,147	280,020	3,348,978	25	168	299,415	174	103,375
185	Optical goods	66	795,958	104,000	65,000	273,919	351,039	80	94	60,908	573	198,038
186	Painting, house, sign, etc	1,612	2,550,393	820,435	874,345	299,969	1,558,644	1,712	133	88,263	5,278	2,923,349
187	Paints	66	10,268,515	1,601,877	1,333,868	2,767,768	4,660,002	47	405	453,024	1,049	736,111
188	Paper and wood pulp	73	16,424,107	925,950	2,752,790	7,289,080	5,456,337	74	251	855,478	4,840	1,989,128
189	Paper goods, not elsewhere specified	15	572,866	63,000	73,749	65,950	370,167	16	28	30,475	283	106,056
190	Paper hanging	380	1,828,273	135,390	242,264	186,387	764,232	428	94	73,677	1,228	695,109
191	Paper hangings	13	2,194,106	72,834	222,668	812,523	1,056,078	8	98	133,658	921	432,109
192	Patent medicines and compounds	161	2,953,368	145,525	192,141	323,852	2,244,350	160	354	265,341	936	360,981
193	Paving and paving materials	188	4,275,018	297,720	506,848	671,867	2,798,574	206	171	156,797	4,719	2,147,880
194	Perfumery and cosmetics	26	327,341	17,000	13,250	23,620	273,471	33	60	62,437	191	64,373
195	Petroleum, refining	38	26,580,504	1,188,955	1,609,555	9,865,515	13,916,179	40	277	403,466	3,239	1,681,003
196	Photographic materials	14	229,605	11,400	19,500	57,700	141,035	15	24	23,276	129	58,224
197	Photography	576	1,379,604	107,647	152,485	569,243	530,220	637	129	79,636	878	363,154
198	Photolithographing and photoengraving	17	295,250	15,000	31,003	147,100	102,150	22	43	35,479	270	109,460
199	Pickles, preserves, and sauces	40	2,981,813	226,522	559,617	209,471	1,986,203	54	762	704,652	1,730	514,591
200	Pipes, tobacco	5	150,363	10,000	13,000	34,175	98,188	7	4	3,754	229	89,077
201	Plastering and stucco work	207	862,364	54,300	69,360	197,587	541,617	253	10	13,230	868	496,073
202	Plated and britannia ware	4	67,819	20,000	5,000	24,034	18,285	4	3	2,440	48	19,318
203	Plumbers' supplies	21	3,457,048	354,500	557,157	579,932	1,965,134	19	182	200,145	1,583	854,069
204	Plumbing, and gas and steam fitting	1,532	6,092,993	631,717	907,303	666,393	3,887,580	1,534	875	244,840	5,683	3,173,035
205	Pocketbooks	6	101,650			6,884	94,686	10	10	8,810	113	34,313
206	Pottery, terra cotta, and fire-clay products	143	11,308,786	2,030,698	3,570,302	1,886,793	4,270,993	172	468	450,905	8,872	3,007,354
207	Printing and publishing, book and job	740	14,226,842	520,071	808,694	6,143,792	6,753,785	866	690	836,971	7,190	3,857,306
208	Printing and publishing, music	13	480,288	25,000	20,000	133,142	261,146	23	36	47,840	293	94,442
209	Printing and publishing, newspapers and periodicals	1,022	23,552,145	2,366,820	3,297,929	9,333,799	8,953,697	1,169	3,028	2,812,873	9,665	5,094,769
210	Printing materials	10	46,736			17,998	28,738	11	5	1,845	85	12,830
211	Pumps, not including steam pumps	17	113,034	33,850	84,950	14,770	29,464	21	4	3,784	27	12,964
212	Refrigerators	5	245,388	46,000	58,000	37,688	103,800	5	6	4,700	177	94,500
213	Regalia and society banners and emblems	18	189,808	12,800	12,950	49,882	114,676	22	23	12,128	146	59,604
214	Roofing and roofing materials	455	4,529,223	1,329,709	453,176	948,658	2,097,680	571	249	177,213	4,713	2,021,593
215	Rubber and elastic goods	11	924,106	42,700	92,919	272,721	515,766	14	30	43,836	599	276,699
216	Saddlery and harness	1,039	2,678,339	275,444	481,797	258,207	1,713,891	1,098	79	57,383	1,477	633,382
217	Safes and vaults	6	753,307	22,000	89,406	199,280	442,621	3	52	55,424	370	168,669
218	Sand and emery paper and cloth	3	324,314		8,000	21,000	295,314	1	17	40,216	75	43,558
219	Sausage	20	87,325	18,800	23,900	16,680	25,445	25	1	1,000	54	24,072
220	Saws	12	4,602,089	826,051	462,234	663,619	3,150,185	15	37	93,299	1,411	734,612
221	Scales and balances	8	394,497	9,000	20,000	112,278	253,219	10	21	25,532	213	122,135

SPECIFIED INDUSTRIES: 1900—Continued.

AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES—continued.						MISCELLANEOUS EXPENSES.						COST OF MATERIALS USED.				Value of products, including custom work and repairing.	
Men, 16 years and over.		Women, 16 years and over.		Children, under 16 years.		Total:	Rent of works.	Taxes, not including internal revenue.	Rent of offices, interest, etc.	Contract work.	Total.	Principal materials, including mill supplies and freight.	Fuel and rent of power and heat.				
Average number.	Wages.	Average number.	Wages.	Average number.	Wages.												
370	\$188,647	453	\$92,609	293	\$41,438	\$83,030	\$300	\$1,711	\$38,622	\$22,397	\$775,641	\$767,938	\$7,703	\$1,318,137	147		
572	214,500					57,076	15,562	2,956	36,411	2,117	273,639	242,729	33,910	714,813	148		
531	227,502	188	61,692	17	3,030	85,245	915	2,643	19,894	11,793	296,551	292,578	8,983	821,195	149		
24	10,720	53	6,590	10	1,117	5,295	3,106	80	1,869	250	62,320	51,445	875	100,753	150		
305	168,112	7	2,249	22	5,653	43,837	8,070	1,873	33,894		185,068	177,939	7,129	583,025	151		
4	3,000					388	312		26		1,101	1,020	81	8,550	152		
67	35,659	2	720	3	535	5,130	1,616		3,020		20,273	18,567	1,706	87,430	153		
141	74,955					49,288	14,099	3,876	31,813		7,831,952	1,322,074	9,888	1,567,091	154		
533	253,331	536	99,404	111	12,923	106,384	21,476	1,968	80,490	2,450	821,776	818,273	3,503	1,830,672	155		
12,839	5,311,200	287	84,078	270	62,240	2,432,724	47,955	136,805	2,244,026	3,938	42,403,503	42,182,568	220,935	55,615,000	156		
4,499	1,772,035			60	11,680	504,297	38,071	24,071	370,533	71,622	2,363,212	1,409,645	863,567	6,790,892	157		
431	243,783	37	6,265	3	295	2,655,533	86,420	89,658	2,589,103	397	1,568,569	1,492,469	76,110	5,857,615	158		
4,490	2,831,215	6	1,346	9	1,681	13,039,371	52,807	335,263	12,651,551	250	6,609,880	6,085,932	523,937	20,162,743	159		
7	1,700					961	25	368	456	112	23,446	23,446		53,800	160		
615	294,385	103	31,810	29	4,528	110,668	23,355	1,644	64,929	20,740	359,638	349,142	10,496	1,099,078	161		
270	131,450	3	1,346	38	5,748	33,307	21,925	2,798	7,514	1,070	150,061	141,958	8,103	529,530	162		
503	233,168	49	12,797	44	7,517	91,528	60,646	1,472	26,625	5,785	674,849	668,215	6,631	1,436,555	163		
13,337	5,521,469	42	7,756	131	20,938	930,687	44,783	207,053	666,336	12,515	20,777,869	20,770,826	7,013	35,749,965	164		
7,297	3,432,416	66	13,355	109	15,779	698,816	89,871	50,499	386,500	171,916	9,441,629	9,319,813	121,816	16,736,380	165		
55	29,380					13,700	5,200	2,376	6,124		331,571	324,906	6,635	452,765	166		
40	23,220					3,937	1,580	221	2,133		62,914	62,852	62	141,017	167		
6,539	3,009,524	1	495	14	2,043	438,136	49,181	32,328	195,079	211,545	2,535,869	2,471,481	61,388	7,690,255	168		
11,349	6,061,731			6	1,342	2,939,404	47,525	37,017	230,150	2,594,712	10,598,180	10,570,316	27,864	23,768,787	169		
40	19,774	40	8,496	10	1,531	65	65	109	1,366		45,839	44,461	1,378	82,866	170		
574	236,985	205	61,874	12	2,340	96,410	32,595	2,403	61,400	12	1,148,205	1,140,375	7,830	1,888,577	171		
113	61,107	810	241,403	23	2,635	83,269	32,673	2,650	47,946		792,429	786,314	6,115	1,564,008	172		
20	13,618	2,848	800,154	45	6,233	391,679	268,838	13,744	106,057	1,020	3,276,113	3,252,686	23,727	6,178,960	173		
549	239,175	170	46,845	27	3,811	284,144	24,392	6,211	253,291	250	1,070,576	1,000,037	70,539	2,334,986	174		
266	122,767	81	10,661	13	2,509	33,875	5,165	1,269	27,441		508,665	503,554	5,111	531,116	175		
389	245,423	3	658	6	585	27,947	17,431	650	9,616	250	137,607	129,552	8,055	579,557	176		
921	552,421			2	339	91,113	22,250	7,373	34,144	27,937	1,088,924	1,078,880	10,044	2,363,955	177		
55	21,035	34	5,870	3	466	34,756	6,800	287	27,069		370,203	367,350	2,853	551,074	178		
146	75,897	6	1,103			16,335	1,679	664	18,221	781	61,409	59,127	2,232	221,064	179		
266	147,010	6	2,270	2	458	88,343	2,889	664	32,774	2,016	210,879	205,926	4,953	509,802	180		
420	263,067			13	2,200	63,197	6,682	1,823	54,692		402,340	387,988	14,356	978,331	181		
11	6,474	2	572	5	930	781	474	20	287		2,029	1,608	420	22,100	182		
111	59,914					23,966	4,477	2,331	21,135		1,423,342	1,412,125	11,217	1,551,153	183		
169	102,427	2	448	3	500	1,490,522	4,477	3,733	1,482,262		1,997,743	1,970,712	27,031	5,836,300	184		
231	126,448	309	66,002	33	5,583	76,800	2,243	34,722	34,722	1,125	300,071	382,751	7,320	1,007,443	185		
5,231	2,913,899	3	886	44	8,564	235,885	125,133	10,752	73,280	26,720	2,037,805	2,027,799	10,006	7,817,803	186		
1,557	711,635	87	23,512	5	964	511,533	26,541	23,298	408,839	52,855	5,203,343	5,060,009	143,334	9,187,970	187		
4,033	1,809,391	766	170,721	51	9,016	1,030,821	22,010	61,069	973,712	30,530	6,374,315	5,746,949	627,366	12,267,900	188		
176	79,793	106	26,113	1	150	20,548	9,274	1,503	549,583	500	549,583	545,144	4,439	950,261	189		
1,192	692,709	21	3,271	15	2,129	135,117	50,872	4,264	74,048	5,933	725,628	720,814	4,814	2,260,915	190		
608	363,558	127	36,910	186	31,641	252,094	36,707	5,678	209,703		1,847,719	1,823,417	24,302	2,898,637	191		
454	239,048	469	119,997	13	1,886	1,050,749	54,869	6,573	988,495	812	1,456,916	1,438,479	18,437	4,368,531	192		
4,709	2,145,439			10	1,941	528,400	35,385	8,801	409,342	14,872	2,725,507	2,679,270	46,237	6,719,873	193		
42	19,261	135	33,174	14	1,938	98,821	15,966	827	82,028		283,367	281,625	1,742	611,966	194		
3,142	1,600,397	156	505	156	20,701	640,429	2,027	42,530	588,608	7,264	27,518,735	26,787,453	726,282	31,977,703	195		
88	41,598	35	10,708	6	918	28,009	8,956	511	18,542		147,226	144,509	2,717	339,292	196		
486	253,188	349	103,986	33	5,980	218,747	144,921	4,199	62,254	7,373	586,820	575,516	11,304	1,984,225	197		
245	163,593	14	4,189	11	1,678	37,911	9,348	519	23,861	4,183	58,805	52,870	5,935	379,314	198		
955	370,296	780	142,895	15	1,900	1,172,444	10,822	10,944	1,150,678		2,428,255	2,401,609	26,646	5,239,807	199		
195	91,047	19	5,340	15	2,690	8,217	1,330	417	6,420		107,181	104,778	2,353	234,715	200		
803	495,860			5	713	59,025	11,961	1,986	14,874	30,204	509,600	505,919	3,681	1,389,230	201		
85	14,897	12	4,265	1	156	2,800	1,560	312	928		18,187	17,362	825	55,810	202		
1,640	843,809	27	6,918	21	3,942	133,903	13,792	10,879	108,572	725	1,676,012	1,612,253	63,759	8,156,248	203		
5,617	3,160,680	3	845	63	11,510	439,668	207,663	23,594	160,564	47,852	6,536,858	6,488,002	48,256	13,439,596	204		
57	21,921	45	10,872	11	1,525	13,910	5,176	8,734	65,167		65,167	61,720	447	152,464	205		
8,120	2,885,794	409	60,173	343	61,387	402,589	17,551	43,253	321,803	19,982	2,451,980	1,905,192	546				

TABLE 7.—MANUFACTURES BY

	MANUFACTURING AND MECHANICAL INDUSTRIES.	Number of establishments.	CAPITAL.					Proprietors and firm members.	SALARIED OFFICIALS, CLERKS, ETC.		AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES.	
			Total.	Land.	Buildings.	Machinery, tools, and implements.	Cash and sundries.		Number.	Salaries.	Total.	
											Average number.	Wages.
222	Sewing machine repairing.....	32	\$29,064	\$2,950	\$900	\$10,799	\$14,385	81	1	\$1,040	33	\$15,992
223	Sewing machines and attachments.....	4	536,352	100,750	118,450	205,801	81,438	1	15	10,708	160	80,908
224	Ship and boat building, wooden.....	35	282,401	58,550	59,450	44,790	120,611	41	13	8,680	257	119,719
225	Shipbuilding, iron and steel.....	3	13,878,081	2,505,511	4,551,982	2,042,882	4,757,709	148	148	245,221	6,820	3,425,226
226	Shirts.....	161	3,050,810	92,365	180,223	452,436	2,325,816	228	347	289,452	6,888	1,719,307
227	Shoddy.....	25	972,070	83,050	145,600	254,181	488,639	19	34	24,746	368	148,240
228	Show cases.....	5	90,512	13,328	21,192	11,022	45,000	8	3	1,600	73	41,300
229	Silk and silk goods.....	121	20,894,023	491,508	3,688,545	6,696,158	10,017,722	131	745	718,776	21,028	4,629,626
230	Silverware.....	4	105,600	32,000	10,000	65,600	58,600	7	10	6,412	55	38,736
231	Slaughtering and meat packing, wholesale.....	68	6,009,317	700,563	1,291,502	675,703	3,341,682	101	319	239,165	1,383	733,132
232	Slaughtering, wholesale, not including meat packing.....	43	539,230	64,300	149,700	52,984	272,246	67	27	27,988	286	186,258
233	Smelting and refining, not from the ore.....	16	841,072	60,500	101,800	81,425	611,310	18	72	49,996	218	109,827
234	Soap and candles.....	60	2,981,308	209,800	382,297	403,657	1,991,551	78	136	152,936	811	293,160
235	Soda water apparatus.....	3	589,867	34,464	65,403	34,464	555,403	5	35	60,960	165	78,200
236	Sporting goods.....	13	282,055	9,300	55,100	41,020	177,265	16	16	21,894	376	124,638
237	Springs, steel, car and carriage.....	8	2,668,811	184,948	182,800	400,504	1,900,534	12	56	132,822	523	328,579
238	Stamped ware.....	13	2,299,712	31,800	130,800	1,025,764	1,111,848	7	95	111,769	1,238	618,695
239	Stationery goods, not elsewhere specified.....	13	485,430	8,300	6,900	181,141	295,089	13	17	16,910	416	282,786
240	Steam fittings and heating apparatus.....	37	1,780,279	122,500	194,204	636,008	1,127,167	26	145	164,473	992	479,652
241	Steam packing.....	22	1,822,586	48,000	207,602	645,825	921,999	31	136	181,240	655	277,658
242	Stencils and brands.....	8	28,875	6,500	2,530	10,050	4,225	12	39	81,462	10	4,296
243	Stereotyping and electrotyping.....	19	336,825	2,750,000	2,050,030	164,934	171,591	28	80	81,462	323	177,674
244	Sugar and molasses, refining.....	7	23,992,552	2,750,000	2,050,030	2,649,719	16,542,838	15	119	185,078	1,249	647,692
245	Surgical appliances.....	29	676,849	34,800	86,050	135,685	320,814	30	46	49,467	267	138,436
246	Taxidermy.....	10	18,885	7,150	3,000	745	7,990	10	10	7,990	5	1,612
247	Tin andterne plate.....	25	3,327,029	238,500	267,947	915,849	1,610,233	11	180	147,202	1,678	813,692
248	Tinsmithing, coppersmithing, and sheet-iron working.....	1,338	6,215,346	704,136	1,037,761	1,176,587	3,296,862	1,573	348	260,383	4,679	2,205,011
249	Tobacco, chewing, smoking, and snuff.....	20	1,765,639	181,097	345,068	223,357	1,016,022	26	35	40,065	257	102,395
250	Tobacco, cigars and cigarettes.....	2,604	13,836,368	818,457	1,781,604	740,389	13,495,918	2,928	886	819,995	25,015	8,404,687
251	Tobacco, stemming and rehandling.....	28	616,494	7,140	54,000	4,284	551,070	84	5	8,222	181	38,666
252	Tools, not elsewhere specified.....	51	2,178,818	188,850	253,975	528,609	1,201,884	63	90	123,518	1,122	600,202
253	Toys and games.....	18	476,285	36,400	119,125	118,675	207,085	13	21	31,525	458	145,480
254	Trunks and valises.....	40	410,550	12,350	33,500	37,290	327,410	69	28	19,882	308	139,571
255	Typewriter repairing.....	3	1,530	5,000	20,000	750	780	4	4	780	2	1,826
256	Typewriters and supplies.....	4	410,075	5,000	20,000	86,746	804,329	4	74	67,674	328	178,947
257	Umbrellas and canes.....	47	1,698,856	57,750	83,147	277,641	1,480,315	73	184	198,889	2,832	884,540
258	Upholstering materials.....	30	2,696,332	173,230	358,775	453,888	1,710,469	48	77	92,781	1,321	490,293
259	Varnish.....	27	1,816,481	198,485	183,138	170,350	1,264,508	17	120	172,216	167	119,428
260	Vinegar and cider.....	145	376,011	42,650	71,565	168,965	92,831	161	19	10,836	119	49,563
261	Washing machines and clothes wringers.....	14	494,434	25,345	78,413	61,810	308,836	16	15	32,332	353	113,767
262	Watch, clock, and jewelry repairing.....	1,187	1,561,602	192,668	261,610	485,749	671,580	1,260	28	12,061	921	497,239
263	Wheelbarrows.....	3	125,502	6,200	5,400	59,460	24,242	5	4	2,008	22	9,063
264	Whips.....	5	159,708	500	19,500	18,401	121,804	4	9	9,420	112	37,774
265	Window shades.....	28	810,018	45,700	45,000	24,515	194,203	25	30	22,928	147	61,957
266	Wire.....	9	762,482	98,090	161,485	255,942	240,965	6	28	26,756	274	122,422
267	Wirework, including wire rope and cable.....	61	2,813,277	118,472	311,511	919,125	1,464,169	67	77	83,492	941	382,576
268	Wood, turned and carved.....	126	1,250,496	103,770	189,665	872,208	554,768	153	67	40,541	1,286	471,548
269	Woodenware, not elsewhere specified.....	21	815,634	26,862	27,820	91,214	189,788	28	26	18,519	321	115,577
270	Wool hats.....	13	750,798	44,500	60,500	75,375	570,423	31	17	8,845	634	253,313
271	Wool pulling.....	7	222,690	20,000	31,700	17,550	163,440	9	4	2,192	85	41,393
272	Woolen goods.....	198	19,405,595	1,051,999	2,576,460	5,612,433	10,164,613	231	353	399,570	13,721	5,091,932
273	Worsted goods.....	51	19,356,538	417,832	1,609,471	5,085,186	12,334,009	35	188	277,081	10,201	3,337,491
274	Zinc, smelting and refining.....	3	871,626	50,000	1,150,000	190,000	472,626	9	9	13,669	448	171,540
275	All other industries ¹	62	13,146,231	796,011	1,615,457	2,413,716	3,421,047	51	355	476,297	5,704	2,768,188

¹ Embraces axle grease, 1; belting and hose, linen, 1; belting and hose, rubber, 1; boots and shoes, rubber, 2; brass, 1; cardboard, 1; cars, street railroad, not including operations of railroad companies, 1; clocks, 2; drug grinding, 2; engravers' materials, 2; firearms, 2; fire extinguishers, chemical, 2; fireworks, 2; fish, canning and preserving, 1; grindstones, 1; hammocks, 1; hones and whetstones, 1; hooks and eyes, 2; horseshoes, factory product, 1; maps and matting, 2;

TABLE 8.—MANUFACTURES IN CITIES.

ALLEGHENY.

	All industries.....	\$98	\$50,122,503	\$5,598,172	\$6,295,361	\$6,783,760	\$31,445,204	1,040	2,027	\$2,098,121	20,804	\$10,352,502
2	Baskets, and rattan and willow ware.....	3	14,964			785	14,229	5	1	780	25	11,903
3	Bicycle and tricycle repairing.....	6	7,290		8,000	965	3,325	7			3	1,755
4	Blacksmithing and wheelwrighting.....	42	79,675	9,150	14,020	11,447	45,078	58	8	2,050	70	41,774
5	Boots and shoes, custom work and repairing.....	63	24,903	2,250	4,500	3,647	14,500	64			10	3,323
6	Bottling.....	18	104,530	11,700	32,300	14,360	46,170	13	5	2,136	46	27,412

SPECIFIED INDUSTRIES: 1900—Continued.

AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES—continued.						MISCELLANEOUS EXPENSES.						COST OF MATERIALS USED.			Value of products, including custom work and repairing.	
Men, 16 years and over.		Women, 16 years and over.		Children, under 16 years.		Total.	Rent of works.	Taxes, not in- cluding internal revenue.	Rent of offices, interest, etc.	Contract work.	Total.	Principal materials, including mill supplies and freight.	Fuel and rent of power and heat.			
Average num- ber.	Wages.	Average num- ber.	Wages.	Average num- ber.	Wages.									Total.	Rent of works.	Taxes, not in- cluding internal revenue.	Rent of offices, interest, etc.	Contract work.	Total.	Principal materials, including mill supplies and freight.	Fuel and rent of power and heat.
29	\$14,532	4	\$1,460			\$5,990	\$5,043	\$65	\$382		\$19,061	\$18,180	\$881	\$61,578	222	
157	79,348	3	1,560			21,237	1,020	1,803	18,414		96,308	93,211	3,087	210,146	223	
252	118,619	1	250			38,028	3,223	2,251	3,537	\$29,617	176,498	174,126	2,372	407,763	224	
6,847	3,323,216			473	102,010	591,535	2,600	23,935	286,774	278,336	6,996,703	6,903,411	93,262	14,085,395	225	
780	378,176	5,718	1,288,328	390	52,803	371,943	94,098	3,749	128,158	145,938	3,248,666	3,209,772	38,894	6,836,928	226	
285	126,601	80	21,064	3	572	57,728	11,023	3,513	40,667	2,535	1,069,914	1,052,210	17,734	1,448,886	227	
73	41,300					6,893	4,256	521	2,116		38,850	37,460	1,390	123,798	228	
5,214	1,718,587	11,565	2,363,123	4,249	547,916	2,451,820	96,517	36,330	610,872	1,708,071	19,884,869	19,710,481	174,388	31,072,926	229	
54	38,586			1	150	3,810	1,110	737	1,963		53,033	52,093	950	178,550	230	
1,364	728,961	12	3,395	7	1,576	372,368	34,842	26,167	309,074	2,285	15,128,096	15,049,815	78,281	17,826,697	231	
282	185,506	1	500	3	252	154,604	96,523	3,234	54,847		6,473,714	6,459,644	14,070	7,412,075	232	
212	109,491			1	336	60,790	4,541	2,109	51,820	2,320	2,063,613	2,041,818	21,795	2,519,724	233	
530	239,365	231	49,554	47	7,220	482,521	16,518	7,717	458,286		2,093,138	2,064,901	28,237	3,013,249	234	
163	77,684	2	520			52,409	9,220	1,574	41,615		181,600	179,803	1,797	464,162	235	
178	76,816	176	44,384	22	3,438	9,801	3,289	666	5,846		206,963	204,980	1,983	502,497	236	
523	328,579					180,482	13,686	6,186	160,610		1,359,690	1,304,883	54,802	2,535,388	237	
951	392,422	260	120,889	27	5,384	74,576	10,304	5,240	57,582	850	1,139,411	1,036,197	168,214	2,274,348	238	
232	82,823	141	35,390	43	4,568	69,374	9,955	50	60,169	100	841,424	838,391	3,033	631,534	239	
962	472,073	15	4,056	15	3,523	141,281	20,606	4,962	115,713		1,001,024	982,461	18,563	2,143,907	240	
564	256,707	81	19,391	10	1,560	146,544	13,664	2,348	122,862	7,670	830,378	805,436	24,942	1,858,481	241	
10	4,296					1,770	1,422	166	182		5,762	5,700	62	31,217	242	
307	173,358	1	500	20	3,816	31,203	15,796	26	14,571	810	144,772	136,398	8,374	517,869	243	
1,171	635,281	60	8,911	18	3,450	604,871	11,600	25,693	561,578	3,000	33,658,440	33,411,459	248,981	86,163,817	244	
166	104,605	92	27,359	9	1,412	58,183	9,690	1,788	33,705	13,000	182,068	178,018	3,150	575,383	245	
5	1,612					1,823	932	180	261		5,231	5,203	31	17,010	246	
1,284	736,818	288	75,760	6	1,114	82,169	1,175	11,202	69,792		10,364,084	10,323,583	40,501	12,530,901	247	
4,454	2,250,145	79	19,921	146	25,978	451,607	162,718	25,795	237,673	25,421	4,366,702	4,313,213	53,489	9,455,832	248	
107	58,208	148	43,918	2	269	451,243	2,051	5,772	443,420		423,245	419,155	4,090	1,247,397	249	
13,660	5,605,101	10,085	2,631,713	1,300	167,873	6,448,701	228,844	34,963	6,181,967	2,927	11,570,888	11,505,930	64,958	31,433,141	250	
94	24,141	60	12,085	27	2,440	11,742	1,295	638	9,809		502,733	502,204	529	625,394	251	
1,084	591,953	18	2,500	25	5,749	68,627	15,142	9,527	43,908	50	1,061,493	1,005,212	56,281	2,528,777	252	
249	105,744	80	21,805	129	17,940	37,623	2,456	1,227	32,230	1,710	152,530	148,176	4,351	435,225	253	
277	131,813	20	5,831	11	1,927	51,056	18,381	675	25,500	6,500	274,194	272,340	1,861	622,608	254	
2	1,326					413	388		25		2,312	2,265	47	7,265	255	
826	178,647	2	300			50,172	5,915	951	43,306		75,417	74,120	1,297	443,069	256	
1,002	430,459	1,610	414,550	220	39,531	258,589	42,465	2,747	213,302	75	3,445,131	3,423,800	21,331	5,873,878	257	
481	221,732	762	205,973	78	12,588	138,554	18,440	6,415	109,755	3,941	1,828,350	1,807,040	21,840	2,881,818	258	
165	119,088	1	240		100	201,497	4,054	5,474	134,477	57,492	1,391,371	1,381,497	9,874	2,161,495	259	
118	49,394			1	169	14,805	3,485	1,311	10,009		268,805	260,036	8,769	490,877	260	
295	104,521			53	9,236	20,278	802	822	17,504	1,150	437,161	433,556	3,605	634,443	261	
845	483,261	19	5,942	57	8,038	209,484	137,515	7,429	40,676	23,814	474,052	459,606	14,446	2,184,421	262	
22	9,063					855	125	176	554		35,533	35,263	270	60,445	263	
85	32,136	15	3,390	12	2,248	22,290	1,032	65	21,133		60,828	60,180	648	141,175	264	
126	54,977	18	6,414	3	566	18,622	4,034	1,538	12,790	200	190,551	189,333	1,218	375,066	265	
246	117,512	13	2,250	15	2,660	8,003	1,050	1,422	5,531		378,452	360,480	17,972	607,415	266	
754	341,947	136	35,006	51	5,623	90,809	10,137	5,321	74,576	775	1,441,911	1,421,245	20,666	2,280,474	267	
1,141	446,005	77	15,358	68	10,455	58,576	15,412	3,380	38,508	1,275	590,991	577,389	13,605	1,467,600	268	
225	98,067	65	13,388	31	4,122	28,868	5,846	650	22,872		166,166	163,402	2,764	409,878	269	
366	178,238	195	66,932	73	10,143	19,501	4,700	2,316	12,485		663,468	648,713	14,749	1,106,076	270	
85	44,393					7,328	2,580	840	3,908		9,281	6,321	2,910	96,314	271	
7,588	3,805,619	4,967	1,575,655	1,166	210,658	1,444,778	117,422	43,379	1,014,310	269,667	15,874,544	15,595,418	279,126	25,389,344	272	
3,776	1,708,640	4,596	1,309,610	1,829	319,241	1,686,689	116,023	20,749	1,133,745	416,172	14,737,131	14,553,128	184,006	22,109,892	273	
448	174,510					4,869		1,935	2,934		896,192	829,601	66,591	1,521,307	274	
4,276	2,373,245	1,167	338,982	261	45,961	701,884	43,333	15,734	630,452	12,315	7,515,710	7,355,803	159,907	13,057,452	275	

millstones, 1; nets and seines, 1; oil, essential, 2; oil, lard, 1; oilcloth, enameled, 1; oilcloth, floor, 2; oleomargarine, 1; pens, fountain and stylographic, 2; pens, steel, 1; phonographs and graphophones, 2; photographic apparatus, 2; salt, 1; screws, machine, 2; silversmithing, 2; starch, 1; tinfoil, 2; type founding, 2; vault lights and ventilators, 1; watch and clock materials, 1; watch cases, 2; watches, 1; wood, preserving, 1; wool scouring, 1.

BY SPECIFIED INDUSTRIES: 1900.

ALLEGHENY.

17,820	\$9,753,687	2,467	\$498,848	517	\$99,967	\$5,120,269	\$204,842	\$179,698	\$3,781,492	\$954,787	\$29,478,781	\$28,516,193	\$962,588	\$54,136,967	1
24	11,435	1	468			1,297	1,114	46	137		15,228	15,196	32	36,884	2
8	1,755					991	731	38	272		3,359	3,267	92	11,619	3
70	41,774					8,321	5,896	964	1,156	815	35,496	33,907	1,589	150,253	4
9	3,225			1	104	5,068	4,304	261	503		15,658	15,049	609	55,991	5
45	26,892	1	520			11,847	2,500	3,548	5,299		147,320	146,322	998	254,020	6

TABLE 8.—MANUFACTURES IN CITIES

ALLEGHENY—Continued.

MANUFACTURING AND MECHANICAL INDUSTRIES.	Number of establishments.	CAPITAL.					Proprietors and firm members.	SALARIED OFFICIALS, CLERKS, ETC.		AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES.	
		Total.	Land.	Buildings.	Machinery, tools, and implements.	Cash and sundries.		Number.	Salaries.	Total.	
										Average number.	Wages.
Boxes, wooden packing.....	3	\$21,043	\$12,000	\$5,000	\$3,548	\$3,495	3	2	\$498	10	\$3,719
Bread and other bakery products.....	42	342,431	76,800	119,025	60,071	86,535	44	35	23,159	207	85,499
Brooms and brushes.....	4	76,640	950	925	5,793	68,867	4	3	3,200	46	14,805
Carpentering.....	52	490,505	52,000	48,175	49,044	341,286	66	19	16,311	503	321,141
Carriages and wagons.....	19	142,977	41,600	30,250	20,259	50,868	26	1	700	70	42,427
Cars and general shop construction and repairs by steam railroad companies.....	4	1,213,619	770,000	129,300	92,702	221,617	68	57,716	1,202	701,331	
Clothing, men's, custom work and repairing.....	50	168,723	4,900	42,400	6,842	114,581	59	8	1,378	203	102,700
Clothing, women's, dressmaking.....	46	67,709	2,500	2,500	7,611	55,098	54	14	18,480	172	55,421
Confectionery.....	11	270,150	25,000	71,000	37,300	136,850	17	27	23,708	238	75,130
Dyeing and cleaning.....	3	25,460	4,000	6,000	5,140	10,320	8	3	1,194	33	16,385
Foundry and machine shop products.....	35	6,557,760	730,458	871,533	1,834,137	3,121,632	34	231	211,180	2,935	1,670,132
Furniture, cabinetmaking, repairing, and upholstering.....	9	12,020			1,768	10,252	9	2	200	11	4,430
Furniture, factory product.....	3	32,547		5,500	1,150	25,897	7	3	2,247	39	21,823
Glass, cutting, staining, and ornamenting.....	3	11,885			2,115	9,770	4	1	800	15	9,348
Hardware.....	3	356,025	20,000	50,000	52,000	234,025	4	8	13,500	251	63,516
Ice, manufactured.....	4	546,500	123,000	33,500	320,000	20,000	5	8	10,200	70	43,773
Iron and steel.....	6	3,382,800	423,045	418,043	868,194	1,673,518	83	103,136	2,322	1,413,491	
Ironwork, architectural and ornamental.....	4	122,950	85,100	17,500	29,538	40,812	5	7	3,972	99	42,941
Leather, tanned, curried, and finished.....	9	2,189,995	217,717	320,195	181,279	1,470,804	8	33	51,609	430	185,940
Liquors, malt.....	4	3,412,689	472,888	519,171	582,759	1,837,871	30	48,458	150	91,080	
Lock and gun smithing.....	6	4,740		1,000	2,055	1,685	6			1	156
Looking-glass and picture frames.....	5	74,258	2,000	3,000	1,140	68,118	8	11	7,000	47	13,073
Lumber, planing mill products, including sash, doors, and blinds.....	9	272,117	33,000	34,900	52,987	145,250	17	7	6,117	143	86,483
Marble and stone work.....	5	335,174	101,500	17,586	49,260	166,828	5	15	18,865	354	143,694
Masonry, brick and stone.....	24	544,628	72,850	20,968	40,290	404,620	36	20	45,514	1,017	438,077
Mattresses and spring beds.....	4	99,363			11,788	87,575	4	17	15,656	119	40,648
Millinery, custom work.....	18	96,392	7,200	25,800	7,360	56,032	23	34	8,070	96	23,728
Mineral and soda waters.....	4	16,100	3,000	1,200	5,000	6,900	5			15	6,136
Monuments and tombstones.....	8	82,864	21,000	5,500	23,159	33,205	8	2	1,548	52	30,979
Painting, house, sign, etc.....	48	112,540	9,250	6,770	9,854	86,666	56	6	3,524	291	145,477
Paints.....	3	306,245	37,000	49,006	33,915	186,324	3	20	19,350	48	17,890
Paper hanging.....	3	3,260	300	500	170	2,280	4			7	3,702
Photography.....	10	13,627			9,210	4,417	11			12	5,404
Pickles, preserves, and sauces.....	5	2,472,552	178,450	451,000	114,072	1,729,030	6	699	672,156	1,444	409,120
Plastering and stucco work.....	9	41,963	7,950	6,100	4,154	23,759	12	1	1,350	42	92,747
Plumbing, and gas and steam fitting.....	48	282,994	27,750	44,457	19,610	191,177	58	25	19,139	228	152,205
Printing and publishing, book and job.....	16	79,566			59,844	19,722	20	7	4,728	87	40,394
Roofing and roofing materials.....	20	228,101	33,000	37,900	42,340	114,861	23	10	9,254	93	54,305
Saddlery and harness.....	10	29,388	2,500	5,300	1,080	20,508	10			13	7,326
Slaughtering and meat packing, wholesale.....	8	1,497,666	238,400	477,276	141,236	640,764	13	52	57,800	438	233,028
Soap and candles.....	4	228,503	12,100	35,269	24,113	157,021	6	20	20,573	40	19,726
Tinsmithing, coppersmithing, and sheet-iron working.....	15	226,938	26,500	51,981	44,605	103,852	21	10	8,360	165	84,377
Tobacco, cigars and cigarettes.....	54	333,523	43,964	71,421	41,481	176,657	56	18	13,753	734	156,669
Varnish.....	3	81,834		7,462	6,542	67,830	3	19	27,688	11	9,535
Watch, clock, and jewelry repairing.....	20	84,097	1,500	5,420	7,240	19,937	20			24	12,827
All other industries.....	93	22,945,380	1,697,900	2,141,728	1,832,872	17,272,880	110	444	535,414	6,128	3,138,696

¹ Embraces agricultural implements, 1; ammunition, 1; awnings, tents, and sails, 2; axle grease, 1; bookbinding and blank book making, 2; boxes, cigar, 2; boxes, fancy and paper, 1; brass castings and brass finishing, 1; brick and tile, 2; bronze castings, 1; carpets, rag, 2; cars and general shop construction and repairs by street railroad companies, 1; cars, steam railroad, not including operations of railroad companies, 1; chemicals, 1; china decorating, 1; clothing, women's, factory product, 2; coffins, burial cases, and undertakers' goods, 1; cooperage, 2; electrical apparatus and supplies, 2; electrical construction and repairs, 2; electroplating, 1; felt goods, 1; flavoring extracts, 1; flouring and grist mill products, 1; food preparations, 2; galvanizing, 1; gas and lamp fixtures, 1; gas and oil stoves, 2; glass, 1; grease and tallow, 1; hairwork, 2; hardware, saddlery, 1; instruments, professional and scientific, 1; iron and steel, bolts, nuts,

ALLENTOWN.

1 All industries.....	491	\$11,996,971	\$819,039	\$2,328,729	\$3,155,260	\$5,693,943	617	390	\$325,762	8,447	\$3,150,970
2 Bicycle and tricycle repairing.....	9	9,600	200	200	7,150	2,050	20	2	928	6	2,726
3 Blacksmithing and wheelwrighting.....	14	34,447	14,400	10,055	3,825	6,167	18	1	208	26	13,717
4 Boots and shoes, custom work and repairing.....	26	5,645	1,100	1,827	1,895	1,023	31	-----	-----	6	2,017
5 Boots and shoes, factory product.....	9	649,410	75,450	98,749	101,601	378,610	14	38	25,301	663	210,372
6 Bread and other bakery products.....	24	148,714	22,224	85,980	18,625	21,885	29	17	7,568	102	39,238
7 Brick and tile.....	5	118,326	32,400	38,900	16,200	30,826	9	2	1,000	95	29,357
8 Brooms and brushes.....	4	9,800	950	3,050	1,250	4,550	4	1	306	22	7,563
9 Carpentering.....	16	89,337	4,260	2,137	2,915	80,025	21	-----	-----	196	122,015
10 Carriages and wagons.....	7	63,500	21,900	22,425	3,250	15,925	10	-----	-----	34	16,945
11 Clothing, men's, custom work and repairing.....	13	24,030	-----	-----	1,595	22,435	19	-----	-----	35	15,394

BY SPECIFIED INDUSTRIES: 1900—Continued.

ALLEGHENY—Continued.

AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES—continued.						MISCELLANEOUS EXPENSES.						COST OF MATERIALS USED.			Value of products, including custom work and repairing.	
Men, 16 years and over.		Women, 16 years and over.		Children, under 16 years.		Total.	Rent of works.	Taxes, not in- cluding internal revenue.	Rent of offices, interest, etc.	Contract work.	Total.	Principal materials, including mill supplies and freight.	Fuel and rent of power and heat.			
Average num- ber.	Wages.	Average num- ber.	Wages.	Average num- ber.	Wages.											
10	\$3,719					\$1,334	\$390	\$300	\$614		\$33,972	\$33,644	\$328	\$15,613	7	
147	73,737	56	\$10,872	4	\$890	20,107	8,826	8,699	7,582		287,836	277,979	9,857	502,184	8	
20	10,074	25	4,511	1	220	11,908	1,380	22	6,045	\$4,461	56,490	56,126	364	100,023	9	
500	320,015	1	520	2	606	853,664	7,432	2,744	12,954	830,584	456,205	453,930	2,275	1,866,970	10	
68	42,159			2	268	9,501	8,998	1,037	2,399	1,472	43,788	41,972	1,816	147,599	11	
1,190	697,586	7	2,202	5	1,543	45,120		12,278	32,847		372,164	360,989	11,175	1,176,331	12	
130	77,977	68	23,905	5	818	18,379	13,283	1,412	2,554	1,130	122,712	121,288	1,424	321,720	13	
6	5,125	164	49,966	2	330	10,932	8,483	173	2,226	50	49,684	48,747	937	182,445	14	
89	44,778	143	29,426	6	926	16,770	8,130	2,002	10,638		404,205	400,636	3,569	594,859	15	
17	10,813	16	4,572			3,481	360	236	2,885		12,660	11,705	955	42,060	16	
2,879	1,656,086			56	14,096	302,329	16,868	25,486	259,395	580	3,018,049	2,930,383	87,666	5,662,507	17	
9	4,020	1	260	1	150	2,099	1,524	7	508		9,242	8,883	359	23,719	18	
39	21,823					3,665	1,015	192	2,428		61,817	61,617	200	107,833	19	
15	9,348					2,140	970	32	840	298	6,629	6,373	256	26,508	20	
91	41,916	100	14,600	60	7,000	3,710	1,100	1,720	890		195,658	193,780	1,878	355,810	21	
70	43,773					18,837	2,400	2,163	9,274		15,880	4,585	10,795	111,212	22	
2,301	1,409,908			21	3,583	369,956	1,300	12,789	353,167	2,700	4,196,922	3,693,977	502,945	7,985,673	23	
97	42,823			2	418	11,555	622	1,371	9,662		87,784	84,106	3,678	162,792	24	
418	183,742	8	1,338	4	800	90,674		8,180	82,494		1,137,677	1,128,173	9,504	1,582,386	25	
150	91,980					530,122		21,777	508,345		336,705	319,716	16,989	1,253,205	26	
35	11,500	6	918	1	156	895	714	13	168		2,641	2,589	52	8,885	27	
143	86,483			6	655	5,802	3,300	134	2,428		75,966	75,593	113	136,760	28	
353	143,460					20,291	4,230	1,717	14,344		197,547	193,418	4,129	376,444	29	
1,017	433,077			1	234	25,433	1,772	1,746	8,008	13,907	148,155	145,673	2,482	385,272	30	
84	30,166	33	10,177	2	800	112,261	8,163	1,663	19,456	87,980	407,249	404,295	2,951	1,234,559	31	
1	208	91	22,690	4	830	9,088	5,180	108	3,855		173,244	172,432	812	254,346	32	
14	5,980			1	156	18,980	15,041	602	3,337		109,567	108,054	1,513	185,597	33	
52	80,979					1,288	768	83	437		5,789	5,390	399	26,165	34	
284	144,069			7	1,408	5,628	880	891	3,857		29,620	29,016	604	81,485	35	
44	17,020	2	400	2	470	8,030	3,863	555	3,612		95,513	95,099	414	335,059	36	
7	3,702	3	696			18,755	1,000	1,755	16,000		245,500	243,870	1,630	343,300	37	
0	4,708	3	696			228	148	33	52		3,492	3,492		10,157	38	
766	290,335	666	110,985	12	1,800	4,362	3,875	45	442		7,366	7,134	232	29,704	39	
42	82,747					1,130,523	1,580	9,193	1,119,750		1,932,242	1,912,220	20,022	4,429,382	40	
223	151,229			5	976	4,031	456	301	3,274		88,879	88,254	625	154,672	41	
62	33,391	17	5,528	8	1,475	19,298	10,194	1,621	7,388	100	217,000	215,634	1,366	503,338	42	
91	53,905			2	400	10,800	6,580	107	3,199	914	42,482	41,658	824	129,289	43	
13	7,826					18,657	2,219	2,052	12,099	2,287	198,746	195,908	2,833	338,118	44	
426	229,648	7	2,080	5	1,800	2,373	2,008	129	236		15,153	14,925	228	36,484	45	
						111,546	1,940	11,876	96,545	2,285	3,338,805	3,319,446	19,359	3,996,807	46	
85	18,842	1	156	4	728	18,372	409	1,501	16,462		146,617	145,036	1,581	245,280	47	
164	84,169			1	208	11,463	1,689	2,055	7,719		171,644	169,426	2,218	325,647	48	
112	51,040	525	92,705	97	12,924	272,990	5,097	2,197	265,696		166,923	164,817	2,076	690,210	49	
11	9,535					39,872	1,135	290	38,447		167,035	166,258	777	278,797	50	
21	12,489			8	338	4,826	3,728	260	538	300	4,551	4,137	414	37,161	51	
5,414	2,991,546	525	103,353	184	43,797	897,110	36,377	36,214	819,095	5,424	10,364,415	10,139,779	224,636	16,799,480	52	

washers, and rivets, 2; iron and steel, forgings, 2; kaolin and other earth grinding, 1; lamps and reflectors, 1; lead, bar, pipe, and sheet, 1; lime and cement, 2; lumber and timber products, 2; malt, 1; mirrors, 1; models and patterns, 2; mucilage and paste, 2; musical instruments and materials, not specified, 1; oil, linseed, 1; patent medicines and compounds, 2; paving and paving materials, 2; perfumery and cosmetics, 1; petroleum, refining, 1; plumbers' supplies, 2; pottery, terra cotta, and fire-clay products, 1; printing and publishing, newspapers and periodicals, 1; pumps, not including steam pumps, 1; salt, 1; sausage, 1; ship and boat building, wooden, 2; springs, steel, car and carriage, 1; stamped ware, 1; tin andterne plate, 1; tools, not elsewhere specified, 2; trunks and valises, 2; vinegar and cider, 1; washing machines and clothes wringers, 1; wire, 1; wirework, including wire rope and cable, 1; wood, turned and carved, 1; wool pulling, 2.

ALLENTOWN.

5,251	\$2,479,054	2,574	\$598,527	622	\$73,389	\$1,810,643	\$79,022	\$28,480	\$338,971	\$364,170	\$9,846,047	\$9,435,031	\$410,966	\$16,947,722	1
5	2,676			1	50	1,227	966	28	233		6,241	5,970	271	16,462	2
26	13,717					819	491	161	177	50	16,272	15,593	679	52,984	3
6	2,017					1,365	1,227	42	96		6,985	6,810	125	22,571	4
378	140,127	206	59,015	79	11,280	18,728	835	3,102	14,625	166	585,998	582,981	3,017	900,976	5
88	36,942	7	1,406	7	890	5,562	2,415	994	1,953		118,981	115,126	3,806	232,229	6
90	28,571			5	786	6,794	3,200	792	2,802		14,798	6,412	8,386	75,714	7
22	7,568					675	88	35	554		7,616	7,576	40	24,325	8
196	122,015					28,857	210	164	2,593	25,900	204,339	204,179	160	434,322	9
34	16,945					2,231	60	279	1,592	800	14,898	14,315	583	51,897	10
26	13,394	9	2,000			3,694	2,818		876		39,900	39,568	332	72,414	11

TABLE 8.—MANUFACTURES IN CITIES

ALLEN TOWN—Continued.

	MANUFACTURING AND MECHANICAL INDUSTRIES.	Number of establishments.	CAPITAL.					Proprietors and firm members.	SALARIED OFFICIALS, CLERKS, ETC.		AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES.	
			Total.	Land.	Buildings.	Machinery, tools, and imple- ments.	Cash and sundries.		Num- ber.	Salaries.	Total.	
											Average num- ber.	Wages.
12	Clothing, men's, factory product.....	6	\$203,625	\$32,000	\$12,000	\$7,795	\$121,830	12	20	\$9,714	207	\$78,085
13	Clothing, women's, dressmaking.....	30	16,277	3,450	5,650	2,635	4,542	32			68	16,644
14	Confectionery.....	7	17,942	500	1,000	6,860	9,582	9	8	734	28	11,805
15	Foundry and machine shop products.....	13	878,895	65,282	106,820	198,270	508,523	22	29	24,596	616	328,232
16	Furniture, factory product.....	6	402,458	39,468	67,500	30,603	258,887	7	35	32,506	398	156,970
17	Hosiery and knit goods.....	5	102,000	100	500	53,000	48,100	8	12	14,920	255	57,078
18	Iron and steel.....	5	3,147,958	160,000	725,000	775,757	1,487,201	25	25	32,652	1,129	615,403
19	Leather, tanned, curried, and finished.....	3	132,088	2,000	3,000	3,700	123,388	7	1	310	21	9,280
20	Liquors, malt.....	4	612,936	90,500	219,315	176,681	146,437	5	10	20,652	47	32,688
21	Looking-glass and picture frames.....	4	2,065			390	1,675	8	1	566	5	2,174
22	Lumber, planing mill products, includ- ing sash, doors, and blinds.....	7	157,206	12,786	25,545	48,753	70,122	12	4	2,001	102	46,478
23	Masonry, brick and stone.....	13	112,669	12,700	7,750	11,495	80,724	18	1	500	360	167,431
24	Millinery, custom work.....	29	41,067	2,800	3,600	1,604	33,063	35	10	3,874	61	17,759
25	Monuments and tombstones.....	6	13,892	1,000	200	875	11,817	6			8	4,175
26	Painting, house, sign, etc.....	37	19,971	3,780	2,870	4,006	9,815	45			82	43,619
27	Paper hanging.....	7	15,460	3,300	5,700	850	5,610	7			13	7,064
28	Paving and paving materials.....	3	52,020		600	15,820	35,600	2	4	3,720	31	14,144
29	Photography.....	9	21,235	3,450	6,700	7,500	3,585	10			9	3,682
30	Plastering and stucco work.....	4	2,054	200	30	105	1,719	9			18	9,596
31	Plumbing, and gas and steam fitting.....	14	75,246	4,000	11,000	6,000	54,246	22	4	1,329	47	21,061
32	Printing and publishing, book and job.....	8	66,048	6,000	5,624	32,536	21,888	11	3	1,118	30	11,803
33	Printing and publishing, newspapers and periodicals.....	9	250,600	20,000	81,000	103,000	46,000	13	2	1,700	81	41,052
34	Roofing and roofing materials.....	4	13,122	4,000	1,000	2,012	6,110	6	1	416	19	8,068
35	Saddlery and harness.....	5	26,595	10,000	7,000	2,170	7,425	6	4	2,194	15	8,324
36	Silk and silk goods.....	7	2,149,130	54,400	471,855	697,558	925,817	4	65	67,616	2,380	607,247
37	Tinsmithing, coppersmithing, and sheet-iron working.....	13	88,930	8,700	11,800	29,050	39,380	17	8	4,282	52	24,752
38	Tobacco, cigars and cigarettes.....	48	195,806	8,400	13,740	10,468	158,198	47	20	15,242	308	95,900
39	Watch, clock, and jewelry repairing.....	8	7,600			3,550	4,050	8	1	260	8	4,210
40	All other industries ¹	50	1,998,667	97,339	233,607	756,608	911,113	54	66	49,519	864	247,507

¹ Embraces awnings, tents, and sails, 1; bookbinding and blank book making, 2; boot and shoe uppers, 1; bottling, 1; boxes, cigar, 2; boxes, fancy and paper, 1; brass castings and brass finishing, 2; carpets, rag, 1; cars and general shop construction and repairs by steam railroad companies, 1; china decorating, 2; clothing, women's, factory product, 1; coffins, burial cases, and undertakers' goods, 1; cooperage, 2; cutlery and edge tools, 1; druggists' preparations, not including prescriptions, 1; dyeing and cleaning, 2; electrical construction and repairs, 2; electroplating, 1; flouring and grist mill products, 1; furniture, cabinet-

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1 All industries.....	230	\$8,108,819	\$506,098	\$1,751,119	\$2,682,558	\$3,169,044	267	380	\$266,527	8,090	\$4,619,828
2 Blacksmithing and wheelwrighting.....	12	9,250	3,175	1,475	1,425	3,175	13			9	3,955
3 Boots and shoes, custom work and repairing.....	23	6,500	700	575	2,090	3,135	25			12	4,500
4 Bread and other bakery products.....	11	20,470	3,200	4,500	6,325	6,445	12	6	2,494	40	16,756
5 Carpentering.....	6	104,500	2,100	1,050	2,100	98,650	9	3	3,000	66	42,500
6 Carriages and wagons.....	5	11,545	4,000	3,600	1,640	2,305	7			8	4,520
7 Cars and general shop construction and repairs by steam railroad companies.....	3	5,153,590	257,500	1,181,300	1,561,006	2,158,784		244	169,569	6,500	4,016,877
8 Clothing, men's, custom work and repairing.....	24	50,620	12,000	2,000	3,935	32,685	25			88	30,212
9 Confectionery.....	7	44,600	7,000	8,800	13,800	15,500	8	6	3,048	35	9,786
10 Flouring and grist mill products.....	3	20,900	500	4,500	6,900	8,900	3			6	2,700
11 Liquors, malt.....	3	288,000	41,000	65,000	75,000	107,000	5	6	5,300	31	16,700
12 Lock and gun smithing.....	3	560			460	100	3			1	100
13 Lumber, planing mill products, including sash, doors, and blinds.....	7	158,075	39,700	18,700	35,125	64,550	7	5	2,604	98	52,108
14 Millinery, custom work.....	8	38,900	4,000	2,800	3,800	28,300	8	2	1,200	50	14,300
15 Painting, house, sign, etc.....	15	31,425	4,400	4,150	5,275	17,600	16	5	1,746	61	32,573
16 Paper hanging.....	3	9,160			135	9,025	3			10	5,275
17 Paving and paving materials.....	5	6,350			2,550	3,800	5			16	6,700
18 Photography.....	5	10,850	5,000	1,000	3,900	950	5	1	195	4	996
19 Plumbing, and gas and steam fitting.....	19	47,865	5,900	15,175	4,090	22,650	24	2	780	40	18,535
20 Printing and publishing, newspapers and periodicals.....	6	132,700	15,300	9,400	36,500	21,500	7	12	10,536	136	58,272
21 Roofing and roofing materials.....	5	10,920	250	650	1,720	8,300	4	2	1,050	17	6,796
22 Saddlery and harness.....	4	14,910	5,500	4,500	850	4,060	5			5	2,640
23 Tinsmithing, coppersmithing, and sheet-iron working.....	7	24,350	4,700	5,700	4,300	9,650	8	3	1,392	22	9,384
24 Tobacco, cigars and cigarettes.....	3	10,250			1,150	9,100	3	3	1,700	32	8,935
25 Watch, clock, and jewelry repairing.....	11	5,985	400	800	3,125	1,660	16			4	3,450
26 All other industries ¹	82	1,896,544	89,623	414,844	855,857	536,220	46	80	61,913	804	251,258

¹ Embraces bicycle and tricycle repairing, 2; brick and tile, 1; brooms and brushes, 1; carpets, rag, 2; china decorating, 1; clothing, men's, factory product, 1; coffins, burial cases, and undertakers' goods, 1; cooperage, 1; dyeing and cleaning, 1; electrical construction and repairs, 1; foundry and machine shop products, 2; furniture, cabinetmaking, repairing, and upholstering, 1; furniture, factory product, 1; gas, illuminating and heating, 1; glass, 1; ice, manufactured, 2; looking-

BY SPECIFIED INDUSTRIES: 1900—Continued.

ALLENTOWN—Continued.

AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES—continued.						MISCELLANEOUS EXPENSES.					COST OF MATERIALS USED.			Value of products, including custom work and repairing.	
Men, 16 years and over.		Women, 16 years and over.		Children, under 16 years.		Total.	Rent of works.	Taxes, not in- cluding internal revenue.	Rent of offices, interest, etc.	Contract work.	Total.	Principal materials, including mill supplies and freight.	Fuel and rent of power and heat.		
Average num- ber.	Wages.	Average num- ber.	Wages.	Average num- ber.	Wages.										
90	\$45,883	114	\$31,875	8	\$327	\$14,697	\$5,600		\$9,097		\$270,197	\$268,296	\$1,901	\$456,290	12
1	336	67	16,308			3,115	2,217	\$89	809		2,777	2,369	408	45,055	13
17	8,205	11	3,600			1,652	1,235	12	405		37,665	36,965	700	60,629	14
616	328,232					21,333	4,871	1,243	15,219		630,681	612,478	18,203	1,242,589	15
369	151,999	10	1,841	19	8,130	22,659	700	1,227	20,732		147,022	144,201	2,821	398,607	16
28	10,342	198	43,290	29	3,446	7,699	2,200	121	5,378		189,075	187,462	1,613	325,847	17
1,129	615,403					441,633	6,724	3,176	431,733		2,955,300	2,627,430	327,870	4,443,782	18
21	9,280					3,040	300	395	2,345		90,908	90,571	337	110,850	19
47	82,688					113,804		6,291	107,513		87,175	82,158	5,017	310,725	20
5	2,174					411	360		51		2,911	2,841	70	8,145	21
101	46,317			1	156	5,826	402	581	4,898		92,155	89,180	2,975	188,653	22
360	167,431					13,825	235	190	6,851	\$9,516	270,129	270,074	355	568,400	23
8	4,175	59	17,524	2	235	11,043	9,174	80	1,789		69,850	69,042	808	141,162	24
82	43,519					913	326	11	94		7,837	7,789	48	17,766	25
							913	110	193		14,153	14,050	108	103,280	26
13	7,064					430	268	81	90		9,838	9,741	97	24,404	27
31	14,144					289	74	191	24		9,595	9,575	20	29,374	28
6	2,766	8	916			2,883	1,356	140	887		6,998	6,896	102	23,773	29
18	9,596					13	5	3	5		2,463	2,463		20,186	30
47	21,061					4,144	2,139	253	1,702	50	75,695	75,331	361	139,270	31
24	10,153	3	588	3	562	5,116	1,593	112	3,411		15,195	14,188	1,007	44,885	32
79	40,658	1	260	1	134	17,518	2,552	771	12,825	1,400	28,419	26,767	1,652	129,234	33
19	8,063					1,197	422	75	700		25,073	24,985	88	42,500	34
15	8,324					2,936	1,444	204	1,348		10,392	10,283	109	29,670	35
655	254,041	1,405	316,722	320	36,494	372,061	5,150	4,212	31,908	327,791	2,007,977	1,995,664	12,313	3,467,792	36
52	24,752					4,256	2,540	204	1,512		38,264	37,730	531	110,012	37
142	58,980	163	36,446	3	474	69,212	6,450	357	62,405		234,027	232,963	1,064	464,348	38
8	4,210					849	741		108		2,052	1,976	76	11,400	39
397	165,286	318	66,736	149	15,485	98,412	7,191	2,814	86,440	1,967	1,495,991	1,483,684	12,907	2,114,200	40

making, repairing, and upholstering, 1; gas, illuminating and heating, 1; grease and tallow, 1; hats and caps, not including fur hats and wool hats, 1; ice, manufactured, 1; iron and steel, pipe, wrought, 1; ironwork, architectural and ornamental, 2; jute and jute goods, 1; kaolin and other earth grinding, 1; lime and cement, 1; lock and gun smithing, 1; marble and stone work, 2; mattresses and spring beds, 1; paints, 2; pottery, terra cotta, and fire-clay products, 2; shirts, 1; slaughtering and meat packing, wholesale, 2; tools, not elsewhere specified, 1; window shades, 1.

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7,458	\$1,494,347	432	\$95,013	200	\$30,468	\$350,501	\$39,385	\$10,887	\$242,741	\$57,488	\$8,376,488	\$8,182,520	\$103,968	\$14,250,656	1
9	3,955					1,014	658	74	312		5,549	5,144	405	21,715	2
12	4,500					2,186	1,701	20	412	50	10,974	10,764	220	32,699	3
36	16,310	1	100	3	346	4,153	2,770	115	1,268		49,236	47,869	1,367	97,608	4
66	42,500					29,192	122	137	933	28,000	142,066	142,036	30	289,548	5
8	4,520					910	700	35	175		4,634	4,489	145	10,398	6
6,470	4,009,674	8	3,831	22	3,372	83,134		2,400	80,734		6,216,222	6,070,486	145,736	10,485,802	7
38	20,620	45	9,592			7,239	4,478	225	2,163	373	52,149	51,223	926	121,926	8
15	6,760	14	2,482	6	544	6,153	4,168	245	1,740		19,915	19,240	675	48,850	9
6	2,700					1,080	650	210	220		24,980	24,380	600	32,035	10
31	16,700					80,516	2,200	600	77,716		57,000	51,600	5,400	186,550	11
				1	100	757	720		37		435	435		2,400	12
92	51,250	6	858			12,994	754	1,074	3,106	8,000	138,803	136,283	2,520	234,858	13
		48	14,108	2	192	4,167	2,760	100	1,207		61,812	61,520	292	94,380	14
60	32,477	1	96			2,545	1,378	94	1,073		86,410	86,320	90	94,730	15
10	5,275					1,808	1,200		548		6,148	6,078	70	17,375	16
16	6,700					625	180		95	350	7,799	7,789	10	19,350	17
2	900	2	396			1,076	856	50	170		2,831	2,831		10,525	18
40	18,535					4,172	1,967	199	901	1,105	46,181	45,797	384	94,185	19
127	56,564	4	1,068	5	620	8,303	1,596	743	5,554	410	82,567	80,239	2,323	143,552	20
16	6,700			1	96	641	276	82	333		18,013	13,796	117	28,050	21
5	2,640					417	192	115	110		8,834	3,675	150	10,199	22
17	8,214			5	1,140	1,550	923	90	537		11,656	11,300	255	31,110	23
8	4,260	24	4,675			8,507	960		7,547		12,670	12,545	125	33,750	24
4	3,450					1,648	1,431	12	205		1,647	1,632	15	12,550	25
370	169,398	285	58,665	149	23,200	85,684	6,682	4,817	55,485	19,200	1,417,158	1,385,059	32,099	2,089,011	26

glass and picture frames, 2; marble and stone work, 1; mattresses and spring beds, 1; mineral and soda waters, 2; monuments and tombstones, 2; plastering and stuccowork, 2; silk and silk goods, 1; washing machines and clothes wringers, 1.

TABLE 8.—MANUFACTURES IN CITIES

CHESTER.

MANUFACTURING AND MECHANICAL INDUSTRIES.		Number of establishments.	CAPITAL.					Proprietors and firm members.	SALARIED OFFICIALS, CLERKS, ETC.		AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES.	
			Total.	Land.	Buildings.	Machinery, tools, and implements.	Cash and sundries.		Number.	Salaries.	Total.	
											Average number.	Wages.
1	All industries	315	\$18,977,710	\$1,665,692	\$3,044,227	\$5,838,218	\$8,529,578	327	324	\$191,821	7,682	\$3,462,193
2	Bicycle and tricycle repairing	4	2,510			1,100	1,410	4			1	410
3	Blacksmithing and wheelwrighting	17	26,440	5,990	5,300	4,175	10,975	20			23	11,040
4	Boots and shoes, custom work and repairing.	22	11,050	800	2,300	8,660	4,290	22			14	5,253
5	Bottling	13	88,585	21,463	28,000	11,225	27,900	14	1	780	34	21,190
6	Bread and other bakery products	15	58,125		24,150	10,775	13,250	17			41	20,061
7	Brick and tile	3	51,600	13,000	10,000	15,500	16,100	3	1	1,200	56	21,003
8	Carpentering	10	200,400	8,143	10,900	4,525	176,535	12			133	71,103
9	Carriages and wagons	6	47,150	12,100	12,900	3,675	18,475	7			26	15,410
10	Clothing, men's, custom work and repairing.	13	25,775			2,725	23,050	13			42	17,400
11	Clothing, women's, dressmaking	6	1,355			478	877	6			5	1,073
12	Confectionery	10	38,550	8,500	13,000	3,750	13,300	12			26	10,378
13	Cotton goods	11	3,441,091	170,824	540,666	1,411,142	1,321,459	9	66	106,714	1,906	676,023
14	Foundry and machine shop products	12	1,218,428	124,980	260,000	203,303	540,145	17	27	34,092	523	247,043
15	Furniture, cabinetmaking, repairing, and upholstering.	4	18,100		2,000	1,150	12,950	5			14	6,250
16	Iron and steel	7	4,577,318	291,799	1,092,519	1,508,810	1,684,190		63	110,197	1,435	782,169
17	Lumber, planing mill products, including sash, doors, and blinds.	4	106,300	17,000	14,000	20,300	55,000	5	4	4,010	74	83,003
18	Marble and stone work	3	16,270	4,300	750	1,020	10,200	3			20	8,900
19	Masonry, brick and stone	9	34,757			3,357	33,403	10			95	46,603
20	Millinery, custom work	13	44,215	9,500	7,000	565	27,150	15			33	8,795
21	Models and patterns	3	25,760	3,700	5,400	4,000	12,650	5			20	19,572
22	Painting, house, sign, etc	11	91,239	23,500	24,300	5,254	38,185	11	5	1,492	83	87,905
23	Paper hanging	3	3,450			400	3,050	3			8	3,500
24	Paving and paving materials	4	12,362	150	700	2,650	8,862	5			30	12,182
25	Photography	6	10,990		2,250	5,350	2,890	6			8	2,911
26	Plumbing, and gas and steam fitting	12	74,764	16,800	24,150	8,500	25,314	13	1	375	42	23,185
27	Printing and publishing, book and job	4	14,250			10,700	3,550	5			5	1,800
28	Printing and publishing, newspapers and periodicals.	4	177,621	15,000	36,000	82,121	44,500	4	3	5,500	81	43,697
29	Roofing and roofing materials	4	66,700	7,500	17,500	3,400	38,300	6			34	13,950
30	Saddlery and harness	5	7,210			1,110	6,100	5			6	3,260
31	Ship and boat building, wooden	3	13,550	600	1,900	2,050	9,000	3			10	6,450
32	Tinsmithing, coppersmithing, and sheet-iron working.	9	29,935	6,000	8,900	2,725	12,310	10			14	8,300
33	Tobacco, cigars and cigarettes	8	40,765	7,500	13,500	3,477	16,288	8	2	1,300	37	12,126
34	Watch, clock, and jewelry repairing	9	10,350	1,500	4,000	2,200	2,650	9			7	2,725
35	Woolen goods	3	520,991	41,683	54,000	157,794	267,514	2	13	16,002	885	138,698
36	Worsted goods	8	454,494	3,000	10,400	166,301	274,793	3	5	11,250	369	146,517
37	All other industries ¹	42	7,412,270	743,616	817,742	2,080,951	3,772,961	55	133	201,879	2,024	980,258

¹ Embraces artists' materials, 1; awnings, tents, and sails, 1; belting and hose, leather, 1; brass castings and brass finishing, 2; carpets, rag, 2; cars and general shop construction and repairs by street railroad companies, 1; chemicals, 1; coffins, burial cases, and undertakers' goods, 1; cutlery and edge tools, 1; dyeing and cleaning, 1; dye stuffs and extracts, 1; electrical construction and repairs, 1; gas, illuminating and heating, 1; grease and tallow, 1; ice, manufactured, 1; iron and steel, pipe, wrought, 2; ironwork, architectural and ornamental, 1; lime and cement, 1; liquors, malt, 1; lock and gunsmithing, 2; looking-glass and picture

EASTON.

1 All industries	285	\$4,829,879	\$375,580	\$1,108,706	\$1,362,023	\$1,983,620	323	180	\$130,082	3,012	\$1,516,525
2 Bicycle and tricycle repairing	6	3,585	300	200	2,200	885	6			3	1,205
3 Blacksmithing and wheelwrighting	11	20,205	3,800	4,200	2,505	4,700	13			11	4,728
4 Boots and shoes, custom work and repairing	11	2,885	1,800	370	755	460	11			2	747
5 Bread and other bakery products	20	42,150	7,800	15,600	8,830	9,920	21	1	208	52	22,630
6 Brick and tile	8	51,545	18,200	13,520	6,225	13,600	4	2	2,000	35	9,490
7 Carpentering	13	90,193	5,800	2,950	6,025	75,918	15	1	700	161	90,627
8 Clothing, men's, custom work and repairing	17	74,185	7,000	14,000	1,880	51,295	20	1	322	73	32,053
9 Clothing, women's, dressmaking	3	8,900			800	8,100	3			19	8,100
10 Confectionery	9	17,185	2,400	3,900	4,275	6,610	11	2	1,200	21	6,850
11 Electrical construction and repairs	5	10,190			835	9,355	4	3	1,310	12	5,415
12 Flouring and grist mill products	3	82,050	5,000	10,000	16,000	51,050	3			16	8,880
13 Furniture, cabinetmaking, repairing, and upholstering	7	16,700	160	100	750	15,760	7	1	500	12	6,403
14 Knoch and other earth grinding	3	82,000	4,000	9,000	27,000	42,000	2	2	2,040	35	16,960
15 Liquors, malt	3	480,213	33,000	190,000	125,000	141,213	4	15	9,714	76	33,765
16 Looking-glass and picture frames	3	4,725			625	4,100	3	4	940	5	2,012
17 Lumber, planing mill products, including sash, doors, and blinds	3	56,800	8,150	8,500	19,500	20,150	4	3	1,740	43	21,521
18 Marble and stone work	3	32,940	15,300	2,110	3,230	12,300	9			14	8,100
19 Masonry, brick and stone	5	44,654	800	700	7,151	36,003	8	5	1,264	100	49,330
20 Millinery, custom work	12	61,115	10,000	18,600	360	82,125	14	7	1,751	31	7,899
21 Monuments and tombstones	4	42,826	12,500	1,700	3,850	24,776	9			23	11,050

BY SPECIFIED INDUSTRIES: 1900—Continued.

CHESTER.

AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES—continued.						MISCELLANEOUS EXPENSES.					COST OF MATERIALS USED.			Value of products, including custom work and repairing.	
Men, 16 years and over.		Women, 16 years and over.		Children, under 16 years.		Total.	Rent of works.	Taxes, not in- cluding internal revenue.	Rent of offices, interest, etc.	Contract work.	Total.	Principal materials, including mill supplies and freight.	Fuel and rent of power and heat.		
Average number.	Wages.	Average number.	Wages.	Average number.	Wages.										
5,935	\$2,941,151	1,451	\$469,662	296	\$51,383	\$1,222,400	\$87,265	\$41,259	\$802,561	\$291,315	\$9,261,886	\$8,782,471	\$479,415	\$16,421,725	1
1	410					587	480	7	100		2,860	2,775	85	6,000	2
23	11,040					2,163	1,436	239	488		8,076	8,537	439	36,190	3
14	5,256					3,413	2,941	88	414		10,216	9,983	283	26,610	4
34	21,190					9,837	2,260	5,423	2,174		99,176	98,379	797	161,250	5
37	19,049	4	1,012			5,294	2,447	404	2,443		53,854	51,777	2,077	113,715	6
56	21,000					1,213	500	288	425		6,297	2,842	3,455	37,600	7
133	74,100					116,584	132	239	3,013	113,200	164,840	164,695	145	391,500	8
26	15,440					1,937	460	227	1,250		19,239	18,819	420	48,480	9
26	13,850	16	3,550			4,397	3,619	26	752		23,856	22,698	658	55,200	10
		5	1,075			754	632	4	118		2,200	2,105	95	6,275	11
16	8,624	9	1,650	1	104	6,876	3,116	270	3,490		23,444	22,800	644	56,845	12
793	343,555	926	300,038	187	32,430	214,880	12,800	7,337	115,720	79,023	1,422,744	1,354,208	68,536	2,711,049	13
523	247,043					30,603	1,736	3,351	25,516		452,479	441,003	11,476	832,238	14
13	6,100	1	150			3,219	1,320	69	1,830		28,975	28,765	210	45,300	15
1,435	782,109					277,604	10,000	7,722	259,882		1,535,101	1,288,898	246,203	2,983,450	16
74	33,000					5,417	1,800	217	3,400		76,725	76,150	575	155,000	17
20	8,900					372	12	180	180		15,910	15,845	65	28,300	18
95	45,600					7,148	108	50	1,090	5,900	45,785	45,745	40	124,450	19
29	19,572	33	8,735			5,775	4,343	227	1,205		84,862	84,037	325	64,100	20
						884	150	138	476	120	8,510	7,980	530	36,000	21
83	37,905					3,787	654	557	2,576		54,650	54,293	357	113,600	22
8	3,500					589	366	13	210		3,060	3,007	53	8,450	23
39	12,182					787	88	24	675		19,715	19,715		39,390	24
6	2,285	2	656			1,405	971	34	400		3,987	3,787	200	12,000	25
42	23,185					3,560	936	418	2,006	200	49,895	49,564	331	99,800	26
3	1,544			2	256	746	640		106		3,548	3,390	158	15,900	27
69	39,827	7	2,920	5	950	6,833	967	477	5,389		21,255	19,325	1,930	102,914	28
34	13,950					1,144	272	276	596		24,047	23,922	125	60,750	29
6	8,260					1,662	928	19	715		4,642	4,569	73	11,400	30
8	6,000			2	450	617	170	47	400		6,175	6,175		17,775	31
14	8,300					1,667	901	228	538		19,474	19,269	205	44,900	32
12	6,126	20	5,200	5	800	6,840	1,356	247	5,237		22,639	22,285	404	53,112	33
7	2,725					1,423	1,008	99	316		3,990	3,735	255	15,350	34
228	92,621	125	40,737	32	5,940	34,319	4,760	1,549	24,310	8,700	398,333	391,279	7,054	701,569	35
120	61,216	209	79,499	40	5,802	52,289	11,988	200	38,181	1,920	607,416	601,027	6,389	916,369	36
1,908	951,227	91	24,380	22	4,651	405,725	10,968	10,565	296,940	87,252	3,984,011	3,850,188	124,823	6,288,894	37

frames, 2; mattresses and spring beds, 1; mineral and soda waters, 1; monuments and tombstones, 1; musical instruments, pianos and materials, 1; patent medicines and compounds, 1; petroleum, refining, 1; plastering and stuccowork, 2; pottery, terra cotta, and fire-clay products, 1; refrigerators, 1; shipbuilding, iron and steel, 1; shirts, 1; shoddy, 2; slaughtering and meat packing, wholesale, 1; wirework, including wire rope and cable, 1.

EASTON.

2,684	\$1,266,156	945	\$199,747	283	\$50,622	\$485,029	\$33,898	\$12,102	\$183,383	\$256,146	\$3,794,496	\$3,725,688	\$68,808	\$6,746,078	1
8	1,205					484	394	5	85		1,796	1,703	93	5,425	2
11	4,728					686	534	118	34		4,802	4,447	355	17,550	3
2	747					550	514	16	20		3,059	2,942	117	9,112	4
45	21,654			7	976	2,336	1,582	287	467		89,592	87,183	2,459	159,334	5
32	9,108			8	382	603		178	425		6,087	1,160	4,927	24,000	6
160	90,211			1	416	90,938	558	78	528	89,774	122,592	122,358	234	340,260	7
69	28,938	12	2,780	2	385	4,074	3,316	29	729		51,139	50,589	600	118,254	8
6	3,600	13	4,500			1,392	1,240		152		9,845	9,575	270	21,500	9
14	5,864	5	626	2	360	2,985	2,279	101	605		23,912	23,320	592	44,987	10
11	5,265			1	150	886	696		190		5,517	5,403	114	16,398	11
16	8,880					2,598	1,251	297	1,050		97,079	96,544	535	117,226	12
11	6,211	1	192			1,074	948	8	123		13,582	13,410	172	26,588	13
85	16,960					1,577	300	147	1,130		50,381	47,220	3,111	80,931	14
74	33,657			1	108	81,308		2,660	78,648		56,689	55,821	2,865	210,640	15
4	1,837			1	175	919	598		321		2,927	2,805	122	15,600	16
43	21,521					1,878	150	168	1,060		36,388	35,923	465	71,040	17
14	8,100					1,937	100	92	845		10,000	9,839	161	23,500	18
100	49,330					149	12	15	122		23,437	23,307	130	88,233	19
23	11,050	29	7,634	2	265	2,484	2,069	235	1,180		43,230	42,790	440	79,842	20
						4,788		93	1,690	3,000	12,300	12,085	215	42,500	21

TABLE 8:—MANUFACTURES IN CITIES

EASTON—Continued.

	MANUFACTURING AND MECHANICAL INDUSTRIES.	Number of establishments.	CAPITAL.					Proprietors and firm members.	SALARIED OFFICIALS, CLERKS, ETC.		AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES.	
			Total.	Land.	Buildings.	Machinery, tools, and imple- ments.	Cash and sundries.		Number.	Salaries.	Total.	
											Average number.	Wages.
22	Painting, house, sign, etc -----	11	\$7,695	\$100	\$100	\$1,090	\$6,405	13			28	\$14,011
23	Paper hanging -----	8	31,495	2,000	1,000	1,145	27,350	8	7	\$2,790	33	14,506
24	Photography -----	3	5,400			3,400	2,000	3	1	84	1	432
25	Plumbing, and gas and steam fitting -----	15	85,370	100	200	3,680	81,390	17			32	17,814
26	Printing and publishing, newspapers and periodicals.	6	161,711	10,500	26,000	79,396	48,815	7	4	1,986	108	46,623
27	Roofing and roofing materials -----	3	12,600	2,700	3,650	750	5,500	6			13	5,975
28	Saddlery and harness -----	3	42,900	11,000	16,000	2,900	13,000	3	1	600	12	5,876
29	Tinsmithing, coppersmithing, and sheet-iron working.	13	39,525	4,900	7,750	6,305	20,570	15			28	12,644
30	Tobacco, cigars and cigarettes -----	17	29,359	1,600	1,650	868	25,241	15			48	19,479
31	Watch, clock, and jewelry repairing -----	12	14,730	4,000	1,500	6,305	2,925	11			12	4,761
32	All other Industries ¹	50	3,212,488	198,630	755,406	1,018,348	1,240,104	54	120	100,912	2,854	1,026,639

¹ Embraces awnings, tents, and sails, 1; bookbinding and blank book making, 1; boots and shoes, factory product, 1; bottling, 2; boxes, cigar, 2; boxes, fancy and paper, 1; brass castings and brass finishing, 1; brooms and brushes, 2; carpets, rag, 2; carriages and wagons, 2; cars and general shop construction and repairs by steam railroad companies, 1; clothing, men's, factory product, 2; coffins, burial cases, and undertakers' goods, 1; cordage and twine, 1; dyeing and cleaning, 1; flags and banners, 1; foundry and machine shop products, 2; gas, illuminating and heating, 1; hosiery and knit goods, 1; ice, manufactured, 1; iron

ERIE.

1	All industries	644	\$20,418,016	\$1,361,284	\$3,483,098	\$5,543,480	\$10,029,254	718	679	\$702,343	9,389	\$4,574,625
2	Awnings, tents, and sails	3	3,985	1,200	950	585	1,250	3			2	610
3	Bicycle and tricycle repairing	14	19,600	800	900	8,275	10,225	16			10	8,370
4	Bicycles and tricycles	3	486,110	9,300	87,080	180,579	159,151	1	42	27,119	258	142,336
5	Blacksmithing and wheelwrighting	26	31,120	12,000	9,875	5,300	6,345	29			24	14,706
6	Boots and shoes, custom work and repairing.	65	88,285	6,450	7,550	6,710	12,575	65			16	8,983
7	Bottling	5	24,854			12,663	12,191	5	2	900	18	11,696
8	Brass castings and brass finishing	3	63,283	7,000	7,500	16,238	32,508	4			27	13,061
9	Bread and other bakery products	28	187,546	27,300	49,500	68,856	41,887	27	13	12,134	103	43,182
10	Carpentering	21	242,748	35,463	37,900	34,980	134,455	24	11	13,292	255	153,947
11	Carpets, rug	8	5,640	1,150	1,500	1,490	1,500	8			1	1,000
12	Carriages and wagons	3	35,922	14,550	9,400	2,140	9,832	6	1	500	22	11,592
13	Clothing, men's, custom work and repairing.	54	124,700	10,300	12,350	9,940	92,110	60	6	3,200	175	86,339
14	Clothing, women's, dressmaking	13	4,265			1,340	2,925	14			35	12,230
15	Confectionery	16	43,650	10,300	9,250	8,475	15,625	16	7	2,828	24	11,092
16	Cooperage	5	108,310	16,400	21,000	21,010	49,900	4	7	8,680	112	34,448
17	Dyeing and cleaning	3	5,700	700	2,500	2,150	350	3			4	2,375
18	Flouring and grist mill products	7	242,653	46,500	49,000	86,653	60,500	12	10	12,112	40	21,695
19	Foundry and machine shop products	41	9,075,309	511,717	1,075,912	1,606,360	5,881,320	28	259	293,911	3,702	1,069,136
20	Furniture, cabinetmaking, repairing, and upholstering.	14	28,762	5,000	5,100	3,135	15,527	17	1	600	14	7,010
21	Hairwork	4	1,785			185	1,600	4			2	599
22	Liquors, malt	5	1,100,467	79,000	357,778	387,568	276,031		30	46,240	115	90,440
23	Lock and gun smithing	4	10,400	1,500	2,500	2,350	4,050	5			3	1,500
24	Looking-glass and picture frames	7	16,270	1,100	1,100	810	13,260	7			6	2,500
25	Lumber, planing mill products, including sash, doors, and blinds.	11	726,629	86,588	108,343	123,421	408,277	19	32	31,886	207	120,526
26	Masonry, brick and stone	3	6,075			575	5,500	4			32	21,900
27	Millinery, custom work	19	79,506	18,400	13,300	2,295	45,511	24	10	2,800	63	28,201
28	Models and patterns	3	10,870	1,000	2,000	3,552	4,318	5			6	3,766
29	Monuments and tombstones	6	65,505	21,000	8,580	11,675	24,250	7	5	2,300	28	26,750
30	Optical goods	3	3,300			1,550	1,750	4			2	625
31	Painting, house, sign, etc.	34	37,780	1,900	2,100	5,950	27,830	39	1	260	95	57,231
32	Patent medicines and compounds	7	54,924	6,200	4,800	3,187	40,737	6	7	4,422	17	5,225
33	Photography	10	15,175	2,050	3,500	7,100	2,525	10			5	2,800
34	Plumbing, and gas and steam fitting	15	102,713	8,000	11,000	9,171	74,542	19	16	8,620	88	46,723
35	Printing and publishing, book and job	10	106,512	5,000	14,474	61,908	25,130	16	2	624	71	39,652
36	Printing and publishing, newspapers and periodicals.	9	212,350			168,449	43,901	11	19	14,086	131	72,972
37	Roofing and roofing materials	9	34,700	5,300	6,200	4,350	18,850	14	2	1,500	34	18,247
38	Saddlery and harness	7	16,375	2,000	4,300	1,475	8,600	8			11	6,146
39	Sewing machine repairing	4	1,475			375	1,100	5			2	1,200
40	Tinsmithing, coppersmithing, and sheet-iron working.	8	26,170	3,400	5,100	3,557	14,113	10			19	10,046
41	Tobacco, cigars and cigarettes	26	82,096	7,200	11,200	4,320	59,876	32	2	1,275	90	46,054
42	Watch, clock, and jewelry repairing	24	84,885	5,000	8,000	7,985	18,900	24	2	1,092	19	12,158
43	All other industries ¹	85	6,951,712	389,826	1,533,056	2,654,903	2,373,927	108	192	212,462	3,352	1,412,111

¹ Embraces babbitt metal and solder, 1; belting and hose, rubber, 1; bookbinding and blank book making, 1; boxes, cigar, 2; boxes, fancy and paper, 1; boxes, wooden packing, 1; brick and tile, 2; brooms and brushes, 1; buttons, 2; carriage and wagon materials, 2; carriages and sleds, children's, 1; cars and general shop construction and repairs by steam railroad companies, 2; cars, steam railroad, not including operations of railroad companies, 1; cheese, butter, and condensed milk, factory product, 2; chemicals, 1; clothing, men's, factory product, 2; clothing, women's, factory product, 1; coffee and spice, roasting and grinding, 1; coffins, burial cases, and undertakers' goods, 1; cutlery and edge tools, 1; electrical apparatus and supplies, 1; electrical construction and repairs, 2; electroplating, 2; engraving, steel, including plate printing, 1; engraving, wood, 1; fertilizers, 1; fur goods, 1; furniture, factory product, 1; gas and lamp fixtures, 1; gas and oil stoves, 2; gas, illuminating and heating, 1; gas machines and meters, 1; hand stamps, 1; hardware, 1; hats and caps, not including fur hats

BY SPECIFIED INDUSTRIES: 1900—Continued.

EASTON—Continued.

AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES—continued.						MISCELLANEOUS EXPENSES.					COST OF MATERIALS USED.			Value of products, including custom work and repairing.	
Men, 16 years and over.		Women, 16 years and over.		Children, under 16 years.		Total.	Rent of works.	Taxes, not in- cluding internal revenue.	Rent of offices, interest, etc.	Contract work.	Total.	Principal materials, including mill supplies and freight.	Fuel and rent of power and heat.		
Average number.	Wages.	Average number.	Wages.	Average number.	Wages.										
28	\$14,011					\$608	\$518	\$2	\$83		\$6,069	\$6,025	\$14	\$32,235	22
33	14,506					2,455	1,598	25	837		15,140	14,975	165	43,279	23
1	432					1,015	725		290		2,835	2,723	112	8,200	24
32	17,814					1,900	1,583	28	289		48,789	48,337	452	95,880	25
92	43,896	7	\$1,850	9	\$877	9,062	1,275	267	7,520		21,474	19,969	1,505	116,351	26
12	5,800			1	175	975	200	60	715		16,102	15,990	112	38,500	27
12	5,876					775	400	205	170		8,405	8,315	90	21,600	28
28	12,644					1,514	1,146	95	273		16,957	16,526	431	41,030	29
42	18,215	2	432	4	832	10,308	1,880	27	8,901		31,186	30,930	256	69,784	30
11	4,605			1	156	2,258	1,983	75	200		3,540	3,310	230	18,830	31
1,780	799,491	876	181,733	248	45,415	250,923	6,054	6,796	74,701	\$163,372	2,959,698	2,912,264	47,494	4,721,669	32

and steel, 1; ironwork, architectural and ornamental, 1; leather, tanned, curried, and finished, 1; lime and cement, 1; lumber and timber products, 1; malt, 1; mattresses and spring beds, 1; musical instruments, organs and materials, 1; oil, not elsewhere specified, 1; paints, 1; paving and paving materials, 2; printing and publishing, book and job, 2; shirts, 1; silk and silk goods, 2; slaughtering and meat packing, wholesale, 1; steam fittings and heating apparatus, 2; surgical appliances, 1; watch and clock materials, 1; wire, 1.

ERIE.

8,389	\$4,348,584	699	\$183,811	251	\$47,230	\$1,197,411	\$106,948	\$64,153	\$916,462	\$109,848	\$9,107,305	\$3,796,402	\$310,903	\$19,053,202	1
1	810	1	300			77	10	32	35		8,441	3,430	11	6,000	2
19	8,370					2,708	2,177	12	519		17,493	16,738	755	44,930	3
258	142,336					29,938	1,000	687	28,281		239,839	237,703	2,186	466,223	4
24	14,706					2,177	1,466	802	409		12,910	12,099	811	54,688	5
16	8,983					5,434	4,931	182	321		20,009	18,933	1,076	72,205	6
18	11,696					6,554	2,331	35	4,188		32,412	31,960	452	89,673	7
26	12,816			1	245	2,493	260	166	1,867	200	30,425	29,494	931	60,125	8
81	89,771	21	3,288	1	123	5,566	2,170	824	2,572		142,612	137,490	5,122	237,734	9
255	153,947					71,912	416	952	8,525	62,019	258,934	258,387	547	568,904	10
1	1,000					465	304	49	112		2,055	1,925	130	9,500	11
22	11,592					1,430	505	225	700		11,131	10,400	731	32,211	12
137	74,859	87	11,876	1	101	23,504	15,114	818	7,672	400	95,304	93,636	1,063	308,130	13
18	9,342	35	12,230			1,511	1,448		63		5,733	5,425	908	28,450	14
52	24,448	6	1,750			4,053	2,711	305	1,037		26,507	25,512	995	60,425	15
				60	10,000	8,666	219	408	3,039		82,060	81,597	463	192,294	16
8	2,175	1	200			189	24	40	125		1,090	850	240	8,200	17
40	21,695					9,261	211	1,805	7,215		628,694	622,131	6,563	717,432	18
8,641	1,954,126			61	15,010	319,759	9,375	16,157	267,703	26,524	2,854,320	2,734,015	120,305	6,511,439	19
14	7,010					2,204	1,456	135	613		12,635	12,403	232	34,345	20
		2	599			811	766		45		1,196	1,090	106	4,700	21
115	90,440					256,959	12,585	244,374			138,092	122,975	15,117	690,745	22
8	1,500					1,319	1,084	25	210		1,375	1,170	205	8,700	23
6	2,800					2,766	2,396	40	330		17,897	17,607	290	34,975	24
297	120,526					52,388	6,300	2,196	24,897	18,995	420,781	425,126	4,655	768,549	25
32	21,900					250	250				38,820	38,820		78,000	26
6	3,766	62	28,201	1	90	9,293	6,292	439	2,562		93,412	92,562	850	172,715	27
28	26,750					398	160	25	213		1,587	1,372	215	12,704	28
2	625					1,900	542	448	910		55,746	54,835	910	109,625	29
95	57,231					1,087	904	183	183		2,483	2,322	161	10,706	30
						4,998	4,113	52	833		31,467	34,085	382	145,431	31
8	3,995	8	1,064	1	166	8,614	906	228	7,480		20,839	20,699	140	48,302	32
4	2,434	1	426			2,016	1,468	85	463		5,496	5,011	485	21,070	33
88	46,723					7,366	3,212	315	3,189	650	89,487	88,413	1,074	189,462	34
44	27,935	24	5,252	8	465	3,644	2,084	130	1,430		28,180	26,819	1,361	108,904	35
104	66,062	27	6,910			18,807	5,163	153	8,086	460	57,432	54,297	3,135	198,584	36
84	18,247					2,175	1,460	133	582		36,915	36,585	330	74,800	37
11	6,146					2,047	1,676	65	306		10,392	10,136	256	28,600	38
2	1,200					722	637		85		918	888	30	4,400	39
19	10,046					1,487	872	133	482		16,634	16,319	315	44,500	40
80	43,468	1	260	9	1,326	19,289	1,618	202	17,469		61,878	61,364	514	155,705	41
18	11,933	1	220			7,165	5,211	142	1,812		11,090	10,420	640	55,608	42
2,767	1,280,675	472	111,735	118	19,701	803,949	13,676	24,148	265,525	600	3,476,615	3,339,359	136,256	6,495,699	43

and wool hats, 1; house furnishing goods, not elsewhere specified, 1; ice, manufactured, 1; iron and steel, forgings, 1; ironwork, architectural and ornamental, 1; leather, tanned, curried, and finished, 2; lime and cement, 1; lithographing and engraving, 1; marble and stone work, 2; mattresses and spring beds, 1; mineral and soda waters, 2; mucilage and paste, 1; musical instruments, organs and materials, 2; musical instruments, pianos and materials, 2; paper and wood pulp, 2; paving and paving materials, 2; photolithographing and photoengraving, 1; pickles, preserves, and sauces, 1; plastering and stucco work, 2; plumbers' supplies, 1; pumps, not including steam pumps, 2; regalia and society banners and emblems, 1; rubber and elastic goods, 1; ship and boat building, wooden, 1; shoe cases, 1; slaughtering, wholesale, not including meat packing, 2; springs, steel, car and carriage, 1; stereotyping and electrotyping, 1; tools, not elsewhere specified, 1; typewriter repairing, 1; washing machines and clothes wringers, 1.

TABLE 8.—MANUFACTURES IN CITIES

HARRISBURG.

MANUFACTURING AND MECHANICAL INDUSTRIES.		Number of establishments.	CAPITAL.					Proprietors and firm members.	SALARIED OFFICIALS, CLERKS, ETC.		AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES.	
			Total.	Land.	Buildings.	Machinery, tools, and imple- ments.	Cash and sundries.		Number.	Salaries.	Total.	
											Average number.	Wages.
1	All industries.....	446	\$8,749,516	\$941,461	\$1,316,977	\$2,177,204	\$4,313,871	464	401	\$391,086	7,362	\$2,940,544
2	Bicycle and tricycle repairing.....	7	16,910		560	3,750	12,660	6			11	5,573
3	Blacksmithing and wheelwrighting.....	18	7,945	1,760	3,465	1,700	1,080	20			12	5,099
4	Boots and shoes, custom work and repairing.....	29	6,009	1,690	1,855	1,792	672	29			4	1,717
5	Boots and shoes, factory product.....	5	612,193	19,260	57,472	86,968	478,556	5	75	58,441	713	179,401
6	Bottling.....	4	47,815	1,500	2,300	14,500	29,515	5	1	783	17	7,080
7	Bread and other bakery products.....	44	92,030	23,550	46,000	10,910	11,600	43	2	936	75	35,745
8	Brick and tile.....	3	270,028	30,453	80,500	76,672	32,403	4	7	5,240	123	38,749
9	Carpentering.....	17	41,566	4,250	7,600	3,855	25,831	22			88	48,755
10	Carriages and wagons.....	8	85,220	22,500	29,350	8,938	24,387	7	5	4,620	45	21,653
11	Clothing, men's, custom work and repairing.....	52	96,284	23,550	22,200	3,480	50,004	34	2	1,174	110	46,065
12	Clothing, women's, dressmaking.....	5	4,050	1,200	1,000	625	1,225	5			14	3,082
13	Confectionery.....	17	43,881	1,350	3,250	19,655	19,626	21	1	240	127	26,161
14	Dyeing and cleaning.....	3	18,390	6,000	4,800	2,090	500	3	1	216	7	2,380
15	Foundry and machine shop products.....	6	1,271,225	161,878	223,259	310,715	545,373	4	42	56,376	579	250,600
16	Furniture, cabinetmaking, repairing, and upholstering.....	11	9,840	900	860	915	7,725	12	1	312	13	4,773
17	Iron and steel.....	7	8,065,702	409,000	415,000	521,968	1,719,784		74	101,276	1,701	821,547
18	Liquors, malt.....	3	260,725	65,000	81,000	54,600	60,125	8	4	2,865	32	20,882
19	Looking-glass and picture frames.....	6	10,075	700	900	975	7,500	7			6	1,804
20	Lumber, planing mill products, including sash, doors, and blinds.....	4	128,720	17,020	29,600	28,600	53,500	3	6	4,750	82	41,814
21	Marble and stone work.....	3	7,850		350	2,475	5,025	5			24	13,254
22	Masonry, brick and stone.....	4	36,800	1,150	2,500	2,150	31,000	6			64	35,100
23	Millinery, custom work.....	9	20,995		650	19,445	19,445	12	7	2,496	41	12,516
24	Painting, house, sign, etc.....	19	17,055	1,850	2,350	4,197	8,658	19	1	234	86	33,462
25	Paper hanging.....	3	9,100	300	400	1,375	7,025	3	2	468	14	6,950
26	Patent medicines and compounds.....	5	23,133	300	500	1,683	20,650	5	1	1,000	5	2,860
27	Photography.....	5	10,500		700	5,800	4,000	5	3	536	13	4,900
28	Plumbing, and gas and steam fitting.....	32	81,580	7,700	8,635	19,540	45,705	34	11	6,249	117	47,709
29	Printing and publishing, book and job.....	14	219,921	13,000	23,000	141,180	42,732	16	9	8,039	198	89,891
30	Printing and publishing, newspapers and periodicals.....	5	898,639	28,500	27,000	217,900	125,140	1	25	27,513	145	70,201
31	Roofing and roofing materials.....	5	8,650	200	1,000	1,600	5,850	6			18	8,770
32	Saddlery and harness.....	7	8,820			745	8,075	7			9	8,950
33	Tinsmithing, copper-smithing, and sheet-iron working.....	13	32,165	4,650	4,500	5,875	17,140	15	5	2,908	47	17,648
34	Tobacco, cigars and cigarettes.....	25	89,351	7,200	12,400	5,905	63,846	28	9	4,251	609	181,800
35	Watch, clock, and jewelry repairing.....	13	14,065	1,000	500	5,130	7,485	14			18	8,364
36	All other industries ¹	55	1,638,201	87,173	222,791	578,108	770,129	51	110	100,636	2,195	882,959

¹ Embraces awnings, tents, and sails, 2; baking and yeast powders, 1; baskets, and rattan and willow ware, 1; bookbinding and blank book making, 2; boxes, cigar, 1; boxes, fancy and paper, 2; brass castings and brass finishing, 1; brooms and brushes, 2; carpets, rag, 2; cars and general shop construction and repairs by steam railroad companies, 2; cars and general shop construction and repairs by street railroad companies, 1; clothing, men's, factory product, 1; clothing, women's, factory product, 1; coffee and spice, roasting and grinding, 1; coffins, burial cases, and undertakers' goods, 1; electrical construction and repairs, 2; electroplating, 2;

JOHNSTOWN.

1 All industries.....	248	\$16,940,450	\$929,865	\$3,065,682	\$6,944,427	\$6,000,476	316	391	\$449,183	6,116	\$3,218,183
2 Blacksmithing and wheelwrighting.....	9	7,155	1,800	2,240	2,830	1,315	12			12	7,215
3 Boots and shoes, custom work and repairing.....	17	1,940		895	1,055	490	18			1	413
4 Bread and other bakery products.....	11	31,651	3,500	12,700	5,371	5,080	13			35	16,944
5 Carpentering.....	24	188,840	24,950	16,725	36,965	110,200	36	12	6,300	181	90,709
6 Carriages and wagons.....	3	5,800		1,000	1,900	2,900	4			9	4,634
7 Clothing, men's, custom work and repairing.....	14	11,250	1,100	1,800	1,725	6,625	14			85	13,888
8 Clothing, women's, dressmaking.....	5	475			435	40	5			5	1,081
9 Confectionery.....	7	13,100	2,000	1,300	5,100	4,200	8	2	820	8	3,822
10 Foundry and machine shop products.....	5	2,526,591	223,775	249,112	1,135,416	918,288	6	90	100,231	603	396,780
11 Furniture, cabinetmaking, repairing, and upholstering.....	5	2,167			1,555	602	8			8	1,686
12 Iron and steel.....	4	11,882,627	514,000	2,291,339	4,321,444	4,255,844		219	230,056	3,871	2,100,145
13 Liquors, malt.....	4	524,795	58,100	178,250	143,467	149,958	3	12	12,199	69	41,920
14 Masonry, brick and stone.....	11	10,910	700	500	1,810	7,900	13			52	26,088
15 Millinery, custom work.....	8	80,010	4,000	6,000	380	19,680	9	8	754	28	7,933
16 Mineral and soda waters.....	3	6,400	2,000	1,100	2,400	900	4			4	708
17 Monuments and tombstones.....	3	11,350	600	400	700	9,650	3			6	2,838
18 Painting, house, sign, etc.....	17	23,570	3,100	5,850	2,010	12,580	19			49	27,920
19 Photography.....	8	7,150		10	5,650	1,490	8			6	1,227
20 Plastering and stucco work.....	8	3,470			270	8,200	5			7	4,400
21 Plumbing, and gas and steam fitting.....	10	68,050	2,500	750	2,925	59,875	12	5	3,132	43	20,534
22 Pottery, terra cotta, and fire-clay products.....	3	345,625	25,500	145,600	89,912	84,614	18	12	10,846	611	260,939
23 Printing and publishing, book and job.....	5	14,500			10,700	3,800	6			16	3,327
24 Printing and publishing, newspapers and periodicals.....	5	131,222	6,000	20,300	59,500	45,422	6	1	1,000	58	26,804

BY SPECIFIED INDUSTRIES: 1900—Continued.

HARRISBURG.

AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES—continued.						MISCELLANEOUS EXPENSES.					COST OF MATERIALS USED.			Value of products, including custom work and repairing.	
Men, 16 years and over.		Women, 16 years and over.		Children, under 16 years.		Total.	Rent of works.	Taxes, not in- cluding internal revenue.	Rent of offices, interest, etc.	Contract work.	Total.	Principal materials, including mill supplies and freight.	Fuel and rent of power and heat.		
Average number.	Wages.	Average number.	Wages.	Average number.	Wages.										
5,435	\$2,593,264	1,812	\$342,086	115	\$13,294	\$646,950	\$141,425	\$24,365	\$380,105	\$101,055	\$9,402,516	\$3,992,718	\$409,798	\$16,064,597	1
11	5,573					2,499	1,252	19	1,228		29,143	28,809	334	51,960	2
11	4,839			1	260	857	742	76	39		5,178	4,801	377	22,280	3
4	1,747					1,996	1,331	34	31		7,319	6,999	320	23,348	4
326	108,184	358	68,964	29	2,253	20,864	478	558	19,828		465,838	463,119	2,719	748,798	5
17	7,980					2,713	1,380	226	1,107		35,663	34,973	690	62,620	6
63	33,161	6	1,692	6	892	6,915	4,187	983	1,795		116,052	111,420	4,632	225,713	7
122	38,541			1	208	6,194	2,000	694	3,500		18,661	3,031	15,630	87,667	8
88	48,755					41,646	680	120	1,045	39,791	114,364	114,170	191	260,575	9
45	21,653					2,093	75	646	1,372		24,698	23,877	821	62,708	10
69	36,627	38	9,113	3	325	6,339	4,496	671	1,172		56,886	55,890	946	147,732	11
1	320	13	2,762			722	664	18	40		4,093	3,929	164	11,493	12
57	10,519	66	6,133	4	509	6,856	5,456	156	1,244		98,521	96,455	2,066	164,701	13
4	1,755	3	625			406		181	275		812	680	132	9,500	14
564	257,157	9	2,377	5	1,066	48,174	744	2,456	44,974		373,529	362,546	10,983	840,914	15
10	4,445			3	328	1,060	1,258	25	377		8,332	8,237	95	22,298	16
1,701	821,547					105,728	43,620	8,684	53,424		5,050,689	4,718,058	332,631	7,602,404	17
32	20,882					70,362		1,924	68,438		41,819	38,699	3,120	186,030	18
4	1,594	2	270			1,095	1,036	28	31		4,553	4,438	120	12,050	19
82	41,814					3,960	1,422	708	1,830		83,782	82,147	1,635	150,875	20
23	13,072			1	182	615	390	5	120	100	10,082	10,007	75	29,550	21
64	35,100					18,744	295	54	195	18,200	129,600	129,575	25	217,600	22
		41	12,516			5,796	3,984	91	1,721		56,195	55,910	285	90,700	23
83	32,838			3	624	1,948	1,162	71	725		20,254	20,022	232	76,600	24
14	6,950					297	216	19	62		9,170	9,115	55	20,750	25
3	2,000	2	300			1,610	328	25	1,257		9,455	9,364	91	20,080	26
9	8,920	3	876	1	104	3,080	2,685	45	450		10,108	9,986	122	29,409	27
114	47,345			3	364	5,588	3,236	188	1,939	225	89,851	89,093	758	220,392	28
180	75,003	66	14,628	2	260	24,047	3,498	270	11,271	9,008	57,336	53,887	3,449	210,155	29
180	66,003	13	3,886	2	312	17,340	4,710	886	11,696	48	56,093	51,274	4,819	236,126	30
18	8,770					248	208	17	23		24,088	24,001	87	41,150	31
9	3,950					1,289	1,213	3	73		10,364	10,264	100	20,880	32
47	17,548					2,016	1,882	100	534		36,122	35,770	352	72,659	33
98	34,593	508	96,894	3	313	80,751	3,755	280	70,716		269,035	266,358	2,677	536,013	34
18	8,364					2,745	1,528	44	1,173		5,750	5,438	312	31,200	35
1,464	761,775	684	121,800	47	5,294	150,357	42,114	4,160	70,400	33,683	2,069,181	2,050,881	18,750	3,517,672	36

fertilizers, 1; food preparations, 1; furnishing goods, men's, 2; gas, illuminating and heating, 1; glass, cutting, staining, and ornamenting, 1; hand stamps, 1; hosiery and knit goods, 1; ice, manufactured, 1; lock and gun smithing, 2; mattresses and spring beds, 1; mineral and soda waters, 2; models and patterns, 1; monuments and tombstones, 2; paving and paving materials, 2; pottery, terra cotta, and fire-clay products, 1; shirts, 2; silk and silk goods, 1; slaughtering and meat packing, wholesale, 2; soap and candles, 1; tin andterne plate, 1; typewriters and supplies, 1; umbrellas and canes, 1; wheelbarrows, 1.

JOHNSTOWN.

5,918	\$3,166,356	98	\$26,129	100	\$20,704	\$1,922,080	\$245,423	\$62,923	\$1,543,800	\$69,934	\$14,445,126	\$13,066,883	\$1,378,243	\$22,559,890	1
12	7,215					723	618	40	65		7,226	7,062	164	23,388	2
1	416					1,166	1,026	6	134		3,201	3,201		12,903	3
28	15,976	3	412	4	556	3,678	922	276	2,480		89,729	38,814	915	78,577	4
181	90,709					75,814	2,475	898	4,490	67,981	214,631	213,049	1,582	465,609	5
9	4,634					902	418	4	880	100	8,544	8,244	300	20,760	6
24	11,266	11	2,622			4,240	2,377	81	1,507	325	17,058	17,018	40	46,116	7
		4	961	1	120	512	452		60		535	535		4,280	8
6	8,414	1	308	1	100	1,736	924	67	745		19,039	18,486	553	35,496	9
634	387,992	8	2,847	21	5,941	68,890	459	5,294	61,137		1,140,128	1,105,458	34,665	1,900,255	10
3	1,686					357	827		30		3,958	3,947	6	8,834	11
3,850	2,095,049			21	5,096	1,521,707	220,168	48,867	1,252,672		12,218,364	10,928,725	1,287,689	17,834,705	12
62	40,646	3	430	4	844	150,361	3,248	153,113	735	840	88,235	84,204	4,031	394,972	13
52	26,083					1,818	2,289	50	1,088		43,053	43,053		85,671	14
1	800	27	7,849	1	104	3,422	70	27	274		43,101	43,081	20	68,828	15
				3	408	371					570	570		3,820	16
8	2,833					631	870	10	251		6,840	6,840		13,880	17
49	27,920					1,280	445	263	567		19,513	19,493	20	64,338	18
2	595	2	328	2	304	1,516	1,267		249		3,373	3,373		14,173	19
7	4,400					502	167	75	200		5,432	5,400	32	14,317	20
41	20,244			2	840	5,996	2,121	231	3,584		60,085	68,860	225	110,633	21
605	255,619	1	480	5	2,000	7,422		1,311	6,111		187,142	105,437	31,705	459,202	22
5	1,713	4	721	7	888	1,123	726		867	80	7,117	6,821	296	19,497	23
53	25,651	4	1,075	1	78	14,281	989	890	12,213	634	10,038	9,011	1,027	74,199	24

TABLE 8.—MANUFACTURES IN CITIES

JOHNSTOWN—Continued.

JOHNSTOWN—Continued.

MANUFACTURING AND MECHANICAL INDUSTRIES.	Number of establishments.	CAPITAL.					Proprietors and firm members.	SALARIED OFFICIALS, CLERKS, ETC.		AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES.	
		Total.	Land.	Buildings.	Machinery, tools, and implements.	Cash and sundries.		Number.	Salaries.	Total.	
										Average number.	Wages.
Saddlery and harness.....	5	\$18,275	\$2,030	\$2,850	\$3,113	\$10,812	5	2	\$600	13	\$5,131
Tinsmithing, coppersmithing, and sheet-iron working.....	14	30,465	5,100	4,190	4,220	16,955	19			33	18,345
Watch, clock, and jewelry repairing.....	11	6,450	500	1,000	2,175	2,775	13			9	5,281
All other industries ¹	34	1,038,021	48,610	122,211	602,439	265,331	51	36	23,695	289	122,354

¹ Embraces awnings, tents, and sails, 1; bicycle and tricycle repairing, 2; brick and tile, 1; brooms and brushes, 1; carpets, rag, 1; clothing, men's, factory product, 1; dyeing and cleaning, 1; enameling and enameled goods, 1; flouring and grist mill products, 1; furniture, factory product, 1; gas, illuminating and heating, 1; glass, cutting, staining, and ornamenting, 1; ice, manufactured, 1; lock and gun smithing, 2; looking-glass and picture frames, 2; lumber, planing mill

LANCASTER.

1	All industries.....	788	\$10,808,461	\$772,515	\$1,901,955	\$3,182,296	\$4,996,698	855	427	\$998,934	9,349	\$3,323,748
2	Bicycle and tricycle repairing.....	10	7,170	100	100	2,715	4,255	13	1	500	13	3,988
3	Blacksmithing and wheelwrighting.....	27	20,485	7,570	5,040	3,245	4,630	32			19	9,032
4	Boots and shoes, custom work and repairing.....	30	10,267	1,950	2,200	3,330	2,757	29			13	4,562
5	Bottling.....	11	54,830	9,350	15,000	24,500	5,950	15	1	600	31	14,092
6	Boxes, cigar.....	6	95,445	5,100	11,700	34,945	43,700	5	9	5,816	197	47,011
7	Boxes, wooden packing.....	8	7,985	3,600	2,300	135	2,050	4	1	500	8	2,220
8	Bread and other bakery products.....	45	75,844	17,430	37,700	6,615	13,379	49	3	2,107	97	40,391
9	Brick and tile.....	3	66,660	20,660	14,800	10,010	21,250	4			69	22,970
10	Brooms and brushes.....	3	1,355	150	350	270	585	4			3	820
11	Carpentering.....	41	126,895	16,775	31,000	7,805	71,815	42	10	6,013	231	124,148
12	Carpets, rag.....	5	21,625	4,100	5,900	3,525	8,100	9	3	1,680	22	7,266
13	Carriage and wagon materials.....	7	113,978	22,200	34,550	28,503	28,728	8	4	2,400	50	22,947
14	Carrriages and wagons.....	12	372,746	43,015	55,100	62,513	212,118	13	22	11,201	275	131,336
15	Clothing, men's, custom work and repairing.....	23	116,615	34,800	23,375	5,400	53,543	28	9	7,500	145	62,768
16	Clothing, women's, dressmaking.....	90	23,745	2,625	5,250	7,145	8,725	101			136	31,797
17	Coffee and spice, roasting and grinding.....	3	7,800	500	300	5,700	1,300	3			3	1,031
18	Confectionery.....	25	922,216	29,750	244,450	290,350	357,666	27	16	31,854	712	148,716
19	Dyeing and cleaning.....	4	975	100	400	320	155	4			1	300
20	Foundry and machine shop products.....	19	445,087	54,350	39,350	140,590	160,797	16	33	25,003	232	92,955
21	Furniture, cabinetmaking, repairing, and upholstering.....	15	71,413	9,800	24,700	2,018	34,895	16			23	9,970
22	Hardware.....	3	61,850	10,000	10,000	18,550	28,300	3	4	2,450	78	30,250
23	Leather, tanned, curried, and finished.....	3	180,575	17,000	23,500	18,000	122,075	3	9	10,053	85	32,000
24	Liquors, malt.....	4	845,600	30,000	274,000	214,000	127,000	6	11	13,500	65	32,761
25	Lock and gun smithing.....	4	166,570	21,000	32,000	38,400	75,170	5	6	4,700	204	59,500
26	Lumber, planing mill products, including sash, doors, and blinds.....	3	139,500	16,000	40,000	19,500	64,000	3	7	4,048	75	41,826
27	Marble and stone work.....	4	23,950	300	200	11,650	11,800	6	1	1,000	15	9,300
28	Masonry, brick and stone.....	16	94,565	2,300	5,750	52,270	34,245	26	6	4,812	232	94,280
29	Millinery, custom work.....	18	92,735	33,800	21,400	2,356	35,700	23	1	750	63	19,723
30	Monuments and tombstones.....	5	14,660	325	175	2,660	11,600	6			14	7,080
31	Painting, house, sign, etc.....	35	22,170	2,250	5,550	5,233	9,137	44	1	700	114	55,221
32	Paints.....	3	48,175	3,500	5,500	7,876	31,299	6	5	3,530	12	4,800
33	Paper hanging.....	5	7,790			480	7,300	6			13	6,001
34	Paving and paving materials.....	11	21,955	7,300	1,753	7,475	5,480	13	7	3,365	156	58,642
35	Photography.....	9	20,050	1,500	2,000	14,350	2,200	10	1	416	10	4,786
36	Plastering and stucco work.....	7	1,460			140	1,320	10			18	9,130
37	Plumbing, and gas and steam fitting.....	16	49,305	3,000	6,900	7,550	31,855	21	2	1,092	56	25,168
38	Printing and publishing, book and job.....	9	149,110	27,250	21,300	76,474	24,086	9	3	3,500	71	31,205
39	Printing and publishing, newspapers and periodicals.....	8	365,160	40,000	65,000	170,300	89,850	11	19	12,516	201	91,901
40	Roofing and roofing materials.....	3	5,825	1,000	500	1,025	3,300	5			6	2,680
41	Saddlery and harness.....	10	59,587	4,100	5,100	13,170	37,217	11	8	4,416	57	20,710
42	Tinsmithing, coppersmithing, and sheet-iron working.....	11	82,050	11,800	23,800	19,950	22,000	13	9	4,960	70	28,404
43	Tobacco, cigars and cigarettes.....	69	1,063,230	30,005	155,235	94,483	783,502	84	61	70,183	1,765	692,322
44	Tools, not elsewhere specified.....	5	71,200	12,600	7,500	41,700	9,400	6			25	13,574
45	Umbrellas and canes.....	6	629,500	20,000	40,000	33,000	486,500	10	47	59,872	1,187	328,255
46	Watch, clock, and jewelry repairing.....	17	75,710	5,000	800	33,560	36,350	19	1	550	39	20,643
47	All other industries ¹	63	4,148,575	189,500	545,930	1,542,903	1,870,237	63	106	107,240	2,432	788,892

¹ Embraces awnings, tents, and sails, 1; bags, paper, 1; bookbinding and blank book making, 2; boots and shoes, factory product, 2; boxes, fancy and paper, 1; chocolate and cocoa products, 1; coffins, burial cases, and undertakers' goods, 1; combs, 1; cooperage, 1; cork, cutting, 2; cotton goods, 1; druggists' preparations, not including prescriptions, 1; electrical apparatus and supplies, 1; electrical construction and repairs, 1; electroplating, 1; emery wheels, 1; engraving and die sinking, 2; engraving, wood, 1; fancy articles, not elsewhere specified, 1; fertilizers, 1; files, 1; flouring and grist mill products, 2; furniture, factory product, 1; gas, illuminating and heating, 1; glue, 2; hand stamps, 1; ice, manufactured, 1; iron and steel, 1; ironwork, architectural and ornamental, 2; jewelry, 1; kailin

McKEESPORT.

1	All industries.....	180	\$17,870,016	\$2,066,593	\$3,108,206	\$6,173,573	\$6,524,554	199	523	\$497,822	7,605	\$4,870,331
2	Bicycle and tricycle repairing.....	4	16,260		2,800	1,825	11,625	5			4	1,632
3	Blacksmithing and wheelwrighting.....	11	12,026	4,400	2,550	3,423		13			5	3,275
4	Boots and shoes, custom work and repairing.....	11	2,788			1,105	1,633	11			3	940
5	Bottling.....	10	137,190	7,063	7,600	26,650	95,877	10	7	4,086	42	21,638
6	Bread and other bakery products.....	7	43,455	17,000	15,900	3,680	6,375	8	2	682	17	11,609

BY SPECIFIED INDUSTRIES: 1900—Continued.

JOHNSTOWN—Continued.

AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES—continued.						MISCELLANEOUS EXPENSES.						COST OF MATERIALS USED.			Value of products, including custom work and repairing.
Men, 16 years and over.		Women, 16 years and over.		Children, under 16 years.		Total.	Rent of works.	Taxes, not in- cluding internal revenue.	Rent of offices, interest, etc.	Contract work.	Total.	Principal materials, including mill supplies and freight.	Fuel and rent of power and heat.		
Average num- ber.	Wages.	Average num- ber.	Wages.	Average num- ber.	Wages.										
7	\$3,883	6	\$1,248	1	\$90	\$836	\$238	\$66	\$532		\$18,851	\$18,681	\$170	\$30,724	
28	16,315	4	1,940			2,046	1,137	181	754	\$24	29,664	29,529	135	68,013	
7	4,885	1	280	1	166	1,777	1,874	75	828		3,888	3,868	20	17,507	
245	114,057	19	4,628	25	3,669	45,053	4,064	1,315	39,674		288,221	273,523	14,698	629,693	

products, including sash, doors, and blinds, 1; mattresses and spring beds, 1; paints, 1; paper hanging, 2; paving and paving materials, 2; roofing and roofing materials, 2; soap and candles, 1; steam fittings and heating apparatus, 1; tin andterne plate, 1; tobacco, cigars and cigarettes, 1; tools, not elsewhere specified, 1; window shades, 2.

LANCASTER.

5,585	\$2,416,060	2,954	\$774,801	810	\$132,887	\$1,193,997	\$74,312	\$33,164	\$924,791	\$161,730	\$8,342,709	\$8,187,475	\$155,234	\$16,370,281	1
10	8,648			8	340	1,832	1,252	5	350	225	7,451	7,156	295	21,308	2
19	9,632					1,779	1,493	191	95		7,523	7,077	446	42,304	3
13	4,562					2,592	2,402	58	132		9,946	9,547	399	30,895	4
34	14,092					2,106	1,052	229	825		63,783	63,891	842	125,097	5
81	25,740	90	19,844	26	2,827	1,619	640	429	550		136,892	134,911	1,481	222,131	6
8	2,220					1,044	600	19	425		60,060	60,035	25	68,090	7
92	39,377	4	910	1	104	5,762	2,571	871	2,820		108,597	103,538	5,059	219,177	8
60	22,970					3,741		341	3,400		10,702	202	10,500	52,275	9
1	300	1	260	1	260	158	144	4	10		1,798	1,780	18	5,004	10
234	124,148					121,939	885	802	2,017	118,285	441,106	440,223	883	786,369	11
17	6,074	5	1,192			1,065	450	190	425		12,818	12,472	346	32,480	12
50	22,947					1,781	174	507	1,100		46,841	45,287	1,054	99,775	13
274	131,070	1	266			14,221	2,050	876	11,295		167,055	154,903	2,152	408,173	14
117	56,619	27	6,019	1	130	6,862	3,637	757	2,318	150	94,996	93,999	997	237,494	15
		136	31,707			5,284	4,985	115	184		44,141	42,434	1,707	136,999	16
3	1,091					211	186	8	17		5,000	4,670	330	8,200	17
173	58,368	276	50,288	263	40,060	46,221	2,847	2,638	40,730		515,921	503,064	12,857	885,446	18
1	300					731	426	7	28	270	359	302	57	3,264	19
280	92,678			2	277	12,894	2,074	1,418	9,077	325	153,396	146,278	7,118	362,394	20
23	9,970					1,728	971	349	403		12,023	11,600	393	34,955	21
71	27,250	7	3,000			1,913	198	315	1,400		68,377	62,475	902	132,000	22
85	32,900					2,404		904	1,500		240,923	237,423	3,500	390,021	23
65	32,764					147,328	1,200	1,480	144,648		101,356	83,790	17,566	358,247	24
174	85,000			30	4,500	3,925	140	500	3,285		81,383	77,365	4,018	248,100	25
75	41,826					2,136		481	1,655		52,859	49,971	2,388	115,450	26
15	9,300					4,071	276	50	445	3,300	31,059	30,641	418	54,290	27
232	93,280					4,973	167	103	803	3,900	546,155	545,683	472	694,573	28
		62	19,651	1	78	8,024	4,571	560	2,793	100	77,054	76,306	748	132,903	29
14	7,080					1,876	990	5	381		23,263	23,233	30	44,563	30
113	54,921			1	300	3,117	2,392	151	574		29,166	28,958	208	122,305	31
12	4,800					3,280	600	180	2,500		68,575	67,475	1,100	97,950	32
13	6,001					1,085	798	1	286		6,303	6,336	27	18,150	33
163	58,138			3	504	1,204	542	61	601		91,953	91,783	170	198,800	34
8	4,554			2	182	2,730	1,740	275	715		8,350	8,141	209	26,375	35
18	9,130					40					4,849	4,849		19,393	36
55	25,012			1	156	1,690	1,281	93	316		49,520	49,010	510	104,698	37
58	28,523	11	2,486	2	256	5,914	1,333	584	3,934	63	17,546	16,683	863	73,075	38
196	90,957	3	610	2	334	18,366	2,050	1,021	14,515	180	63,649	60,770	2,879	239,260	39
6	2,680					190	50	20	120		12,940	12,900	40	20,185	40
55	20,246			2	464	2,018	1,399	112	507		47,700	45,422	2,278	111,233	41
69	28,250			1	154	3,267	330	739	2,098	100	72,741	72,243	498	124,630	42
826	392,940	804	269,319	135	30,068	514,348	9,765	1,531	503,052		951,782	942,688	9,099	2,557,787	43
25	13,574					1,867	520	110	1,237		12,495	11,972	523	44,810	44
411	148,950	630	153,605	146	25,700	57,912	3,450	1,497	52,965		1,552,110	1,548,030	4,080	2,694,200	45
37	20,414			2	229	6,431	3,672	182	2,577		31,168	30,727	441	93,819	46
1,850	546,769	897	215,644	185	26,469	160,823	7,869	12,395	106,177	34,882	2,215,515	2,159,677	55,838	3,805,478	47

and other earth grinding, 1; looking-glass and picture frames, 2; mattresses and spring beds, 1; millinery and lace goods, 1; models and patterns, 1; paper goods, not elsewhere specified, 1; patent medicines and compounds, 2; perfumery and cosmetics, 1; pottery, terra cotta, and fire-clay products, 2; sewing machine repairing, 1; shirts, 2; silk and silk goods, 1; slaughtering and meat packing, wholesale, 1; soap and candles, 1; sporting goods, 1; surgical appliances, 1; tobacco, chewing, smoking, and snuff, 2; tobacco, stemming and rehandling, 1; watches, 1; window shades, 1; wirework, including wire rope and cable, 1.

McKEESPORT.

7,331	\$4,302,201	96	\$24,269	178	\$43,911	\$428,226	\$29,594	\$87,797	\$300,886	\$59,949	\$22,809,161	\$21,007,172	\$1,301,989	\$37,074,136	1
8	1,494			1	168	768	397	40	826		2,787	2,614	123	7,701	2
5	3,275					1,115	855	108	152		3,926	3,658	268	19,848	3
2	784			1	156	1,183	1,046	19	118		2,689	2,680	9	9,567	4
42	21,638					20,376	4,320	733	15,323		230,564	230,176	888	329,083	5
15	11,033	1	288	1	283	4,416	1,020	499	2,897		37,405	36,895	1,010	65,909	6

TABLE 8.—MANUFACTURES IN CITIES

McKEESPORT—Continued.

MANUFACTURING AND MECHANICAL INDUSTRIES.		Num-ber of estab-lish-ments.	CAPITAL.					Propri-eters and firm mem-bers.	SALARIED OF-FICIALS, CLERKS, ETC.		AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES.	
			Total.	Land.	Buildings.	Machinery, tools, and imple-ments.	Cash and sundries.		Num-ber.	Salaries.	Total.	
											Average num-ber.	Wages.
7	Brick and tile	4	\$57,500	\$5,400	\$15,000	\$14,800	\$22,300	7	5	\$1,275	47	\$21,604
8	Clothing, men's, custom work and re- pairing.	17	44,490	2,000	2,000	1,930	38,560	21	8	1,475	53	30,572
9	Clothing, women's, dressmaking	6	1,023			563	1,060	9			5	936
10	Foundry and machine shop products	5	38,987	2,400	5,000	15,345	16,242	6	3	3,922	36	14,985
11	Iron and steel	7	14,109,342	1,791,355	2,628,420	4,496,897	5,192,690		427	431,581	6,753	3,937,803
12	Lumber, planing mill products, includ- ing sash, doors, and blinds.	6	145,000	80,250	12,800	12,050	89,900	8	3	800	53	33,904
13	Millinery, custom work	7	31,710	4,000	2,250	2,470	22,990	10	2	1,700	23	7,498
14	Painting, house, sign, etc	3	2,150			700	1,450	4			9	6,024
15	Photography	9	9,810		200	2,975	6,635	10	16	9,560	5	3,260
16	Plumbing, and gas and steam fitting	9	85,936	6,600	1,900	2,050	25,886	12	3	1,286	40	22,040
17	Printing and publishing, newspapers and periodicals	6	107,886	16,500	28,800	46,400	16,186	4	8	6,507	63	34,949
18	Roofing and roofing materials	3	9,000		150	1,650	7,200	3			13	8,091
19	Saddlery and harness	3	6,920			660	6,260	3			5	3,016
20	Tinsmithing, coppersmithing, and sheet-iron working.	5	24,806	7,000	3,950	2,175	11,681	6			12	9,402
21	Tobacco, cigars and cigarettes	11	6,667	300	1,100	925	4,342	11			20	3,716
22	Watch, clock, and jewelry repairing	8	9,829	500	800	1,584	6,945	8	1	130	7	4,903
23	All other industries ¹	28	3,022,701	171,345	375,076	1,540,486	935,794	30	43	34,868	390	188,548

¹ Embraces awnings, tents, and sails, 1; bookbinding and blank book making, 1; brass castings and brass finishing, 1; carriages and wagons, 2; confectionery, 1; dyeing and cleaning, 1; electrical construction and repairs, 1; furniture, cabinetmaking, repairing, and upholstering, 2; gas, illuminating and heating, 1; ice, manufactured, 1; iron and steel, pipe, wrought, 1; ironwork, architectural and ornamental, 1; liquors, distilled, 1; liquors, malt, 1; lock and gun smithing, 1;

NEWCASTLE.

1	All industries.....	216	\$13,308,220	\$722,356	\$2,287,442	\$6,934,933	\$3,363,489	252	198	\$243,689	4,992	\$3,226,669
2	Blacksmithing and wheelwrighting.....	18	18,000	4,300	3,100	3,070	7,530	20			11	6,463
3	Boots and shoes, custom work and repairing.....	9	2,915	800	1,200	640	275	9			1	475
4	Bread and other bakery products.....	6	13,848	5,000	4,500	2,350	1,998	6	1	156	22	12,422
5	Carpentering.....	10	90,350	7,200	4,300	7,850	71,000	16	3	1,420	144	80,695
6	Clothing, men's, custom work and repairing.....	16	36,020	700	400	2,030	32,890	21	1	480	81	44,595
7	Clothing, women's, dressmaking.....	8	1,265			730	535	9			18	3,467
8	Confectionery.....	5	35,135	5,000	8,000	3,280	13,855	8	8	3,150	20	5,734
9	Dyeing and cleaning.....	4	8,650	2,900	3,700	1,750	300	4			5	1,860
10	Foundry and machine shop products.....	6	620,819	54,400	124,325	253,176	188,418	10	16	13,618	312	176,190
11	Furniture, cabinetmaking, repairing, and upholstering.....	3	8,931	3,000	1,500	1,450	2,984	3	2	700	18	5,902
12	Iron and steel.....	10	9,042,734	414,000	1,355,000	5,248,511	2,027,223		91	148,114	3,320	2,226,835
13	Lumber, planing mill products, including sash, doors, and blinds.....	7	145,182	13,500	11,945	17,686	102,051	14	8	6,312	71	85,103
14	Marble and stone work.....	3	8,325	1,350	1,050	725	5,200	5			5	3,750
15	Millinery, custom work.....	11	37,660	7,900	5,300	660	23,800	15			35	11,676
16	Mineral and soda waters.....	8	12,250	1,500	4,850	3,600	2,400	3			6	3,120
17	Painting, house, sign, etc.....	12	3,880	850	700	757	1,573	15			13	8,200
18	Paving and paving materials.....	3	88,825	21,000	12,000	23,125	27,700	3	5	5,064	42	22,350
19	Photography.....	3	9,900	4,700	1,900	2,250	1,050	3			3	2,281
20	Plumbing, and gas and steam fitting.....	9	57,067	10,000	3,000	5,108	38,959	14	5	1,259	44	28,682
21	Printing and publishing, book and job.....	3	18,950			15,100	3,850	6	1	150	8	8,150
22	Printing and publishing, newspapers and periodicals.....	4	87,298			45,300	41,998	1	3	4,300	48	22,408
23	Roofing and roofing materials.....	4	11,700	600	800	1,925	8,375	5			16	7,530
24	Saddlery and harness.....	5	14,775	3,000	3,000	975	7,800	6			4	2,244
25	Tinsmithing, coppersmithing, and sheet-iron working.....	5	5,050			1,250	3,800	7			13	6,700
26	Tobacco, cigars and cigarettes.....	4	3,590			215	3,375	4			11	4,699
27	Watch, clock, and jewelry repairing.....	11	14,770			4,825	9,945	14			10	5,178
28	All other industries ¹	34	2,910,828	160,656	736,872	1,278,695	734,605	31	54	58,966	711	495,457

¹ Embraces awnings, tents, and sails, 1; bicycle and tricycle repairing, 2; bookbinding and blank book making, 1; bottling, 2; brick and tile, 1; carpets, rag, 1; carriage and wagon materials, 1; carriages and wagons, 1; cooperage, 1; electrical construction and repairs, 1; fireworks, 1; flouring and grist mill products, 2; gas, illuminating and heating, 1; glass, 1; ice, manufactured, 1; iron and steel, pipe, wrought, 1; liquors, malt, 2; lock and gun smithing, 1; masonry, brick and

NORRISTOWN.

1	All industries.....	210	\$4,069,449	\$331,393	\$779,690	\$1,258,400	\$1,699,966	227	169	\$132,100	3,429	\$1,168,942
2	Blacksmithing and wheelwrighting.....	11	13,890	2,500	4,500	3,800	3,090	12			14	6,291
3	Boots and shoes, custom work and repairing.....	20	13,351	3,000	6,050	2,935	1,866	20			9	3,598
4	Bread and other bakery products.....	10	48,435	5,500	27,500	10,685	4,750	10	5	1,912	31	16,167
5	Carpentering.....	8	11,195	250	1,050	2,375	7,020	10			63	30,628

BY SPECIFIED INDUSTRIES: 1900—Continued.

McKEESPORT—Continued.

AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES—continued.						MISCELLANEOUS EXPENSES.					COST OF MATERIALS USED.			Value of products, including custom work and repairing.	
Men, 16 years and over.		Women, 16 years and over.		Children, under 16 years.		Total.	Rent of works.	Taxes, not in- cluding internal revenue.	Rent of offices, interest, etc.	Contract work.	Total.	Principal materials, including mill supplies and freight.	Fuel and rent of power and heat.		
Average number.	Wages.	Average number.	Wages.	Average number.	Wages.										
43	\$20,474			4	\$1,130	\$2,554	\$514	\$117	\$1,923		\$3,305	\$370	\$2,935	\$35,261	7
37	24,763	16	\$5,809			6,392	4,771	130	1,491		34,861	34,830	31	100,475	8
		5	936			982	942		40		2,889	2,889		8,565	9
36	14,985					1,954	1,200	160	594		37,431	36,198	1,233	69,774	10
6,588	3,896,538			165	41,205	209,608		29,298	180,310		20,706,228	19,439,900	1,266,328	34,339,612	11
52	33,744			1	160	62,224	100	418	3,181	\$58,525	128,178	127,385	793	240,555	12
		23	7,498			4,507	3,096	141	1,270		26,251	26,254		52,669	13
9	6,024					318	216	10	92		3,532	3,525	7	13,322	14
3	2,850	2	416			2,562	1,732	36	794		7,904	7,881	23	32,818	15
						2,370	1,071	89	1,210		37,230	36,932	298	79,028	16
40	22,040			2	208	9,616	954	364	7,208	1,090	15,635	14,985	650	80,541	17
60	34,272	1	469												
13	8,091					1,804	440	7	1,357		12,270	12,176	94	29,180	18
5	3,016					1,441	963	18	460		11,923	11,914	9	19,868	19
						1,123	360	145	618		13,278	13,193	85	35,419	20
12	9,402														
		14	2,304	2	354	9,976	1,091	65	8,820		7,257	7,249	8	22,393	21
4	1,058					1,262	884	31	397		3,679	3,679		14,892	22
7	4,903														
355	181,817	34	6,549	1	182	81,680	3,672	5,369	72,305	334	979,986	952,289	27,697	1,468,216	23

marble and stone work, 1; mineral and soda waters, 1; monuments and tombstones, 2; patent medicines and compounds, 2; printing and publishing, book and job, 2; regalia and society banners and emblems, 1; ship and boat building, wooden, 1; tin and terne plate, 1.

NEWCASTLE.

4,754	\$3,157,196	174	\$53,623	64	\$15,850	\$491,336	\$10,377	\$53,691	\$399,043	\$8,225	\$13,646,648	\$12,245,897	\$1,400,751	\$21,046,842	1
11	6,463					1,627	1,255	163	209		10,360	9,750	610	84,780	2
1	475					544	517	9	18		2,842	2,716	126	7,687	3
20	11,952	2	470			487	196	205	86		32,202	31,144	1,058	60,553	4
144	80,695					16,539	470	243	8,326	7,500	164,396	164,126	270	344,816	5
42	31,688	38	12,782	1	125	7,022	6,013	30	979		51,164	50,600	564	138,640	6
		18	3,467			910	904		6						
11	4,158	9	1,576			6,600	922	191	5,187	300	23,025	23,032	593	50,797	7
3	1,270	2	590			715	205	80	430		2,225	1,875	350	6,470	8
312	176,190					34,886		2,291	32,595		364,138	351,818	12,320	678,325	9
12	4,390	6	1,512			1,314	444	130	740		4,487	4,119	368	21,125	10
3,264	2,211,855			56	14,480	275,090		27,690	247,400		9,735,362	8,438,324	1,297,038	15,123,463	11
71	35,103					3,455	1,075	538	1,242		168,616	167,586	1,030	246,435	12
						359	180	21	158		5,951	5,879	72	12,471	13
5	3,750	35	11,076			3,119	1,710	190	1,219		44,733	43,787	940	73,000	14
				1	340	138	25	65	48		5,330	5,275	55	19,300	15
6	2,780														
13	8,200					948	853	37	58		9,239	9,097	142	28,925	16
42	22,350					17,238		243	16,995		85,492	82,287	3,205	144,928	17
3	2,284					581	180	77	299	25	3,354	3,232	122	10,500	18
43	28,422	1	260			2,946	1,862	229	855		63,214	62,923	291	118,473	19
7	3,000	1	150			887	763		124		5,172	5,101	71	17,929	20
41	20,258	6	2,000	1	150	2,705	1,564		1,141		15,468	14,620	848	84,390	21
16	7,530					670	466	15	189		29,694	29,547	147	45,253	22
4	2,244					670	490	123	52		7,076	6,990	86	13,362	23
13	6,700					1,075	898	8	169		14,066	13,990	76	28,250	24
7	4,279	2	320	2	100	4,728	750	33	3,940		3,776	3,712	64	15,845	25
10	5,178					4,255	3,090	85	1,110		5,827	5,427	400	20,904	26
654	475,982	54	18,820	3	655	101,828	4,975	20,985	75,468	400	2,788,611	2,708,840	79,771	3,695,056	27

stone, 2; models and patterns, 1; monuments and tombstones, 2; paper and wood pulp, 1; patent medicines and compounds, 1; shirts, 1; sugar and molasses, refining, 1; tin and terne plate, 2; wirework, including wire rope and cable, 1.

NORRISTOWN.

1,744	\$742,063	1,458	\$391,559	227	\$35,820	\$418,854	\$39,878	\$3,798	\$362,918	\$7,320	\$2,467,861	\$2,410,849	\$57,012	\$4,821,745	1
14	6,291					776	668	47	60		9,558	9,121	432	27,737	2
9	3,598					1,196	1,077	91	28		7,773	7,563	210	20,852	3
29	15,554	2	613			3,189	2,556	366	267		37,858	36,490	1,368	71,745	4
63	30,628					247	207	12	28		67,165	67,133	27	127,700	5

TABLE 8.—MANUFACTURES IN CITIES

NORRISTOWN—Continued.

	MANUFACTURING AND MECHANICAL INDUSTRIES.	Number of establishments.	CAPITAL.					Proprietors and firm members.	SALARIED OFFICIALS, CLERKS, ETC.		AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES.	
			Total.	Land.	Buildings.	Machinery, tools, and imple-ments.	Cash and sundries.		Number.	Salaries.	Total.	
											Average number.	Wages.
6	Clothing, men's, custom work and re- pairing.	9	\$23,065	\$1,000	\$6,000	\$1,140	\$14,925	8	1	\$350	30	\$14,612
7	Clothing, women's, dressmaking -----	11	4,290	100	250	1,800	2,550	12	-----	-----	49	9,456
8	Confectionery -----	4	8,340	-----	-----	615	7,725	4	-----	-----	10	8,752
9	Foundry and machine shop products.	9	322,601	22,504	69,050	109,000	122,047	9	14	15,276	237	115,253
10	Furniture, cabinetmaking, repairing, and upholstering.	4	3,575	800	900	925	1,450	4	-----	-----	3	1,078
11	Hosiery and knit goods -----	5	488,458	27,689	67,984	145,415	247,370	6	21	10,064	678	190,247
12	Lumber, planing mill products, includ- ing sash, doors, and blinds.	3	154,684	10,000	21,000	14,350	109,334	5	7	4,436	54	23,941
13	Masonry, brick and stone -----	3	1,750	-----	-----	700	1,050	6	-----	-----	22	8,420
14	Millinery, custom work -----	8	44,711	13,000	14,000	11	17,700	8	5	1,340	16	5,216
15	Monuments and tombstones -----	3	27,650	7,000	4,000	2,650	14,000	4	1	936	9	5,500
16	Painting, house, sign, etc -----	6	8,460	300	750	1,185	6,225	9	1	125	18	10,218
17	Photography -----	5	6,500	-----	-----	4,700	1,800	5	-----	-----	1	875
18	Plumbing, and gas and steam fitting -----	8	65,838	4,000	1,000	8,225	52,613	9	4	2,126	41	20,909
19	Printing and publishing, newspapers and periodicals.	4	189,450	27,000	55,000	86,250	21,200	2	8	5,720	53	21,078
20	Saddlery and harness -----	4	10,230	1,500	1,800	380	6,550	4	-----	-----	6	2,787
21	Tinsmithing, coppersmithing, and sheet-iron working.	5	9,000	1,000	2,200	2,000	3,800	4	-----	-----	9	4,070
22	Tobacco, cigars and cigarettes -----	10	263,480	5,700	22,500	9,025	226,255	15	9	14,516	598	168,537
23	Watch, clock, and jewelry repairing -----	7	5,215	800	1,200	2,575	1,140	7	-----	-----	9	4,026
24	Woolen goods -----	4	540,881	24,800	85,425	162,022	268,634	1	11	14,054	465	158,222
25	All other industries ¹ -----	49	1,804,400	178,950	387,581	685,547	557,372	53	81	61,245	1,004	343,861

¹ Embraces belting and hose, leather, 1; bicycle and tricycle repairing, 2; bottling, 2; carpets and rugs, other than rag, 2; carpets, rag, 1; carriages and wagons, 1; coffins, burial cases, and undertakers' goods, 1; cotton goods, 1; dyeing and cleaning, 1; flouring and grist mill products, 2; fur hats, 1; gas, illuminating and heating, 1; glass, 1; hats and caps, not including fur hats and wool hats, 2; ice, manufactured, 2; ink, writing, 1; iron and steel, 1; iron and steel, nails and spikes, cut and wrought, including wire nails, 1; liquors, malt, 1; lock and gun smithing, 1; looking-glass and picture frames, 1; marble and stone work, 2;

PHILADELPHIA.

1 All industries	15,887	\$476,529,407	\$43,726,855	\$64,859,709	\$113,913,281	\$254,024,562	18,062	15,113	\$20,154,836	246,445	\$111,847,076
2 Agricultural implements	3	536,781	42,500	138,963	63,418	291,850	4	49	55,956	204	111,271
3 Artificial feathers and flowers	24	544,251	42,700	83,500	49,675	418,376	34	42	52,948	878	208,869
4 Artificial limbs	6	9,710			4,055	5,655	6	1	1,300	5	2,975
5 Awnings, tents, and sails	46	152,625	900	600	30,110	121,015	50	6	5,235	190	88,471
6 Babbitt metal and solder	3	19,723			500	19,223	3	1	400	13	5,703
7 Bags, other than paper	3	41,250			9,250	32,000	6	2	2,020	29	10,425
8 Bags, paper	7	58,627			19,152	34,475	7	7	6,924	88	31,041
9 Baking and yeast powders	5	32,550	1,200	5,000	8,150	18,200	5	1	780	17	8,326
10 Baskets, and rattan and willow ware	28	22,042	2,800	2,704	1,086	15,452	29	1	520	33	11,160
11 Belting and hose, leather	5	340,055	6,000	20,570	35,448	278,037	8	15	9,225	60	35,300
12 Bicycle and tricycle repairing	191	180,812	6,750	8,535	64,037	101,490	209	19	11,081	179	78,240
13 Bicycles and tricycles	11	165,850	3,000	5,000	21,000	136,850	18	10	7,430	72	41,774
14 Billiard tables and materials	5	47,435	4,000	3,000	1,935	38,500	6	2	1,560	17	9,986
15 Blacking	10	379,204	20,000	35,688	43,125	280,391	10	57	57,674	141	48,055
16 Blacksmithing and wheelwrighting	414	775,254	225,775	185,886	118,605	215,988	456	6	4,286	706	430,138
17 Bluing	6	35,175	6,800	8,200	4,575	15,600	7			17	5,491
18 Bookbinding and blank book making	66	1,122,895	1,500	1,000	462,148	658,247	82	75	75,498	1,281	595,061
19 Boot and shoe cut stock	4	114,555			5,505	109,050	7	10	7,600	21	8,050
20 Boot and shoe uppers	13	31,880	11,950	10,150	1,915	7,365	14			25	12,638
21 Boots and shoes, custom work and repairing.	1,018	439,288	74,150	118,135	102,837	149,161	1,033	15	9,704	483	190,375
22 Boots and shoes, factory product	63	2,658,489	97,700	203,420	586,112	1,771,257	97	214	215,965	3,782	1,574,054
23 Bottling	218	1,865,976	269,900	290,044	167,259	939,773	234	72	65,435	579	304,236
24 Boxes, cigar	10	190,404	20,000	15,000	35,115	120,289	14	9	5,500	202	66,328
25 Boxes, fancy and paper	50	1,597,911	110,000	190,026	487,615	810,270	55	110	98,797	2,709	708,565
26 Boxes, wooden packing	29	663,499	89,800	108,500	146,054	319,145	33	35	27,819	582	253,718
27 Brass castings and brass finishing	33	1,805,055	188,500	191,878	858,705	1,065,912	40	95	108,712	704	345,876
28 Brassware	17	516,639	43,500	49,000	188,018	286,121	20	29	22,150	400	124,516
29 Bread and other bakery products	1,290	4,992,195	1,059,333	1,550,681	1,090,238	1,285,944	1,320	458	349,696	3,273	1,569,168
30 Brick and tile	87	2,448,668	541,498	590,913	417,874	898,385	49	47	53,593	1,451	678,201
31 Bridges	6	224,700	1,100	1,100	118,500	109,000	8	16	17,700	570	293,300
32 Bronze castings	3	229,692	27,000	26,000	40,200	136,492	3	18	26,468	105	67,093
33 Brooms and brushes	60	466,976	35,500	36,250	36,380	357,946	80	45	40,476	472	199,541
34 Buttons	17	376,982	21,500	27,580	140,478	187,424	26	25	26,992	623	215,566
35 Calcium lights	3	12,039			4,700	7,339	3	1	1,000	7	2,880
36 Card cutting and designing	16	99,132	8,000	2,600	40,779	52,753	21	1	520	113	54,540
37 Carpentering	731	5,048,584	331,720	378,148	456,626	3,884,040	838	210	172,775	4,337	2,747,800
38 Carpets and rugs, other than rag	88	16,865,764	316,375	2,527,255	4,774,463	8,648,671	102	296	330,155	12,190	5,092,252
39 Carpets, rag	55	149,901	22,675	51,100	18,637	57,489	63	4	2,880	227	72,531
40 Carpets, wood	4	38,699			6,050	32,649	9	10	5,430	57	24,634
41 Carriage and wagon materials	9	399,363	67,000	52,000	80,275	210,088	13	12	20,617	118	64,664

BY SPECIFIED INDUSTRIES: 1900—Continued.

NORRISTOWN—Continued.

AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES—continued.						MISCELLANEOUS EXPENSES.					COST OF MATERIALS USED.			Value of products, including custom work and repairing.	
Men, 16 years and over.		Women, 16 years and over.		Children, under 16 years.		Total.	Rent of works.	Taxes, not in- cluding internal revenue.	Rent of offices, interest, etc.	Contract work.	Total.	Principal materials, including mill supplies and freight.	Fuel and rent of power and heat.		
Average num- ber.	Wages.	Average num- ber.	Wages.	Average num- ber.	Wages.										
16	\$10,920	13	\$3,484	1	\$208	\$2,378	\$1,812	\$40	\$526		\$23,095	\$22,779	\$316	\$50,834	6
		49	9,456			1,089	1,074	5	10		6,640	6,450	190	23,475	7
8	3,572	1	100	1	80	1,690	1,410		180		9,516	9,211	305	18,784	8
236	115,045	1	208			7,943	929	582	6,282	\$150	165,055	156,812	8,243	848,328	9
2	1,814	1	364			194	167	11	16		5,270	5,145	125	10,890	10
109	43,814	404	131,409	105	15,024	29,265	700	711	27,854		456,344	453,934	2,410	798,698	11
54	23,941					3,670	600	477	2,593		89,027	89,027		91,100	12
22	8,420										1,586	1,586		16,483	13
9	5,500	16	5,216			1,474	1,234	205	35		21,261	21,011	250	35,156	14
						1,196	620	51	525		18,752	13,555	197	23,253	15
18	10,218					338	274	13	51		7,850	7,670	180	27,288	16
		1	375			592	484		108		4,208	4,100	108	7,784	17
41	20,909					3,058	2,024	46	988		72,757	72,489	268	125,280	18
48	19,486	5	1,592			5,887	1,600	424	8,863		14,110	12,479	1,640	58,961	19
6	2,787					644	512	30	102		5,717	5,670	47	11,640	20
9	4,670					502	444	42	16		5,801	5,200	101	15,033	21
128	55,487	421	105,550	49	7,500	125,356	1,500	275	123,581		225,783	224,289	1,494	562,073	22
9	4,026					719	655	21	43		1,730	1,670	60	18,600	23
253	96,243	180	56,075	32	5,904	32,451		660	31,791		385,858	376,270	9,588	680,879	24
661	259,640	304	77,117	39	6,604	195,101	19,331	4,629	163,971	7,170	880,643	851,190	29,453	1,649,772	25

mineral and soda waters, 1; oilcloth, enameled, 1; optical goods, 1; paper hanging, 2; patent medicines and compounds, 2; paving and paving materials, 1; plastering and stuccowork, 2; pottery, terra cotta, and fire-clay products, 1; printing and publishing, book and job, 1; roofing and roofing materials, 2; shirts, 1; slaughtering, wholesale, not including meat packing, 1; steam packing, 1; tobacco, chewing, smoking, and snuff, 1; wire, 1; wood, turned and carved, 1.

PHILADELPHIA.

172,011	\$91,540,077	61,688	\$18,151,177	12,746	\$2,155,822	\$55,575,685	\$5,607,288	\$1,222,710	\$28,978,408	\$19,767,279	\$326,877,441	\$320,634,140	\$6,193,301	\$603,466,526	1
204	111,271					44,329		1,486	42,843		177,453	166,573	10,880	416,930	2
84	40,185	521	137,021	268	81,713	59,790	17,508	1,018	34,264	1,000	466,724	464,350	2,374	948,763	3
5	2,975					1,699	1,075		524		4,627	4,574	53	21,747	4
119	70,435	69	17,706	2	330	20,220	12,203	46	7,980		223,762	222,573	1,189	468,926	5
18	5,703					1,199	1,130	22	47		45,509	44,914	595	63,310	6
8	4,650	21	5,775			2,446	1,924	45	477		85,220	84,970	250	130,208	7
48	22,331	40	8,660			4,820	3,272	144	1,410		111,814	111,079	735	215,240	8
17	8,326					2,395	1,450	70	875		37,525	36,723	802	70,001	9
28	10,426	1	208	4	582	3,054	2,455	101	498		24,119	24,021	98	58,678	10
58	34,940			2	360	8,109	2,930	308	4,871		299,402	297,719	1,683	427,964	11
168	76,284			11	1,956	36,164	28,951	356	5,687	1,170	138,339	134,042	4,297	407,771	12
72	41,774					20,878	5,015	103	10,760	5,000	193,603	191,398	2,205	289,900	13
17	9,986					2,185	1,068	80	1,037		24,565	24,485	80	51,837	14
46	22,117	85	24,191	10	1,747	40,074	9,652	1,144	35,878		229,552	226,600	2,952	491,278	15
995	428,093			11	2,045	65,405	51,368	5,342	8,195	500	278,305	258,106	20,259	1,281,850	16
7	2,941	8	800	7	1,750	1,186	390	281	515		18,699	18,377	322	37,694	17
635	858,247	579	167,752	67	9,065	104,851	59,003	507	36,908	8,433	539,408	529,793	9,615	1,571,502	18
21	8,050					1,142	898		244		368,224	366,895	1,329	406,000	19
20	10,266	5	2,272			1,988	664	246	928	160	32,004	31,781	223	57,641	20
464	184,697	16	5,245	3	433	124,104	95,455	3,138	16,171	9,340	342,689	336,065	6,624	1,216,926	21
2,194	1,095,170	1,303	399,810	285	79,074	348,545	37,815	3,434	298,123	4,173	3,860,157	3,834,815	25,342	5,931,045	22
573	302,582	2	624	4	1,030	287,881	42,360	125,697	119,408	416	5,247,663	5,238,927	8,736	6,548,604	23
130	47,287	71	18,841	1	200	23,974	1,706	450	21,758		194,671	192,877	1,794	338,696	24
578	249,252	1,825	415,896	306	43,417	134,045	46,722	3,660	83,663		1,005,931	989,509	16,422	2,412,087	25
572	251,834			10	1,884	82,028	9,284	2,599	21,045		890,441	881,074	9,367	1,411,781	26
700	343,326	4	2,050			123,128	14,120	5,262	103,179	507	1,682,196	1,654,887	27,309	2,554,629	27
256	97,737	59	13,863	85	12,916	29,336	10,047	850	18,239	200	218,635	212,691	5,944	490,063	28
2,825	1,464,688	376	101,716	72	12,759	440,127	156,384	89,564	244,660	119	5,709,048	5,542,153	160,895	10,461,689	29
1,430	673,296			21	4,905	195,100	49,088	6,433	139,579		283,085	78,281	204,804	1,497,301	30
570	293,300					77,110	1,420	15	6,325	69,350	470,880	464,480	6,400	1,022,390	31
105	67,093					32,530	1,800	592	28,608	1,530	284,816	279,325	5,491	470,042	32
358	176,340	83	18,058	31	5,143	35,358	19,509	1,081	14,593	175	476,504	472,069	3,895	935,245	33
289	139,132	277	67,464	60	8,980	15,556	6,823	810	7,743	180	330,600	326,685	3,915	723,805	34
7	2,886					1,432	1,004		423		3,286	3,286	518	17,774	35
106	51,520	3	2,400	4	620	6,377	3,030	128	2,133	1,536	37,244	36,446	798	150,414	36
4,327	2,744,818			10	2,982	10,596,845	77,614	11,307	120,221	10,387,703	5,072,603	5,059,009	13,594	21,751,145	37
6,157	3,095,414	5,268	1,876,093	765	120,745	1,448,363	95,074	38,946	1,039,697	279,646	13,223,263	13,015,562	207,711	21,965,002	38
201	66,808	25	5,554	1	169	13,034	4,776	970	3,510	3,778	116,970	115,979	991	269,080	39
57	24,684					10,613	3,710		6,908		76,273	74,856	1,417	165,148	40
112	63,294			6	1,370	18,469	3,102	1,884	11,483	2,000	122,855	116,420	6,435	219,773	41

TABLE 8.—MANUFACTURES IN CITIES

PHILADELPHIA—Continued.

MANUFACTURING AND MECHANICAL INDUSTRIES.		Number of establishments.	CAPITAL.					Proprietors and firm members.	SALARIED OFFICIALS, CLERKS, ETC.		AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES.	
			Total.	Land.	Buildings.	Machinery, tools, and implements.	Cash and sundries.		Number.	Salaries.	Total.	
											Average number.	Wages.
42	Carriages and sleds, children's.....	6	\$104,341			\$4,669	\$99,672	9	16	\$8,844	109	\$59,634
43	Carriages and wagons.....	133	2,126,386	\$515,534	\$511,195	191,025	908,632	167	63	70,359	1,400	746,395
44	Cars and general shop construction and repairs by steam railroad companies.	10	1,433,997	422,759	491,440	216,320	803,478		81	71,945	2,780	1,609,055
45	Cheese and butter, urban dairy products.	3	9,500	2,500	4,500	1,850	650	4			2	775
46	Cheese, butter, and condensed milk, factory product.	3	32,989	2,500	4,000	13,000	13,489	4	1	525	10	5,871
47	Chemicals.....	24	13,400,479	1,156,405	2,130,151	2,612,832	7,501,091	4	248	391,014	1,917	1,026,018
48	China decorating.....	12	26,905	12,050	6,550	2,523	5,782	12			16	7,809
49	Cleansing and polishing preparations.....	10	33,350	800	700	4,155	23,195	10	22	12,594	12	4,167
50	Cloth, sponging and refinishing.....	3	51,339	8,000	5,000	19,484	18,555	3	4	3,990	50	21,760
51	Clothing, horse.....	6	135,650			13,450	122,200	10	13	11,940	144	41,603
52	Clothing, men's, custom work and repairing.	750	2,685,896	196,740	179,545	118,879	2,190,782	844	198	159,497	2,576	1,297,082
53	Clothing, men's, factory product.....	397	8,141,180	187,640	188,000	228,213	7,587,327	535	587	647,912	6,463	3,301,070
54	Clothing, men's, factory product, buttonholes.	18	16,495			12,190	4,305	19	1	760	140	47,763
55	Clothing, women's, dressmaking.....	482	647,935	49,775	85,400	68,013	444,747	522	39	27,885	2,070	675,635
56	Clothing, women's, factory product.....	191	3,884,850	8,000	13,500	399,501	2,963,849	283	510	427,558	6,233	2,122,028
57	Coffee and spice, roasting and grinding.	43	1,167,821	83,500	110,400	178,808	795,113	60	135	176,686	308	137,379
58	Coffins, burial cases, and undertakers' goods.	4	46,760	800	1,600	560	43,800	5			21	9,698
59	Combs.....	4	86,515	12,000	5,000	20,044	49,471	9			156	55,350
60	Confectionery.....	338	3,235,945	502,050	623,680	727,339	1,382,876	381	414	330,781	2,622	870,441
61	Cooperage.....	53	1,097,863	209,980	179,338	51,740	656,805	67	15	14,936	331	167,129
62	Cordage and twine.....	9	3,906,458	229,000	312,700	796,650	2,567,208	12	59	73,255	1,168	398,905
63	Cork, cutting.....	6	161,345	10,800	28,164	85,688	86,693	8	9	10,604	161	34,745
64	Corsets.....	13	74,970	2,300	1,500	16,465	54,705	13	10	12,100	149	50,852
65	Cotton goods.....	122	12,541,083	661,041	1,582,915	4,342,514	5,954,613	174	361	457,239	9,334	3,573,536
66	Cotton small wares.....	21	1,839,258	107,600	215,500	578,734	987,524	32	39	55,674	1,361	436,807
67	Cotton waste.....	9	235,405	13,500	20,100	36,925	155,880	11	7	9,230	62	32,450
68	Crucibles.....	4	582,074	30,000	105,601	100,780	345,693	10	7	12,049	66	38,008
69	Cutlery and edge tools.....	11	264,303	25,500	53,800	96,350	88,653	14	15	13,078	115	59,600
70	Dentists' materials.....	17	1,278,171	120,000	217,000	202,028	739,143	20	66	64,134	590	314,017
71	Druggists' preparations, not including prescriptions.	15	4,513,682	193,700	459,406	421,717	3,438,859	18	312	352,200	1,172	408,289
72	Dyeing and cleaning.....	100	270,520	59,050	69,770	84,778	56,922	106	27	11,908	228	103,486
73	Dyeing and finishing textiles.....	91	4,981,889	690,622	903,848	1,757,929	1,623,950	143	164	172,043	3,455	1,678,434
74	Dye stuffs and extracts.....	3	63,912	10,000	15,000	13,150	15,762	4			17	7,976
75	Electrical apparatus and supplies.....	40	3,662,910	60,000	131,846	613,732	2,857,332	33	143	196,385	1,253	490,921
76	Electrical construction and repairs.....	66	304,632	9,000	2,000	55,485	238,147	80	47	45,625	885	218,820
77	Electroplating.....	34	106,151	5,000	1,000	58,250	41,901	45	6	4,976	141	63,708
78	Enameling and enameled goods.....	8	49,850	9,000	8,600	22,540	9,210	9	4	1,415	22	7,635
79	Engraving and diesinking.....	45	51,387			33,530	17,857	52	1	1,040	67	35,257
80	Engraving, steel, including plate printing.	30	369,567	18,750	28,000	186,245	136,572	43	79	50,800	530	257,110
81	Engraving, wood.....	16	53,850	5,500	3,000	2,950	42,400	20	1	1,000	24	12,964
82	Envelopes.....	5	176,084			78,498	97,586	9	19	13,853	139	47,707
83	Fancy articles, not elsewhere specified.	26	254,917	2,500	7,500	53,200	191,717	30	32	13,231	326	81,042
84	Fertilizers.....	6	2,330,918	371,838	347,753	253,443	1,357,884	3	96	136,657	443	218,943
85	Files.....	8	1,201,810	106,824	154,676	422,218	518,592	10	33	51,103	918	350,229
86	Flags and banners.....	3	9,268	1,000	1,200	606	6,462	3	2	1,352	10	4,028
87	Flavoring extracts.....	17	144,592	9,000	13,500	12,729	109,363	22	16	12,328	38	14,749
88	Flouring and grist mill products.....	17	340,595	58,400	53,809	62,700	165,686	22	15	15,510	71	40,398
89	Food preparations.....	34	638,985	65,400	69,553	118,780	390,247	43	120	78,087	363	138,362
90	Foundry and machine shop products.....	370	45,935,567	5,101,017	6,123,678	10,705,850	23,915,022	427	1,575	1,807,479	19,643	11,176,259
91	Fur goods.....	45	545,646	5,450	10,820	23,326	506,050	52	53	26,916	229	120,882
92	Fur hats.....	12	5,051,084	793,690	1,285,152	619,602	2,352,640	11	159	248,552	2,116	893,494
93	Furnishing goods, men's.....	32	642,568	8,500	7,500	78,028	543,540	46	123	181,791	988	301,437
94	Furniture, cabinetmaking, repairing, and upholstering.	351	727,119	72,850	103,725	76,499	474,045	389	34	29,965	880	469,969
95	Furniture, factory product.....	77	3,102,995	369,850	438,596	392,891	1,906,658	102	162	201,185	2,391	1,240,940
96	Galvanizing.....	4	133,560	30,000	17,000	17,826	68,734	6	9	11,956	122	51,448
97	Gas and lamp fixtures.....	22	1,597,581	52,500	74,230	292,058	1,178,793	22	105	116,480	937	402,754
98	Gas, illuminating and heating.....	3	21,745,611	1,487,948	1,391,539	17,042,515	1,873,609		281	285,093	2,560	1,201,347
99	Gas machines and meters.....	5	553,146	45,000	69,100	69,100	364,046	8	18	16,446	405	217,746
100	Glass.....	8	1,268,450	225,000	286,831	144,678	601,941	8	66	85,807	1,529	618,047
101	Glass, cutting, staining, and ornamenting.	41	246,190	8,500	9,300	58,212	170,178	48	48	82,298	385	197,563
102	Glue.....	3	1,911,949	105,000	140,000	135,200	1,531,749	6	17	32,000	437	171,089
103	Gold and silver, leaf and foil.....	8	408,894	59,900	92,900	47,602	214,492	12	6	5,268	189	87,780
104	Gold and silver, reducing and refining, not from the ore.	6	88,565	6,000	10,000	14,153	8,412	4	3	2,094	7	4,216
105	Grease and tallow.....	11	1,213,007	122,300	294,000	359,703	437,004	9	94	42,240	278	145,500
106	Hairwork.....	27	103,125	34,500	16,500	8,885	43,240	30	2	1,600	83	30,912
107	Hand knit goods.....	8	15,795	1,075	1,200	2,770	10,750	9			44	8,400
108	Hand stamps.....	13	176,877	11,000	7,500	78,161	80,216	19	14	15,425	101	50,480
109	Hardware.....	22	2,869,320	449,000	358,779	569,628	991,922	25	81	60,520	1,278	595,482
110	Hardware, saddlery.....	3	14,500	1,000	1,000	2,400	10,100	3	3	2,166	16	7,584
111	Hat and cap materials.....	6	88,200	12,000	8,000	5,600	62,600	8	2	1,500	27	11,350

BY SPECIFIED INDUSTRIES: 1900—Continued.

PHILADELPHIA—Continued.

AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES—continued.						MISCELLANEOUS EXPENSES.					COST OF MATERIALS USED.			Value of products, including custom work and repairing.	
Men, 16 years and over.		Women, 16 years and over.		Children, under 16 years.		Total.	Rent of works.	Taxes, not in- cluding internal revenue.	Rent of offices, interest, etc.	Contract work.	Total.	Principal materials, including mill supplies and freight.	Fuel and rent of power and heat.		
Average number.	Wages.	Average number.	Wages.	Average number.	Wages.										
96 1,396 2,717	\$55,884 745,710 1,596,045	9 2 63	\$3,150 450 13,010	4 2	\$600 235	\$30,475 150,483 24,681	\$5,980 33,936	\$71 11,810 6,972	\$24,424 98,773 17,659	\$5,964	\$103,953 607,331 1,945,770	\$103,153 585,807 1,920,320	\$800 21,524 25,450	\$239,442 1,960,779 3,651,401	42 43 44
2	775					40		36	4		6,432	6,237	195	7,588	45
10	5,371					4,274	2,150	72	2,052		76,264	75,108	1,156	96,409	46
1,701 12 8 49 25	965,483 6,317 2,957 21,650 10,618	208 4 4 92	58,702 1,492 1,210 25,526	8 1	1,828 100 5,459	454,636 2,153 9,433 7,431 29,920	13,525 1,584 1,227 2,280 5,550	26,125 323 63 170	414,986 246 8,193 4,981 1,870		4,333,716 7,806 17,614 2,558 248,779	4,077,927 6,895 17,290 1,265 247,726	255,789 911 324 1,293 1,053	7,810,456 32,760 50,598 62,548 888,750	47 48 49 50 51
2,043	1,125,347	483	164,021	50	7,714	591,295	237,536	5,819	146,782	201,208	2,034,858	2,018,415	16,443	5,616,886	52
4,177 76	2,598,569 31,212	2,121 49	677,175 14,456	165 15	30,326 2,095	1,998,753 3,959	213,176 2,614	5,050	320,154 1,945	1,460,373	9,629,915 16,883	9,597,511 15,579	32,404 804	18,802,637 102,181	53 54
218 1,803	132,844 978,808	1,334 4,367	540,568 1,138,231	13 63	2,223 9,989	112,179 465,679	86,435 133,363	2,247 5,608	21,973 230,216	1,524 96,492	792,929 5,039,999	786,284 5,009,491	6,645 30,508	2,240,090 9,452,259	55 56
228 13	116,209 7,564	79 8	21,014 2,134	1	156	80,918 2,718	20,259 1,560	3,108 13	57,551 1,140		1,905,633 15,133	1,885,666 15,057	19,967 76	2,642,030 40,680	57 58
117 1,182 331	47,112 561,323 167,129	24 1,288	5,326 288,602	15 152	2,912 20,516	5,044 329,087 127,670	1,492 93,516 20,420	245 15,806 4,889	3,307 219,495 18,663		100,406 3,423,298 1,025,142	98,124 8,367,690 1,019,378	2,282 55,608 5,764	185,143 6,000,815 1,490,119	59 60 61
535 75 11	255,958 21,262 7,118	529 47 123	127,955 8,250 41,799	104 39 15	14,992 5,283 1,935	65,032 29,650 5,134	2,100 2,061 4,856	3,572 301 40	59,360 27,282 738		4,210,942 102,922 67,404	4,197,714 101,595 67,124	13,228 1,327 280	5,291,239 195,907 178,090	62 63 64
4,383 295	2,086,936 137,064	4,055 970	1,943,190 281,583	896 96	143,410 17,160	1,371,465 196,405	123,714 20,562	26,205 4,222	754,507 81,211	407,039 90,410	8,249,823 862,620	8,050,137 841,218	199,686 21,402	15,723,654 1,896,644	65 66
58 66 115 368 384	31,300 38,008 59,000 224,680 200,386	4 219 781	1,090 88,817 200,723			13,365 10,446 6,030 55,460 525,523	4,188 1,200 1,130 11,446 25,981	688 1,588 726 5,102 3,808	8,239 7,658 4,174 38,912 435,731	250	479,317 495,403 38,647 937,764 2,000,476	474,785 487,265 31,946 927,333 1,979,291	4,582 8,138 6,701 10,431 21,185	583,894 689,307 182,124 1,736,976 3,900,189	67 68 69 70 71
143 3,037 11 991 377	74,668 1,483,556 6,600 434,341 216,475	82 200 5 139	28,296 54,662 1,250 34,697	3 218 1 123 8	521 40,216 125 21,883 2,345	41,597 411,749 3,886 461,236 63,402	13,761 67,182 200 37,576 20,052	2,329 25,293 175 7,467 145	24,132 316,369 3,390 247,611 16,915	1,375 2,905 61 163,612 26,290	59,618 2,440,916 27,249 2,198,146 435,960	62,787 2,165,715 26,459 2,157,594 433,534	6,831 275,201 790 40,552 2,426	848,200 5,562,999 49,200 4,230,619 945,622	72 73 74 75 76
129 14 62 321	60,345 6,087 34,326 197,654	8 8 1 194	2,751 1,548 300 67,336	4 4 4 15	612 631 681 2,120	13,157 2,311 8,500 51,098	10,608 1,068 7,125 18,297	42 165 11 649	2,507 910 1,394 31,152		40,440 10,252 13,883 176,492	36,016 9,686 12,561 171,922	4,424 566 1,322 4,570	139,808 39,485 123,261 763,526	77 78 79 80
23	12,808			1	156	7,203	1,665	148	890	4,500	3,781	3,729	52	46,631	81
33 111 443 661 6	14,930 42,101 218,943 291,230 3,073	100 208 117 4	31,841 38,474 34,692 955	6 7 140	936 1,367 24,307	14,169 21,003 162,851 97,668 925	7,720 11,203 13,114 3,850 520	132 167 6,828 3,850 41	6,317 6,333 134,186 89,677 364		101,916 170,739 1,755,111 372,900 2,465	99,083 168,618 1,727,332 342,106 2,450	2,833 2,121 27,779 30,794 15	243,486 417,823 2,375,750 1,013,593 12,811	82 83 84 85 86
31 71 255 19,488 77	12,709 40,398 110,807 11,134,969 68,997	7 106 40 146	2,040 26,505 12,381 56,879			17,813 21,660 105,982 2,083,910 60,267	5,097 7,240 10,804 223,205 32,083	303 1,193 1,792 101,738 213	10,363 13,227 93,386 1,628,226 27,761	2,050	116,759 1,215,265 760,024 18,651,390 317,139	116,391 1,204,505 742,069 18,042,312 315,291	368 10,760 7,955 509,078 1,848	242,250 1,330,063 1,232,722 38,372,971 752,285	87 88 89 90 91
1,515 162 727	743,035 77,980 420,166	504 797 145	135,293 219,233 48,372	97 29 8	15,160 4,224 1,431	305,104 67,180 158,248	7,316 20,736 68,963	5,574 393 2,860	272,329 36,051 32,448	19,885	1,090,428 1,303,985 635,629	1,064,674 1,304,933 629,607	25,754 4,032 6,022	3,075,470 2,057,636 1,906,494	92 93 94
2,342 122	1,229,623 51,448	18	5,820	31	5,497	233,359 11,409	55,481 2,064	9,954 489	165,124 8,556	2,800	1,912,327 146,406	1,885,462 141,416	26,865 4,990	4,416,703 296,326	95 96
897 2,560 339 1,100 336	452,435 1,201,347 213,900 545,781 186,787	27 13 102 28	7,095 3,300 24,340 7,683	13 3 327 21	3,224 546 47,926 3,193	132,496 694,339 8,673 62,423 35,838	37,154 351,469 3,215 1,114 17,489	2,843 3,498 1,248 6,014 353	88,999 339,372 3,910 63,795 16,886	3,500 800 1,800 805	793,693 2,651,482 293,615 337,760 163,104	774,881 2,630,722 292,982 305,903 150,355	18,812 30,764 6,633 31,847 6,749	1,748,198 5,578,873 715,185 1,347,011 544,801	97 98 99 100 101
409 137 6	163,309 78,794 3,956	3 44 1	780 12,304 260	25 8	6,500 1,632	159,022 4,072 3,240	108 729 1,884	12,314 1,792 31	146,000 1,551 1,825		901,940 341,534 90,679	849,913 339,879 90,255	52,022 1,655 424	1,291,204 483,192 114,109	102 103 104
278 14	145,500 9,034	68	21,696	1	182	130,404 7,416	7,760 4,620	4,832 813	117,812 1,643	340	1,466,604 39,509	1,429,489 38,881	37,225 628	1,978,545 119,329	105 106
81 1,193 14 17	46,706 572,051 7,324 8,966	11 43 7	2,200 15,630 1,760	9 37 2 3	1,574 7,801 260 624	12,080 145,382 651 4,282	5,436 6,557 435 2,870	42 280 13,570 37	178 6,344 125,295 179	524 460	7,650 39,360 594,225 10,760 99,586	7,605 37,454 567,052 9,972 99,460	45 1,906 27,173 728 126	83,303 151,427 1,761,875 27,555 136,821	107 108 109 110 111

TABLE 8.—MANUFACTURES IN CITIES

PHILADELPHIA—Continued.

	MANUFACTURING AND MECHANICAL INDUSTRIES.	Number of establishments.	CAPITAL.					Proprietors and firm members.	SALARIED OFFICIALS, CLERKS, ETC.		AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES.	
			Total.	Land.	Buildings.	Machinery, tools, and implements.	Cash and sundries.		Number.	Salaries.	Total.	
											Average number.	Wages.
112	Hats and caps, not including fur hats and wool hats.	66	\$189,147	\$27,800	\$22,200	\$91,522	\$347,625	88	62	\$56,935	772	\$291,414
113	Hosiery and knit goods	142	10,024,606	465,582	1,098,599	3,426,783	5,033,642	171	364	388,426	11,944	3,567,087
114	House furnishing goods, not elsewhere specified.	11	455,278	28,000	83,000	80,057	264,221	15	29	18,761	261	79,470
115	Ice, manufactured	20	3,158,914	455,850	644,551	1,653,575	404,938	3	117	71,435	345	191,465
116	Ink, printing	7	471,006	73,000	47,000	74,099	276,907	7	29	60,824	78	47,947
117	Ink, writing	8	17,003	250	750	1,175	14,828	4	2	2,500	9	3,492
118	Instruments, professional and scientific.	32	700,443	93,000	65,720	236,903	364,820	49	42	31,049	555	291,649
119	Iron and steel	8	6,069,671	829,594	484,119	1,242,299	3,518,659	6	213	298,804	2,815	1,866,572
120	Iron and steel, bolts, nuts, washers, and rivets.	7	1,802,846	368,600	172,080	604,105	668,061	9	35	60,760	1,178	368,387
121	Iron and steel, forgings	7	196,604	6,000	8,500	78,146	104,018	10	12	14,400	184	127,080
122	Ironwork, architectural and ornamental.	46	1,493,811	157,400	181,120	368,290	792,001	54	86	82,342	876	476,269
123	Ivory and bone work	6	89,190	1,000	3,000	24,500	60,690	6	6	7,000	107	39,454
124	Japanning	6	26,680	2,000	8,000	8,870	12,810	7	1	300	23	8,763
125	Jewelry	19	679,287	15,000	5,000	116,473	542,814	25	58	37,027	402	183,493
126	Jewelry and instrument cases	6	64,760			13,300	41,460	8	5	2,560	76	28,928
127	Jute and jute goods	4	926,800	128,700	181,844	120,500	545,756	4	9	7,948	619	168,455
128	Knolin and other earth grinding	5	178,593	48,500	42,234	30,238	57,591	4	10	19,840	57	28,433
129	Kindling wood	5	30,400	6,500	7,250	6,600	10,050	7	1	780	32	12,918
130	Labels and tags	7	45,595			23,200	22,395	9	8	7,116	62	12,507
131	Lamps and reflectors	9	151,000			23,860	127,206	12	20	21,810	154	79,945
132	Lapidary work	8	8,800			700	8,100	3			4	3,000
133	Lasts	5	100,676	18,000	19,922	21,494	41,260	5	4	4,134	72	36,914
134	Lead, bar, pipe, and sheet	5	550,736	118,000	78,000	131,625	223,111	9	11	11,145	71	43,681
135	Leather goods	19	827,001	60,400	44,300	90,459	681,842	29	98	103,762	1,168	380,868
136	Leather, tanned, curried, and finished.	44	9,106,989	476,294	1,506,212	965,698	6,158,785	65	169	184,746	5,781	2,529,120
137	Lime and cement	4	371,991	106,751	92,554	87,008	85,678	2	16	13,257	80	23,136
138	Liquors, malt	59	27,638,289	3,118,209	9,688,933	4,876,147	10,003,000	50	303	652,148	1,791	1,229,248
139	Lithography and engraving	22	1,022,118	18,000	24,000	654,737	325,381	25	46	57,234	609	264,467
140	Lock and gun smithing	126	129,139	17,620	32,177	32,274	47,068	132	1	156	70	36,094
141	Looking-glass and picture frames	74	368,843	3,300	3,200	52,145	310,198	93	65	41,984	309	142,879
142	Lumber and timber products	4	289,200	65,600	40,000	53,100	130,500	5	10	1,380	100	44,936
143	Lumber, planing mill products, including sash, doors, and blinds.	37	2,670,749	441,750	324,358	328,076	1,576,565	44	112	114,361	1,605	807,418
144	Malt	3	644,000	70,000	110,000	21,000	443,000	2	11	22,950	33	18,652
145	Mantels, slate, marble, and marbleized.	5	59,473	3,500	7,500	2,835	45,638	4	12	9,570	35	20,220
146	Marble and stone work	78	2,126,726	597,560	130,330	260,864	1,137,972	108	53	51,982	1,028	652,395
147	Masonry, brick and stone	264	4,910,820	537,350	721,500	403,426	3,248,544	319	142	133,872	4,897	2,906,682
148	Mattresses and spring beds.	37	836,778	11,700	15,900	51,177	254,896	35	43	25,907	339	139,131
149	Millinery and lace goods	37	606,892	97,000	48,500	68,897	397,495	48	52	44,612	759	275,061
150	Millinery, custom work	211	723,867	164,280	118,475	18,731	427,381	241	69	29,228	742	254,704
151	Mineral and soda waters.	51	493,296	26,800	53,700	196,649	126,647	70	89	26,952	169	80,330
152	Mirrors	4	56,210			5,060	51,150	3	4	4,250	42	21,126
153	Models and patterns	40	273,264	8,000	9,500	70,760	190,004	49	8	7,920	270	160,890
154	Monuments and tombstones	41	387,256	84,350	39,010	19,040	194,356	50	9	7,076	214	145,852
155	Mucilage and paste	12	263,088			31,857	231,231	12	34	35,084	80	23,488
156	Musical instruments and materials, not specified.	16	152,098	11,900	15,600	26,990	97,518	22	7	3,830	70	40,703
157	Musical instruments, organs and materials.	6	40,822			3,575	37,247	9	1	780	52	33,850
158	Musical instruments, pianos and materials.	7	875,042	50,000	25,000	32,427	267,615	7	27	34,650	184	119,716
159	Needles and pins	3	9,565			5,500	4,065	4	1	720	15	6,926
160	Oil, not elsewhere specified	8	216,097	51,000	12,000	45,150	107,947	10	22	19,870	27	16,075
161	Optical goods	49	422,468	76,000	30,000	88,979	227,489	58	54	37,057	387	141,461
162	Painting, house, sign, etc.	594	1,151,808	131,260	138,695	149,388	732,465	655	76	66,185	2,364	1,438,451
163	Paints	80	7,531,243	1,202,950	887,203	2,326,366	3,114,724	18	278	296,485	1,071	502,925
164	Paper and wood pulp	7	2,071,431	224,378	348,422	1,217,614	881,017	5	45	60,876	933	388,617
165	Paper goods, not elsewhere specified	14	568,266	63,000	73,749	62,950	368,567	15	27	29,850	279	105,038
166	Paper hanging	302	747,209	107,400	139,242	27,032	473,535	332	51	28,585	931	553,339
167	Paper hangings	11	1,472,171	45,000	151,250	597,749	678,172	8	70	103,023	663	316,047
168	Patent medicines and compounds	78	2,116,874	118,800	127,300	241,950	1,628,824	80	219	186,839	659	255,285
169	Paving and paving materials	68	3,227,092	166,279	410,605	276,577	2,373,571	68	118	109,890	3,111	1,522,765
170	Perfumery and cosmetics	21	299,106	15,000	11,250	20,485	249,371	26	54	44,252	162	47,889
171	Photographic materials	13	225,805	11,400	19,500	57,400	137,505	14	24	23,276	119	48,024
172	Photography	129	494,048	30,100	38,000	244,441	181,507	150	69	47,475	353	156,354
173	Photolithographing and photoengraving.	9	257,975	15,000	31,000	127,100	84,875	8	37	31,787	218	141,111
174	Pickles, preserves, and sauces	17	392,490	40,500	88,825	61,110	202,055	20	59	28,796	236	89,364
175	Pipes, tobacco	6	150,363	10,000	18,000	34,175	93,188	7	4	3,754	229	99,077
176	Plastering and stucco work	79	181,973	29,525	38,025	31,758	82,665	90	8	5,880	352	207,951
177	Plated and britannia ware	3	24,000			18,000	6,000	3	1	624	29	11,037
178	Plumbers' supplies	12	1,270,913	143,550	174,450	220,400	732,513	15	90	84,868	457	229,952
179	Plumbing, and gas and steam fitting	685	2,381,553	265,720	372,330	284,915	1,458,588	772	153	120,070	2,629	1,527,427
180	Pocketbooks	5	98,050			5,864	92,186	8	10	8,810	104	82,518
181	Pottery, terra cotta, and fire-clay products.	16	980,511	300,219	281,800	108,080	296,412	18	37	41,138	494	228,887

BY SPECIFIED INDUSTRIES: 1900—Continued.

PHILADELPHIA—Continued.

AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES—continued.						MISCELLANEOUS EXPENSES.					COST OF MATERIALS USED.			Value of products, including custom work and repairing.	
Men, 16 years and over.		Women, 16 years and over.		Children, under 16 years.		Total.	Rent of works.	Taxes, not including internal revenue.	Rent of offices, interest, etc.	Contract work.	Total.	Principal materials, including mill supplies and freight.	Fuel and rent of power and heat.		
Average number.	Wages.	Average number.	Wages.	Average number.	Wages.										
310	\$168,351	453	\$121,769	9	\$1,294	\$48,604	\$22,240	\$850	\$22,774	\$2,740	\$807,296	\$801,842	\$5,454	\$1,364,100	112
2,243	1,035,051	7,542	2,193,999	2,159	338,037	1,447,055	86,691	15,590	686,090	658,684	6,174,278	6,062,085	112,193	13,040,905	113
84	28,895	168	48,947	9	1,628	41,415	5,350	1,625	25,590	8,850	403,876	399,728	4,148	586,949	114
845	191,465					118,795	8,326	12,991	97,478		204,085	74,752	129,333	894,592	115
76	47,427	1	260	1	260	33,477	2,705	1,072	29,700		204,482	199,089	5,393	407,966	116
5	2,156	4	1,336			3,433	900	13	2,520		15,770	15,662	108	29,288	117
587	286,187	11	4,394	7	1,068	61,375	18,677	1,387	41,311		182,527	172,306	10,221	783,544	118
2,806	1,864,672			9	1,900	671,868	1,365	10,408	214,985	445,110	3,561,526	3,227,103	337,423	7,208,948	119
1,032	342,087			146	26,250	66,362	3,410	6,430	56,522		982,620	949,785	32,835	1,885,494	120
184	127,080					17,281	7,649	680	8,955		209,494	196,858	12,636	455,903	121
874	475,653			2	616	94,593	16,515	3,086	43,776	81,218	1,282,381	1,214,234	18,147	2,118,622	122
92	35,154	12	3,790	3	510	2,416	1,673	55	688		70,587	69,622	915	156,719	123
19	7,973	1	280	3	500	2,636	1,812	45	779		6,649	5,859	790	23,752	124
299	157,046	82	22,981	21	3,466	36,719	11,936	355	22,723	1,705	244,478	239,879	4,599	647,559	125
34	18,941	36	9,073	6	914	4,498	3,085	15	1,393		52,490	51,575	915	109,712	126
226	91,481	236	49,117	157	27,857	37,509	300	685	14,127	22,397	523,121	517,763	5,358	870,306	127
57	28,433					13,238	1,500	1,270	10,468		100,064	94,118	5,946	182,586	128
32	12,918					3,444	643	199	2,602		28,384	28,200	184	64,577	129
19	7,690	41	4,500	2	317	4,040	2,956	834	384	250	36,878	36,348	530	71,253	130
145	78,065	5	1,287	4	593	22,164	6,830	37	15,297		98,226	94,844	3,382	274,486	131
4	3,000					338	312		26		1,101	1,020	81	8,500	132
67	35,659	2	720	3	535	5,130	1,616	494	3,020		20,273	18,567	1,706	87,330	133
71	43,681					24,619	2,000	2,631	19,985		885,931	878,743	7,188	990,809	134
524	249,073	533	98,872	111	12,923	102,019	20,694	1,891	79,431		782,125	778,922	3,203	1,768,894	135
5,318	2,402,022	253	76,680	210	50,418	685,050	32,904	29,209	618,999	3,938	13,429,241	13,332,841	96,400	18,187,231	136
80	23,136					13,297	2,200	2,187	8,910		114,246	104,216	10,030	194,910	137
1,790	1,228,780	1	468			6,062,010	20,566	119,806	5,921,638		2,876,982	2,622,915	254,067	12,606,551	138
507	241,045	74	19,050	28	4,372	104,389	22,055	490	61,104	20,740	289,212	280,671	8,541	905,478	139
64	34,311	2	1,060	4	723	17,452	13,315	877	1,785	995	37,919	35,285	2,634	175,305	140
274	135,138	17	4,192	18	3,049	50,882	33,766	196	16,895	25	381,915	379,099	2,816	807,212	141
100	44,936					8,763	2,550	1,624	4,589		383,653	383,653		543,492	142
1,495	782,868	66	18,355	44	6,200	163,396	40,255	9,056	116,759	2,326	1,678,773	1,660,822	17,951	3,200,142	143
38	18,652					8,755	3,700	1,655	3,400		214,691	211,311	3,380	300,300	144
35	20,220					3,912	1,530	204	2,178		57,464	57,452	12	131,017	145
1,026	651,744	1	495	1	156	125,376	24,477	9,485	82,594	8,820	801,179	785,247	15,932	1,937,349	146
4,896	2,906,442			1	240	2,066,178	24,062	26,243	144,147	1,871,726	5,978,692	5,964,129	14,563	13,565,550	147
235	105,526	99	32,565	5	1,040	46,361	20,362	435	25,555	12	515,653	511,731	3,919	881,898	148
102	56,604	619	217,009	8	1,448	78,090	29,673	2,635	45,782		743,043	737,563	5,480	1,446,984	149
9	8,062	714	244,014	19	2,628	64,513	41,171	5,120	18,222		787,366	784,986	2,380	1,636,868	150
165	79,490	1	290	3	550	51,329	9,676	1,715	39,393		131,793	128,637	3,156	436,945	151
41	20,918			1	208	3,325	1,438		1,887		90,543	89,193	1,350	140,999	152
265	159,967	2	458	3	465	19,044	11,968	237	6,709	130	90,531	86,161	4,370	877,788	153
213	145,644			1	208	15,273	3,503	1,364	5,181	5,225	162,947	161,546	1,401	448,287	154
46	17,772	33	5,555	1	156	33,232	6,152	133	26,897		350,805	348,280	2,575	519,149	155
69	40,838	1	365			5,855	1,675	401	2,998	781	32,645	31,529	1,116	120,188	156
51	33,550	1	800			5,944	2,789	5	1,904	1,296	18,550	17,149	1,401	74,411	157
176	118,716			8	1,000	86,047	4,402	1,003	30,642		138,791	131,833	7,458	446,108	158
10	5,824	2	572	3	530	606	474		132		1,570	1,300	270	16,300	159
24	15,575			3	500	6,453	1,700	310	4,443		164,893	162,188	2,705	250,984	160
187	96,541	188	42,762	17	2,158	62,360	30,926	1,631	28,678	1,125	254,315	248,920	5,395	704,177	161
2,350	1,480,604			14	2,847	135,327	65,093	4,141	40,763	25,330	913,151	909,106	4,045	3,559,437	162
1,001	484,345	67	18,086	3	494	372,274	22,356	13,870	288,657	47,891	3,180,084	3,072,074	108,610	5,923,930	163
785	343,342	193	44,275	5	1,000	217,104	5,800	8,121	201,223	1,960	1,511,057	1,344,447	166,610	2,695,749	164
174	79,143	104	25,745	1	150	20,874	9,130	1,503	9,241	500	547,112	542,848	4,264	944,991	165
922	561,719	2	520	7	1,100	70,976	41,690	3,456	26,418	5,412	483,682	481,888	1,744	1,608,821	166
447	269,566	89	26,310	127	20,171	147,545	36,707	4,800	106,088		1,424,441	1,404,513	19,928	2,062,839	167
326	163,845	328	85,735	5	705	700,607	99,105	3,051	717,639	812	973,389	958,678	14,716	3,018,034	168
3,109	1,622,515			2	250	429,852	19,568	5,434	394,732	10,118	1,903,387	1,887,416	21,921	4,898,975	169
33	15,641	115	29,810	14	1,938	90,701	14,004	652	76,045		254,100	252,663	1,437	531,291	170
78	36,398	35	10,708	6	918	27,288	8,590	386	18,342		140,381	138,484	2,367	319,232	171
228	119,644	106	33,306	19	3,404	97,802	68,003	1,026	24,968	3,805	205,699	203,447	2,252	759,061	172
198	136,180	11	3,565	9	1,366	30,455	5,133	502	22,615	2,200	44,139	39,892	4,247	296,357	173
159	67,054	77	22,310			38,195	8,172	1,443	28,580		425,680	420,462	5,168	601,524	174
195	91,047	19	5,340	15	2,690	8,217	1,380	417	6,420		107,181	104,778	2,353	234,715	175
351	207,785			1	156	44,881	8,374	1,017	6,445	29,045	136,672	136,251	421	533,705	176
22	9,376	6	1,505	1	156	2,305	1,590		745		5,318	4,863	455	25,325	177
428	222,410	18	5,236	11	2,306	35,194	12,322	4,165	17,982	725	449,260	436,772	12,488	873,150	178
2,593	1,521,101			36	6,326	177,247	88,303	10,168	63,885	15,391	2,993,807	2,973,037	20,770	6,294,008	179
55	21,821	38	9,672	11	1,525	13,725	4,996		56,920		57,342	56,920	422	133,264	180
481	226,0,87														

TABLE 8.—MANUFACTURES IN CITIES

PHILADELPHIA—Continued.

MANUFACTURING AND MECHANICAL INDUSTRIES.	Number of establishments.	CAPITAL.					Proprietors and firm members.	SALARIED OFFICIALS, CLERKS, ETC.		AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES.	
		Total.	Land.	Buildings.	Machinery, tools, and implements.	Cash and sundries.		Number.	Salaries.	Total.	
										Average number.	Wages.
182 Printing and publishing, book and job.	401	\$11,530,833	\$281,955	\$561,411	\$4,650,078	\$6,037,339	458	844	\$775,094	5,327	\$2,508,317
183 Printing and publishing, music.	12	479,288	25,000	20,000	180,142	254,146	19	38	47,840	233	93,351
184 Printing and publishing, newspapers and periodicals.	209	11,011,212	1,455,425	1,631,064	3,692,143	4,232,580	190	1,986	1,989,881	3,397	2,111,009
185 Printing materials.	9	36,927			15,998	20,929	10	5	1,845	30	10,692
186 Pumps, not including steam pumps.	4	45,259	13,500	16,050	870	14,839	4	2	2,004	8	4,354
187 Refrigerators.	8	27,500	1,000	3,000	15,700	7,800	4	1	500	55	40,500
188 Regalia and society banners and emblems.	11	141,906	10,500	10,500	36,656	84,250	15	15	9,960	114	48,462
189 Roofing and roofing materials.	105	600,658	48,750	72,400	176,132	303,371	112	66	57,321	542	272,321
190 Rubber and elastic goods.	6	219,575	22,000	11,500	20,325	155,750	9	7	4,720	86	83,100
191 Saddlery and harness.	169	435,403	44,200	56,400	36,742	298,061	173	14	11,172	298	161,115
192 Safes and vaults.	4	479,421	5,000	35,207	103,432	335,782	3	33	43,108	211	110,978
193 Sausage.	11	31,365	9,800	9,900	7,180	4,485	13	1	1,000	21	10,847
194 Saws.	4	4,231,103	804,051	425,234	566,041	2,935,777	4	69	76,239	1,310	631,582
195 Scales and balances.	5	160,300	4,000	14,000	33,900	108,400	9	8	5,820	116	64,808
196 Sewing machine repairing.	19	21,714			9,379	12,335	17	1	1,040	29	14,272
197 Ship and boat building, wooden.	10	51,955	8,400	9,000	12,630	21,925	14			69	38,184
198 Shirts.	60	2,124,862	61,750	90,250	197,605	1,775,257	93	213	208,485	2,820	915,523
199 Shoddy.	21	823,088	78,050	130,600	207,688	406,145	12	32	23,186	324	132,226
200 Show cases.	8	27,000			5,000	22,000	3	2	1,300	35	20,800
201 Silk and silk goods.	28	3,813,532	46,666	220,000	898,404	2,648,462	49	184	179,253	2,506	826,456
202 Silverware.	4	165,600	32,000	10,000	65,000	58,600	7	10	6,412	55	38,736
203 Slaughtering and meat packing, wholesale.	22	1,417,092	196,700	251,092	245,400	723,810	36	118	86,637	353	198,110
204 Slaughtering, wholesale, not including meat packing.	36	465,730	59,000	123,000	43,884	239,846	50	23	25,288	264	174,500
205 Smelting and refining, not from the ore.	7	332,209	16,500	38,600	22,537	304,522	9	56	26,871	98	48,338
206 Soap and candles.	33	2,307,478	165,950	285,914	247,125	1,608,489	43	116	111,936	499	198,430
207 Soda water apparatus.	3	589,867			34,464	555,403	5	35	60,960	165	78,204
208 Sporting goods.	11	276,300	9,200	54,600	39,520	172,980	11	14	24,420	371	123,560
209 Springs, steel, car and carriage.	3	937,075	74,943	79,860	88,849	693,423	6	24	57,302	280	172,632
210 Stamped ware.	9	524,600	21,800	43,800	140,400	313,600	7	26	37,301	606	227,210
211 Stationery goods, not elsewhere specified.	4	11,300			4,500	6,800	6	6	5,010	20	5,200
212 Steam fittings and heating apparatus.	11	797,296	74,000	95,900	111,957	515,439	10	58	70,172	281	158,691
213 Steam packing.	17	386,990	4,000	11,562	88,465	232,963	20	68	78,813	238	96,088
214 Stencils and brands.	8	23,875	6,500	2,500	10,650	4,225	12	17	15,844	10	4,296
215 Stereotyping and electrotyping.	11	246,434			120,134	126,300	17	17	15,844	256	149,696
216 Sugar and molasses, refining.	7	23,992,552	2,750,000	2,050,000	2,649,719	16,542,833	15	110	135,078	1,249	647,592
217 Surgical appliances.	23	554,635	34,600	85,900	133,185	300,950	27	43	47,447	253	128,628
218 Taxidermy.	3	6,510	2,000	1,500	260	2,750	3			2	664
219 Tin andterne plate.	4	795,697	47,000	72,684	91,736	584,277	5	101	69,281	340	105,838
220 Tinsmithing, coppersmithing, and sheet-iron working.	437	2,636,068	295,365	370,649	545,375	1,424,674	502	172	137,317	2,304	1,218,139
221 Tobacco, chewing, smoking, and snuff.	6	852,379	76,447	216,442	189,255	370,235	5	9	4,230	48	21,063
222 Tobacco, cigars and cigarettes.	550	4,042,502	127,350	231,837	112,078	3,571,237	602	264	324,882	6,032	2,571,808
223 Tools, not elsewhere specified.	14	434,091	52,500	37,500	65,467	278,624	15	24	29,450	251	135,386
224 Toys and games.	13	243,427	24,300	60,400	42,328	116,404	13	9	17,924	232	76,000
225 Trunks and valises.	32	280,923	4,000	9,500	23,370	244,053	48	19	12,102	234	108,317
226 Umbrellas and canes.	36	1,245,056	30,750	40,147	193,044	981,115	57	135	157,745	1,628	550,374
227 Upholstering materials.	22	2,579,897	169,900	346,300	886,188	1,677,509	* 40	75	90,084	1,282	416,333
228 Varnish.	16	1,526,329	182,589	134,654	141,658	1,067,437	* 9	78	115,136	129	91,013
229 Vinegar and cider.	5	101,450	15,900	10,200	32,750	42,600	7	11	5,778	38	23,016
230 Washing machines and clothes wringers.	3	4,360	600	1,500	160	2,100	3			4	1,875
231 Watch, clock, and jewelry repairing.	354	476,027	45,330	68,355	128,987	238,355	375	11	6,080	337	183,443
232 Whips.	4	8,828			1,115	7,708	4	2	1,500	9	4,500
233 Window shades.	16	299,248	45,700	45,600	23,400	184,548	17	29	22,328	131	54,858
234 Wire.	3	110,137	20,000	15,158	30,049	44,930	4	3	2,850	65	29,953
235 Wirework, including wire rope and cable.	26	338,464	15,400	53,000	122,508	147,556	31	10	17,132	330	130,338
236 Wood, turned and carved.	54	315,730	36,400	37,400	76,485	165,445	67	11	10,284	358	149,697
237 Woodenware, not elsewhere specified.	10	85,850			20,805	64,551	13	9	6,280	99	48,197
238 Woolen goods.	98	12,874,265	751,762	1,525,003	3,515,721	7,078,779	126	216	252,655	9,438	3,622,765
239 Wool pulling.	5	178,740	15,000	26,700	15,400	121,640	7	4	2,192	69	36,203
240 Worsteds.	36	14,079,859	332,334	1,148,926	8,529,729	9,068,870	23	138	200,954	7,407	2,429,603
241 All other industries ¹ .	80	43,651,745	4,177,774	7,523,115	10,422,745	21,528,111	73	701	939,906	14,624	7,257,764

¹ Embraces artists' materials, 2; bells, 1; belting and hose, linen, 1; bone, ivory, and lampblack, 1; boots and shoes, rubber, 1; brass, 1; cardboard, 1; cars and general shop construction and repairs by street railroad companies, 2; cars, steam railroad, not including operations of railroad companies, 1; cars, street railroad, not including operations of railroad companies, 1; chocolate and cocoa products, 2; clocks, 1; drug grinding, 2; emery wheels, 2; engravers' materials, 2; felt goods, 1; firearms, 2; fire extinguishers, chemical, 2; fireworks, 1; fish, canning and preserving, 1; foundry supplies, 1; fruits and vegetables, canning and preserving, 2; furs, dressed, 2; gloves and mittens, 1; graphite and graphite refining, 1; grindstones, 1; hammocks, 1; hooks and eyes, 2; iron and steel, nails and

BY SPECIFIED INDUSTRIES: 1900—Continued.

PHILADELPHIA—Continued.

AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES—continued.						MISCELLANEOUS EXPENSES.					COST OF MATERIALS USED.			Value of products, including custom work and repairing.	
Men, 16 years and over.		Women, 16 years and over.		Children, under 16 years.		Total.	Rent of works.	Taxes, not in- cluding internal revenue.	Rent of offices, interest, etc.	Contract work.	Total.	Principal materials, including mill supplies and freight.	Fuel and rent of power and heat.		
Average num- ber.	Wages.	Average num- ber.	Wages.	Average num- ber.	Wages.										
3,856 165 2,882	\$2,107,512 77,916 1,940,581	1,207 66 426	\$359,882 15,632 155,911	261 2 89	\$10,893 406 14,517	\$1,626,292 45,038 2,374,571	\$241,859 11,752 184,191	\$3,388 585 40,961	\$552,127 17,643 1,474,766	\$922,918 15,058 674,653	\$2,948,999 107,590 3,640,590	\$2,863,897 105,319 3,541,068	\$85,102 2,271 99,522	\$10,066,740 365,295 13,076,840	182 183 184
17 8	8,373 4,354	12	2,130	1	189	4,699 5,067	3,373 135	267	1,328 4,470	195	21,912 22,617	21,248 22,617	664	50,019 42,587	185 186
55 20	40,500 14,125	92	33,946	2	390	4,863 13,600	2,016 3,606	27 296	2,820 7,698	2,000	37,040 70,133	36,500 69,296	540 837	100,367 106,592	187 188
541 80 282	272,171 81,370 157,049	6 9	1,730 2,762	1 7	150 1,304	98,768 3,049 38,811	18,316 483 28,547	1,383 344 1,589	79,069 2,102 8,355	120 320	551,378 282,825 272,594	548,151 281,994 270,306	3,227 831 2,288	1,226,267 407,110 709,689	189 190 191
211 21 1,139 116 25	110,978 10,847 642,832 64,808 12,812	46	12,250	125	26,500	56,677 1,781 64,504 10,681 4,461	3,170 1,041 1,510 1,656 3,776	683 426 2,529 225 3	12,824 314 60,465 8,250 682	40,000	165,024 47,278 917,601 60,295 16,374	158,820 46,197 890,873 64,363 15,601	6,204 1,081 26,728 1,932 773	565,138 75,475 2,286,471 178,000 51,141	192 193 194 195 196
67 496 253 35 676	37,784 267,333 113,928 20,800 307,079	2,236 69	633,604 17,934	97 2	14,586 364	4,143 315,916 42,965 5,001 299,965	1,804 71,609 6,103 4,256 55,878	173 2,591 2,633 19 2,563	1,483 103,033 31,704 816 94,451	683 138,783 2,525	21,342 1,937,564 966,181 25,700 2,291,074	20,961 1,919,819 950,944 25,010 2,255,688	378 17,745 15,237 690 35,986	91,957 3,979,408 1,285,411 66,600 4,531,794	197 198 199 200 201
54 353	38,586 198,110			1	150	3,810 73,903	1,110 12,116	737 5,347	1,963 56,440		53,033 4,317,472	52,083 4,290,873	950 26,699	178,550 5,128,823	202 203
261	173,848	1	500	2	152	147,771	95,999	2,570	49,202		6,003,593	5,990,843	12,750	6,891,680	204
98 340	48,338 102,286					38,942 433,544	2,385 12,762	1,251 4,885	35,306 415,197		912,183 1,554,511	904,337 1,534,996	7,796 19,515	1,092,352 2,716,357	205 206
163 177 280 406 9	77,684 76,446 172,632 123,037 2,660	2 173	520 43,844		3,270	52,409 8,972 131,762 13,751 3,563	9,220 3,145 10,000 3,123 1,795	1,574 656 1,850 1,365	41,615 5,171 119,912 8,410 1,668		181,600 203,720 761,131 235,394 13,607	179,803 201,924 727,981 227,887 13,220	1,797 1,796 33,150 7,507 387	454,102 495,765 1,375,621 578,220 47,000	207 208 209 210 211
255 203 10 246 1,171	152,432 87,378 4,296 147,696 635,281	11 35	2,736 8,710	15	3,523	70,143 52,916 1,770 23,970 604,371	6,880 12,330 1,422 12,100 11,600	2,259 413 166	61,004 39,673 182		382,781 385,866 5,762 117,269 3,000	378,435 378,618 5,700 110,890 33,414,459	4,346 7,248 62 6,379 248,981	809,225 769,116 31,217 404,319 36,163,817	212 213 214 215 216
100 2 264 2,206	101,833 664 86,743 1,194,412	84 76 43	25,383 19,095 11,231	9 55	1,412 12,496	54,015 633 38,202 247,195	8,628 444 375 80,859	1,758 56 1,628 9,792	30,629 133 36,199 143,855	13,000	160,944 3,490 1,378,564 2,146,642	157,871 3,480 1,371,712 2,126,648	3,073 10 6,852 19,994	530,190 9,750 1,761,936 4,731,473	217 218 219 220
34	16,894	14	4,169			117,133	602	1,339	115,192		102,939	101,113	1,826	303,246	221
4,153	2,038,973	1,751	511,471	128	21,364	1,258,818	114,209	6,552	1,137,979	78	3,321,261	3,312,938	8,323	8,687,349	222
232	131,928	13	2,500	6	958	13,825	4,794	1,546	7,435		292,776	281,960	10,816	657,928	223
103	51,156	42	13,945	87	10,890	26,702	2,106	920	22,166	1,510	74,452	72,829	1,623	240,640	224
210	101,938	16	5,281	8	1,148	45,427	16,091	224	22,612	6,500	220,731	219,465	1,266	492,730	225
679	276,881	970	259,707	73	13,786	198,216	37,090	1,061	159,990	75	1,879,852	1,862,805	17,047	3,145,446	226
442	197,772	702	205,973	78	12,588	133,680	16,980	5,791	106,965	3,944	1,771,336	1,754,686	16,750	2,769,758	227
127	90,673	1	240	1	100	115,278	2,000	4,707	55,971	52,000	1,027,649	1,020,056	7,593	1,523,259	228
38	23,016					7,781	2,500	430	4,851		142,380	139,985	2,395	214,075	229
4	1,875					384	204	20	160		3,190	3,180	10	8,660	230
294	180,073	10	3,726	33	4,644	80,893	47,161	1,950	10,064	21,718	178,264	174,053	4,211	820,889	231
9	4,500					1,397	1,092		305		13,333	13,173	160	28,675	232
116	48,803	12	4,989	3	566	16,287	2,912	1,538	11,637	200	164,144	163,009	1,135	332,350	233
65	29,953					2,040	600	406	1,034		158,508	151,812	6,696	218,390	234
239	116,094	55	10,994	36	3,250	11,901	5,742	603	4,956	800	199,842	195,316	4,526	496,056	235
825	145,389			33	4,308	24,077	10,481	1,033	12,113	450	155,127	149,830	5,797	427,538	236
77	44,832	4	611	18	2,754	17,621	5,740	29	11,852		79,905	78,466	1,439	182,194	237
5,102	2,307,245	3,579	1,177,305	757	138,215	1,098,240	89,865	29,022	725,934	253,419	11,751,083	11,551,911	199,177	18,340,012	238
69	36,203					6,568	2,400	690	3,478		7,703	5,243	2,400	75,206	239
2,799	1,278,230	3,300	917,067	1,308	234,297	1,408,925	88,404	15,189	891,080	414,252	10,513,700	10,376,616	142,034	16,242,250	240
12,907	6,836,042	859	259,720	858	161,402	1,657,420	100,502	66,636	1,283,883	206,399	32,693,939	32,053,103	635,836	49,557,873	241

spikes, cut and wrought, including wire nails, 2; iron and steel, pipe, wrought, 1; liquors, distilled, 2; mats and matting, 2; nets and seines, 1; oil, lard, 1; oil, linseed, 2; oilcloth, floor, 2; pens, fountain and stylographic, 1; pens, steel, 1; petroleum, refining, 2; phonographs and graphophones, 2; photographic apparatus, 2; sand and emery paper and cloth, 1; screws, machine, 2; sewing machines and attachments, 2; shipbuilding, iron and steel, 2; silversmithing, 2; tin foil, 1; type founding, 2; typewriter repairing, 2; typewriters and supplies, 1; vault lights and ventilators, 1; watch cases, 2; wood, preserving, 1; wool scouring, 1.

TABLE 8.—MANUFACTURES IN CITIES

PITTSBURG.

1	MANUFACTURING AND MECHANICAL INDUSTRIES.	Number of establishments.	CAPITAL.						Proprietors and firm members.	SALARIED OFFICIALS, CLERKS, ETC.		AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES.	
			Total.	Land.	Buildings.	Machinery, tools, and implements.	Cash and sundries.	Number.		Salaries.	Total.		
											Average number.	Wages.	
1	All industries	1,938	\$198,162,900	\$19,612,219	\$23,001,802	\$41,161,172	\$109,387,707	2,253	5,064	\$5,457,443	69,977	\$36,684,563	
2	Artificial limbs.....	3	20,085			8,585	11,500	4	11	4,212	33	13,994	
3	Awnings, tents, and sails	7	57,875		300	4,925	52,650	8	10	5,965	61	27,452	
4	Bicycle and tricycle repairing	13	18,135		100	4,715	8,320	17			5	2,114	
5	Blacksmithing and wheelwrighting	83	301,188	75,100	45,060	33,383	147,643	97	5	2,580	170	110,794	
6	Bookbinding and blank book making	7	40,808			25,000	15,808	8	3	3,000	87	32,692	
7	Boots and shoes, custom work and repairing.....	126	53,398	8,170	10,840	15,045	19,283	129	3	1,500	51	22,491	
8	Bottling.....	22	219,078	46,800	46,500	26,240	99,538	26	12	12,458	105	60,403	
9	Boxes, fancy and paper	4	48,929			18,116	30,813	6	1	225	137	31,711	
10	Brass castings and brass finishing	5	199,894	24,000	14,000	35,437	126,457	2	21	15,666	87	53,003	
11	Bread and other bakery products.....	83	2,122,318	169,850	312,536	1,100,845	589,087	88	219	198,374	1,108	424,123	
12	Brick and tile.....	21	1,232,110	502,600	306,633	188,274	234,603	33	31	28,295	671	300,963	
13	Brooms and brushes	4	248,965	4,000	5,000	28,245	206,720	10	2	1,800	131	42,200	
14	Carpentering.....	68	1,344,493	140,970	105,296	72,033	1,026,194	94	41	33,510	895	549,071	
15	Carpets, rag	5	6,350	1,000	1,150	2,200	2,000	5			15	4,466	
16	Carrriages and wagons	23	382,700	44,000	76,950	39,657	223,093	35	17	14,268	292	171,286	
17	Cars and general shop construction and repairs by steam railroad companies	4	170,635	16,500	57,500	50,115	46,520		43	36,823	921	417,505	
18	Chemicals.....	4	650,324	121,200	94,000	288,253	146,871	1	23	19,007	88	50,920	
19	China decorating	3	12,610			1,910	10,700	3	6	1,494	5	2,650	
20	Clothing, men's, custom work and repairing.....	142	756,271	66,400	74,000	22,845	593,026	173	67	54,242	728	376,927	
21	Clothing, men's, factory product	12	926,304	160,000	100,000	29,500	646,804	28	55	44,228	735	247,158	
22	Clothing, women's, dressmaking	55	137,516	500	700	14,180	122,136	61	14	8,516	331	107,444	
23	Clothing, women's, factory product	9	1,010,840			11,240	999,600	17	28	34,766	325	133,232	
24	Confectionery	11	334,378	18,000	22,000	39,432	255,446	15	129	55,810	322	76,075	
25	Cooperage.....	10	214,121	54,400	97,040	10,629	112,652	13	3	3,000	252	131,261	
26	Dyeing and cleaning.....	18	92,380	36,000	39,600	6,230	10,490	22	5	5,112	54	27,656	
27	Electrical apparatus and supplies.....	8	16,070,738	221,348	1,888,427	2,023,537	11,937,426	7	431	562,431	5,938	3,302,790	
28	Electrical construction and repairs	12	85,628	20,300	5,800	9,216	50,312	21	3	1,796	63	35,524	
29	Engraving and diesinking	3	815			55	220						
30	Engraving, steel, including plate printing.....	5	14,044			6,983	7,061	8	4	2,550	26	11,307	
31	Food preparations	3	55,000	6,500	18,000	18,500	12,000	4	1	780	39	12,232	
32	Foundry and machine shop products.....	83	14,897,525	2,656,636	2,206,332	8,611,596	6,422,961	82	448	564,233	6,359	3,609,721	
33	Fur goods	4	119,075	27,000	8,000	4,275	79,800	4	7	2,566	26	7,796	
34	Furniture, cabinetmaking, repairing, and upholstering.....	9	9,345	1,600	3,650	1,805	2,790	12			8	5,272	
35	Furniture, factory product.....	6	59,429	6,000	8,000	14,850	30,579	14	26	5,500	71	41,904	
36	Galvanizing	3	68,023		7,000	9,746	51,280	8	2	980	66	22,975	
37	Gas and lamp fixtures	5	75,263			15,400	59,863	6	17	17,156	66	31,307	
38	Gas, illuminating and heating.....	3	11,751,033	350,471	343,000	3,273,200	7,784,362		22	19,143	128	31,295	
39	Glass	16	3,588,202	835,274	748,444	631,788	1,372,698	5	107	136,971	2,104	1,132,985	
40	Glass, cutting, staining, and ornamenting.....	9	153,884	18,500	14,500	22,500	103,384	12	12	13,160	191	81,308	
41	Hand stamps.....	5	24,720			8,600	16,120	8	10	6,118	29	14,603	
42	Iron and steel.....	86	75,149,146	7,192,910	10,175,168	19,355,578	38,425,490	37	915	1,183,227	24,418	13,887,501	
43	Iron and steel, bolts, nuts, washers, and rivets.....	3	408,062	37,720	25,500	196,625	148,217	6	16	20,450	344	100,993	
44	Ironwork, architectural and ornamental.....	9	4,412,379	512,845	238,381	553,875	3,077,278	6	158	173,545	2,043	1,042,760	
45	Leather goods.....	3	7,735			85	7,650	5	1	52	1	300	
46	Liquors, malt	7	13,419,671	1,068,264	1,231,886	1,523,973	9,595,548		70	159,861	383	312,102	
47	Lithographing and engraving	8	53,000	3,500	8,500	25,500	15,500	9	3	4,100	22	9,156	
48	Lock and gun smithing	9	63,790	50,000	5,000	3,340	5,450	18	2	366	10	5,541	
49	Looking-glass and picture frames.....	16	105,556	6,500	2,100	3,694	93,262	17	14	8,544	62	30,602	
50	Lumber, planing mill products, including sash, doors, and blinds.....	13	740,333	99,136	108,437	90,616	442,094	24	33	30,082	296	174,808	
51	Marble and stone work	15	3,622,627	224,507	24,498	190,711	3,182,911	22	103	132,881	3,409	1,392,496	
52	Masonry, brick and stone	32	1,444,900	90,500	100,520	71,814	1,182,066	46	60	57,550	1,231	707,350	
53	Mattresses and spring beds	3	172,110	30,000	50,000	13,293	78,812	4	7	6,900	79	34,152	
54	Millinery, custom work	38	345,899	43,800	30,000	5,349	266,750	44	124	46,356	198	61,353	
55	Mineral and soda waters.....	10	137,785	21,000	11,200	48,010	57,575	10	22	16,622	52	23,408	
56	Mirrors.....	4	64,417		3,238	21,204	39,975	7	7	6,368	90	32,853	
57	Models and patterns	7	51,226		1,500	23,775	25,951	10	5	5,900	54	41,946	
58	Monuments and tombstones.....	11	131,289	50,250	15,050	13,122	52,867	14	3	2,540	75	58,036	
59	Oil, not elsewhere specified	3	134,644	46,515	15,701	7,575	64,853	2	16	27,778	12	5,942	
60	Optical goods	7	94,400	20,000	10,000	8,490	55,910	10	19	8,302	24	17,247	
61	Painting, house, sign, etc	47	823,421	48,000	53,100	13,463	203,858	59	15	10,286	325	194,767	
62	Paints.....	6	1,024,114	137,500	165,100	147,525	583,989	3	43	62,409	184	78,293	
63	Patent medicines and compounds	9	226,388		8,000	47,049	171,339	9	66	39,639	105	42,352	
64	Petroleum, refining	4	1,183,609	252,628	25,489	369,687	535,805	2	30	48,745	140	74,714	
65	Photography	27	49,463	400	1,200	13,675	29,183	30	9	4,108	42	21,829	
66	Photolithographing and photoengraving.....	6	34,075			17,500	16,575	11	6	3,692	50	27,518	

BY SPECIFIED INDUSTRIES: 1900--Continued.

PITTSBURG.

AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES—continued.						MISCELLANEOUS EXPENSES.					COST OF MATERIALS USED.			Value of products, including custom work and repairing.	
Men, 16 years and over.		Women, 16 years and over.		Children, under 16 years.		Total.	Rent of works.	Taxes, not in- cluding internal revenue.	Rent of offices, interest, etc.	Contract work.	Total.	Principal materials, including mill supplies and freight.	Fuel and rent of power and heat.		
Average number.	Wages.	Average number.	Wages.	Average number.	Wages.										
62,381	\$34,809,175	5,873	\$1,542,689	1,723	\$332,699	\$15,293,017	\$929,081	\$699,025	\$11,045,033	\$2,619,878	\$110,833,174	\$110,858,518	\$5,974,056	\$203,261,251	1
30	13,384	1	312	2	298	4,750	3,420	20	1,330	10,955	10,580	375	55,792	2	
33	18,666	28	8,786	1	190	6,426	3,840	5	2,566	62,949	62,509	440	140,725	3	
4	1,924			1	100	3,282	2,924	5	353	8,529	8,338	191	20,550	4	
169	110,616			1	178	18,056	12,031	2,456	3,569	115,833	109,798	6,035	375,332	5	
40	20,888	45	11,417	2	387	7,212	3,467	62	1,893	16,629	14,756	874	70,028	6	
50	22,335			1	156	19,301	17,498	412	1,451	49,718	48,626	1,092	158,184	7	
104	60,199			1	204	30,280	10,445	3,446	16,889	308,731	307,666	1,065	486,539	8	
26	12,050	87	16,725	24	2,936	6,421	3,816	170	2,435	45,833	45,233	600	102,100	9	
87	53,003					32,695	1,550	641	30,504	299,331	295,443	3,888	418,425	10	
594	332,831	333	65,628	182	25,664	276,068	39,996	10,473	225,599	1,359,423	1,327,380	32,034	2,709,293	11	
632	291,666			39	9,297	81,845	9,348	3,045	24,452	149,195	25,150	124,045	729,632	12	
95	35,218	37	6,732	2	250	10,798	6,492	278	4,028	164,856	163,979	877	248,038	13	
846	548,825			2	246	1,876,675	11,082	6,223	33,088	1,145,623	1,140,945	4,678	4,115,033	14	
10	3,256	5	1,200			1,082	697	75	310	2,280	2,138	151	11,034	15	
291	171,086			1	200	30,076	16,588	4,197	9,091	147,587	143,539	4,018	447,601	16	
866	401,687	55	18,418			2,890		587	2,353	258,001	244,841	8,660	710,219	17	
87	50,821			1	99	49,098	294	3,098	45,701	143,799	137,609	6,190	817,711	18	
4	2,450	1	200			1,789	938	42	651	10,351	9,991	360	20,892	19	
563	326,514	147	46,936	18	2,477	145,492	87,936	3,005	26,656	586,338	582,048	4,295	1,472,053	20	
169	91,810	556	153,824	10	1,524	45,186	17,758	3,754	10,624	801,772	794,490	7,282	1,270,717	21	
27	20,098	301	86,843	3	508	26,875	20,683	93	6,099	163,750	162,475	1,275	889,371	22	
72	38,611	253	94,621			68,985	7,750	175	61,080	388,195	385,775	2,420	631,000	23	
73	37,708	167	27,457	82	10,820	90,742	25,340	1,743	63,659	261,217	258,134	3,083	565,841	24	
238	124,363			14	6,898	7,214	2,794	2,021	2,396	424,242	422,707	1,535	805,815	25	
41	23,440	11	3,772	2	444	8,991	2,970	1,664	2,752	7,292	6,831	1,421	79,030	26	
5,269	3,096,580	641	200,148	28	6,002	1,113,783	4,486	21,861	1,009,075	8,838,186	8,744,593	93,603	14,013,450	27	
60	34,968			3	556	5,688	2,746	309	2,428	93,293	92,740	544	177,005	28	
20	10,663	5	1,180	1	104	264	264			9,237	9,068	169	5,300	29	
24	9,268	15	2,964			2,354	1,390	60	904	52,925	51,525	1,400	39,114	30	
6,290	3,593,094	15	5,099	54	11,523	1,729		629	1,100	52,925	51,525	1,400	80,717	31	
8	4,950	17	2,846			755,411	67,874	98,376	578,901	8,165,696	7,879,939	285,757	15,545,561	32	
7	5,152	1	120			4,263	1,700	760	1,763	79,625	79,093	432	113,500	33	
69	41,340					1,384	1,146	126	112	9,644	9,595	49	26,988	34	
66	22,976	2	624			7,373	3,825	318	3,080	42,718	40,905	1,813	136,645	35	
53	28,764					7,700	2,072	1,278	4,350	74,025	70,909	3,056	108,206	36	
128	81,295	12	2,361	1	182	15,180	6,940	179	3,061	69,945	69,080	865	155,850	37	
1,461	972,562	173	49,857	468	116,566	70,759	1,200	23,456	46,103	79,961	77,017	2,344	667,241	38	
87	51,949	97	27,859	7	1,500	136,914	2,920	20,739	113,286	741,562	659,751	181,811	2,423,686	39	
27	14,291					12,734	4,365	781	7,688	168,873	162,925	5,948	349,161	40	
28,821	18,765,044	290	58,580	2	312	5,659	2,870	87	2,702	10,983	10,401	492	51,945	41	
289	82,360	21	8,750	307	63,877	4,505,421	66,820	218,619	4,184,461	59,322,561	54,785,332	4,537,229	90,798,086	42	
2,028	1,038,939			34	9,883	8,937	2,250	2,100	4,587	371,265	359,969	11,296	578,121	43	
1	800			15	3,821	183,659	4,765	14,621	108,230	4,396,141	4,362,646	33,495	6,111,943	44	
383	312,102					407	291	29	87	4,702	4,701	1	6,525	45	
20	8,740					1,525,061		62,012	1,463,019	677,672	626,110	51,662	8,583,393	46	
8	5,111	1	200	1	156	2,652	1,300	627	725	13,205	12,990	215	81,600	47	
53	28,710	1	286	1	144	3,022	1,665	1,008	319	9,427	9,235	192	25,633	48	
296	174,368	2	662	7	1,230	13,109	11,142	668	1,380	76,508	77,899	619	162,030	49	
3,409	1,892,496					28,816	6,108	4,867	17,781	474,740	468,023	6,726	827,059	50	
1,231	707,350					213,949	4,665	10,570	48,119	886,864	877,027	9,237	8,180,631	51	
60	28,026	19	6,126			368,098	9,686	4,877	28,241	1,468,650	1,465,018	3,682	2,921,294	52	
7	3,848	185	56,491			23,450	3,780	914	18,756	157,959	157,209	750	245,597	53	
45	22,008	2	600	6	1,014	62,050	32,503	1,658	27,189	287,411	286,447	964	574,250	54	
63	26,717	27	6,136	5	800	19,320	1,367	1,305	10,018	41,119	40,029	180,810	130,810	55	
58	41,746					11,309	3,707	407	7,135	52,770	50,708	2,068	117,465	56	
76	58,086					5,000	3,310	172	1,527	22,897	21,620	1,377	100,818	57	
12	5,942					15,729	1,520	1,487	1,562	22,897	21,620	1,377	100,818	58	
22	16,822					4,486	1,875	840	2,271	252,467	252,182	275	322,656	59	
819	193,433	1	480	2	425	7,928	5,600	212	2,114	27,992	27,140	862	85,600	60	
170	69,543			5	844	21,670	13,364	1,593	6,713	150,322	149,743	579	485,903	61	
68	29,776	14	3,750			50,847	1,495	4,751	42,801	797,190	782,947	14,243	1,402,038	62	
140	74,714	47	12,576			133,680	9,441	8,708	121,259	289,287	287,537	1,750	685,148	63	
27	17,725					50,660	8,810	44,223	2,889	1,031,617	1,021,887	29,730	1,315,040	64	
45	26,532	14	3,974	1	130	21,817	12,606	6,272	2,158	30,901	30,438	443	132,099	65	
		8	624	2	312	7,031	3,935	17	1,196	13,966	12,433	1,533	78,767	66	

TABLE 8.—MANUFACTURES IN CITIES

PITTSBURG—Continued.

	MANUFACTURING AND MECHANICAL INDUSTRIES.	Number of establishments.	CAPITAL.					Proprietors and firm members.	SALARIED OFFICIALS, CLERKS, ETC.		AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES.	
			Total.	Land.	Buildings.	Machinery, tools, and implements.	Cash and sundries.		Number.	Salaries.	Total.	
											Average number.	Wages.
67	Plumbing, and gas and steam fitting.	107	\$638,693	\$57,875	\$68,600	\$56,796	\$455,422	139	38	\$24,964	481	\$313,851
68	Pottery, terra cotta, and fire-clay products.	8	2,774,471	462,939	935,279	158,503	1,217,750	143	143	136,964	1,995	509,035
69	Printing and publishing, book and job.	67	1,100,015	134,500	93,347	533,824	338,844	91	90	75,076	886	434,481
70	Printing and publishing, newspapers and periodicals.	45	3,849,792	390,500	612,150	1,147,855	1,759,287	29	444	890,857	1,229	966,818
71	Roofing and roofing materials	15	194,899	28,000	29,175	12,175	125,549	22	9	6,437	147	74,228
72	Saddlery and harness	32	141,389	10,700	18,650	13,630	98,409	37	9	7,400	99	53,255
73	Shirts	8	52,416		18,650	9,473	42,943	12	27	15,243	155	42,259
74	Slaughtering and meat packing, wholesale.	5	786,810	130,113	44,362	28,040	584,295	6	47	42,713	150	93,950
75	Smelting and refining, not from the ore.	5	347,350	43,000	33,500	22,250	248,600	10	10	18,830	87	49,731
76	Steam fittings and heating apparatus	9	356,168			63,250	292,908	1	47	55,590	205	99,345
77	Stereotyping and electrotyping	4	68,696			15,900	37,796	2	15	14,868	28	11,288
78	Tin and terne plate	4	374,336	65,000	32,000	112,700	164,636	4	19	20,130	215	115,647
79	Tinsmithing, coppersmithing, and sheet-iron working.	54	547,818	73,100	63,332	106,282	304,604	76	33	29,405	430	211,836
80	Tobacco, cigars and cigarettes	147	714,730	151,407	164,165	85,580	818,578	157	61	45,081	1,365	460,739
81	Tools, not elsewhere specified	6	545,903	47,000	44,000	123,513	331,390	5	34	42,802	317	189,279
82	Trunks and valises	3	15,917	2,000	3,000	320	10,597	4	2	850	12	5,680
83	Watch, clock, and jewelry repairing	68	130,376	14,250	17,100	37,710	61,316	71	9	3,152	131	78,577
84	Wirework, including wire rope and cable.	4	193,470			32,100	161,370	4	2	4,200	13	5,870
85	Wood, turned and carved.	3	3,190			2,100	1,090	3	2	700	2	858
86	All other industries	100	19,377,062	2,477,741	1,948,666	4,094,955	10,860,700	105	437	543,653	5,655	2,787,017

¹ Embraces artists' materials, 1; babbitt metal and solder, 2; baking and yeast powders, 1; baskets, and rattan and willow ware, 1; belting and hose, leather, 1; bicycles and tricycles, 1; boots and shoes, factory product, 1; boxes, wooden packing, 2; brassware, 2; bridges, 2; cars and general shop construction and repairs by street railroad companies, 1; cars, steam railroad, not including operations of railroad companies, 2; cleansing and polishing preparations, 1; coffee and spice, roasting and grinding, 2; coffins, burial cases, and undertakers' goods, 1; coke, 2; cork, cutting, 2; cotton waste, 1; cutlery and edge tools, 1; druggists' preparations, not including prescriptions, 1; electroplating, 2; explosives, 1; fancy articles, not elsewhere specified, 1; fertilizers, 2; flavoring extracts, 2; flouring and grist mill products, 2; foundry supplies, 2; fruits and vegetables, canning and preserving, 1; fur hats, 2; furnishing goods, men's, 2; gas and oil stoves, 2; gas machines and meters, 1; grease and tallow, 1; hairwork, 1; hats and caps, not including fur hats and wool hats, 2; house furnishing goods, not elsewhere specified, 2; ice,

READING.

	All industries	843	\$27,975,628	\$2,458,523	\$4,460,370	\$6,999,595	\$14,048,140	989	1,073	\$924,551	19,165	\$7,544,950
2	Bicycle and tricycle repairing.	7	7,276			3,585	3,691	9	2	500	7	2,508
3	Bicycles and tricycles.	4	656,816	54,380	67,662	137,346	397,428	37	28,722		407	165,106
4	Blacksmithing and wheelwrighting.	27	21,610	8,000	4,385	3,950	5,305	30			27	12,721
5	Bookbinding and blank book making.	3	27,100	5,000	7,000	10,674	4,526	3	2	780	33	10,671
6	Boots and shoes, custom work and repairing.	52	21,065	6,600	6,065	4,510	3,890	51	2	900	15	6,642
7	Bottling.	6	63,150	11,250	17,700	20,300	13,900	6	3	1,449	28	12,478
8	Boxes, cigar.	3	67,030	4,500	15,000	8,000	39,530	5	1	68	74	19,892
9	Boxes, fancy and paper.	6	66,109	6,450	15,000	24,225	20,434	9	2	1,500	111	27,444
10	Brass castings and brass finishing.	3	31,763	13,000	7,000	3,400	8,363	4	5	3,250	15	9,170
11	Bread and other bakery products.	51	284,713	50,000	82,825	95,388	56,500	59	31	18,666	217	104,412
12	Brick and tile.	3	9,750	1,000	3,200	1,300	4,250	3			24	7,887
13	Brooms and brushes.	7	27,550	2,050	3,675	2,875	18,950	11	5	1,018	48	12,805
14	Carpentering.	47	194,492	4,150	3,010	7,935	179,397	55	6	4,470	267	132,190
15	Carpets, rug.	8	11,425	3,800	5,200	905	1,520	9	1	312	5	1,910
16	Carriages and wagons.	12	443,721	55,000	76,359	75,578	286,784	11	21	9,737	203	83,115
17	Cars and general shop construction and repairs by steam railroad companies.	4	2,069,203	48,043	465,000	323,141	1,233,019		46	45,845	1,962	1,045,675
18	Clothing, men's, custom work and repairing.	41	236,094	41,700	34,800	8,190	151,404	48	23	14,748	315	111,504
19	Clothing, men's, factory product.	4	185,292	23,500	26,000	3,900	131,892	9	11	18,941	172	52,583
20	Clothing, women's, dressmaking.	11	9,850	2,800	2,800	3,025	1,725	17			54	15,109
21	Clothing, women's, factory product.	5	18,465			5,325	13,140	9			49	12,013
22	Coffee and spice, roasting and grinding.	3	12,158	1,000	1,500	2,050	7,608	4	1	700	3	1,728
23	Confectionery.	21	164,191	30,500	40,588	51,087	42,016	25	41	32,224	328	71,076
24	Dyeing and finishing textiles.	4	36,771			17,495	19,276	5	3	1,000	23	9,050
25	Electrical construction and repairs.	6	15,311	100	75	400	14,788	6	1	290	13	6,805
26	Foundry and machine shop products.	27	2,799,240	274,246	486,176	567,304	1,521,514	30	99	90,705	1,672	681,574
27	Fur hats.	3	623,408	48,000	66,055	101,130	408,223	6	20	19,767	731	283,000
28	Furniture, cabinetmaking, repairing, and upholstering.	14	28,326	3,000	3,100	8,710	18,516	17	3	750	18	9,272
29	Hardware.	4	1,784,544	86,000	185,438	516,657	946,449	4	119	98,284	1,587	600,861
30	Hosiery and knit goods.	21	710,128	33,950	32,904	283,832	309,442	24	50	58,315	1,667	390,857
31	Iron and steel.	7	8,182,619	536,460	1,895,829	1,925,223	4,275,102	1	108	157,689	3,769	1,612,011
32	Ironwork, architectural and ornamental.	4	50,668			7,679	42,984	4	3	3,640	49	21,299
33	Lime and cement.	3	950	100	300	55	495	4			5	1,605
34	Liquors, malt.	6	1,032,510	133,200	290,434	213,340	395,536	8	19	25,732	119	66,331
35	Looking-glass and picture frames.	4	9,675	325	325	600	8,305	4			7	2,778
36	Lumber, planing mill products, including sash, doors, and blinds.	5	178,949	15,675	25,050	38,376	99,848	7	6	4,666	146	69,467

BY SPECIFIED INDUSTRIES: 1900—Continued.

PITTSBURG—Continued.

AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES—continued.						MISCELLANEOUS EXPENSES.					COST OF MATERIALS USED.			Value of products, including custom work and repairing.	
Men, 16 years and over.		Women, 16 years and over.		Children, under 16 years.		Total.	Rent of works.	Taxes, not in- cluding internal revenue.	Rent of offices, interest, etc.	Contract work.	Total.	Principal materials, including mill supplies and freight.	Fuel and rent of power and heat.		
Average number.	Wages.	Average number.	Wages.	Average number.	Wages.										
478 1,978	\$313,426 505,801	16	\$3,034	3 1	\$425 200	\$32,014 86,252	\$26,566 2,806	\$3,099 15,586	\$22,236 55,300	\$113 12,500	\$632,144 839,153	\$627,491 726,475	\$4,653 112,678	\$1,297,816 2,118,962	67 68
581 1,124	359,924 926,640	249 96	66,567 38,506	56 9	8,020 1,072	116,728 457,182	45,433 78,196	8,239 21,046	41,778 309,919	21,278 47,991	513,223 835,531	498,839 812,364	14,384 23,167	1,396,292 3,247,809	69 70
146	73,916			1	312	9,297	3,934	1,882	3,481		288,064	288,386	578	427,625	71
97	52,909			2	256	15,501	10,308	875	4,321		83,960	83,362	508	229,805	72
6	4,976	147	36,997	2	286	5,892	2,492	50	3,295	55	75,803	74,581	1,222	157,573	73
148	93,525	2	425			28,001	4,650	2,876	20,475		1,779,600	1,774,137	5,463	2,054,521	74
87	49,731					17,583	1,640	810	14,613	520	1,005,020	997,008	8,012	1,239,309	75
201	98,025	4	1,320			32,173	10,120	1,007	21,051		344,496	340,011	4,455	644,180	76
29	9,776			8	1,512	4,143	2,222		1,921		17,151	16,886	765	70,437	77
191	110,451	21	5,196			10,534	500	3,321	6,713		1,451,395	1,444,296	7,039	1,837,926	78
410	208,239	5	1,535	15	2,062	47,815	19,464	2,872	21,856	3,623	378,395	372,124	6,271	861,476	79
474	229,621	790	225,722	101	5,396	708,689	14,789	5,672	688,228		371,666	368,283	3,383	1,757,499	80
302	185,488			15	3,791	25,219	5,050	5,199	16,000		307,449	289,189	18,260	666,253	81
12	5,680					1,007	850	126	631		7,260	7,255	5	19,890	82
123	77,340			8	1,237	16,165	10,811	1,132	4,222		77,824	76,409	1,415	251,378	83
12	5,714			1	156	8,599	1,917	49	6,603		31,637	31,127	510	59,831	84
2	858					578	470	36	72		1,470	1,259	211	7,955	85
4,586	2,585,822	906	176,043	163	25,152	1,363,558	69,703	59,735	1,234,120		11,499,488	11,243,242	256,246	20,717,239	86

manufactured, 2; ink, writing, 1; iron and steel, forgings, 2; iron and steel, nails and spikes, cut and wrought, including wire nails, 1; iron and steel, pipe, wrought, 1; lamps and reflectors, 2; lead, bar, pipe, and sheet, 1; lime and cement, 1; liquors, distilled, 1; millinery and lace goods, 1; oil, linseed, 1; oleomargarine, 1; paper hanging, 2; perfumery and cosmetics, 1; photographic materials, 1; plastering and stucco work, 1; plated and britannia ware, 1; plumbers' supplies, 1; printing and publishing, music, 1; printing materials, 1; refrigerators, 1; regalia and society banners and emblems, 1; sand and emery paper and cloth, 1; saws, 1; ship and boat building, wooden, 2; show cases, 1; soap and candles, 2; springs, steel, car and carriage, 2; stamped ware, 2; surgical appliances, 1; taxidermy, 1; tobacco, chewing, smoking, and snuff, 2; umbrellas and canes, 1; upholstering materials, 1; varnish, 1; wheelbarrows, 1; window shades, 1.

READING.

14,351	\$6,440,263	3,786	\$958,704	1,028	\$136,983	\$5,085,456	\$169,140	\$92,480	\$1,570,746	\$3,258,030	\$19,089,332	\$18,301,154	\$788,178	\$86,902,511	1
7	2,508					763	678		85		7,948	7,782	166	10,306	2
354	154,865	26	6,410	27	4,131	55,094	4,182	303	50,519		523,133	518,674	6,459	816,832	3
27	12,731					2,132	1,516	177	134	25	12,776	12,012	758	43,318	4
14	6,044	10	4,627			1,286	430	123	735		7,186	6,572	608	26,071	5
12	6,966	3	676			8,104	2,127	162	291	524	23,232	22,866	366	67,526	6
28	12,478					10,330	460	480	9,390		51,941	51,009	932	88,541	7
35	11,909	35	7,489	4	494	3,681	960	245	2,479		71,037	70,307	730	104,456	8
26	11,082	66	13,852	19	2,510	4,513	840	330	3,433		39,125	37,794	1,331	99,544	9
15	9,179					926	220	280	426		14,577	13,682	895	34,503	10
212	103,405	2	551	3	456	21,935	4,578	2,292	15,065		238,547	223,409	10,138	501,197	11
19	6,687			5	1,200	1,262	830	52	380		2,903	688	2,315	17,525	12
35	11,460	5	936	3	409	1,937	336	70	1,531		44,697	44,582	115	73,604	13
267	132,190					197,403	1,345	718	8,179	192,161	365,236	364,885	341	782,571	14
5	1,910					419	174	89	156		6,647	6,582	65	18,529	15
203	83,115					13,262	1,855	962	9,945	500	104,685	101,499	3,186	807,859	16
1,962	1,045,675					2,968,665		8,584	9,742	2,950,339	2,254,943	2,242,323	12,620	6,315,128	17
129	62,422	185	48,978	1	104	21,905	10,453	844	8,830	1,778	180,228	178,747	1,481	407,149	18
46	20,780	114	29,987	12	1,816	6,629	1,674	486	4,469		241,139	240,741	398	359,771	19
4	1,620	50	13,489			1,258	1,150	48	60		9,703	9,402	301	30,869	20
4	1,425	39	9,562	6	1,026	1,618	914	44	660		29,726	29,246	480	55,341	21
3	1,728					1,189	240	316	633		19,206	18,865	341	24,761	22
191	46,300	111	20,418	26	4,328	16,977	5,600	845	10,532		249,146	244,353	4,788	420,169	23
21	8,660			2	390	1,613	879		731		15,921	13,097	2,824	32,942	24
13	6,805					1,798	1,146	2	650		42,070	42,060	20	61,163	25
1,565	679,822			7	1,752	123,718	7,848	8,220	107,650		1,269,009	1,215,533	53,776	2,437,355	26
498	233,939	198	44,473	35	4,588	40,806	1,200	1,260	38,346		765,247	749,046	16,201	1,183,688	27
18	9,272					1,987	1,384	88	515		14,812	14,391	421	37,010	28
1,280	551,125	80	17,262	227	32,474	39,237	60	4,625	34,552		562,569	535,301	27,268	1,611,268	29
183	75,674	1,184	279,337	300	35,846	53,266	5,420	1,887	40,307	5,652	696,527	681,689	14,888	1,325,397	30
3,782	1,606,460			37	5,551	344,793	250	14,061	330,482		6,320,660	5,816,234	504,426	9,530,286	31
49	21,299					5,807	1,092		4,715		66,227	65,572	655	113,267	32
5	1,605					785	350	5	90	340	1,922	752	1,170	6,190	33
119	66,361					393,600	13,520	17,066	363,014		189,777	176,212	13,565	881,665	34
7	2,778					513	328	10	175		5,791	5,731	60	11,195	35
146	69,467					7,280	581	680	6,019		184,666	182,566	2,070	302,339	36

TABLE 8.—MANUFACTURES IN CITIES

READING—Continued.

MANUFACTURING AND MECHANICAL INDUSTRIES.	Number of establishments.	CAPITAL.					Proprietors and firm members.	SALARIED OFFICIALS, CLERKS, ETC.		AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES.	
		Total.	Land.	Buildings.	Machinery, tools, and implements.	Cash and sundries.		Number.	Salaries.	Total.	
										Average number.	Wages.
37 Marble and stone work	8	\$86,635	\$17,800	\$8,300	\$15,685	\$44,850	13	2	\$936	49	\$22,063
38 Masonry, brick and stone	14	87,902	2,900	3,420	17,175	64,407	22	9	3,050	275	129,945
39 Millinery, custom work	11	64,547	8,100	7,650	582	48,215	14	29	7,080	81	26,136
40 Models and patterns	4	7,517	1,800	1,200	2,802	1,715	4			5	1,728
41 Monuments and tombstones	7	82,410	12,300	2,350	5,025	62,735	11	4	2,500	59	33,725
42 Optical goods	3	268,090	10,000	25,000	173,000	60,090	8	20	15,289	154	34,640
43 Painting, house, sign, etc	42	84,423	12,725	18,925	8,751	44,022	55	3	860	156	70,399
44 Paints	5	154,776	29,500	25,000	23,600	76,676	1	12	13,716	23	9,481
45 Paper and wood pulp	3	549,913	93,000	84,000	165,000	207,913	13	13	23,787	129	52,021
46 Paper hanging	3	14,750	400	600	1,350	12,400	3	1	380	11	5,272
47 Paving and paving materials	9	11,910	4,975	1,875	1,170	3,890	9			57	19,353
48 Photography	9	49,287	17,500	12,000	8,975	10,812	10	5	1,134	37	16,254
49 Plastering and stuccowork	8	12,170	1,050	1,050	1,055	9,015	10			40	18,179
50 Plumbing, and gas and steam fitting	25	125,583	14,600	14,825	9,006	87,152	27	6	3,240	128	58,808
51 Pottery, terra cotta, and fire-clay products.	3	240,815	51,000	60,000	21,000	108,815	3	7	6,804	86	27,011
52 Printing and publishing, book and job	17	121,607	6,350	11,200	70,400	33,657	26			63	27,485
53 Printing and publishing, newspapers and periodicals.	10	391,723	79,500	65,500	105,660	141,063	6	31	21,625	176	88,999
54 Roofing and roofing materials	8	24,945	5,700	4,700	1,595	12,950	9	1	78	43	19,995
55 Saddlery and harness	7	25,235	8,000	3,500	1,710	12,025	8	1	500	15	6,116
56 Shirts	5	41,456	9,000	3,000	3,279	26,177	9	8	4,580	74	16,905
57 Tinsmithing, coppersmithing, and sheet-iron working.	38	158,281	48,830	33,600	18,100	57,691	45	9	2,920	83	37,585
58 Tobacco, cigars and cigarettes	76	750,497	58,775	154,848	29,747	507,127	91	62	53,078	1,107	421,775
59 Watch, clock, and jewelry repairing	22	34,325	8,800	5,400	10,451	9,675	22			26	15,735
60 Wool hats	4	450,149	33,000	38,000	42,300	336,849	8	1	600	235	126,558
61 All other industries ¹	67	4,154,731	419,639	512,972	1,789,662	1,422,461	84	178	137,726	1,928	585,200

¹Embraces artificial feathers and flowers, 1; bags, paper, 2; baskets, and rattan and willow ware, 2; boots and shoes, factory product, 1; boxes, wooden packing, 1; brassware, 1; carriage and wagon materials, 1; cars and general shop construction and repairs by street railroad companies, 2; cheese and butter, urban dairy products, 2; cheese, butter, and condensed milk, factory product, 1; cordage and twine, 1; cotton goods, 1; cotton small wares, 1; cutlery and edge tools, 1; dyeing and cleaning, 1; electroplating, 1; fancy articles, not elsewhere specified, 1; flouring and grist mill products, 1; food preparations, 1; furnishing goods, men's, 2; gas, illuminating and heating, 1; glass, 1; glass, cutting, staining, and ornamenting, 1; grease and tallow, 1; hairwork, 1; hand stamps, 1; hats and caps, not including fur hats and wool hats, 2; house furnishing goods, not elsewhere specified, 2; ice, manufactured, 2; iron and steel, bolts, nuts, washers,

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1	All industries	710	\$10,954,525	\$2,803,113	\$3,768,815	\$5,227,697	\$8,654,900	771	661	\$791,580	12,669	\$5,191,522
2	Bicycle and tricycle repairing	7	19,615	3,000	3,975	8,190	4,450	10	1	1,300	24	10,565
3	Blacksmithing and wheelwrighting	48	58,300	13,400	9,565	10,870	19,465	52			52	22,221
4	Boots and shoes, custom work and repairing	71	18,160	2,700	1,075	7,870	6,515	71			16	7,155
5	Bottling	10	19,190	2,400	1,800	3,210	11,780	12	3	1,130	19	7,824
6	Bread and other bakery products	27	101,711	33,500	55,282	46,022	56,907	80	28	17,918	132	55,453
7	Brick and tile	3	60,161	19,500	9,500	10,500	20,661	11	2	1,620	67	22,520
8	Carpentering	18	198,433	42,500	41,105	13,202	101,160	22	15	14,520	207	112,563
9	Carpets, rug	8	5,395	2,200	1,500	895	800	8			2	404
10	Carriages and wagons	9	344,396	187,700	74,700	25,834	106,162	13	8	4,296	129	65,335
11	Clothing, men's, custom work and repairing	56	87,670	9,800	9,500	10,410	58,460	57	1	1,040	165	68,682
12	Clothing, women's, dressmaking	18	13,345			3,350	9,995	18			60	12,682
13	Clothing, women's, factory product	3	85,500			17,500	18,000	4	6	3,320	322	59,950
14	Dyeing and cleaning	7	10,775	3,000	2,500	4,300	3,75	8			15	5,690
15	Electrical construction and repairs	4	7,175			2,175	5,000	4	3	5,000	9	6,270
16	Flavoring extracts	5	22,775	6,400	4,625	2,600	9,150	5	5	3,664	7	3,530
17	Flouring and grist mill products	4	385,000	107,000	73,000	48,000	107,000	5	8	11,940	35	17,722
18	Foundry and machine shop products	13	3,953,580	842,784	888,644	841,653	1,380,489	10	52	90,994	1,381	706,787
19	Furniture, cabinetmaking, repairing, and upholstering	8	6,595	700	900	1,485	3,510	9			5	2,100
20	Hats and caps, not including fur hats and wool hats	3	1,855			780	1,075	3			5	2,080
21	Iron and steel	5	4,400,779	140,000	500,215	909,322	2,851,242	1	60	144,094	2,315	1,227,788
22	Liquors, malt	6	1,481,012	186,625	490,634	457,425	296,328		29	92,077	181	116,666
23	Looking-glass and picture frames	3	4,100			800	3,300	3			3	1,038
24	Lumber, planing mill products, including sash, doors, and blinds	11	592,507	166,050	73,131	80,959	272,367	12	21	20,430	277	119,994
25	Marble and stone work	7	235,648	40,100	22,594	100,214	72,740	6	6	6,160	90	46,041
26	Masonry, brick and stone	13	182,080	38,800	21,300	38,990	87,900	19	15	13,410	528	279,299
27	Mattresses and spring beds	3	69,313	12,000	22,489	9,000	25,824	3	5	3,725	28	12,281
28	Millinery, custom work	21	75,582	4,750	10,500	5,438	54,896	24	42	16,375	104	21,399
29	Mineral and soda waters	4	86,200	10,500	7,500	11,800	6,400	7	2	1,520	22	8,604
30	Painting, house, sign, etc	64	57,462	12,500	14,850	7,610	22,502	70	2	900	172	91,374
31	Paper hanging	10	4,970	1,700	1,200	995	1,075	11			18	6,266
32	Patent medicines and compounds	6	8,925	1,000	400	1,300	1,225	7	1	400	6	1,780
33	Photography	11	35,727	2,000	1,000	16,899	16,028	12	6	8,400	27	8,909
34	Plastering and stuccowork	3	865			375		3			3	1,200
35	Plumbing, and gas and steam fitting	40	158,552	13,225	16,400	16,709	112,218	51	16	9,746	169	86,128
36	Printing and publishing, book and job	13	74,898	5,575	5,000	58,462	10,861	16	3	1,280	50	22,715

BY SPECIFIED INDUSTRIES: 1900—Continued.

READING—Continued.

AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES—continued.						MISCELLANEOUS EXPENSES.						COST OF MATERIALS USED.				Value of products, including custom work and repairing.	
Men, 16 years and over.		Women, 16 years and over.		Children, under 16 years.		Total.	Rent of works.	Taxes, not in- cluding internal revenue.	Rent of offices, interest, etc.	Contract work.	Total.	Principal materials, including mill supplies and freight.	Fuel and rent of power and heat.				
Average num- ber.	Wages.	Average num- ber.	Wages.	Average num- ber.	Wages.												
49	\$22,063					\$1,167	\$339	\$108	\$720		\$31,024	\$30,542	\$482		\$68,996	37	
275	129,945					63,191	1,612	141	2,093	\$59,345	78,516	77,724	792		314,181	38	
						9,915	5,848	194	3,873		89,849	88,925	924		163,102	39	
5	1,728					521	356	30	135		2,547	2,287	260		7,617	40	
59	33,725	81	\$26,136			1,518	956	157	405		21,717	21,114	603		79,521	41	
14	8,400	126	23,240	14	\$3,000	4,322	560	400	3,362		96,140	95,500	640		184,770	42	
156	70,399					6,960	3,549	407	2,629	375	59,721	59,387	334		190,636	43	
21	8,808	2	676			5,195	90	1,418	3,687		117,624	116,603	921		168,846	44	
90	45,104	39	6,917			52,106		3,001	49,105		214,041	198,114	20,927		429,205	45	
11	5,272					1,040	800	15	225		8,245	8,205	40		18,150	46	
57	19,353					655	25	105	525		28,164	28,159	5		57,837	47	
20	11,600	17	4,651			4,289	1,758	420	1,711	400	14,366	13,642	724		52,116	48	
40	18,179					1,000		32	90	878	18,210	18,210			43,966	49	
128	58,808					5,973	3,248	466	2,259		132,794	132,269	525		249,163	50	
84	26,911			2	100	1,770		733	1,037		28,688	24,678	4,010		105,128	51	
54	26,441			9	1,044	7,062	2,328	257	4,477		35,020	32,872	2,148		99,447	52	
147	84,070	14	3,090	15	1,839	50,360	4,635	1,190	40,058	4,477	49,483	45,950	3,533		309,266	53	
43	19,995					1,748	247	137	1,364		39,678	39,583	95		73,725	54	
15	6,116					2,550	1,904	170	476		12,275	12,091	184		28,261	55	
3	1,225	71	15,680			1,387	490	174	723		39,541	39,226	315		76,155	56	
82	37,416			1	169	10,039	3,233	1,128	5,478	200	102,072	101,018	1,054		200,746	57	
526	235,725	540	180,254	41	5,796	260,252	6,297	2,239	251,701	15	784,094	781,404	2,690		1,683,466	58	
25	15,631			1	104	3,760	2,462	156	1,142		11,041	10,529	512		46,327	59	
157	80,273	104	41,299	34	4,986	6,769	300	1,672	4,797		293,860	288,813	5,047		628,180	60	
1,056	403,649	675	158,681	197	22,570	230,393	53,183	12,316	128,813	36,081	2,150,515	2,095,210	55,305		3,688,006	61	

and rivets, 1; iron and steel, forgings, 1; lamps and reflectors, 1; leather, tanned, curried, and finished, 2; lock and gun smithing, 1; malt, 1; mattresses and spring beds, 1; mirrors, 1; patent medicines and compounds, 1; photolithographing and photoengraving, 1; regalia and society banners and emblems, 2; sewing machine repairing, 1; silk and silk goods, 1; slaughtering and meat packing, wholesale, 1; soap and candles, 1; stereotyping and electrotyping, 1; tobacco, chewing, smoking, and snuff, 2; toys and games, 1; trunks and valises, 1; umbrellas and canes, 1; washing machines and clothes wringers, 2; window shades, 1; wirework, including wire rope and cable, 1; wood, turned and carved, 1; woolen goods, 2.

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8,776	\$4,509,263	2,863	\$525,849	1,030	\$156,410	\$1,857,881	\$154,034	\$91,394	\$1,159,672	\$452,781	\$18,411,022	\$17,340,548	\$1,070,474	\$27,646,418	1
24	10,565					3,211	1,420	295	1,496		7,702	7,321	381	26,286	2
51	22,077			1	144	6,006	5,489	300	517		25,964	26,896	2,068	99,702	3
16	7,155					7,458	6,773	90	595		26,920	26,008	812	73,873	4
19	7,824					5,105	1,992	169	2,944		78,170	77,923	247	121,524	5
88	46,940	28	6,513	16	2,000	14,518	7,176	682	6,660		207,973	203,131	4,842	357,066	6
66	22,220					3,103	1,275	270	1,558		3,553	650	3,003	42,000	7
207	112,563			1	300	47,940	1,121	888	2,591	43,340	194,947	194,331	610	426,906	8
2	404					335	972	39	2,24		2,051	2,001	50	5,994	9
124	64,412			5	921	7,960	2,444	1,280	4,236		81,895	80,422	1,473	220,703	10
94	47,792	71	20,790			21,487	11,878	191	8,958	460	74,896	73,886	920	216,992	11
7	3,150	60	12,682			4,651	3,814		840		25,925	25,830	95	57,087	12
8	3,920	294	53,000	21	3,800	3,478	2,820		370	283	50,420	49,720	700	133,270	13
9	6,270	7	1,770			2,890	2,600	25	265		1,847	1,437	410	16,585	14
5	2,980	2	550			6,509	632		877	5,000	47,525	47,410	115	89,316	15
						1,396	396	75	925		9,101	8,951	150	23,780	16
35	17,722					11,175	720	2,233	8,222		394,608	392,275	2,333	461,790	17
1,868	704,382			13	2,405	217,320	1,920	18,718	196,682		553,604	519,807	33,797	1,755,909	18
5	2,100					1,229	1,008	16	205		9,105	9,067	38	18,970	19
4	1,780	1	300			1,641	1,316		325		2,026	1,945	81	9,080	20
2,815	1,227,788					57,258		23,659	33,599		9,363,721	8,418,542	945,179	10,231,139	21
181	116,666					550,427		15,322	535,105		220,250	212,384	7,866	1,196,105	22
2	960			1	78	1,480	1,200		280		7,808	7,808	25	17,600	23
277	119,994					12,369	404	1,849	10,116		378,948	375,242	3,706	610,201	24
90	46,041					5,857	376	812	4,169		53,220	52,657	563	123,090	25
528	279,299					117,254	4,520	1,242	3,309	108,183	193,014	192,544	470	716,571	26
22	10,724	6	1,560			3,856	240	381	2,735		33,233	32,907	326	75,500	27
		104	21,395			16,140	13,165	197	2,778		68,489	65,976	513	148,661	28
22	3,604					2,281	264	321	1,696		16,691	16,559	132	52,696	29
168	90,374			4	1,000	5,843	4,556	352	935		67,012	66,927	85	222,510	30
13	6,266					779	553	61	165		3,790	3,780	10	19,770	31
2	1,020	8	640	1	120	2,019	924	30	1,065		4,305	4,260	45	11,470	32
11	5,802	14	2,831	2	276	7,251	4,901	10	2,340		10,990	16,870	120	53,150	33
3	1,200					328	308		20		970	935	35	8,945	34
167	85,760			2	368	21,472	9,966	448	9,108	1,950	215,126	213,817	1,309	415,747	35
42	21,434			8	1,281	5,715	3,668	150	1,897		21,464	20,999	1,365	66,717	36

TABLE 8.—MANUFACTURES IN CITIES

SCRANTON—Continued.

MANUFACTURING AND MECHANICAL INDUSTRIES.	Number of establishments.	CAPITAL.					Proprietors and firm members.	SALARIED OFFICIALS, CLERKS, ETC.		AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES.	
		Total.	Land.	Buildings.	Machinery, tools, and implements.	Cash and sundries.		Number.	Salaries.	Total.	
										Average number.	Wages.
37 Printing and publishing, newspapers and periodicals.	23	\$919,093	\$26,300	\$59,700	\$243,456	\$589,637	23	74	\$51,889	319	\$155,797
38 Saddlery and harness	10	25,270	1,800	2,200	3,515	18,255	12	2	1,500	20	9,316
39 Silk and silk goods	5	1,611,251	59,000	359,290	633,792	589,169	6	50	77,077	2,318	863,476
40 Tinsmithing, coppersmithing, and sheet-iron working.	7	20,474	2,800	2,700	3,875	20,099	12	2	490	45	16,790
41 Tobacco, chewing, smoking, and snuff.	3	188,933	88,000	44,291	16,240	90,402	6	19	16,735	102	36,672
42 Tobacco, cigars and cigarettes	24	84,785	4,200	6,400	5,855	68,330	23	8	4,868	108	42,291
43 Watch, clock, and jewelry repairing	23	15,560			5,401	10,099	24			17	8,476
44 All other industries ¹	73	4,290,903	310,138	929,360	1,545,551	1,611,869	63	166	163,741	3,100	1,317,792

¹ Embraces artificial limbs, 2; bookbinding and blank book making, 2; boot and shoe cut stock, 1; boxes, cigar, 1; brass castings and brass finishing, 1; brassware, 1; brooms and brushes, 1; buttons, 2; carriage and wagon materials, 2; cars and general shop construction and repairs by steam railroad companies, 2; cars and general shop construction and repairs by street railroad companies, 1; cheese, butter, and condensed milk, factory product, 2; china decorating, 1; clothing, men's, factory product, 1; coffee and spice, roasting and grinding, 1; coffins, burial cases, and undertakers' goods, 1; confectionery, 2; cotton goods, 1; electroplating, 1; emery wheels, 1; explosives, 1; food preparations, 1; fur goods, 1; furniture, factory product, 1; gas and lamp fixtures, 1; gas, illuminating and heating, 1; glass, cutting, staining, and ornamenting, 1; grease and tallow, 1; hones and whetstones, 1; hosiery and knit goods, 1; ice, manufactured, 1; ink,

SHEENANDOAH.

1 All industries	78	\$374,057	\$11,125	\$148,865	\$98,644	\$90,423	88	13	\$13,544	210	\$88,555
2 Blacksmithing and wheelwrighting	5	8,725	1,800	4,900	1,500	1,025	5	1	600	14	5,672
3 Boots and shoes, custom work and repairing.	7	1,570	400	300	705	165	7			6	1,925
4 Bread and other bakery products.	5	4,615	1,000	2,000	610	1,005	5			10	3,961
5 Clothing, men's, custom work and repairing.	13	8,463	750	665	1,350	5,698	16			34	12,277
6 Millinery, custom work.	8	1,699	500	475	29	695	10			7	938
7 Painting, house, sign, etc.	3	1,005	125	500	175	205	3			4	2,520
8 Printing and publishing, newspapers and periodicals.	4	18,000	500	500	15,500	1,500	9			17	7,287
9 Tinsmithing, coppersmithing, and sheet-iron working.	3	2,140	100	75	1,150	815	4				
10 Tobacco, cigars and cigarettes.	3	2,500			850	2,150	4			6	3,334
11 Watch, clock, and jewelry repairing.	5	1,975			1,375	600	5			4	1,440
12 All other industries ¹	22	\$23,365	36,450	134,450	75,900	76,565	20	12	12,944	108	49,206

¹ Embraces bottling, 2; carpentering, 2; confectionery, 1; dyeing and cleaning, 1; fertilizers, 1; foundry and machine shop products, 1; gas, illuminating and heating, 1; hats and caps, not including fur hats and wool hats, 1; ice, manufactured, 1; liquors, malt, 1; monuments and tombstones, 1; paper hanging, 1;

WILKESBARRE.

1 All industries	438	\$10,501,537	\$825,426	\$1,620,129	\$3,963,148	\$4,038,834	520	340	\$406,823	5,977	\$2,286,676
2 Bicycle and tricycle repairing.	10	11,760			5,700	6,060	12			15	6,145
3 Blacksmithing and wheelwrighting.	26	24,500	7,125	4,850	6,130	7,895	26			34	15,719
4 Boots and shoes, custom work and repairing.	30	7,200	1,400	900	2,920	2,040	29			14	6,080
5 Bottling.	3	6,500			3,100	3,400	4			6	2,392
6 Bread and other bakery products.	15	146,854	46,400	19,723	30,060	50,171	18	9	6,011	138	51,166
7 Carpentering.	30	178,837	81,760	23,717	17,922	105,438	37	11	8,940	310	163,885
8 Carriages and wagons.	7	60,100	20,100	14,100	5,800	20,100	8			31	15,150
9 Clothing, men's, custom work and repairing.	40	92,745	8,400	8,550	4,525	71,270	45	2	2,100	112	50,591
10 Clothing, women's, dressmaking.	17	4,585			1,950	2,635	23			59	14,806
11 Clothing, women's, factory product.	3	511,500	18,500	37,500	48,000	407,500	7	21	43,800	636	136,768
12 Coffee and spice, roasting and grinding.	3	19,750	1,200	1,600	3,800	13,150	3			10	5,586
13 Confectionery.	9	14,410			9,150	5,260	10	4	1,712	14	3,930
14 Flouring and grist mill products.	4	121,884	23,100	28,486	22,007	45,291	3	11	7,512	15	7,467
15 Foundry and machine shop products.	5	1,165,209	157,802	163,184	333,571	510,652	7	43	55,455	574	265,200
16 Furniture, cabinetmaking, repairing, and upholstering.	7	12,270	2,500	4,000	2,260	3,510	8			16	6,232
17 Looking-glass and picture frames.	5	8,925			775	8,150	7			8	3,518
18 Lumber, planing mill products, including sash, doors, and blinds.	3	57,500	12,000	6,500	15,500	23,500	5	1	1,000	38	20,522
19 Marble and stone work.	4	5,545	960	25	910	3,650	6			16	7,110
20 Masonry, brick and stone.	9	82,843	3,920	623	9,261	69,639	9	2	1,440	179	74,436
21 Mattresses and spring beds.	3	13,600	500	500	2,600	10,000	5			8	4,184
22 Millinery, custom work.	11	52,720			870	51,850	13	5	2,100	115	23,044
23 Mineral and soda waters.	5	29,100	2,000	1,000	10,800	15,300	6			14	7,550
24 Painting, house, sign, etc.	28	48,565	8,200	7,105	4,890	23,380	32	2	1,080	85	44,526
25 Paving and paving materials.	5	3,477			1,214	2,263	7			10	4,008
26 Photography.	6	15,450			6,100	9,350	8	1	400	10	3,545
27 Plumbing, and gas and steam fitting.	22	101,015	4,200	8,100	14,850	73,865	35	9	5,980	134	70,255
28 Printing and publishing, book and job.	11	147,857	20,000	9,600	72,900	46,057	12	8	5,004	80	40,594
29 Printing and publishing, newspapers and periodicals.	15	222,625	39,000	16,500	101,100	66,025	14	42	31,572	179	77,409
30 Saddlery and harness.	8	26,325	2,200	900	1,975	21,250	10			13	7,642
31 Shirts.	3	12,800			5,000	7,800	5	2	1,850	77	13,720

writing, 1; ironwork, architectural and ornamental, 2; jewelry, 1; lamps and reflectors, 2; lime and cement, 2; lock and gun smithing, 1; lumber and timber products, 1; monuments and tombstones, 2; musical instruments, pianos and materials, 1; oil, not elsewhere specified, 1; optical goods, 2; paints, 1; paving and paving materials, 2; perfumery and cosmetics, 1; pickles, preserves, and sauces, 2; pottery, terra cotta, and fire-clay products, 2; roofing and roofing materials, 1; scales and balances, 1; sewing machine repairing, 1; shirts, 1; slaughtering and meat packing, wholesale, 2; soap and candles, 1; stereotyping and electrotyping, 1; tools, not elsewhere specified, 1; varnish, 1; wirework, including wire rope and cable, 1.

186	\$83,031	22	\$5,286	2	\$238	\$96,929	\$6,139	\$1,873	\$88,627	\$290	\$180,224	\$170,959	\$9,265	\$179,336	1
14	5,672					331	144	101	86		3,257	3,001	256	15,662	2
6	1,925					504	348	18	138		2,553	2,441	112	7,579	3
10	3,961					325	228	35	62		18,851	18,461	390	27,879	4
26	10,442	8	1,835			1,852	1,248	72	242	290	18,830	18,597	233	41,250	5
		7	933			890	720	26	144		6,186	6,135	51	13,432	6
4	2,520					190	96	8	86		758	742	16	4,900	7
15	6,906	1	288	1	93	800	612	9	179		5,054	4,824	230	15,941	8
						90	76	6	8		1,449	1,401	48	2,335	9
6	3,334					2,312	228		2,084		4,973	4,924	54	14,864	10
4	1,440					807	606		111		1,445	1,389	56	5,760	11
101	46,831	6	2,230	1	146	88,823	1,743	1,598	85,487		116,863	115,044	1,819	326,731	12

photography, 2; plumbing, and gas and steam fitting, 1; regalia and society banners and emblems, 1; saddlery and harness, 2; shirts, 1; wirework, including wire rope and cable, 1.

3,727	\$1,847,462	1,780	\$379,615	470	\$59,599	\$1,142,358	\$86,479	\$32,194	\$736,451	\$287,231	\$5,167,777	\$5,090,803	\$76,974	\$10,758,348	1
15	6,145					1,935	1,462	4	469		4,112	3,862	250	25,320	2
32	15,344			2	375	2,866	2,551	100	215		16,070	15,018	1,022	56,217	3
13	5,950			1	130	3,093	2,935	56	102		10,164	9,987	177	32,327	4
6	2,392					1,095	410	20	665		10,994	10,878	116	19,600	5
108	44,515	27	6,096	3	525	13,384	6,280	599	6,565		123,226	120,231	2,995	247,230	6
309	163,660			1	225	127,727	2,153	905	3,466	121,203	313,950	313,345	605	764,196	7
31	15,150					2,432	1,090	195	1,147		13,470	12,835	635	45,225	8
89	43,506	22	6,989	1	96	14,633	11,313	368	2,952		55,421	55,054	367	168,832	9
		57	14,706	2	100	2,728	2,637	4	87		7,427	7,389	38	38,842	10
36	22,862	542	106,200	53	7,416	77,410	1,710	625	70,575	4,500	316,508	315,620	888	627,039	11
8	5,236	2	350			1,350	860	70	420		19,882	19,257	625	32,684	12
7	2,420	6	1,410	1	100	3,997	3,402	16	579		17,675	17,068	607	43,884	13
15	7,467					5,830	300	592	4,938		119,814	118,976	838	148,177	14
574	265,200					25,115		4,951	20,161		428,116	419,851	8,265	865,726	15
11	4,271	5	961			564	411	45	108		6,205	6,180	25	17,700	16
8	3,518					954	750	4	200		11,020	11,020		20,744	17
88	20,622					2,739	1,800	400	1,539		31,203	30,575	628	71,258	18
16	7,110					643	328	25	90	200	10,813	10,833	10	24,590	19
179	74,436					25,738		110	6,904	19,531	83,023	82,891	132	205,056	20
6	3,092	2	1,092			914	705	19	190		18,860	18,745	115	27,658	21
2	500	112	22,402	1	142	8,461	6,931	75	1,452		69,209	69,081	125	129,203	22
14	7,550					1,136	660	36	440		12,153	11,936	167	36,856	23
84	44,376			1	150	3,049	1,997	206	846		27,301	27,226	75	110,889	24
10	4,008					221	202		19		8,540	8,540		16,335	25
5	2,089	5	1,456			3,606	2,546		1,060		7,653	7,612	46	24,080	26
132	69,930			2	325	31,107	4,066	261	6,115	20,665	86,749	85,943	806	250,483	27
54	33,831	11	3,867	15	2,896	6,031	3,062	348	2,121		29,957	29,957	1,597	103,182	28
163	74,688	3	585	13	2,136	49,463	3,034	470	35,570	7,389	52,301	60,304	1,997	307,467	29
12	7,482	1	160			2,025	1,629	30	366		10,627	10,578	49	30,650	30

TABLE 8.—MANUFACTURES IN CITIES

WILKESBARRE—Continued.

MANUFACTURING AND MECHANICAL INDUSTRIES.	Number of establishments.	CAPITAL.						Proprietors and firm members.	SALARIED OFFICIALS, CLERKS, ETC.		AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES.	
		Total.	Land.	Buildings.	Machinery, tools, and imple- ments.	Cash and sundries.	Number.		Salaries.	Total.		
										Average num- ber.	Wages.	
32 Slaughterling and meat packing, whole- sale.	3	\$184,424	\$10,000	\$15,546	\$6,302	\$152,576	6	14	\$13,610	21	\$10,363	
33 Tinsmithing, coppersmithing, and sheet-iron working.	5	95,635	1,100	450	27,500	66,685	7	11	4,680	59	17,620	
31 Tobacco, cigars and cigarettes	16	32,530	2,900	1,100	1,685	26,845	20	1	572	38	16,416	
35 Watch, clock, and jewelry repairing	15	8,285	1,900	2,200	3,125	1,060	15			10	5,408	
36 Wirework, including wire rope and cable.	3	1,281,822	57,800	154,050	493,059	576,913	3	19	19,740	239	124,181	
37 All other industries¹	49	5,686,830	387,459	1,098,920	2,687,447	1,563,004	55	119	191,665	2,660	955,568	

¹ Embraces artificial limbs, 1; awnings, tents, and sails, 1; bluing, 1; bookbinding and blank book making, 1; boot and shoe uppers, 1; boots and shoes, factory product, 1; brass castings and brass finishing, 1; brick and tile, 2; carpets, rag, 1; carriage and wagon materials, 1; cars and general shop construction and repairs by steam railroad companies, 1; cars and general shop construction and repairs by street railroad companies, 1; cotton goods, 2; cutlery and edge tools, 2; dyeing and cleaning, 2; electrical construction and repairs, 2; fancy articles, not elsewhere specified, 1; fertilizers, 1; furniture, factory product, 1; gas, illuminating and

WILLIAMSPORT.

1 All industries	396	\$9,863,811	\$912,145	\$977,480	\$2,094,664	\$5,879,522	439	397	\$352,348	5,595	\$2,065,930
2 Bicycle and tricycle repairing	8	20,077	1,600	3,300	4,530	10,647	8	1	468	9	3,431
3 Blacksmithing and wheelwrighting	15	29,005	9,600	7,050	2,325	9,430	19			14	6,625
4 Boots and shoes, custom work and repairing.	18	8,045	3,200	1,800	1,646	1,500	15			10	4,292
5 Bottling.	4	24,319	500	1,800	12,718	9,801	4	3	3,420	8	3,639
6 Bread and other bakery products.	17	93,131	6,200	14,500	39,347	33,084	18	10	6,923	58	21,749
7 Brick and tile.	3	84,825	13,875	3,500	950	16,500	2	2	2,300	19	9,464
8 Carpentering	18	64,674	4,200	9,993	6,675	48,806	25	1	80	115	51,669
9 Carriages and wagons.	4	47,292	3,500	3,600	1,300	38,892	5			37	19,038
10 Clothing, men's, custom work and repairing.	27	78,323	6,725	13,100	5,636	52,862	32			132	45,979
11 Clothing, men's, factory product	5	226,800	4,800	24,000	26,000	172,000	8	54	28,770	733	231,860
12 Clothing, women's, dressmaking	23	14,146	900	3,000	2,646	7,600	24			75	11,780
13 Confectionery	6	70,488	10,000	11,200	14,065	35,223	7	8	4,920	35	11,878
14 Foundry and machine shop products.	15	608,652	54,100	84,643	197,347	272,562	15	36	28,548	418	186,591
15 Furniture, cabinetmaking, repairing, and upholstering.	6	10,715	2,550	2,150	755	5,260	8			7	3,525
16 Furniture, factory product.	8	555,893	53,510	152,043	94,801	255,539	13	35	30,863	373	123,287
17 Leather, tanned, curried, and finished.	3	1,610,352	17,000	49,000	12,200	1,532,152	5	9	4,820	190	78,749
18 Lock and gun smithing.	3	7,050	1,500	1,000	2,100	2,450	4			3	1,160
19 Looking-glass and picture frames.	4	45,350	6,200	7,500	7,750	23,900	5	5	2,912	61	22,196
20 Lumber and timber products.	6	1,601,636	286,578	38,000	81,609	1,195,009	10	22	28,535	374	159,048
21 Lumber, planing mill products, including sash, doors, and blinds.	13	461,693	31,628	46,809	77,566	305,630	21	21	35,070	338	128,593
22 Masonry, brick and stone.	3	9,950	600	350	3,650	5,350	3			30	11,385
23 Millinery, custom work	15	40,169	3,000	7,000	2,805	27,351	16	1	1,200	58	11,294
24 Monuments and tombstones.	8	19,356	2,200	825	15,506	4				5	2,500
25 Painting, house, sign, etc.	21	14,155	850	1,760	2,498	9,047	21			46	21,536
26 Photography	10	39,466	5,000	3,575	12,750	18,141	10			12	6,230
27 Plumbing, and gas and steam fitting.	12	27,497	1,750	1,600	3,800	20,347	12	2	600	42	27,944
28 Printing and publishing, book and job.	6	29,955	300	200	21,720	7,735	8	2	1,830	27	12,186
29 Printing and publishing, newspapers and periodicals.	4	281,197	9,000	17,417	113,661	141,119	4	41	30,619	95	49,295
30 Roofing and roofing materials.	10	10,180	1,300	800	3,145	4,935	10			15	7,021
31 Saddlery and harness	3	177,698	1,500	12,262	40,786	117,090	9	15	15,101	179	49,711
32 Saws.	3	12,658	1,000	1,600	4,878	5,180	4	1	144	20	8,825
33 Shirts.	3	5,800	500	1,000	1,800	2,500	3			20	7,500
34 Tinsmithing, coppersmithing, and sheet-iron working.	9	34,317	4,000	1,350	3,525	25,442	9	6	1,690	23	14,047
35 Tobacco, cigars and cigarettes.	4	9,413			265	9,148	5			14	7,573
36 Watch, clock, and jewelry repairing.	14	6,015			2,600	3,415	15			7	3,476
37 All other industries ¹	65	3,533,529	362,979	449,153	1,278,188	1,443,209	58	119	123,535	1,983	707,354

¹ Embraces belting and hose, leather, 1; bookbinding and blank book making, 1; boots and shoes, factory product, 1; boots and shoes, rubber, 1; boxes, cigar, 1; boxes, fancy and paper, 1; boxes, wooden packing, 1; brooms and brushes, 2; carpets, rag, 1; cars and general shop construction and repairs by steam railroad companies, 1; cheese, butter, and condensed milk, factory product, 1; chemicals, 2; corsets, 1; cotton small wares, 1; dyeing and cleaning, 2; electrical construction and repairs, 1; electroplating, 1; engraving, wood, 1; flouring and grist mill products, 2; furnishing goods, men's, 2; furs, dressed, 1; gas, illuminating and heating, 1; grease and tallow, 1; hairwork, 1; ice, manufactured, 1; kindling wood, 2; leather goods, 1; liquors, malt, 2; lithographing and engraving, 1;

YORK.

1 All industries	404	\$9,640,784	\$926,336	\$1,357,974	\$2,240,686	\$5,115,788	564	404	\$433,281	7,785	\$2,679,175
2 Agricultural implements.	4	383,410	20,300	28,000	71,000	214,110	3	35	26,278	314	112,141
3 Baskets, and rattan and willow ware.	9	5,530	950	2,675	255	1,650	9			8	1,866
4 Bicycle and tricycle repairing.	8	10,247	100	200	4,207	5,740	8			17	3,707
5 Blacksmithing and wheelwrighting.	16	25,845	7,900	7,250	3,075	7,620	17			14	4,992
6 Boots and shoes, custom work and repairing.	41	17,030	2,300	4,650	3,220	6,860	44			7	1,969
7 Bottling.	4	19,500			7,800	11,700	4			13	4,628
8 Boxes, cigar.	6	231,711	10,500	25,038	40,191	155,987	12	8	6,136	171	42,904
9 Bread and other bakery products.	24	151,820	22,150	37,900	38,990	55,780	26	17	12,749	215	61,312
10 Brick and tile.	4	49,600	16,000	10,000	5,600	18,000	7			128	39,154
11 Brooms and brushes	6	3,520	850	1,400	310	960	5			3	1,000

BY SPECIFIED INDUSTRIES: 1900—Continued.

WILKESBARRE—Continued.

AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES—continued.						MISCELLANEOUS EXPENSES.					COST OF MATERIALS USED.			Value of products, including custom work and repairing.	
Men, 16 years and over.		Women, 16 years and over.		Children, under 16 years.		Total.	Rent of works.	Taxes, not in- cluding internal revenue.	Rent of offices, interest, etc.	Contract work.	Total.	Principal materials, including mill supplies and freight.	Fuel and rent of power and heat.		
Average number.	Wages.	Average number.	Wages.	Average number.	Wages.										
21	\$10,363					\$11,318	\$4,500	\$374	\$6,439		\$106,538	\$106,058	\$180	\$174,646	32
48	14,920	12	\$2,200	4	\$500	11,194	1,700	39	1,655	\$7,800	52,898	52,632	266	102,400	33
33	15,782	3	444	2	240	9,769	1,783	59	7,927		28,740	28,704	36	66,747	34
9	5,308			1	100	1,520	775	120	625		2,318	2,295	23	19,008	35
239	124,181					32,910	75	2,560	30,275		610,346	602,581	7,765	810,031	36
1,400	717,242	903	195,373	357	42,953	653,106	11,469	18,508	517,189	105,940	2,073,717	2,028,938	44,779	4,700,936	37

heating, 1; hats and caps, not including fur hats and wool hats, 1; ice, manufactured, 1; ironwork, architectural and ornamental, 2; jewelry, 1; liquors, malt, 2; lock and gun smithing, 2; monuments and tombstones, 2; paper hanging, 1; patent medicines and compounds, 1; plastering and stuccowork, 2; roofing and roofing materials, 2; ship and boat building, wooden, 1; silk and silk goods, 2; steam packing, 1; taxidermy, 1; tools, not elsewhere specified, 1; wood, turned and carved, 1.

WILLIAMSPORT.

3,679	\$1,587,052	1,614	\$134,185	302	\$14,693	\$517,059	\$51,821	\$19,754	\$100,698	\$11,783	\$6,420,337	\$6,349,847	\$70,490	\$11,109,600 1
7	3,119			2	312	941	450	71	420		9,867	9,563	361	19,521 2
14	6,625					1,132	780	182	170		9,805	9,407	398	31,581 3
10	4,292					1,246	1,188	22	36		6,640	6,451	189	18,736 4
8	3,639					4,082	960	560	2,562		39,916	39,563	353	58,825 5
47	19,773	10	1,716	1	260	17,608	1,759	358	15,491		77,404	75,198	2,206	151,563 6
18	9,302			1	162	3,771	1,200	123	2,448		18,040	14,443	3,597	40,882 7
115	51,609					29,260	350	320	1,487	27,037	112,120	111,763	357	225,197 8
37	19,038					2,397	949	62	1,256	130	29,535	29,123	412	70,071 9
69	34,218	63	11,761			8,991	3,052	223	716		72,428	71,478	950	156,714 10
123	46,600	560	177,780	50	7,500	3,748	1,500	125	2,123		624,261	621,470	2,791	977,000 11
		75	11,780			2,049	1,622	58	360		5,845	5,526	319	24,634 12
23	9,725	11	1,945	1	208	2,235	510	334	1,331		53,063	52,310	753	101,105 13
411	185,688			7	903	20,169	1,962	1,816	16,391		429,076	416,773	12,303	747,617 14
7	3,525					2,588	81	123	381	2,000	16,160	15,873	287	27,672 15
851	119,749			22	3,538	20,337	1,605	1,770	16,962		287,667	285,000	2,667	508,223 16
175	75,804			15	2,945	69,983		1,651	68,322		604,244	602,393	1,851	839,375 17
2	1,040			1	120	402	220	78	879	30	879	815	64	4,912 18
41	16,572	11	3,610	9	2,014	2,070	329	183	1,567		29,744	28,762	982	65,224 19
374	159,048					77,084	6,270	2,136	60,113	8,265	734,607	734,607		1,429,028 20
326	126,948			12	1,645	13,742	2,405	849	10,488		367,513	364,593	2,920	637,116 21
30	11,385					1,124	120	16	158	830	8,185	8,185		22,779 22
1	1,000	56	10,198	1	96	5,500	4,874	81	542		44,655	44,491	161	83,885 23
5	2,500					1,982	132	35	315	1,500	9,442	9,312	30	18,014 24
45	21,471			1	65	1,329	652	74	603		11,507	11,435	72	48,242 25
8	4,960	4	1,270			2,415	1,436	117	862		15,036	14,680	356	36,538 26
42	21,944					2,369	1,154	86	1,069	60	36,546	36,382	164	73,204 27
22	11,468	2	390	3	318	2,043	1,200	3	540	300	19,160	18,790	370	44,277 28
92	48,771	2	264	1	260	53,424	2,712	348	50,364		62,686	59,068	3,618	254,498 29
15	7,021					952	539	41	372		11,790	11,705	85	28,694 30
105	35,870	74	13,841			10,050	1,210	289	8,121	430	115,463	113,740	1,723	222,645 31
19	8,200			1	125	572	201	90	281		6,793	6,071	722	20,180 32
3	2,500	17	5,000			568	390	15	163		5,885	5,570	315	18,600 33
28	14,047					2,599	1,491	106	1,092		42,247	41,899	348	70,734 34
11	6,455	3	1,118			3,087	263	29	2,785		10,422	10,341	81	24,600 35
7	3,476					2,090	1,987	10	93		2,887	2,696	191	13,200 36
1,088	489,620	726	193,532	174	21,202	148,189	9,274	7,367	130,347	1,201	2,488,919	2,460,431	28,488	4,074,514 37

marble and stone work, 2; matches, 1; mattresses and spring beds, 1; mineral and soda waters, 2; models and patterns, 1; musical instruments and materials, not specified, 1; optical goods, 1; paints, 2; paper hanging, 2; patent medicines and compounds, 1; paving and paving materials, 2; plastering and stuccowork, 1; sand and emery paper and cloth, 1; sewing machines and attachments, 1; silk and silk goods, 1; steam fittings and heating apparatus, 1; surgical appliances, 1; taxidermy, 2; umbrellas and canes, 1; window shades, 1; wirework, including wire rope and cable, 1; wood, turned and carved, 1; woolen goods, 1.

YORK.

5,802	\$2,283,326	1,501	\$335,093	462	\$60,756	\$708,453	\$50,851	\$19,727	\$654,429	\$73,446	\$6,078,070	\$5,869,260	\$208,810	\$11,961,706 1
310	111,578			4	568	9,721	750	250	8,721		183,506	180,933	2,573	407,417 2
5	1,516			3	350	225	24	62	149		1,681	1,567	114	8,400 3
8	3,312			3	395	1,331	1,044	7	160	120	7,966	7,614	352	18,800 4
14	4,992					925	565	130	290		10,085	9,686	399	30,025 5
6	1,894			1	75	2,436	1,392	117	817	110	12,551	11,937	614	86,294 6
13	4,628					1,350	1,075	10	265		25,927	25,846	581	42,557 7
65	22,446	103	19,990	3	468	4,343	300	794	3,249		140,772	139,448	1,324	223,774 8
160	52,099	17	3,072	38	6,141	19,633	1,833	926	16,844		284,195	274,834	9,361	458,762 9
113	36,588			15	2,566	6,600	1,650	238	3,712		12,373	12,831	9,542	99,750 10
3	1,000					475	108	47	820		4,659	4,542	117	9,981 11

TABLE 8.—MANUFACTURES IN CITIES

YORK—Continued.

	MANUFACTURING AND MECHANICAL INDUSTRIES AND CITIES AND BOROUGHS.	Number of establishments.	CAPITAL.					Proprietors and firm members.	SALARIED OFFICIALS, CLERKS, ETC.		AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES.	
			Total.	Land.	Buildings.	Machinery, tools, and implements.	Cash and sundries.		Number.	Salaries.	Total.	
											Average number.	Wages.
12	Carpentering.....	3	\$50,700	\$1,100	\$950	\$5,650	\$43,000	5			91	\$39,312
13	Carpets, rag.....	5	29,600	4,200	1,150	5,350	18,900	6			37	10,746
14	Carriage and wagon materials.....	4	113,971	12,000	22,500	17,900	61,571	9	1	\$208	99	36,669
15	Carriages and wagons.....	11	473,925	31,650	75,400	26,525	340,350	12	23	15,724	306	95,090
16	Clothing, men's, custom work and repairing.	22	108,429	13,600	15,250	3,827	75,752	26	2	875	115	34,394
17	Clothing, women's, dressmaking.....	4	4,010			1,010	3,000	4			19	3,090
18	Confectionery.....	20	178,253	33,710	38,909	65,905	39,729	21	15	24,757	293	58,373
19	Cooperage.....	4	12,375	3,500	4,600	775	3,500	4			8	2,412
20	Flouring and grist mill products.....	3	86,559	3,500	12,500	13,559	7,000	3	3	2,000	6	2,900
21	Foundry and machine shop products.....	11	2,544,619	316,500	274,400	551,056	1,402,663	20	62	63,030	1,591	661,779
22	Furniture, cabinetmaking, repairing, and upholstering.	6	17,775	5,800	4,400	825	6,750	8			9	4,000
23	Furniture, factory product.....	3	66,357	6,500	6,500	13,000	40,357	9	2	512	81	35,528
24	Iron and steel, nails and spikes, cut and wrought, including wire nails.	4	264,941	17,995	22,633	81,200	143,113	3	16	13,582	344	115,061
25	Lime and cement.....	6	34,050	10,500	3,850	7,000	12,700	8			29	9,469
26	Lock and gun smithing.....	4	3,675			1,600	1,975	4			3	1,102
27	Looking-glass and picture frames.....	3	18,150	600	1,500	1,350	14,700	3	4	2,600	18	6,828
28	Lumber, planing mill products, including sash, doors, and blinds.	6	420,000	83,500	47,600	59,300	234,600	13	3	2,250	281	115,625
29	Marble and stone work.....	3	17,200	600	100	4,700	11,800	5			25	15,224
30	Masonry, brick and stone.....	4	53,750	4,500	3,500	3,650	42,700	4			144	53,820
31	Millinery, custom work.....	11	69,050			5,750	63,300	15	35	8,575	52	14,945
32	Monuments and tombstones.....	3	5,005			725	4,280	3			5	2,320
33	Painting, house, sign, etc.....	12	37,135	2,050	1,700	3,455	29,930	13	4	1,944	84	33,681
34	Paper and wood pulp.....	3	154,858	5,000	28,000	76,905	44,453	7	4	3,176	50	30,862
35	Patent medicines and compounds.....	4	16,300	700	5,000	450	10,150	7	1	1,800	13	5,300
36	Photography.....	5	15,200			4,800	10,400	7			18	6,182
37	Plastering and stucco work.....	4	2,900	350	200	550	1,800	5			23	7,607
38	Plumbing, and gas and steam fitting.....	19	82,270	9,400	11,550	9,175	52,145	21	2	964	71	34,520
39	Printing and publishing, book and job.....	11	23,040	2,700	3,200	21,400	11,740	12			14	6,195
40	Printing and publishing, newspapers and periodicals.....	7	207,208	16,200	9,000	100,986	81,022	11	31	17,283	106	88,385
41	Saddlery and harness.....	8	20,175	1,400	4,000	1,475	13,300	9			21	8,250
42	Shirts.....	4	18,186			9,686	8,500	8	2	1,336	207	40,290
43	Tinsmithing, coppersmithing, and sheet-iron working.....	11	29,925	2,200	850	3,825	23,050	10	1	300	24	10,032
44	Tobacco, cigars and cigarettes.....	48	644,097	24,050	46,200	34,180	539,667	56	23	56,270	1,131	324,539
45	Watch, clock, and jewelry repairing.....	13	53,532	13,800	20,200	4,425	15,307	14			8	2,210
46	All other industries ¹	64	2,946,891	212,881	575,224	924,669	1,234,117	64	110	175,932	1,515	533,762

¹ Embraces awnings, tents, and sails, 1; blacking, 1; bookbinding and blank book making, 2; boxes, fancy and paper, 1; boxes, wooden packing, 1; cars and general shop construction and repairs by steam railroad companies, 2; cleansing and polishing preparations, 1; clothing, men's, factory product, 1; clothing, women's, factory product, 1; dentists' materials, 1; dyeing and cleaning, 1; electrical apparatus and supplies, 1; electrical construction and repairs, 2; fertilizers, 1; files, 1; furnishing goods, men's, 1; gas, illuminating and heating, 1; hardware, saddlery, 1; hats and caps, not including fur hats and wool hats, 1; hosiery and knit goods, 1; ice, manufactured, 2; iron and steel, 1; ironwork, architectural and ornamental, 1; kaolin and other earth grinding, 1; liquors, malt, 2; malt, 1;

TABLE 9.—MANUFACTURES IN CITIES AND

	Total for cities and boroughs.....	7,799	\$236,490,999	\$15,356,430	\$86,683,294	\$57,125,169	\$127,326,106	8,678	6,195	\$6,204,857	118,973	\$51,553,695
2	Ashland.....	54	307,871	16,925	34,875	177,296	78,775	65	7	3,525	168	85,640
3	Athens.....	51	843,719	143,146	161,135	95,276	444,162	54	38	29,107	589	220,250
4	Bangor.....	73	804,517	55,650	61,250	206,301	481,316	81	70	44,700	944	343,687
5	Beaver Falls.....	119	6,367,196	339,305	1,300,453	1,778,327	2,949,106	110	134	161,823	2,231	1,022,075
6	Bellefonte.....	62	874,076	60,025	275,306	207,087	331,658	71	44	38,011	506	219,770
7	Berwick.....	33	2,446,463	86,775	441,050	509,287	1,349,351	28	53	61,882	1,335	730,505
8	Bethlehem.....	106	1,871,072	166,370	343,123	823,150	543,424	117	44	46,480	1,265	326,954
9	Birdsboro.....	26	1,035,866	21,925	203,480	329,025	540,926	30	24	47,236	861	335,450
10	Bloomburg.....	65	2,093,473	134,750	509,587	608,313	840,823	69	65	65,030	1,029	328,585
11	Braddock.....	121	2,724,303	323,222	359,723	691,145	1,320,213	132	71	60,828	1,437	893,037
12	Bradford.....	149	2,674,380	132,453	233,837	860,668	1,397,427	183	101	97,397	1,965	1,031,949
13	Bridgeport.....	28	1,954,100	65,590	371,747	559,606	837,157	22	22	30,207	833	265,209
14	Bristol.....	72	3,616,181	81,545	189,551	1,258,827	2,050,258	72	57	67,902	2,027	751,093
15	Butler.....	129	1,636,396	154,175	285,422	532,314	724,485	159	40	47,686	1,003	505,468
16	Carbondale.....	92	1,618,034	89,445	373,492	350,108	804,089	103	71	69,552	1,188	387,528
17	Carlisle.....	109	1,125,685	95,265	172,442	254,185	603,793	129	82	92,894	1,385	415,986
18	Carnegie.....	53	465,890	62,546	66,160	120,375	216,759	65	14	15,678	381	231,519
19	Catsaunqu.....	68	3,136,658	280,872	1,363,224	555,921	937,441	63	72	94,575	1,543	592,026
20	Chambersburg.....	107	833,037	85,556	91,780	268,297	412,404	124	35	25,425	703	283,676
21	Charleroi.....	62	2,896,002	136,044	725,235	773,141	755,532	65	66	79,673	1,270	671,371
22	Coatesville.....	70	4,772,487	112,543		878,757	2,574,879	73	113	95,805	1,854	840,322
23	Columbia.....	142	2,403,571	235,475	344,349	751,320	1,072,418	141	86	61,522	2,729	968,288
24	Connellsville.....	121	1,283,667	109,887	174,035	367,000	632,745	149	57	45,230	916	495,761
25	Conshohocken.....	55	3,957,818	205,350	512,275	1,105,919	2,104,274	51	129	178,180	1,951	896,797
26	Cornapolis.....	20	471,294	25,976	80,048	86,881	278,389	19	41	69,436	397	171,916

BY SPECIFIED INDUSTRIES: 1900—Continued.

YORK—Continued.

AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES—continued.						MISCELLANEOUS EXPENSES.					COST OF MATERIALS USED.			Value of products, including custom work and repairing.	
Men, 16 years and over.		Women, 16 years and over.		Children, under 16 years.		Total.	Rent of works.	Taxes, not in- cluding internal revenue.	Rent of offices, interest, etc.	Contract work.	Total.	Principal materials, including mill supplies and freight.	Fuel and rent of power and heat.		
Average number.	Wages.	Average number.	Wages.	Average number.	Wages.										
90	\$39,156			1	\$156	\$23,850	\$650	\$25	\$1,300	\$20,875	\$52,565	\$54,165	\$400	\$140,000	12
31	10,022			6	724	2,954	300	19	622	2,013	23,926	24,820	166	49,487	13
91	35,295			8	1,374	3,151		291	2,860		79,712	78,522	1,190	158,250	14
299	93,740	3	\$925	4	725	19,125	1,215	2,077	1,833	14,000	261,437	259,213	2,221	467,494	15
57	22,431	53	11,531	5	432	6,003	3,400	316	2,212	75	58,009	57,096	913	125,747	16
70	25,394	17	2,890	2	200	719	444		275		3,202	3,097	105	11,050	17
8	2,412	149	23,126	74	9,853	18,033	1,395	321	16,407		250,631	246,701	3,330	419,397	18
6	2,900					204		39	165		5,440	5,350	90	10,852	19
1,568	658,931			23	2,848	151,026	400	87	2,149		111,839	110,589	1,250	129,308	20
9	4,000					542	72	82	388	250	1,405,645	1,340,324	65,321	2,654,772	21
81	35,528					2,524	20	140	2,361		40,244	39,479	765	158,560	23
334	113,614	1	150	9	1,297	8,755	800	509	7,446		274,915	254,250	20,665	467,669	24
28	9,369			1	100	1,200		200	1,000		12,168	5,711	6,457	31,630	25
3	1,102					734	414	14	306		1,886	1,811	75	6,100	26
13	5,628	5	1,200			7,198	646	42	750	5,700	8,640	8,450	190	32,500	27
278	115,200			3	425	8,786		2,166	6,620		233,430	230,860	2,570	424,250	28
25	15,224			3	309	585	320	5	200		17,845	17,690	155	45,200	29
141	53,520	49	14,435	3	510	15,446	9,422	101	1,345	14,000	86,225	85,875	350	175,100	30
5	2,320					574	424	41	3,441		79,737	78,798	939	145,000	31
78	32,871			6	810	1,942	1,632		150		4,515	4,470	45	11,100	32
49	30,706			1	156	8,090	2,250	41	369		27,190	26,785	405	87,394	33
8	4,500	5	800			6,496	686	110	5,700		103,661	93,216	10,415	183,723	34
9	4,102	9	2,080			3,230	1,569	30	5,980		25,352	25,262	90	53,294	35
19	7,050					8,230	1,609	18	1,273	370	10,110	9,925	185	28,000	36
68	33,980			4	557	207	102	5	100		4,736	4,666	70	17,290	37
12	5,870			3	540	2,968	1,597	132	1,329		76,278	75,517	761	162,687	38
76	33,570	2	292	2	325	1,370	948	79	343		8,949	8,327	622	27,675	39
21	8,250			88	4,523	14,365	1,561	318	11,751	732	37,587	35,412	2,175	130,920	40
8	5,556					2,250	1,272	63	915		16,037	15,702	335	34,703	41
24	10,032	185	34,266	14	468	1,210	883	15	312		90,831	89,668	1,063	165,832	42
618	205,372	470	114,248			2,475	1,185	88	1,202		17,576	17,234	312	44,640	43
7	2,110	1	100			1,210	883	15	312		90,831	89,668	1,063	165,832	44
971	413,523	432	106,288	112	18,951	1,914	1,137	202	400	175	6,314	5,772	512	18,293	45
						230,973	7,634	4,761	203,612	14,966	1,442,402	1,385,848	56,551	2,794,750	46

mattresses and spring beds, 2; mineral and soda waters, 1; models and patterns, 1; musical instruments, organs and materials, 2; paper hanging, 1; paper hangings, 2; paving and paving materials, 2; pottery, terra cotta, and fire-clay products, 1; sales and vaults, 1; silk and silk goods, 2; soap and candles, 1; steam fittings and heating apparatus, 1; stereotyping and electrotyping, 1; tobacco, chewing, smoking, and snuff, 1; umbrellas and canes, 1; washing machines and clothes wringers, 1; wirework, including wire rope and cable, 2.

BOROUGHES UNDER 20,000 IN POPULATION: 1900.

96,991	\$17,189,606	16,089	\$3,526,426	5,893	\$837,663	\$18,273,118	\$1,618,437	\$555,249	\$13,014,123	\$3,055,309	\$164,136,310	\$152,307,395	\$11,888,945	\$286,791,008	1
156	82,582	11	2,914	1	144	9,779	2,617	776	6,386		132,909	128,551	4,358	274,765	2
517	210,828	48	6,423	21	2,999	54,556	12,280	826	36,113	4,837	618,956	606,767	12,189	1,012,183	3
810	327,062	101	17,975	33	3,650	110,955	61,399	1,017	48,539		562,617	529,839	22,808	1,230,550	4
1,931	964,939	174	38,253	106	18,888	303,189	9,464	10,275	283,450		3,780,651	3,657,751	122,900	6,245,501	5
469	209,364	45	10,242	2	164	46,731	10,632	1,173	34,376	550	652,436	560,480	91,956	1,175,968	6
1,292	721,244	35	8,162	8	1,099	111,087	2,040	3,095	101,845	4,087	2,808,818	2,726,499	82,314	4,372,953	7
681	207,310	439	98,607	195	21,037	240,028	14,443	4,054	122,944	98,587	985,368	971,546	20,822	1,822,219	8
759	312,729	58	15,568	41	7,153	58,240	15,095	2,836	40,390		1,321,574	999,609	321,912	2,026,928	9
655	250,986	308	63,892	86	13,567	106,093	8,615	3,183	44,256	50,039	978,508	969,711	17,797	1,532,559	10
1,374	877,992	37	10,247	26	4,898	875,170	16,632	4,061	482,227	332,250	3,111,916	3,045,666	66,250	5,644,152	11
1,821	985,255	130	38,148	24	8,516	224,062	17,977	5,001	175,084	26,900	2,011,858	1,938,070	73,788	4,101,839	12
402	174,970	333	76,847	98	13,392	66,292	2,484	3,140	60,668		1,358,235	1,243,650	15,185	1,821,585	13
1,135	502,412	664	208,844	228	39,777	332,920	25,478	2,012	393,409	2,021	2,577,508	2,510,090	67,418	4,008,248	14
905	482,462	61	15,593	34	7,413	144,796	8,630	15,040	75,990	45,136	749,216	686,737	62,479	1,877,419	15
735	326,722	210	40,211	193	20,595	100,701	13,939	10,833	76,379		572,101	554,405	17,696	1,384,662	16
858	315,855	495	97,079	32	3,052	83,436	12,583	2,630	62,553	5,670	1,249,456	1,234,789	14,667	2,131,239	17
358	225,875	18	4,994	5	650	67,192	6,914	7,220	27,260	25,789	431,609	415,196	19,464	909,890	18
1,181	527,471	208	42,343	154	22,212	190,598	2,769	11,558	135,045	41,226	1,660,319	1,580,471	79,848	3,197,297	19
600	245,233	165	34,218	28	4,235	62,527	10,829	1,574	34,724	15,400	633,952	623,475	10,477	1,127,412	20
1,011	615,070	48	11,612	211	44,689	278,069	2,133	12,150	229,086	34,700	700,669	614,034	86,635	1,871,505	21
1,674	808,961	128	20,951	52	10,410	219,305	7,809	7,981	150,235	53,280	3,752,864	3,528,226	224,638	6,356,079	22
1,728	797,399	729	185,410	272	35,479	160,051	13,661	4,726	78,943	62,721	2,837,765	2,724,630	113,135	4,729,477	23
831	477,737	65	14,222	20	3,802	50,344	12,616	2,159	25,969	6,660	1,449,328	1,418,301	31,037	2,380,137	24
1,525	773,299	359	113,724	67	9,774	219,482	49,846	7,248	162,001	387	2,363,063	2,260,637	102,426	4,444,320	25
295	141,380	77	23,036	25	7,500	35,336	2,165	341	26,000	6,830	365,093	286,834	18,259	731,840	26

TABLE 9.—MANUFACTURES IN CITIES AND

CITIES AND BOROUGHS.	Number of establishments.	CAPITAL.						Proprietors and firm members.	SALARIED OFFICIALS, CLERKS, ETC.		AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES.	
		Total.	Land.	Buildings.	Machinery, tools, and implements.	Cash and sundries.	Number.		Salaries.	Total.		
										Average number.	Wages.	
27 Corry	109	\$830,727	\$79,540	\$164,457	\$165,073	\$421,657	112	36	\$28,818	585	\$255,129	
28 Danville	92	2,836,268	112,179	302,306	1,110,576	1,311,207	107	74	75,998	2,414	855,306	
29 Darby	45	1,363,579	59,715	196,708	570,323	536,833	54	24	28,259	744	270,921	
30 Dubois	56	1,513,316	80,142	274,089	232,354	926,131	74	40	36,351	893	855,925	
31 Dunmore	53	1,336,477	118,869	260,561	341,362	615,685	51	60	60,458	893	854,922	
32 Duquesne	19	14,368,059	1,421,000	635,494	5,775,411	6,526,154	24	77	88,877	1,497	1,075,152	
33 East Mauch Chunk	21	301,135	9,100	102,656	133,994	55,385	19	3	3,016	383	76,257	
34 Ephrata	66	370,198	10,603	52,703	64,027	242,865	74	13	7,876	501	130,323	
35 Etna	37	3,701,581	832,400	1,274,644	503,317	1,091,220	37	34	50,190	1,709	865,992	
36 Franklin	120	4,523,916	186,000	276,601	354,463	3,706,252	156	156	271,365	758	854,318	
37 Greencastle	26	48,526	8,670	7,630	8,665	28,561	29	1	100	61	19,476	
38 Greenville	79	1,998,509	69,666	485,743	829,791	613,309	90	48	39,589	999	544,612	
39 Hamburg	62	416,757	19,925	69,914	99,524	227,394	77	11	6,704	369	113,515	
40 Hanover	85	766,387	29,437	102,270	212,023	422,657	113	38	20,513	849	262,267	
41 Hawley	28	716,842	73,550	69,200	114,155	459,937	34	12	11,200	448	140,953	
42 Hazelton	141	1,488,290	186,276	368,395	479,125	504,494	156	78	53,241	1,049	341,769	
43 Hollidaysburg	38	167,649	22,100	92,775	29,155	99,619	41	11	7,051	197	77,736	
44 Homestead	52	2,691,815	517,421	279,335	776,762	1,017,697	63	87	86,113	1,030	439,247	
45 Homestead	71	1,357,399	67,000	225,957	276,142	788,300	81	60	51,694	680	238,684	
46 Huntingdon	68	1,062,520	79,200	224,600	325,282	433,438	75	31	23,320	550	209,583	
47 Lansford	24	208,116	3,190	35,740	75,273	93,913	22	3	2,550	283	119,815	
48 Lebanon	219	7,756,390	636,667	1,853,022	2,607,877	2,656,824	247	201	210,477	5,613	2,245,809	
49 Lehigh	42	648,281	42,990	140,104	131,650	324,537	44	30	22,105	380	99,715	
50 Lewisburg	36	889,487	13,410	54,840	115,635	205,002	40	11	7,664	260	82,927	
51 Lewistown	64	1,011,949	84,650	205,980	209,690	611,629	69	22	21,337	563	223,705	
52 McKees Rocks	34	14,990,471	604,550	917,753	1,009,228	12,458,040	32	220	90,188	2,055	1,206,476	
53 Mahanoy City	99	607,059	32,950	276,346	148,271	149,492	112	31	20,488	474	181,582	
54 Manheim	58	157,490	14,060	41,085	26,179	76,166	59	9	3,634	334	76,903	
55 Marietta	37	849,538	21,950	143,560	126,736	554,292	33	30	24,760	674	210,151	
56 Mauch Chunk	34	366,370	21,750	68,670	95,671	180,279	35	15	14,312	323	143,714	
57 Meadville	135	1,415,783	62,480	255,650	562,069	535,584	151	97	74,532	1,445	648,020	
58 Mechanicsburg	58	482,155	42,245	78,580	133,985	207,345	60	25	13,920	444	173,840	
59 Media	40	235,997	31,720	66,250	59,076	78,951	44	5	4,410	170	75,309	
60 Middletown	50	2,323,876	217,975	460,907	781,920	863,074	49	48	52,099	1,572	556,818	
61 Millvale	37	819,149	45,775	80,725	116,217	76,432	38	20	13,862	119	70,609	
62 Milton	60	1,950,893	91,360	265,795	580,997	1,012,741	69	57	58,398	1,421	584,674	
63 Minersville	36	75,177	8,075	20,075	21,104	22,923	33	1	520	84	25,290	
64 Monongahela	58	805,861	64,758	145,770	203,772	331,561	65	30	25,944	438	288,310	
65 Nanticoke	73	328,414	27,876	89,103	121,553	89,882	83	12	6,166	207	73,161	
66 New Brighton	68	2,903,449	145,241	422,920	1,218,592	1,116,687	77	90	119,447	1,482	590,689	
67 New Haven	22	40,401	8,400	11,450	4,910	15,641	25	1	750	46	20,941	
68 New Holland	23	76,843	8,900	22,000	16,084	34,850	27	4	3,782	81	23,894	
69 Northumberland	16	238,788	7,350	46,796	15,274	169,348	18	13	6,196	267	74,940	
70 Oil City	158	4,578,237	323,924	583,501	969,291	2,701,521	189	119	147,572	1,992	1,038,173	
71 Orwigsburg	27	268,522	8,200	27,635	63,286	169,351	34	45	19,706	453	133,189	
72 Pen Argyl	31	392,615	122,900	27,010	85,460	157,245	58	9	4,660	336	177,873	
73 Phoenixville	92	6,482,025	634,180	1,077,277	2,314,024	2,456,544	94	128	134,272	2,556	1,099,719	
74 Pittston	95	1,038,797	112,590	308,768	424,332	41,309	100	54	41,309	505	222,340	
75 Plymouth	101	579,558	25,072	68,949	242,263	248,269	98	38	20,701	923	213,497	
76 Pottstown	144	4,922,556	537,933	887,960	932,090	2,564,578	164	183	148,427	3,059	1,251,229	
77 Pottsville	206	3,383,237	395,050	758,975	808,330	1,380,882	232	150	111,198	1,967	671,179	
78 Rahkin	12	4,962,354	386,659	884,560	1,768,984	2,422,151	8	73	62,535	1,622	983,867	
79 Rochester	47	2,228,337	171,019	474,675	486,422	1,146,220	59	40	56,685	1,433	589,516	
80 St. Clair	31	94,863	3,750	9,875	14,355	66,883	42	7	3,780	213	47,506	
81 Sayre	46	1,341,905	31,627	570,937	849,401	889,940	52	64	47,908	1,261	591,238	
82 Schuylkill Haven	53	545,701	47,997	88,800	205,656	203,748	59	15	7,873	702	259,499	
83 Shamokin	143	971,130	88,750	141,516	210,671	530,193	151	50	39,807	1,008	813,057	
84 Sharon	96	6,140,725	507,000	1,242,637	2,492,506	1,888,582	112	96	131,594	3,145	1,001,748	
85 Sharpsburg	103	1,053,416	121,250	128,250	111,531	692,385	117	32	33,458	1,213	669,940	
86 Sharpsville	21	3,657,100	92,838	804,286	220,265	2,639,711	22	37	42,002	912	531,809	
87 Shippensburg	54	263,081	13,150	40,419	45,578	163,934	70	26	13,809	284	71,437	
88 Slaton	54	756,751	46,775	73,775	194,346	441,855	61	43	29,827	926	362,384	
89 South Bethlehem	127	8,713,185	126,745	707,745	1,161,985	6,716,700	126	281	842,142	5,544	2,390,100	
90 South Williamsport	15	686,678	31,131	78,895	217,870	258,777	14	15	16,164	386	146,213	
91 Spring City	47	509,302	45,200	94,800	99,689	269,673	46	20	19,708	432	198,685	
92 Steelton	55	6,315,833	99,166	967,815	857,651	4,391,201	51	273	275,189	4,871	2,127,334	
93 Stroudsburg	55	461,770	43,775	90,850	171,810	155,835	63	13	12,015	544	232,046	
94 Summit Hill	14	34,078	1,375	3,935	2,658	26,110	16	16	26,110	29	11,105	
95 Sunbury	76	2,101,602	139,894	353,119	580,395	1,028,254	76	80	55,513	1,140	441,531	
96 Susquehanna	82	810,076	69,950	213,948	396,770	129,408	81	18	12,580	1,187	613,508	
97 Tamaqua	64	917,124	87,415	280,350	319,276	250,083	65	28	24,035	564	229,728	
98 Tarentum	55	2,192,747	216,806	542,150	880,313	548,478	58	59	81,620	1,420	623,233	
99 Taylor	12	170,549	6,286	14,615	51,186	98,462	12	8	6,139	197	30,375	
100 Titusville	113	2,550,452	121,516	898,740	739,743	1,290,453	127	67	92,408	1,204	522,749	
101 Towanda	89	673,021	40,000	83,115	187,220	362,686	111	42	30,220	559	185,477	
102 Turtle Creek	14	14,800	3,000	3,250	4,360	4,190	15	15	44,522	15	9,710	
103 Tyrone	69	1,098,861	63,461	180,337	500,335	351,678	80	40	44,522	560	243,711	
104 Uniontown	130	872,549	152,850	171,850	223,069	324,780	157	37	25,579	743	323,863	
105 Warren	119	2,869,020	174,169	466,718	1,142,487	1,085,696	138	74	76,602	1,270	585,590	
106 Washington	150	2,897,671	185,677	504,823	853,626	1,353,645	174	119	130,468	2,206	1,052,616	

BOROUGHES UNDER 20,000 IN POPULATION: 1900—Continued.

AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES—continued.						MISCELLANEOUS EXPENSES.						COST OF MATERIALS USED.				Value of products, including custom work and repairing.	
Men, 16 years and over.		Women, 16 years and over.		Children, under 16 years.		Total.	Rent of works.	Taxes, not including internal revenue.	Rent of offices, interest, etc.	Contract work.	Total.	Principal materials, including mill supplies and freight.	Fuel and rent of power and heat.				
Average number.	Wages.	Average number.	Wages.	Average number.	Wages.												
524	\$241,089	56	\$12,926	5	\$1,114	\$65,053	\$7,543	\$3,928	\$48,082	\$5,500	\$493,058	\$481,785	\$11,273	\$1,001,464	27		
1,968	798,944	209	35,808	237	20,554	227,030	8,715	7,932	208,983	1,400	2,759,707	2,489,451	270,256	4,317,776	28		
287	144,369	293	93,237	164	33,315	78,366	5,013	3,290	61,490	5,513	570,333	559,043	11,290	1,182,278	29		
846	345,917	35	7,358	12	2,650	89,756	6,709	6,304	76,743		1,229,312	1,216,279	13,033	1,926,891	30		
711	322,350	138	25,918	44	6,654	180,467	11,532	3,647	141,788	23,500	602,486	649,592	12,894	1,472,675	31		
1,493	1,074,348			4	804	435,881	1,678	34,637	399,566		14,611,842	13,167,490	1,444,352	20,365,667	32		
177	45,514	167	26,370	39	4,378	66,965	1,088	597	22,644	42,636	478,844	473,936	4,908	685,394	33		
219	75,008	232	49,488	50	5,827	65,227	2,886	759	51,380	10,202	308,958	300,016	8,942	634,359	34		
1,651	851,507	8	3,015	50	11,470	64,848	1,263	12,635	50,780	170	2,515,585	2,007,678	507,907	5,655,269	35		
685	338,455	62	14,033	11	1,830	1,506,361	10,928	4,997	1,489,186	1,250	1,826,916	1,790,014	36,902	6,046,218	36		
89	15,473	17	3,353	5	648	3,989	1,802	123	2,514	50	49,673	48,837	836	94,622	37		
916	528,502	70	14,192	13	1,918	65,003	4,775	2,703	37,825	19,700	1,116,066	1,058,722	57,344	1,900,471	38		
242	90,391	94	20,674	33	2,450	20,950	3,125	1,041	13,159	8,625	383,291	375,596	7,695	627,209	39		
524	203,257	309	56,267	16	2,743	78,399	4,971	1,348	72,080		567,542	540,304	17,238	1,153,492	40		
288	112,206	88	18,756	72	9,991	21,825	1,234	1,737	8,404	10,460	587,627	574,638	12,989	809,724	41		
557	270,206	396	60,472	96	11,091	166,935	18,513	5,353	123,148	19,921	520,222	511,128	9,094	1,478,503	42		
183	75,236	12	2,300	2	200	8,931	1,691	592	6,648		190,979	175,982	14,997	332,022	43		
1,006	433,265	16	4,154	8	1,828	59,737	16,180	2,412	41,145		725,729	701,675	24,054	1,444,245	44		
350	161,414	270	69,865	60	7,405	90,242	6,299	2,753	59,190	22,000	714,659	704,332	10,327	1,235,425	45		
367	165,255	171	41,916	12	1,412	82,972	8,349	2,624	71,999		547,414	530,897	16,517	971,674	46		
270	117,215	9	1,956	4	644	3,728	1,511	1,515	702		200,274	197,795	2,479	348,517	47		
4,554	1,958,687	846	249,744	213	37,378	350,716	18,082	17,411	312,281	2,942	6,512,892	5,612,645	900,247	10,167,455	48		
208	79,021	135	17,707	37	2,987	38,955	4,595	1,988	23,285	9,087	414,945	408,240	6,705	691,705	49		
188	68,923	72	14,004			11,286	2,417	997	7,872		310,212	304,603	5,609	469,221	50		
523	214,619	81	7,846	9	1,240	41,760	5,036	1,587	24,772	10,365	562,710	542,013	20,697	984,234	51		
2,010	1,197,355	2	500	48	8,621	589,720	2,266	5,759	120,695	402,000	2,517,940	2,384,586	133,354	4,288,935	52		
270	99,630	180	28,998	24	2,954	119,879	7,416	8,930	103,533		230,275	223,188	7,092	648,646	53		
138	42,742	179	31,749	17	2,412	36,158	1,299	316	33,511	1,002	273,015	270,237	2,778	450,698	54		
492	173,922	153	33,670	29	2,553	33,986	3,184	897	24,563	5,342	651,529	524,012	127,517	1,125,701	55		
294	138,048	28	5,546	1	120	22,802	3,889	1,068	16,445	800	251,282	247,594	8,688	506,252	56		
1,250	603,944	194	43,926	1	150	77,057	18,616	1,748	54,481	7,212	1,099,379	1,075,688	23,691	2,159,110	57		
358	161,147	71	11,039	15	1,654	22,811	3,160	1,217	18,484		313,820	303,811	10,009	636,083	58		
162	73,709	8	1,600			27,418	4,050	1,252	12,416	9,700	87,575	85,296	2,279	279,436	59		
1,372	516,625	129	29,533	71	10,680	52,608	8,709	3,424	44,914	561	3,269,223	3,212,482	56,791	5,198,286	60		
115	69,967	2	336	2	306	80,649	3,042	2,130	74,477	1,000	174,499	166,686	7,813	466,389	61		
1,228	494,917	154	85,446	39	4,311	86,020	7,148	8,520	75,352		1,885,416	1,820,144	65,272	2,912,209	62		
35	16,341	46	8,588	3	368	11,821	1,826	224	8,471	1,300	87,705	86,729	976	167,798	63		
414	282,864	17	4,320	7	1,126	56,285	4,485	2,270	38,920	10,610	337,720	315,869	21,851	841,155	64		
114	61,168	42	6,742	51	5,251	47,043	4,824	857	41,880	135	194,244	190,621	3,623	399,678	65		
1,207	539,837	200	40,096	75	10,666	108,677	6,187	5,940	94,047	2,547	1,003,463	956,329	47,134	2,195,552	66		
89	19,441	7	1,500			2,203	1,211	320	672		44,473	43,829	644	90,002	67		
51	18,232	26	5,531	4	131	36,196	653	125	4,768	80,650	78,425	77,230	1,135	165,687	68		
136	53,109	122	21,112	9	719	6,766	878	5,560	5,560		224,827	218,422	6,405	360,928	69		
1,872	1,007,906	117	29,817	3	450	161,223	20,559	9,736	123,933	2,000	4,742,848	4,642,547	100,301	6,710,886	70		
248	89,226	177	41,206	28	2,757	15,625	1,568	394	13,668		406,428	401,231	2,192	648,223	71		
233	149,613	103	28,260			46,457	40,328	1,220	4,909		219,184	211,823	7,361	537,322	72		
2,168	1,018,451	253	66,771	130	14,497	232,903	10,278	7,779	214,906		3,202,965	3,028,984	173,981	4,992,772	73		
390	199,216	104	21,665	11	1,559	38,686	12,288	2,988	62,210	21,200	722,800	714,503	8,297	1,261,600	74		
276	119,741	418	73,427	229	20,329	95,935	9,058	1,367	81,010	4,500	362,488	356,011	6,447	803,728	75		
2,421	1,142,666	459	85,232	179	23,331	386,985	214,608	7,174	163,398	1,805	5,263,759	4,970,052	293,707	8,111,486	76		
1,303	571,700	534	85,869	130	13,610	383,317	29,653	8,636	312,531	32,497	3,026,129	3,591,919	31,210	5,354,633	77		
1,574	973,963			48	9,904	716,589	634	14,128	701,827		5,437,357	4,992,790	444,567	8,007,680	78		
927	501,770	206	61,847	300	25,899	104,262	2,412	3,464	98,366		470,450	464,832	55,618	1,440,567	79		
25	10,600	170	34,534	18	2,852	2,225	880	135	1,260		57,678	56,710	968	146,277	80		
1,192	579,243	60	9,373	9	2,622	40,754	1,717	8,412	28,625	2,000	1,170,326	1,148,685	21,641	1,945,797	81		
413	193,872	270	63,418	19	2,209	15,605	2,012	822	12,771		1,105,426	1,094,883	10,543	1,497,484	82		
503	212,976	480	91,741	85	8,340	130,080	20,769	1,575	29,252	78,484	905,421	896,496	8,925	1,656,606	83		
3,078	1,586,957	50	12,280	17	2,511	470,574	9,209	19,134	411,839	30,392	6,751,895	6,148,550	603,345	9,805,039	84		
1,086	644,207	15	8,982	112	21,757	81,674	15,856	3,986	31,028	80,804	1,854,014	1,732,013	122,001	2,950,668	85		
910	531,019	1	250	1	40	229,576	493	7,421	221,662		4,220,3,						

TABLE 9.—MANUFACTURES IN CITIES AND

CITIES AND BOROUGHES.	Number of establishments.	CAPITAL.					Proprietors and firm members.	SALARIED OFFICIALS, CLERKS, ETC.		AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES.	
		Total.	Land.	Buildings.	Machinery, tools, and implements.	Cash and sundries.		Number.	Salaries.	Total.	
										Average number.	Wages.
107 Watsonstown.....	21	\$257,571	\$12,250	\$45,360	\$59,678	\$140,283	20	38	\$23,588	\$280	\$91,651
108 Waynesboro.....	61	8,984,774	60,125	271,665	310,535	3,342,449	61	97	98,069	1,103	507,628
109 West Bethlehem.....	17	143,990	14,425	30,630	27,020	65,915	22	6	4,000	69	29,214
110 West Chester.....	112	1,244,188	136,200	222,451	340,007	545,500	127	69	50,783	740	351,087
111 West Pittston.....	35	567,287	22,500	106,887	195,955	241,945	36	31	47,048	299	123,238
112 Wilkinsburg.....	131	1,049,683	131,370	122,420	68,396	726,897	159	15	6,048	655	461,107
113 Wilmerding.....	10	19,546,553	311,300	2,226,500	653,656	16,355,097	9	109	241,595	2,015	1,353,869
114 Wrightsville.....	34	462,672	22,250	126,746	87,585	226,091	38	30	15,673	427	133,735

BOROUGHES UNDER 20,000 IN POPULATION: 1900—Continued.

AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES—continued.						MISCELLANEOUS EXPENSES.					COST OF MATERIALS USED.			Value of products, including custom work and repairing.	
Men, 16 years and over.		Women, 16 years and over.		Children, under 16 years.		Total.	Rent of works.	Taxes, not in- cluding internal revenue.	Rent of offices, interest, etc.	Contract work.	Total.	Principal materials, including mill supplies and freight.	Fuel and rent of power and heat.		
Average number.	Wages.	Average number.	Wages.	Average number.	Wages.										
259	\$87,142	16	\$3,909	5	\$600	\$11,747	\$1,154	\$728	\$9,865	-----	\$298,200	\$293,628	\$4,572	\$459,670	107
1,086	504,872	14	2,811	3	445	265,093	5,604	5,099	211,050	\$13,340	1,072,213	1,053,728	16,485	2,781,059	108
62	28,064	7	1,150			19,928	424	516	3,488	15,500	174,573	172,320	2,253	276,939	109
695	342,332	35	7,062	10	1,693	164,169	10,106	3,423	64,900	85,650	459,559	445,761	13,798	1,378,362	110
206	107,214	86	15,247	7	777	127,444	3,357	1,344	117,898	4,845	242,730	238,457	4,273	621,996	111
623	455,447	31	8,480	1	180	644,594	12,643	1,868	19,165	610,918	897,931	895,769	2,162	2,295,846	112
1,997	1,348,984	14	3,873	4	1,012	636,488	880	51,323	581,185	100	2,592,726	2,546,018	46,708	9,171,384	113
836	118,052	74	14,669	17	1,014	81,909	5,753	935	24,521	700	470,759	345,305	125,451	781,452	114

CENSUS BULLETIN.

No. 164.

WASHINGTON, D. C.

April 29, 1902.

AGRICULTURE.

CALIFORNIA.

Hon. WILLIAM R. MERRIAM,
Director of the Census.

SIR: I have the honor to transmit herewith, for publication in bulletin form, the statistics of agriculture for the state of California, taken in accordance with the provisions of section 7 of the act of March 3, 1899. This section requires that—

The schedules relating to agriculture shall comprehend the following topics: Name of occupant of each farm, color of occupant, tenure, acreage, value of farm and improvements, acreage of different products, quantity and value of products, and number and value of live stock. All questions as to quantity and value of crops shall relate to the year ending December thirty-first next preceding the enumeration.

A "farm," as defined by the Twelfth Census, includes all the land, under one management, used for raising crops and pasturing live stock, with the wood lots, swamps, meadows, etc., connected therewith. It includes also the house in which the farmer resides, and all other buildings used by him in connection with his farming operations.

The farms of California, June 1, 1900, numbered 72,542, and had a value of \$707,912,960. Of this amount \$77,468,000, or 10.9 per cent, represents the value of buildings, and \$630,444,960, or 89.1 per cent, the value of land and improvements other than buildings. On the same date the value of farm implements and machinery was \$21,311,670, and that of live stock, \$67,303,325. These values, added to that of farms, give \$796,527,955, the "total value of farm property."

The products derived from domestic animals, poultry, and bees, including animals sold and animals slaughtered on farms, are referred to in this bulletin as "animal products." The total value of all such products, together with the value of all crops, is termed "total value of farm products." This value for 1899 was \$131,690,606, of which amount \$36,324,894, or 27.6 per cent, represents the value of animal products, and \$95,365,712, or 72.4 per cent, the value of crops, including forest products cut or produced

on farms. The total value of farm products for 1899 exceeds that reported for 1889 by \$44,657,316, or 51.3 per cent.

The value of "net farm products," or the "gross farm income," is obtained by deducting from the total value of farm products the value of the products fed to live stock on the farms of the producers. In 1899 the reported value of products fed was \$13,488,570, leaving \$118,202,036 as the gross farm income. The percentage which this latter amount is of the "total value of farm property" is referred to in the text as the "percentage of gross income upon investment." For California in 1899 it was 14.8 per cent.

As no reports of expenditures for taxes, interest, insurance, feed for stock, and similar items have been obtained by any census, no statement of net farm income can be given.

Special reports as to the dimensions and cost of the leading irrigation ditches and canals, the area of land under them, methods for the artificial application of water to the growing crops, and other facts relating to irrigation were obtained by correspondence with farmers, engineers, and others. This correspondence was under the joint direction of Mr. F. H. Newell, chief hydrographer of the Geological Survey, acting as expert special agent for the division of agriculture, and Mr. Clarence J. Blanchard.

The statistics presented in this bulletin will be treated in greater detail in the final report on agriculture in the United States, which will be published about June 1, 1902. The present publication is designed to present a summarized advance statement for California.

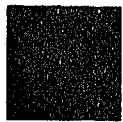
Very respectfully,

L. G. Powers.

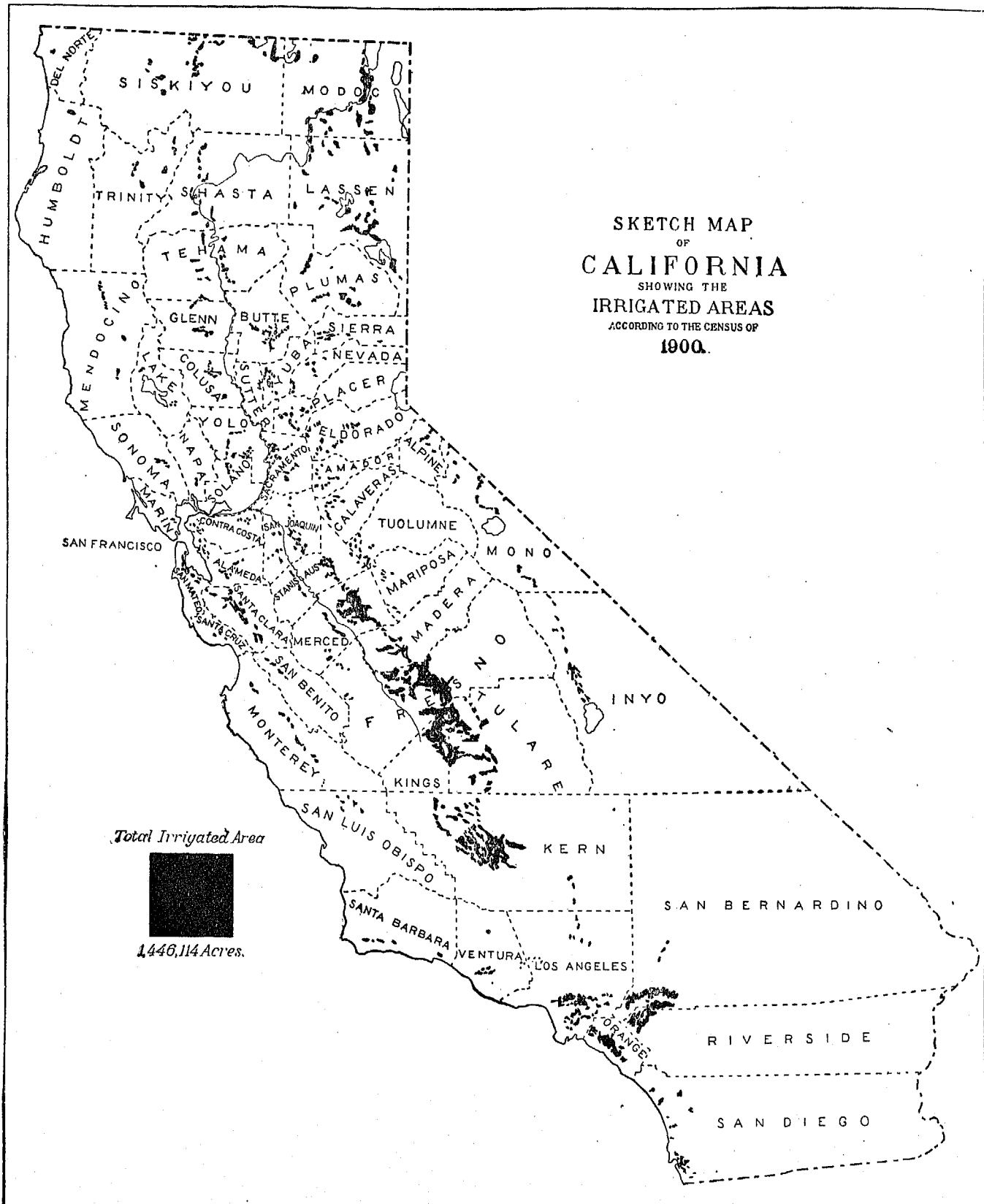
Chief Statistician for Agriculture.

SKETCH MAP
OF
CALIFORNIA
SHOWING THE
IRRIGATED AREAS
ACCORDING TO THE CENSUS OF
1900.

Total Irrigated Area



1,446,114 Acres.



AGRICULTURE IN CALIFORNIA.

GENERAL STATISTICS.

California, the second largest state in the Union, has a total land area of 155,980 square miles, or 99,827,200 acres, of which 28,828,951 acres, or 28.9 per cent, are included in farms.

The northern part of the state is rugged and mountainous, but contains some fertile valleys of small size. From this region two mountain ranges extend southward, one along the coast and the other along the eastern boundary. Between these two ranges lie the Sacramento and San Joaquin valleys, comprising the largest body of farming land in the state. In the south the surface becomes more even, the coast mountains almost disappearing.

The soil of the northern valleys is very rich, but the mountains are generally wooded, and suitable only for grazing purposes. The soils of the Sacramento and San Joaquin valleys vary from a sandy loam to heavy clay, and are everywhere fertile. The southern part of the state is generally arid, but under an extensive system of irrigation the land has become exceedingly productive and valuable.

The diversity in the soil and in the climate of California renders possible a greater variety of agricultural products than is found in any other state of the Union.

NUMBER AND SIZE OF FARMS.

Table 1 gives, by decades since 1850, the number of farms, the total and average acreage, and the per cent of farm land improved.

TABLE 1.—FARMS AND FARM ACREAGE: 1850 TO 1900.

YEAR.	Number of farms.	NUMBER OF ACRES IN FARMS.				Per cent of farm land improved.
		Total.	Improved.	Unimproved.	Average.	
1900.....	72,542	28,828,951	11,958,887	16,870,114	397.4	41.5
1890.....	52,894	21,427,293	12,222,839	9,204,454	405.1	57.0
1880.....	35,931	16,593,742	10,669,698	5,924,044	461.8	64.3
1870.....	23,724	11,427,105	6,218,133	5,208,972	481.7	54.4
1860.....	18,716	8,730,034	2,468,034	6,262,000	466.4	28.3
1850.....	872	3,898,985	32,454	3,861,531	4,465.6	0.8

Most of the farms reported in 1850 were cattle ranches operated by Mexicans under Spanish land grants. The discovery of gold in 1849, and the subsequent rapid immigration, resulted in abnormally high prices for farm produce and in a marked development of agriculture. The great increase in the area of improved farm land in the decade from 1850 to 1860 marks the real beginning of agriculture in California.

Since 1860 the number of farms has increased steadily, the rate of gain for the last decade being 37.1 per cent. The total area in farms, also, increased rapidly, from entry on the public domain and purchase or lease of railway subsidy lands. The increase in the area of improved farm

land has kept pace with the general advancement, although, on account of the adoption by recent censuses of a stricter definition of the term "improved land," and the conversion of agricultural land into cattle ranches, a decrease is shown for the last decade. The average size of farms has decreased as intensive cultivation has become more general, and as special branches of agriculture have been developed.

FARM PROPERTY AND PRODUCTS.

Table 2 presents a summary of the principal statistics relating to farm property and products for each census year, beginning with 1850.

TABLE 2.—VALUES OF SPECIFIED CLASSES OF FARM PROPERTY, AND OF FARM PRODUCTS: 1850 TO 1900.

YEAR.	Total value of farm property.	Land, improvements, and buildings.	Implements and machinery.	Live stock.	Farm products. ¹
1900.....	\$796,527,955	\$707,912,960	\$21,311,670	\$67,303,325	\$181,690,606
1890.....	772,065,570	697,116,630	14,689,710	60,259,230	87,033,290
1880.....	305,999,443	262,051,282	8,447,744	35,500,417	59,721,425
1870.....	184,521,470	141,240,028	5,316,660	37,964,782	49,856,024
1860.....	86,870,827	48,726,804	2,558,506	35,585,017	
1850.....	7,328,582	3,874,041	103,483	3,351,058	

¹ For year preceding that designated.

² Exclusive of the value of animals on ranges.

³ Values for 1870 were reported in depreciated currency. To reduce to specie basis of other figures, they must be diminished by one-fifth.

⁴ Includes betterments and additions to live stock.

The total value of farm property increased very rapidly until 1890, but for the succeeding decade a gain of only 3.2 per cent is shown. This small increase is doubtless due in part to the financial disturbances in 1893, and the subsequent period of depression, as the very substantial gain made in the value of farm products furnishes conclusive evidence that the agricultural interests of the state are not declining. The value of land, improvements, and buildings increased 1.5 per cent from 1890 to 1900. The value of implements and machinery increased 45.1 per cent and that of farm products 51.3 per cent, a portion of each increase being, doubtless, the result of a more detailed enumeration in 1900 than heretofore. In the same period the value of live stock increased 11.7 per cent.

The low value of land, improvements, and buildings in 1850 and the high value of live stock, which nearly equalled that of all other forms of farm property, were due to the conditions explained above. The decreasing percentage of the total value of farm property represented by the value of live stock, and the rapidly increasing relative value of implements and machinery, reflect the gradual transition from grazing and stock raising in general to intensive cultivation of the soil.

COUNTY STATISTICS.

Table 3 gives an exhibit of general agricultural statistics by counties.

TABLE 3.—NUMBER AND ACREAGE OF FARMS, AND VALUES OF SPECIFIED CLASSES OF FARM PROPERTY, JUNE 1, 1900, WITH VALUE OF PRODUCTS OF 1899 NOT FED TO LIVE STOCK, AND EXPENDITURES IN 1899 FOR LABOR AND FERTILIZERS, BY COUNTIES.

COUNTIES.	NUMBER OF FARMS.		ACRES IN FARMS.		VALUES OF FARM PROPERTY.				Value of products not fed to live stock.	EXPENDITURES.	
	Total.	With build-ings.	Total.	Improved.	Land and improve-ments (ex-cept build-ings).	Buildings.	Imple-ments and machinery.	Live stock.		Labor.	Fertill-izers.
The State	72,542	69,267	28,828,951	11,958,837	\$630,444,960	\$77,468,000	\$21,311,670	\$67,808,325	\$118,202,036	\$25,845,120	\$987,050
Alameda	2,787	2,718	398,289	226,118	28,751,590	3,485,310	780,040	1,602,596	4,190,001	989,680	15,180
Alpine	37	87	15,681	4,391	198,100	45,400	10,810	70,181	61,011	6,970	---
Amador	560	554	214,024	48,936	2,185,150	495,630	127,180	510,890	479,830	84,870	2,140
Butte	1,179	1,150	677,080	302,029	12,460,530	1,434,870	439,390	1,200,614	2,910,288	617,900	21,150
Calaveras	575	572	212,820	41,402	1,393,510	427,190	89,030	428,929	885,182	78,380	840
Colusa	582	569	550,002	358,227	10,885,350	838,420	417,690	913,023	3,023,958	611,760	8,640
Contra Costa	1,611	1,483	408,563	262,617	15,553,110	1,675,790	404,500	1,240,897	2,656,274	690,010	10,990
Del Norte	131	129	33,115	9,787	687,830	121,840	35,130	176,240	184,553	88,440	---
Eldorado	759	767	209,320	45,481	1,546,240	566,120	116,320	361,894	543,446	71,600	2,010
Fresno	3,290	3,171	1,284,736	780,337	34,201,530	3,092,140	1,598,800	3,941,919	6,671,875	1,571,010	39,870
Glenn	529	518	577,363	355,781	8,478,880	719,510	299,620	806,310	1,934,303	403,170	60
Humboldt	1,500	1,484	648,511	77,238	9,524,850	1,282,880	311,020	2,123,049	1,916,256	363,880	8,750
Inyo	424	392	141,059	43,740	1,584,750	317,060	95,590	571,229	394,846	59,750	90
Kern	1,098	1,021	1,571,103	324,031	10,404,540	664,120	347,640	2,829,825	1,910,723	814,020	4,420
Kings	932	855	387,605	262,148	8,420,410	811,920	348,330	1,341,247	1,974,900	486,780	920
Lake	723	706	212,176	41,414	2,419,280	524,180	111,420	440,210	532,491	75,970	170
Lassen	555	550	381,109	133,206	2,949,510	708,010	255,220	1,452,875	652,646	314,780	8,700
Los Angeles	6,577	6,062	895,663	518,744	64,180,220	6,702,710	1,433,050	2,492,666	7,527,530	1,430,310	200,310
Madera	523	517	484,659	277,721	4,588,770	433,050	214,100	680,974	1,301,834	238,900	300
Marin	462	461	322,374	47,633	8,330,450	914,020	207,110	1,411,931	1,518,299	830,900	4,000
Mariposa	381	370	160,153	14,003	752,090	207,640	59,960	308,461	211,222	25,450	420
Mendocino	1,452	1,420	742,924	78,907	5,840,250	1,081,090	219,630	1,446,546	1,570,504	255,450	5,330
Merced	999	974	1,702,967	613,376	18,449,650	984,400	501,480	2,701,689	2,680,958	847,190	4,730
Modoc	638	623	298,755	122,617	2,825,360	521,900	174,200	1,842,367	1,097,713	143,320	4,280
Mono	112	104	186,063	65,238	519,040	87,380	26,340	542,983	332,952	28,560	500
Monterey	1,850	1,785	1,087,032	873,605	15,632,700	1,353,700	502,400	1,920,942	2,852,901	572,080	2,920
Napa	1,336	1,319	319,327	111,966	9,925,780	2,181,590	357,980	871,696	1,345,705	329,890	12,690
Nevada	522	518	120,743	24,898	1,116,960	447,640	102,910	280,030	421,769	51,600	5,430
Orange	2,388	2,310	599,436	236,847	18,533,640	2,177,040	456,500	1,179,415	2,549,777	447,010	16,520
Placer	1,076	1,028	440,371	121,063	4,839,730	998,620	222,060	487,851	1,407,787	259,560	13,680
Plumas	267	259	184,449	57,851	1,211,530	387,010	97,240	544,096	420,959	118,070	70
Riverside	2,340	1,849	427,097	216,033	18,488,110	1,999,850	399,280	756,791	3,029,158	580,670	203,010
Sacramento	1,392	1,363	668,426	327,159	15,139,870	2,159,630	528,780	1,448,346	4,608,383	976,560	2,190
San Benito	907	885	512,710	168,698	7,057,190	852,340	272,030	935,498	1,034,360	168,320	3,620
San Bernardino	2,350	1,978	219,132	96,920	21,000,370	2,578,120	395,860	687,052	2,364,492	599,700	151,320
San Diego	2,698	2,566	809,419	229,791	14,133,990	2,170,190	533,980	1,508,517	1,824,665	416,010	22,980
San Francisco	301	298	8,219	8,829	1,855,030	228,100	71,200	253,663	1,025,600	249,070	6,600
San Joaquin	1,966	1,920	751,065	652,923	25,769,590	2,297,130	907,410	2,244,294	6,134,421	1,214,290	20,750
San Luis Obispo	1,813	1,774	1,034,480	412,356	11,133,180	1,272,820	479,840	1,749,917	2,211,273	688,540	2,200
San Mateo	551	544	149,944	72,429	8,201,140	1,333,390	173,600	646,726	1,124,795	199,190	2,070
Santa Barbara	1,149	1,116	922,611	202,382	14,849,440	1,375,290	365,770	1,681,363	2,095,342	437,370	8,870
Santa Clara	3,995	3,748	710,686	290,285	42,270,340	5,332,710	1,287,560	1,834,093	6,195,605	1,366,480	25,490
Santa Cruz	1,274	1,244	160,438	62,843	9,094,410	1,452,020	246,930	649,790	2,008,213	419,230	1,450
Shasta	1,221	1,191	347,120	86,540	2,980,620	638,500	163,450	737,853	837,270	100,970	990
Sierra	141	131	74,609	26,687	564,990	179,770	37,480	213,155	208,428	32,680	1,810
Siskiyou	931	922	452,859	181,029	5,084,110	1,050,390	284,520	1,279,749	1,391,881	255,480	3,890
Solano	1,151	1,115	480,551	344,058	16,903,310	1,905,970	649,320	1,321,834	4,014,705	845,660	17,700
Sonoma	3,076	3,051	785,064	221,374	25,286,750	4,646,580	847,240	2,291,137	5,045,239	1,016,320	12,030
Stanislaus	951	911	830,692	622,700	13,674,850	1,237,900	537,280	1,581,920	2,852,875	621,760	1,570
Sutter	728	694	293,287	206,877	6,976,320	987,700	313,780	904,931	1,857,801	298,760	1,000
Tehama	1,055	1,030	950,763	269,698	11,720,120	2,091,860	440,020	1,778,104	1,971,266	514,330	15,720
Trinity	272	258	76,038	14,144	589,450	171,550	31,180	254,639	157,720	83,500	170
Tulare	2,212	2,105	1,059,727	546,289	15,898,000	1,876,960	715,450	2,296,791	3,160,503	777,240	8,900
Tuolumne	457	457	204,768	86,461	1,284,280	397,850	102,070	346,965	423,742	51,110	2,220
Ventura	1,269	1,236	562,859	174,419	18,549,290	1,491,250	482,270	910,677	2,612,110	668,070	8,780
Yolo	1,214	1,174	552,065	351,213	15,906,280	1,935,590	510,430	1,637,451	3,427,923	681,530	16,110
Yuba	483	480	312,321	154,013	3,375,150	637,130	151,650	539,683	879,303	242,950	1,700
Hopa Valley ¹	88	87	5,784	1,055	66,150	15,830	9,430	24,325	24,136	1,600	---
Mission ¹	53	50	1,528	1,048	32,400	6,470	3,110	7,325	2,975	730	---
Round Valley ¹	118	113	4,767	2,778	107,180	54,180	11,210	41,490	19,887	976	800
Tule River ¹	28	26	6,045	363	13,190	2,110	1,670	18,291	5,507	190	---

¹ Indian reservation.

During the past decade the number of farms increased rapidly in nearly all counties. In San Francisco and Tuolumne counties the number of farms reported in 1900 was more than double that of ten years before, and in Inyo, Siskiyou, and Los Angeles counties the gains were nearly as great. Seven counties show decreases, but, with the exception of Colusa and Amador, whose losses are 43.4 and 20.0 per cent, respectively, they were all comparatively slight. The decrease in Colusa county was doubtless due to a change in boundary since 1890.

The total area of farm land in the state is 34.5 per cent greater than in 1890. In Tuolumne, San Francisco, Mono, Orange, Kern, and Inyo counties the farm area more than doubled. Of the decreases shown, the largest were for Colusa and San Bernardino counties.

The percentage of farm land improved was less than it was in 1890 in all counties except in those showing marked increases in total farm acreage, and in a few counties around the cities of San Francisco and Los Angeles. A comparison with the figures for 1890 shows a gain in the

total acreage devoted to crops in nearly all counties, even in those showing the greatest decreases in improved land.

A lower value of land and buildings than in 1890 is reported for all counties except Los Angeles, Ventura, and Santa Barbara in the southwest; San Joaquin, Calaveras, and most of the counties bordering upon San Francisco Bay, in the central part; and Sierra, Plumas, Lassen, Modoc, and Siskiyou counties in the northeast. These counties are, as a rule, adapted to the growing of fruits and vegetables, while the other parts of the state are devoted, in general, to hay and forage and to live-stock raising.

The value of implements and machinery has increased since 1890 in every county except Colusa, Butte, Amador, and Yuba, which show decreases of 43.7, 18.5, 14.8, and 10.7 per cent, respectively. The largest relative gains are in those counties where fruit raising and dairying are the leading branches of agriculture.

The total value of live stock has increased 11.7 per cent, the largest relative increase being in Tuolumne county. The general agricultural progress of this county in the past ten years, which has been very marked, is probably due to its large relative increase in population.

The average expenditure per farm for labor was \$356 for the state, and ranged from \$67 in Mariposa county to \$1,051 in Colusa county. In the latter county \$1.11 was expended for every acre of farm land. The average was highest in San Francisco county, where it amounted to \$30.30 per acre.

The amount expended for fertilizers in 1900 was more than six times as great as it was ten years before. Large increases were shown for all counties except San Francisco and Shasta. As a rule, the counties reporting the largest acreages in fruits reported also the highest average expenditures for both labor and fertilizers.

INCREASE IN THE NUMBER OF FARMERS IN CALIFORNIA.

From 1850 to 1900 the population of California increased from 92,597 to 1,485,053, or sixteenfold, while the number of farms increased from 872 to 72,542, or over eightyfold. In other words, from 1850 to 1900 the number of farms, and hence the number of persons operating them as owners or tenants, increased faster than the population. This statement applies also to the decades, 1850 to 1860, 1870 to 1880, and 1890 to 1900.

Data showing, with any exactness, the relative increases in the various classes of the farm population are available for only a portion of the fifty years covered by the foregoing comparisons. That portion is the period from 1870 to 1890, during which time the number of farms, and hence of farm owners and tenants, increased approximately 123.0 per cent, while the total state population increased but 115.6 per cent. During the same period the number of males engaged in agriculture increased from 47,580 to 126,711, a gain of 166.3 per cent, which represents approximately the rate of increase in the total number of persons living on farms; and the number of males working for wages on farms increased from 16,156

to 51,532, or 219.0 per cent. These figures show that, in the period mentioned, California was one of the few states that added more to its agricultural than to its other population. Of the different classes of farming population the gain was largest among those working for wages, although the numbers of farm owners and tenants increased faster than the total population. This increase in the number of those working for wages in California was incidental to the introduction of more intensive methods of cultivation, and to the development of such special branches of agriculture as fruit growing, in which California now leads. The beginnings of these changes were made by the owners of the large ranches into which the entire farming area of California was originally divided.

In the last decade the number of farms, and hence, of owners and tenants, increased 37.1 per cent, while the total rural population increased but 12.7 per cent. This indicates that in the last ten years, unlike the two decades preceding, the number of persons operating farms as owners or tenants increased faster than the number of those who worked for wages. The more intensive cultivation of the soil and the growing of fruit, which were introduced between 1870 and 1890 by large capitalists who employed many hired laborers, seem now to be passing to a considerable extent into the hands of smaller farmers, who, as owners or tenants, manage and cultivate their lands in person. The following statistics of farm tenure, if studied in connection with the statistics of population for 1900, already published, and those of occupations, now being tabulated by the division of population, will throw much light upon the changes which have taken place in the social and economic condition of the agriculturists of this state.

FARM TENURE.

Table 4 gives a comparative exhibit for 1880, 1890, and 1900, of the number of farms operated by owners, cash tenants, and share tenants. Table 4a presents, for the two decades covered by Table 4, the per cent of increase in rural population, in the total number of farms, and in the number of farms of specified tenures. In Table 5 the tenure of farms for 1900 is given by race of farmer, and the farms operated by owners are subdivided into groups designated as farms operated by "owners," "part owners," "owners and tenants," and "managers." These groups comprise, respectively: (1) Farms operated by individuals who own all the land they cultivate; (2) farms operated by individuals who own a part of the land and rent the remainder from others; (3) farms operated under the joint direction and by the united labor of two or more individuals, one owning the farm or a part of it, and the other, or others, owning no part, but receiving for supervision or labor a share of the products; and (4) farms operated by individuals who receive for their supervision and other services a fixed salary from the owners.

The farms operated by tenants are divided into groups designated as farms operated by "cash tenants" and farms operated by "share tenants." These groups comprise,

respectively: (1) Farms operated by individuals who pay a cash rental, or a stated amount of labor or farm produce; and (2) farms operated by individuals who pay as rental a stated share of the products.

TABLE 4.—NUMBER AND PER CENT OF FARMS OF SPECIFIED TENURES: 1880 TO 1900.

YEAR.	Total number of farms.	NUMBER OF FARMS OPERATED BY—			PER CENT OF FARMS OPERATED BY—		
		Owners. ¹	Cash tenants.	Share tenants.	Owners. ¹	Cash tenants.	Share tenants.
1900	72,542	55,782	9,074	7,686	76.9	12.5	10.6
1890	52,894	43,489	4,574	4,831	82.2	8.7	9.1
1880	35,934	28,810	3,209	3,915	80.2	8.9	10.9

¹ Including "part owners," "owners and tenants," and "managers."

TABLE 4a.—PER CENT OF INCREASE IN RURAL POPULATION, IN THE TOTAL NUMBER OF FARMS, AND IN THE NUMBER OF FARMS OF SPECIFIED TENURES, FOR THE DECADES, 1880 TO 1890 AND 1890 TO 1900, AND FOR THE TWENTY-YEAR PERIOD, 1880 TO 1900.

PERIOD.	PER CENT OF INCREASE IN—					
	Rural population.	Total number of farms.	Number of farms operated by—			
			All owners.	All tenants.	Cash tenants.	Share tenants.
1890-1900	12.7	37.1	28.3	78.2	98.4	59.1
1880-1890	26.6	47.2	51.0	32.0	42.5	23.4
1880-1900	42.7	101.9	93.6	135.3	182.8	96.3

TABLE 5.—NUMBER AND PER CENT OF FARMS OF SPECIFIED TENURES, JUNE 1, 1900, CLASSIFIED BY RACE OF FARMER.

PART 1.—NUMBER OF FARMS OF SPECIFIED TENURES.

RACE.	Total number of farms.	Owners.	Part owners.	Owners and tenants.	Managers.	Cash tenants.	Share tenants.
The State..	72,542	44,009	8,211	809	3,253	9,074	7,686
White	70,935	43,298	8,165	306	3,224	8,407	7,535
Colored	1,607	711	46	3	29	667	151
Chinese	777	29	7		16	620	105
Indian	658	595	30	3	8	10	12
Japanese	37	4			1	22	10
Negro	135	83	9		4	15	24

PART 2.—PER CENT OF FARMS OF SPECIFIED TENURES.

The State..	100.0	60.7	11.3	0.4	4.5	12.5	10.6
White	100.0	61.0	11.5	0.4	4.6	11.9	10.6
Colored	100.0	44.2	2.9	0.2	1.8	41.5	9.4

The percentages shown in Table 4a indicate a marked improvement, in the last two decades, in the social and economic condition of the California farmer. During this period great additions were made to the rural population, partly by immigration from other states and from foreign countries. The number of farms operated by owners increased 93.6 per cent, and the number operated by tenants

135.3 per cent, the former showing the greater increase from 1880 to 1890 and the latter from 1890 to 1900. Had the number of farms operated by owners increased only as fast as the rural population, the number of such farms in 1900 would have been less than it was by 14,670. The gain in the number of tenants, above the gain that would have been made had the rate of increase been the same as that for rural population, was 6,596. A part of this increase, relatively large, in the number of farm owners and tenants since 1880 is doubtless due to the fact that the increase in the number of persons engaged in agriculture was greater than in the number of those employed in lumbering, mining, and kindred occupations. The change shown by these figures, in the average condition of persons working on farms, is the opposite of that reflected in the occupation tables of 1870 to 1890, which showed a greater increase in the number of farm laborers than in the number of owners and tenants.

Table 5 shows that 1,607, or but 2.2 per cent, of the farms of the state are operated by colored farmers. Of the white farmers 72.9 per cent own all or a part of the farms they operate, and 27.1 per cent operate farms owned by others. For colored farmers the corresponding percentages are 47.3 and 52.7.

Chinese farmers are nearly all tenants, and as a rule pay a cash rental. The Indians generally own the farms they operate.

No previous census has reported the number of farms operated by "part owners," "owners and tenants," or "managers," but it is believed that the number conducted by the last-named class is constantly increasing.

FARMS CLASSIFIED BY RACE OF FARMER AND BY TENURE.

Tables 6 and 7 present the principal statistics for farms classified by race of farmer and by tenure.

TABLE 6.—NUMBER AND ACREAGE OF FARMS, AND VALUE OF FARM PROPERTY, JUNE 1, 1900, CLASSIFIED BY RACE OF FARMER AND BY TENURE, WITH PERCENTAGES.

RACE OF FARMER, AND TENURE.	Number of farms.	NUMBER OF ACRES IN FARMS.			VALUE OF FARM PROPERTY.	
		Average.	Total.	Per cent.	Total.	Per cent.
The State.....	72,542	397.4	28,828,951	100.0	\$796,527,955	100.0
White farmers.....	70,935	404.0	28,658,311	99.4	787,610,449	98.9
Colored farmers.....	1,607	106.2	170,640	0.6	8,917,506	1.1
Chinese	777	101.2	78,609	0.3	7,164,287	0.9
Indian	658	95.1	62,606	0.2	718,262	0.1
Japanese	37	124.1	4,593	(¹)	545,661	0.1
Negro	135	183.9	24,832	0.1	494,296	(¹)
Owners.....	44,009	229.8	10,114,649	35.1	337,425,462	42.4
Part owners.....	8,211	600.8	4,933,421	17.1	124,467,344	15.6
Owners and tenants.....	309	459.1	141,875	0.5	3,823,732	0.5
Managers.....	3,253	2,152.5	7,002,038	24.3	141,116,829	17.7
Cash tenants.....	9,074	329.9	2,993,579	10.4	89,247,117	11.2
Share tenants.....	7,686	474.0	3,613,689	12.6	109,417,471	12.6

¹ Less than one-tenth of 1 per cent.

TABLE 7.—AVERAGE VALUES OF SPECIFIED CLASSES OF FARM PROPERTY, AND AVERAGE GROSS INCOME PER FARM, WITH PER CENT OF GROSS INCOME ON TOTAL INVESTMENT IN FARM PROPERTY, CLASSIFIED BY RACE OF FARMER AND BY TENURE.

RACE OF FARMER, AND TENURE.	AVERAGE VALUES PER FARM OF—					Per cent of gross income on total invest- ment in farm property.
	Farm property, June 1, 1900.				Gross income (products of 1899 not fed to live stock).	
	Land and im- prove- ments (except build- ings).	Build- ings.	Imple- ments and ma- chinery.	Live stock.		
The State.....	\$8,690	\$1,068	\$294	\$928	\$1,629	14.8
White farmers.....	8,779	1,084	297	943	1,632	14.7
Colored farmers.....	4,777	354	160	258	1,530	27.6
Chinese.....	8,300	467	226	227	2,807	30.4
Indian.....	628	146	53	257	173	16.0
Japanese.....	11,804	1,782	899	262	2,181	14.8
Negro.....	2,790	326	102	442	622	17.0
Owners.....	5,810	1,000	221	636	1,119	14.6
Part owners.....	12,251	1,215	462	1,231	2,391	15.8
Owners and tenants.....	9,548	1,285	412	1,135	2,050	16.6
Managers.....	35,185	3,157	816	4,273	5,411	12.5
Cash tenants.....	7,951	723	219	942	1,649	16.8
Share tenants.....	11,032	811	395	830	2,101	16.1

Of the farms of the state 97.8 per cent are operated by white farmers and 2.2 per cent by colored farmers. The average values of the various forms of farm property and the average value of products are much lower for farms operated by colored farmers than for those operated by white farmers. The higher percentage of gross income for colored farmers is largely due to the fact that the farms operated by Chinese and Japanese are nearly all intensively cultivated vegetable farms, vineyards, orchards, etc. The percentages for farms of negroes and Indians do not differ widely from those shown for white farmers.

The average values shown for farms operated by Chinese and Japanese are very high, but it should be borne in mind that very few of the Chinese and Japanese own the farms they operate, and that the farms which they do own have very much lower average values than the farms which they rent.

The farms conducted by managers have larger average areas and higher average values of property and products than the farms of any other group by tenure. The large ranches, vineyards, and orchards of which this group is chiefly composed represent greater investments, and their operation generally requires more capital, than the average farmer can command. Men wealthy enough to own such farms rarely operate them in person.

FARMS CLASSIFIED BY AREA.

Tables 8 and 9 present the principal statistics for farms classified by area.

TABLE 8.—NUMBER AND ACREAGE OF FARMS, AND VALUE OF FARM PROPERTY, JUNE 1, 1900, CLASSIFIED BY AREA, WITH PERCENTAGES.

AREA.	Number of farms.	NUMBER OF ACRES IN FARMS.			VALUE OF FARM PROPERTY.	
		Average.	Total.	Per cent.	Total.	Per cent.
The State.....	72,542	397.4	28,828,951	100.0	\$796,527,955	100.0
Under 3 acres.....	1,492	2.3	3,481	(1)	3,189,393	0.4
3 to 9 acres.....	5,354	6.4	34,075	0.1	16,451,400	2.1
10 to 19 acres.....	8,236	13.0	106,883	0.4	37,981,195	4.8
20 to 49 acres.....	18,110	29.4	533,844	1.3	76,286,267	9.6
50 to 99 acres.....	8,067	71.7	578,102	2.0	64,156,713	8.0
100 to 174 acres.....	13,196	147.4	1,945,423	6.7	83,154,197	10.4
175 to 259 acres.....	4,635	212.6	985,507	3.4	45,999,915	5.8
260 to 499 acres.....	5,370	360.0	3,012,949	10.5	88,297,262	12.3
500 to 999 acres.....	5,329	691.5	3,685,927	12.8	99,439,775	12.5
1,000 acres and over.....	4,753	3,806.4	18,091,660	62.8	271,661,888	34.1

¹ Less than one-tenth of 1 per cent.

TABLE 9.—AVERAGE VALUES OF SPECIFIED CLASSES OF FARM PROPERTY, AND AVERAGE GROSS INCOME PER FARM, WITH PER CENT OF GROSS INCOME ON TOTAL INVESTMENT IN FARM PROPERTY, CLASSIFIED BY AREA.

AREA.	AVERAGE VALUES PER FARM OF—					Per cent of gross income on total invest- ment in farm property.
	Farm property, June 1, 1900.				Gross income (products of 1899 not fed to live stock).	
	Land and im- prove- ments (except build- ings).	Build- ings.	Imple- ments and ma- chinery.	Live stock.		
The State.-----	\$8,690	\$1,068	\$294	\$928	\$1,629	14.8
Under 3 acres -----	1,023	630	53	482	592	27.7
3 to 9 acres -----	2,091	765	82	135	432	14.1
10 to 19 acres -----	3,508	819	120	165	627	13.6
20 to 49 acres -----	4,594	819	164	242	805	14.9
50 to 99 acres -----	6,407	987	235	374	1,244	15.6
100 to 174 acres -----	4,890	729	200	482	1,026	16.3
175 to 259 acres -----	7,846	1,023	310	726	1,640	16.6
260 to 499 acres -----	9,185	1,166	370	1,023	1,852	15.8
500 to 999 acres -----	14,910	1,518	536	1,696	2,881	15.4
1,000 acres and over----	46,219	3,195	1,205	6,537	7,673	13.4

The group of farms each containing 1,000 acres or over comprises more than one-third of the total value of farm property and nearly two-thirds of the total farm acreage.

With a few exceptions the average values of the several forms of farm property and products increase with the size of the farm. The high average value of live stock for farms under 3 acres is due to the fact that some of them are stock farms using ranges and a large number are city dairies. The high average and percentage of gross income shown for this group are due to the fact that, in addition to these stock farms and dairies, it includes 125 florists' establishments. It should be borne in mind that the incomes from dairies and florists' establishments are determined not so much by the acreage of land used as by the amount of capital invested in buildings, implements, and

live stock, and the amounts expended for labor and fertilizers.

The average gross incomes per acre for the various groups classified by area are as follows: Farms under 3 acres, \$253.89; 3 to 9 acres, \$67.86; 10 to 19 acres, \$48.39; 20 to 49 acres, \$29.40; 50 to 99 acres, \$17.35; 100 to 174 acres, \$6.96; 175 to 259 acres, \$7.71; 260 to 499 acres, \$5.14; 500 to 999 acres, \$4.17; 1,000 acres and over, \$2.02.

FARMS CLASSIFIED BY PRINCIPAL SOURCE OF INCOME.

In Tables 10 and 11 the farms are classified by principal source of income. If the value of the hay and grain raised on any farm exceeds that of any other crop and constitutes at least 40 per cent of the total value of products not fed to live stock, the farm is classified as a "hay and grain" farm. If vegetables are the leading crop, constituting 40 per cent of the value of the products, it is a "vegetable" farm. The farms of the other groups are classified in accordance with the same general principle. "Miscellaneous" farms are those whose operators do not derive 40 per cent of their income from any one class of farm products. Farms which yielded no income in 1899 are classified according to the agricultural operations upon other farms in the same locality.

TABLE 10.—NUMBER AND ACREAGE OF FARMS, AND VALUE OF FARM PROPERTY, JUNE 1, 1900, CLASSIFIED BY PRINCIPAL SOURCE OF INCOME, WITH PERCENTAGES.

PRINCIPAL SOURCE OF INCOME.	Number of farms.	NUMBER OF ACRES IN FARMS.			VALUE OF FARM PROPERTY.	
		Average.	Total.	Per cent.	Total.	Per cent.
The State.....	72,542	897.4	28,828,951	100.0	\$796,527,955	100.0
Hay and grain	19,048	533.0	10,151,913	35.2	271,527,804	34.1
Vegetables	3,045	89.0	1,270,936	0.9	18,590,019	2.3
Fruits	18,637	96.0	1,780,122	6.2	214,855,477	27.0
Live stock	15,418	812.3	12,523,729	43.5	157,285,289	19.7
Dairy produce	8,686	274.8	2,387,154	8.3	76,204,051	9.6
Sugar	386	179.0	69,098	0.2	6,542,653	0.8
Flowers and plants	208	8.3	1,726	(1)	1,230,281	0.2
Nursery products	141	47.4	6,689	(1)	1,781,188	0.2
Miscellaneous ²	7,073	231.5	1,637,584	5.7	48,453,193	6.1

¹ Less than one-tenth of 1 per cent.

² Including 1 tobacco farm.

TABLE 11.—AVERAGE VALUES OF SPECIFIED CLASSES OF FARM PROPERTY, AND AVERAGE GROSS INCOME PER FARM, WITH PER CENT OF GROSS INCOME ON TOTAL INVESTMENT IN FARM PROPERTY, CLASSIFIED BY PRINCIPAL SOURCE OF INCOME.

PRINCIPAL SOURCE OF INCOME.	AVERAGE VALUES PER FARM OF—					Per cent of gross income on total investment in farm property.
	Farm property, June 1, 1900.				Gross income (products of 1899 not fed to live stock).	
	Land and improvements (except build-ings).	Build-ings.	Imple-ments and mach-inery.	Live stock.		
The State.....	\$8,690	\$1,068	\$294	\$928	\$1,629	14.8
Hay and grain.....	11,747	1,113	425	962	2,109	14.8
Vegetables.....	5,088	578	172	278	1,559	25.5
Fruits.....	9,609	1,886	325	272	1,670	14.4
Live stock.....	7,203	863	207	1,928	1,463	14.2
Dairy produce.....	6,445	979	218	1,130	1,226	14.0
Sugar.....	15,871	684	359	535	3,575	21.1
Flowers and plants.....	3,684	2,248	177	46	2,866	46.4
Nursery products.....	10,749	1,492	257	134	3,749	29.7
Miscellaneous ¹	5,351	839	193	468	966	14.1

¹ Including 1 tobacco farm.

For the several classes of farms the average values per acre of products not fed to live stock are: Flowers and plants, \$344.16; nursery products, \$79.03; sugar, \$19.97; vegetables, \$17.51; fruit, \$17.35; dairy produce, \$4.46; miscellaneous, \$4.17; hay and grain, \$3.96; tobacco, \$2.32; and live stock, \$1.79. The wide variations in the averages and percentages of gross income are due largely to the fact that in computing gross income no deductions are made for expenses involved in operation. For florists' establishments, nurseries, and market gardens the average expenditure for such items as labor and fertilizers represents a far greater percentage of the gross income than in the case of hay and grain, live-stock, or miscellaneous farms. If it were possible to present the average net income, the variations shown would probably be comparatively slight.

FARMS CLASSIFIED BY REPORTED VALUE OF PRODUCTS NOT FED TO LIVE STOCK.

Tables 12 and 13 present data relating to farms classified by the reported value of products not fed to live stock.

TABLE 12.—NUMBER AND ACREAGE OF FARMS, AND VALUE OF FARM PROPERTY, JUNE 1, 1900, CLASSIFIED BY REPORTED VALUE OF PRODUCTS NOT FED TO LIVE STOCK, WITH PERCENTAGES.

VALUE OF PRODUCTS NOT FED TO LIVE STOCK.	Number of farms.	NUMBER OF ACRES IN FARMS.			VALUE OF FARM PROPERTY.	
		Average.	Total.	Per cent.	Total.	Per cent.
The State.....	72,542	397.4	28,828,951	100.0	\$796,527,955	100.0
\$0.....	2,150	210.5	452,595	1.6	10,559,450	1.3
\$1 to \$19.....	2,516	114.9	289,203	1.0	6,039,600	0.8
\$50 to \$99.....	3,526	108.4	382,222	1.3	8,851,150	1.1
\$100 to \$249.....	10,385	119.7	1,212,669	4.3	32,246,390	4.1
\$250 to \$499.....	12,237	137.3	1,680,105	5.8	60,848,350	6.4
\$500 to \$999.....	13,979	185.8	2,597,321	9.0	83,619,170	10.5
\$1,000 to \$2,499.....	16,077	351.7	5,658,524	19.6	175,544,190	22.0
\$2,500 and over.....	11,672	1,416.3	16,531,312	57.4	428,789,655	53.8

TABLE 13.—AVERAGE VALUES OF SPECIFIED CLASSES OF FARM PROPERTY, AND AVERAGE GROSS INCOME PER FARM, WITH PER CENT OF GROSS INCOME ON TOTAL INVESTMENT IN FARM PROPERTY, CLASSIFIED BY REPORTED VALUE OF PRODUCTS NOT FED TO LIVE STOCK.

VALUE OF PRODUCTS NOT FED TO LIVE STOCK.	AVERAGE VALUES PER FARM OF—					Per cent of gross income on total invest- ment in farm property.
	Farm property, June 1, 1900.				Gross income (products of 1899 not fed to live stock).	
	Land and im- prove- ments (except build- ings).	Build- ings.	Imple- ments and ma- chinery.	Live stock.		
The State-----	\$8,690	\$1,068	\$294	\$928	\$1,629	14.8
\$0-----	3,987	413	75	867	-----	-----
\$1 to \$49-----	1,830	386	64	144	42	1.7
\$50 to \$99-----	1,825	437	75	170	74	2.9
\$100 to \$249-----	2,243	541	94	226	167	5.4
\$250 to \$499-----	3,029	672	131	323	360	8.7
\$500 to \$999-----	4,490	813	187	496	711	11.9
\$1,000 to \$2,499-----	8,603	1,148	307	868	1,505	13.8
\$2,500 and over-----	29,938	2,606	908	3,238	6,646	18.1

Many of the farms reporting no income for 1899 were fruit farms with trees or vines too young to bear; some were country homes of business or professional men; while others were homesteads taken up shortly prior to the date

of enumeration. There were some farms, also, from which no reports of the products of 1899 could be secured because the persons in charge, June 1, 1900, did not operate the farms in 1899. To this extent the reports fall short of giving a complete exhibit of farm income in 1899.

LIVE STOCK.

At the request of the various live-stock associations of the country, a new classification of domestic animals was adopted for the Twelfth Census.

The age grouping for neat cattle was determined by their present and prospective relations to the dairy industry and the supply of meat products. Horses and mules are classified by age, and neat cattle and sheep by age and sex. The new classification permits a very close comparison with the figures published in previous census reports.

Table 14 presents a summary of live-stock statistics.

TABLE 14.—NUMBER OF DOMESTIC ANIMALS, FOWLS, AND BEES ON FARMS, JUNE 1, 1900, WITH TOTAL AND AVERAGE VALUES, AND NUMBER OF DOMESTIC ANIMALS NOT ON FARMS.

LIVE STOCK.	Age in years.	ON FARMS.			NOT ON FARMS.
		Number.	Value.	Average value.	
Calves	Under 1	329,430	\$2,796,201	\$8.49	4,478
Steers	1 and under 2	134,962	2,296,430	17.02	793
Steers	2 and under 3	109,183	2,722,506	24.94	991
Steers	3 and over	86,340	2,796,313	32.39	5,994
Bulls	1 and over	24,725	845,470	34.19	476
Heifers	1 and under 2	148,289	2,696,263	18.18	1,367
Cows kept for milk	2 and over	307,245	10,739,070	34.95	19,511
Cows and heifers not kept for milk.	2 and over	304,450	7,762,893	25.50	984
Colts	Under 1	23,049	423,427	18.37	724
Horses	1 and under 2	24,639	763,613	30.99	627
Horses	2 and over	373,635	16,657,953	44.59	92,820
Mule colts	Under 1	5,635	104,787	20.81	63
Mules	1 and under 2	6,469	247,975	38.33	84
Mules	2 and over	73,269	4,258,147	58.12	3,332
Asses and burros	All ages	2,227	146,697	65.87	560
Lambs	Under 1	838,385	1,579,388	1.88	4,515
Sheep (ewes)	1 and over	1,335,390	4,046,633	3.03	10,713
Sheep (rams and wethers)	1 and over	389,678	1,377,210	3.54	3,003
Swine	All ages	598,836	2,476,781	4.14	24,029
Goats	All ages	109,021	202,981	2.41	3,606
Fowls: ¹					
Chickens ²		3,947,200			
Turkeys		158,356			
Geese		28,419	1,877,489		
Ducks		62,293			
Bees (swarms of)		129,444	363,885	2.81	
Value of all live stock.			67,242,112		

¹ The number reported is of fowls over 3 months old. The value is of all, old and young.

² Including Guinea fowls.

The total value of all live stock on farms and ranges, June 1, 1900, was \$67,242,112. Of this amount the value of horses constituted 26.5 per cent; dairy cows, 16.0 per cent; other neat cattle, 32.6 per cent; sheep, 10.4 per cent; mules and asses, 7.1 per cent; swine, 3.7 per cent; poultry, 2.8 per cent; and all other live stock, 0.9 per cent.

No reports were received of the value of animals not on farms, but it is probable that such animals have higher average values than those on farms. Allowing the same averages, however, the total value of all live stock in the state, exclusive of poultry and bees not on farms, is approximately \$72,827,000.

CHANGES IN LIVE STOCK KEPT ON FARMS.

The following table shows the changes since 1850 in the numbers of the most important domestic animals.

TABLE 15.—NUMBER OF SPECIFIED DOMESTIC ANIMALS ON FARMS AND RANGES: 1850 TO 1900.

YEAR.	Dairy cows.	Other neat cattle.	Horses.	Mules and asses.	Sheep, ¹	Swine.
1900	307,245	1,137,379	421,293	87,000	1,724,968	598,836
1890 ²	317,201	1,049,917	399,852	53,818	2,475,140	584,899
1880 ²	210,078	454,229	237,710	28,343	4,162,349	603,550
1870	164,033	467,305	192,273	17,533	2,768,187	444,617
1860	205,407	974,735	160,610	3,081	1,088,002	466,396
1850	4,280	258,379	21,719	1,003	17,574	2,776

¹ Lambs not included.

² Exclusive of animals on ranges.

The live-stock enumerations in 1880 and in 1890 did not include domestic animals on ranges, and hence the figures for those years presented in the table are not strictly comparable with the figures for 1900. The number of animals on ranges in 1890 was estimated by special agents to be as follows: All neat cattle, 241,300; horses, 22,542; mules and asses, 1,499; sheep, 897,896; swine, 9,110. In comparing the number of animals reported in 1900 with the number reported in 1890, these estimates are disregarded.

Since 1850 the number of dairy cows has increased more than seventyfold, but a decrease of 3.1 per cent is shown for the last decade. It is probable that this decrease is more apparent than real, as many of the 304,450 "cows and heifers not kept for milk" were doubtless milch cows dry at the time of enumeration. The fact that the production of milk has increased 38.2 per cent since 1890 supports this view.

The number of "other neat cattle" given for 1900 included 329,430 calves. It is uncertain whether or not calves were included in the reports for previous census years. If not, their number should be deducted from the total for 1900 when making comparisons with such reports. In that case a decrease since 1890 of 23.0 per cent would be shown in the number of "other neat cattle."

The numbers of horses and of mules and asses have steadily increased since 1850, the rates of gain for the last decade being 5.4 per cent for the former and 61.6 per cent for the latter. The number of sheep increased until 1880, since which date it has decreased, the loss for the last decade being 30.3 per cent. The number of swine has fluctuated from decade to decade, with a general upward tendency.

In comparing the poultry report for 1900 (see Table 14) with that of 1890, it should be borne in mind that in 1900 the enumerators were instructed not to report fowls less than 3 months old, while in 1890 no such limitation was made. This fact explains, to a great extent, the comparatively small increase in the number of chickens, and the following decreases in the number of other fowls: Geese, 24.5 per cent; turkeys, 45.0 per cent; and ducks, 60.5 per cent.

ANIMAL PRODUCTS.

Table 16 is a summarized exhibit of the products of the animal industry

TABLE 16.—QUANTITIES AND VALUES OF SPECIFIED ANIMAL PRODUCTS, AND VALUES OF POULTRY RAISED, ANIMALS SOLD, AND ANIMALS SLAUGHTERED ON FARMS IN 1899.

PRODUCTS.	Unit of measure.	Quantity.	Value.
Wool.....	Pounds.....	13,680,495	\$1,707,088
Mohair and goat hair.....	Pounds.....	169,770	45,665
Milk.....	Gallons.....	1153,684,741	12,128,471
Butter.....	Pounds.....	20,853,360	
Cheese.....	Pounds.....	4,249,588	
Eggs.....	Dozens.....	24,443,540	
Poultry.....			3,861,679
Honey.....	Pounds.....	3,667,738	2,492,067
Wax.....	Pounds.....	115,330	331,939
Animals sold.....			13,305,165
Animals slaughtered.....			2,449,820
Total.....			36,324,894

¹ Includes all milk produced.

In 1899 the value of animal products was \$36,324,894, or 30.7 per cent of the gross farm income. Of the above amount 43.4 per cent represents the value of animals sold and animals slaughtered on farms; 33.4 per cent, that of dairy produce; 17.5 per cent, that of poultry and eggs; 4.8 per cent, that of wool, mohair and goat hair; and 0.9 per cent, that of honey and wax.

DAIRY PRODUCE.

With respect to the number of farmers engaged in its pursuit, dairying holds fourth place among the various branches of California agriculture. Of the 72,542 farms of the state in 1900, 8,686, or 12.0 per cent, were dairy farms. The increase in the production of milk during the last decade was 42,493,555 gallons, or 38.2 per cent, although the population of the state increased but 22.7 per cent. The average production per capita for the state increased from 92.0 gallons in 1889 to 103.5 gallons in 1899. In Yolo, Calaveras, Trinity, and Stanislaus counties the gains were especially marked, the production in 1899 being between two and three times as great as that reported for 1889. Since 1880 the quantity of milk sold has increased 44,187,768 gallons, or over fourfold. These gains all support the conclusion that dairymen are not only keeping better cows, but devoting more care to their herds than they did ten years ago.

A comparison with the figures for 1890 shows a decrease of 22.1 per cent in the quantity of butter, and an increase of 9.8 per cent in the quantity of cheese, made on farms. In 1900 butter was reported by 32,088 farmers, who produced an average of 650 pounds per farm; cheese was reported by 420 farmers, but the average production per farm was 10,118 pounds.

Of the \$12,128,471 given in Table 16 as the value of all dairy produce in 1899, \$2,956,217, or 24.4 per cent, represents the value of dairy produce consumed on farms, and \$9,172,254, or 75.6 per cent, the amount realized from sales. Of the latter amount, \$5,847,591 was derived from the sale of 56,540,946 gallons of milk; \$2,903,714, from 15,236,667 pounds of butter; \$364,456, from 3,989,893 pounds of cheese; and \$56,493, from 71,305 gallons of cream.

POULTRY AND EGGS.

The total value of the products of the poultry industry in 1899 was \$6,356,746, of which amount 39.2 per cent represents the value of fowls raised and 60.8 per cent that of eggs produced. Nearly eleven million dozen more eggs were produced in 1899 than in 1889, the per cent of increase being 78.7.

WOOL.

The production of wool has decreased steadily since 1879. In the last decade the decrease was 2,678,052 pounds, or 16.4 per cent. The average weight per fleece, however, remained practically the same, having been 4.8 pounds in 1889 and 4.7 pounds in 1899. Lake, Tehama, and Shasta counties reported nearly one-half of the total number of fleeces of mohair and goat hair.

HONEY AND WAX.

The quantity of honey produced in 1899 was 3,667,738 pounds, a decrease of 262,151 pounds, or 6.7 per cent, from the production in 1889. The production of wax increased 91.5 per cent. The largest decreases in the production of honey were in the southernmost counties, where severe droughts injured the alfalfa and other food plants of the bee. There were marked increases in Fresno, Kern, and Tulare counties.

HORSES AND DAIRY COWS ON SPECIFIED CLASSES OF FARMS.

Table 17 presents, for the leading groups of farms, the number of farms reporting horses and dairy cows, the total number of these animals, and the average number per farm. In computing the averages presented, only those farms which report the kind of stock under consideration are included.

TABLE 17.—HORSES AND DAIRY COWS ON SPECIFIED CLASSES OF FARMS, JUNE 1, 1900.

CLASSES.	HORSES.			DAIRY COWS.		
	Farms reporting.	Number.	Average per farm.	Farms reporting.	Number.	Average per farm.
Total.....	63,611	421,293	6.6	49,189	307,245	6.2
White farmers.....	62,258	414,406	6.7	48,960	306,473	6.3
Colored farmers.....	1,353	6,887	5.1	229	772	3.4
Owners ¹	46,203	271,755	5.9	36,124	172,618	4.8
Managers.....	2,372	45,934	19.4	1,616	20,448	12.7
Cash tenants.....	7,651	45,776	5.8	5,941	38,152	14.8
Share tenants.....	7,085	57,823	8.2	5,508	26,027	4.7
Under 20 acres.....	10,945	21,022	1.9	6,924	16,218	2.3
20 to 99 acres.....	18,700	61,435	3.3	14,024	44,566	3.2
100 to 174 acres.....	11,794	61,033	5.2	9,023	38,443	4.3
175 to 259 acres.....	4,339	29,218	6.7	3,704	22,343	6.0
260 acres and over.....	17,743	245,532	14.0	15,514	135,675	12.0
Hay and grain.....	17,083	164,343	9.6	13,728	56,518	4.1
Vegetable.....	2,529	10,766	4.3	1,342	4,557	3.4
Fruit.....	15,104	53,999	3.6	9,715	20,180	2.1
Live stock.....	14,147	114,977	8.1	10,806	54,337	5.0
Dairy.....	8,117	42,901	5.3	8,686	153,307	17.6
Sugar.....	350	2,917	8.3	261	731	2.8
Miscellaneous ²	6,281	31,395	5.0	4,651	17,615	3.8

¹ Includes "part owners" and "owners and tenants."

² Including 1 tobacco farm.

CROPS.

The following table gives the statistics of the principal crops of 1899.

TABLE 18.—ACREAGES, QUANTITIES, AND VALUES OF THE PRINCIPAL FARM CROPS IN 1899.

CROPS.	Acres.	Unit of measure.	Quantity.	Value.
Corn.....	53,930	Bushels.....	1,477,093	\$700,894
Wheat.....	2,683,405	Bushels.....	36,534,407	20,179,044
Oats.....	153,734	Bushels.....	4,972,356	1,700,397
Barley.....	1,029,647	Bushels.....	25,149,335	10,645,723
Rye.....	62,925	Bushels.....	524,451	251,486
Buckwheat.....	395	Bushels.....	7,835	8,945
Kafir corn.....	20,218	Bushels.....	420,452	193,244
Flaxseed.....	904	Bushels.....	12,610	10,559
Clover seed.....		Bushels.....	14,409	67,550
Grass seed.....		Bushels.....	1,113	1,847
Hay and forage.....	2,239,601	Tons.....	3,035,982	19,436,398
Tobacco.....	27	Pounds.....	23,490	4,352
Hemp.....	500	Pounds.....	620,000	45,000
Hops.....	6,891	Pounds.....	10,124,660	925,319
Broom corn.....	1,669	Pounds.....	1,146,000	40,506
Peanuts.....	433	Bushels.....	15,461	12,650
Castor beans.....	7	Bushels.....	125	250
Dry beans.....	45,861	Bushels.....	658,515	1,022,586
Dry peas.....	2,014	Bushels.....	57,299	70,033
Potatoes.....	42,098	Bushels.....	5,242,596	2,637,528
Sweet potatoes.....	1,607	Bushels.....	239,029	135,612
Onions.....	2,207	Bushels.....	514,859	296,671
Sugar beets.....	41,242	Tons.....	356,535	1,550,346
Miscellaneous vegetables.....	30,194			2,562,161
Chicory.....	78	Pounds.....	135,500	4,260
Sorghum cane.....	140	Tons.....	16	10
Sorghum sirup.....		Gallons.....	8,671	3,778
Small fruits.....	6,353			911,411
Grapes.....	2133,362	Centals.....	7,214,334	85,622,325
Orchard fruits.....	2340,978	Bushels.....	22,692,770	414,526,786
Tropical fruits.....	2119,836			7,219,082
Nuts.....				1,442,675
Forest products.....				1,722,840
Flowers and plants.....	672			580,646
Seeds.....	1,673			121,896
Nursery products.....	2,914			558,329
Miscellaneous.....				156,473
Total.....	7,025,515			95,365,712

¹ Sold as cane.

² Estimated from number of trees or vines.

³ Including value of raisins, wine, etc.

⁴ Including value of vinegar, cider, etc.

Of the total value of crops, cereals contributed 35.3 per cent; fruits, 29.7 per cent; hay and forage, 20.4 per cent; vegetables, including potatoes, sweet potatoes, onions, and sugar beets, 7.5 per cent; nuts, forest and nursery products, and flowers and plants, 4.5 per cent; and all other crops, 2.6 per cent.

The average values per acre of the principal crops were as follows: Flowers and plants, \$864.06; nursery products, \$191.60; small fruits, \$143.46; hops, \$134.28; hemp, \$90.00; miscellaneous vegetables, \$84.86; sweet potatoes, \$84.39; Irish potatoes, \$62.65; tropical fruits, \$60.24; orchard fruits, \$42.60; grapes, \$42.16; sugar beets, \$37.59; hay and forage, \$8.68; and cereals, \$8.41. The crops yielding the highest average returns per acre were grown upon very highly improved land. Their production requires a relatively large amount of labor, and, in addition, large expenditures for fertilizers.

CEREALS.

The following table is an exhibit of the changes in cereal production since 1849.

TABLE 19.—ACREAGE AND PRODUCTION OF CEREALS: 1849 TO 1899.

PART 1.—ACREAGE.

YEAR. ¹	Barley.	Buckwheat.	Corn.	Oats.	Rye.	Wheat.
1899.....	1,029,647	395	53,930	153,734	62,925	2,683,405
1889.....	816,995	664	70,303	57,599	27,413	2,840,807
1879.....	586,350	1,012	71,781	49,947	20,281	1,832,429

¹ No statistics of acreage were secured prior to 1879.

PART 2.—BUSHELS PRODUCED.

YEAR.	Barley.	Buckwheat.	Corn.	Oats.	Rye.	Wheat.
1899.....	25,149,335	7,835	1,477,093	4,972,356	524,451	36,534,407
1889.....	17,548,386	10,388	2,381,270	1,463,068	243,871	40,869,337
1879.....	12,468,561	22,307	1,993,325	1,341,271	181,681	29,017,707
1869.....	8,788,490	21,928	1,221,222	1,757,507	26,275	16,676,702
1859.....	4,415,426	76,887	510,708	1,043,006	52,140	5,928,470
1849.....	9,712		12,286			17,828

In 1899 the total area devoted to cereals was 3,984,036 acres; in 1889 it was 3,812,751 acres; and in 1879, 2,561,800 acres. In the decade from 1889 to 1899, the acreage in oats increased 167.0 per cent; rye, 129.5 per cent; and barley, 26.2 per cent. Buckwheat shows a decrease of 40.5 per cent; corn, 23.3 per cent; and wheat, 5.5 per cent. Although the production of buckwheat, corn, and wheat decreased during the last decade, there was an increase of approximately 5 per cent in the total production of cereals. The largest acreages and quantities, and the largest average yields per acre are found along the San Joaquin and Sacramento rivers. San Joaquin county reports more barley, rye, and wheat than any other county; Sutter county, more buckwheat; and Sonoma county, more corn and oats. Nearly 85 per cent of the 420,452 bushels of Kafir corn reported, was grown in the south central counties of Fresno, Kings, Kern, and Tulare. The acreage given for cereals is exclusive of the acreage of grains cut green for hay and of the acreages of corn, nonsaccharine sorghum, and similar crops grown for forage and ensilage.

HAY AND FORAGE.

In 1900, 49,402 farmers, or 68.1 per cent of the total number, reported hay and forage crops. Excluding cornstalks and corn strippings, the average yield obtained was 1.4 tons per acre. The acreage in hay and forage in 1899 was 56.4 per cent greater than ten years before. In 1899 the acreages and yields of the various kinds of hay and forage crops were as follows: Wild, salt, or prairie grasses, 223,854 acres and 176,466 tons; millet and Hungarian grasses, 1,741 acres and 3,567 tons; alfalfa, or lucern, 298,898 acres and 838,730 tons; clover, 12,407 acres and 22,638 tons; other tame and cultivated grasses, 153,646 acres and 195,627 tons; grains cut green for hay, 1,506,360 acres and 1,714,692 tons; forage crops, 42,695 acres and 83,546 tons; cornstalks and corn strippings, 459 acres and 716 tons.

In Table 18 the production of cornstalks and corn strippings is included under "hay and forage," but the acreage

is included under "corn," as the forage secured was an incidental product of the corn crop.

HOPS.

The cultivation of hops in California is rapidly becoming an important industry, the quantities reported for each census year since 1860 being as follows: 1860, 80 pounds; 1870, 625,064 pounds; 1880, 1,444,077 pounds; and in 1890, 6,547,338 pounds. In 1900, 203 farmers reported an area of 6,891 acres, or an average of 33.9 acres per farm. They obtained and sold from this land in 1899, 10,124,660 pounds of hops, an average of 1,469 pounds per acre, and received therefrom \$925,319, or an average of \$4,558 per farm, \$134 per acre, and \$0.09 per pound.

The counties producing hops are mostly inland and extend from the extreme north over two-thirds the length of the state, Sonoma, Mendocino, and Sacramento counties reporting 62.0 per cent of the total acreage.

ORCHARD FRUITS.

The changes in orchard fruits since 1890 are shown in the following table.

TABLE 20.—ORCHARD TREES AND FRUITS: 1890 AND 1900.

FRUITS.	NUMBER OF TREES.		BUSHELS OF FRUIT.	
	1900.	1890.	1899.	1889.
Apples	2,578,169	1,260,784	3,488,208	1,654,636
Apricots	4,244,884	1,412,749	2,547,064	970,941
Cherries	886,891	236,945	321,034	154,063
Peaches	7,472,393	2,669,849	8,563,427	1,691,019
Pears	2,612,890	695,738	1,912,825	577,444
Plums and prunes	9,823,713	1,509,833	5,682,036	1,202,573

Of the farmers of the state, 27,491, or 37.9 per cent, reported orchard fruits in 1899. The value of orchard products was not reported by the census of 1890; but in 1879 it was \$2,017,314, and in 1899, \$14,526,786, a six-fold gain in twenty years. In making comparisons between the crops of different years, however, it should be remembered that the quantity of fruit produced in any year is determined largely by the nature of the season.

The number of orchard trees increased in the last decade from 7,824,892 to 28,138,471. The most noteworthy changes were in plum and peach trees, which increased about sixfold and threefold, respectively. In 1890, 34.1 per cent of all fruit trees in the state were peach trees, and 19.3 per cent plum and prune trees, while in 1900 the corresponding percentages were 26.6 and 34.9.

Plum and prune trees are found in the greatest numbers in the west central part of the state, more than one-third being in Santa Clara county. These trees increased so rapidly in the last decade that their number in 1900 was greater than the total number of orchard trees in 1890. Tuolumne is the only county in which the number of plum and prune trees has not increased since 1890.

The leading peach-growing counties are Fresno, Placer, Santa Clara, Tulare, Tehama, and Los Angeles; in 1900 they reported more than one-half of all the trees. Most counties reported a much greater number in 1900 than in 1890.

In the last ten years the number of apricot trees has more than doubled. Over one-third of these trees are in Santa Clara, Ventura, and Los Angeles counties.

Apple trees increased in number 126.7 per cent between 1890 and 1900. The coast counties report the largest numbers—Santa Cruz, Sonoma, Monterey, Los Angeles, Mendocino, and San Diego counties having more than one-half of the total number in the state.

The adjoining counties of Solano and Sacramento contain one-fifth of the pear trees in the state. Nearly three times as many were reported in 1900 as in 1890. Cherry trees, also, show a large increase, but are relatively of small importance.

In addition to the trees shown in Table 20, unclassified fruit trees to the number of 520,031 were reported, with a yield of 228,176 bushels of fruit. The value of orchard products for 1900, given in Table 18, includes the value of 2,395 barrels of cider, 6,339 barrels of vinegar, and 117,935,727 pounds of dried and evaporated fruits.

SEMITROPICAL FRUITS.

The following table shows the changes in semitropical fruits since 1890.

TABLE 21.—SEMITROPICAL TREES AND FRUITS: 1890 AND 1900.

FRUITS.	NUMBER OF TREES.		QUANTITIES OF FRUIT.		
	1900.	1890.	Unit of measure.	1899.	1889.
Citrons	4,780	1,757	Boxes	90	
Figs	188,941	109,535	Pounds	10,620,366	11,190,816
Guavas	7,056	11,495	Pounds	31,370	
Kaki	2,690	19,101	Pounds	59,400	
Lemons	1,493,113	82,611	Boxes	874,305	305,598
Limes	311	2,007	Boxes	125	
Oranges	5,648,714	1,153,881	Boxes	5,882,193	1,245,047
Pineapples	11,815	145,000	Number	440	
Pomeles	80,918	144	Boxes	17,851	
Olives	1,530,164	278,380	Pounds	5,040,227	9,659,208
Miscellaneous	37,957	25,250	Pounds	817,330	

¹ Number of plants.

² Banana trees.

The total number of semitropical fruit trees increased from 1,809,161 in 1890 to 8,996,459 in 1900. Of the number reported in 1900, 62.8 per cent were orange trees; 17.0 per cent, olive trees; 16.6 per cent, lemon trees; 2.1 per cent, fig trees; and 1.5 per cent, other trees.

The orange groves were reported chiefly by southern counties—San Bernardino, Los Angeles, Riverside, and Orange counties containing more than four-fifths of the trees. In 1900 the number reported was nearly five times as great as it was in 1890. All counties reporting oranges shared in the increase, except Lake and Santa Barbara. The production showed a still greater gain.

Olives are grown chiefly in the extreme southern counties—Los Angeles, San Diego, Ventura, Riverside, and San Bernardino furnishing the greater part of the crop of 1900. The number of olive trees reported in 1900 was nearly six times that reported in 1890. Excluding Los Angeles, the counties named showed a hundredfold increase.

San Diego and Los Angeles counties report over one-

half of the lemon trees of the state, and show marked increases since 1890, the number reported in 1900 being over eighteen times as great as ten years before.

The fig-growing industry centers in Fresno county. Pomeloes, or grape fruit, which in 1890 were reported in but 4 counties, are now grown in over one-half of the counties of the state. Pineapples are found chiefly in San Diego and Riverside counties, and citrons are confined almost exclusively to Los Angeles county. The remaining fruits are of small and decreasing importance.

SMALL FRUITS.

The total area used in the cultivation of small fruits in 1899 was 6,353 acres, distributed among 5,137 farms. The value of the fruits grown was \$911,411, an average of \$177.42 per farm. Of the total area, 2,418 acres, or 38.1 per cent, were devoted to strawberries; the total production for the state was 7,690,830 quarts, of which more than one-third was reported by Santa Cruz county. Next in importance are blackberries, of which 1,960 acres were reported. Sonoma county reported one-fourth of the total production of 4,159,131 quarts.

The acreage and production of other berries were as follows: Raspberries and Logan berries, 1,039 acres and 1,446,190 quarts; currants, 729 acres and 1,031,100 quarts; gooseberries, 135 acres and 195,670 quarts; and other small fruits, 72 acres and 59,030 quarts.

GRAPES.

Grapes were grown in 1899 by 13,064 farmers, who obtained 7,214,334 centals of fruit from 90,686,458 vines. The total value of the grapes, including the value of raisins and of 5,492,216 gallons of wine made on farms, was \$5,622,825. Of the quantity of grapes reported, raisin grapes contributed 3,403,368 centals; wine grapes, 3,191,727 centals; and grapes for table use, 619,239 centals.

Of the 57 counties in California, all but 5 reported grape vines, and nearly one-fourth of the counties had over a million vines each.

Fresno, Sonoma, and Santa Clara are the leading counties in the cultivation of this fruit, reporting, in 1900, more than one-third of the vines of the state. Fresno county alone produced 2,125,388 centals of raisin grapes, 522,529 centals of wine grapes, and 94,418 centals of grapes for table use.

Of the counties reporting large acreages in vines, the greatest number of varieties of wine grapes were grown in Sonoma, Santa Clara, Napa, Sacramento, Los Angeles, and Alameda, while grapes for table use and raisins were reported principally by the adjoining counties of Fresno, Kings, Tulare, and Madera.

VEGETABLES.

The value of all vegetables produced in the state in 1899, including the value of potatoes, sweet potatoes, onions, and sugar beets, was \$7,182,318. Of this amount 36.7 per cent represents the value of potatoes, a crop reported by 9,760 farmers, who obtained an average yield of 125 bushels per acre.

Aside from the land devoted to potatoes, sweet potatoes, onions, and sugar beets, 80,194 acres were used in the growing of miscellaneous vegetables. Of this area the products of 9,908 acres were not reported in detail. Of the remaining 20,286 acres, concerning which detailed reports were received, 4,292 acres were devoted to tomatoes; 2,368, to asparagus; 2,123, to sweet corn; 2,024, to watermelons; 1,949, to cabbages; 1,654, to celery; 1,231, to green pease; 1,209, to pumpkins; and 3,436, to other vegetables.

SUGAR BEETS.

Sugar beets were reported in California in 1880, but it was not until within the last decade that their production became an important branch of agriculture in the state. In 1899, 863 farmers devoted to this crop an area of 41,242 acres, an average of 47.8 acres per farm. They obtained and sold from this land 356,535 tons of beets, an average yield of 8.6 tons per acre, and received therefrom \$1,550,346, an average of \$1,796 per farm, \$38 per acre, and \$4.35 per ton.

These beets were grown in 17 counties in the central and southern coast regions; the counties of Ventura, Monterey, Santa Clara, and Alameda, ranking in the order named, reported 70.6 per cent of the total acreage.

FLORICULTURE.

Flowers and plants were grown for market in 1899 by 280 farmers, of whom 208 derived their principal income from the sale of floral products. These commercial florists had invested a capital of \$1,280,281, of which \$766,310 represents the value of land; \$467,625, that of buildings and other improvements; \$36,881, that of implements; and \$9,465, that of live stock. They expended \$110,705 for labor and \$7,379 for fertilizers. The value of the flowers and plants grown by the commercial florists was \$511,125, and that of those grown by others, \$69,521.

LAND UNDER GLASS.

Owing to the natural advantages of the climate of California, the amount of glass used is not so large, in proportion to the value of the products raised, as in most other states. In 1900, 429 farms reported land under glass, with an aggregate area of 1,572,480 square feet. Of the 208 florists in the state only 150 use glass, and they have 1,636,721 square feet of glass surface, equivalent to 1,227,541 square feet of land under glass.

NURSERIES.

Trees and shrubs valued at \$558,329 were grown in 1899, by 245 farmers, of whom 141 derived their principal income from the sale of nursery stock. The farms of these commercial nurserymen were worth \$1,725,945, of which \$1,515,630 represents the value of land; \$10,315, that of buildings; and \$55,243, that of implements, machinery, and live stock. The expenditure for labor was \$158,845, and for fertilizers, \$8,607.

LABOR AND FERTILIZERS.

The total expenditure for labor on farms in 1899, including the value of board furnished, was \$25,845,120, an

average of \$356 per farm. The average was highest on the most intensively cultivated farms, being \$1,123 for nurseries, \$1,053 for sugar farms, \$532 for florists' establishments, \$434 for hay and grain farms, \$428 for fruit farms, \$353 for vegetable farms, \$259 for dairy farms, and \$255 for live-stock farms. "Managers" expended, on an average, \$1,732; "share tenants," \$418; "cash tenants," \$361; and "owners," \$214. White farmers expended \$354 per farm, and colored farmers, \$463.

INDIAN RESERVATIONS.

At the present time most of the Indians in California are located on 26 reservations, namely: Hupa Valley, Round Valley, Tule River, Yuma, and 22 Mission reservations. They comprise a large number of tribes and represent at least fourteen different linguistic stocks. At least one-half of them can use enough English to carry on ordinary conversation, and the greater number wear citizens' clothing. They are, as a rule, self-supporting, rations being issued only to the old and infirm.

HUPA VALLEY RESERVATION.

The Hupa Valley reservation, in Humboldt county, comprises an area of 155 square miles. The reservation proper consists principally of timber or grazing land with a cultivable area of about 1,200 acres.

The total number of Indians on the reservation June 1, 1900, was 1,112. Of this number many were in possession of well stocked farms, the average tillable area being 30 acres. Several of the Indian farmers own improved implements and machinery, and raise profitable crops of corn, oats, wheat, and hay. They have orchards of peach, pear, apple, and cherry trees.

Very little attention is given to dairying, but the sales of domestic animals and animal products in 1899 amounted to \$4,800.

ROUND VALLEY RESERVATION.

Round Valley reservation, in Tehama county, embraces an area of 59 square miles. The fertile soil of the valley and the fine grazing land of the surrounding foothills, offer excellent opportunities for agricultural operations. The reservation had a population, June 1, 1900, of 599, and the average allotment of agricultural land at that time was 40 acres per family.

The farms, as a rule, are well stocked and provided with modern machinery. The principal crops are wheat, oats, and barley, in the order named, although a large acreage of wild hay is cut each year. Small orchards, comprising a large variety of fruit trees, are reported, and also considerable quantities of vegetables. In 1899 nearly all farmers owned cattle, many having large herds. At the time of the enumeration one farmer had 150 cows not kept for milk, valued at \$3,000, and his sales of live stock and other animal products in 1899 amounted to \$1,700. Swine and poultry are kept on most farms.

Fertilizers purchased in 1899 cost \$937,050, or an average of \$18 per farm; in 1889 the total value of fertilizers purchased was only \$148,886. The average expenditure in 1899 was greatest for nurseries, amounting to \$61; for fruit farms it was \$38; for florists' establishments, \$35; for sugar farms, \$8; for hay and grain farms, \$7; for vegetable farms, \$6; for dairy farms, \$3; and for live-stock farms, \$2.

TULE RIVER RESERVATION.

This reservation is located in Tulare county and comprises 76 square miles, the greater portion of which is timber and grazing land. Less than 250 acres, made up of scattered patches of 5 or 10 acres each, is suitable for cultivation.

Most of the 143 Indians on the reservation derive their living from stock raising, or through employment as sheep shearers at certain seasons of the year.

In 1899, 36 acres were devoted to corn, wheat, and barley, and 44 acres to alfalfa and grains cut green for hay. A small acreage was used in the cultivation of melons, squashes, sweet corn, and dry beans. Nearly all crops are irrigated.

Some farms are well stocked with range cattle and small herds of Indian ponies, and in 1899, 18 farmers reported sales of live stock and animal products.

YUMA RESERVATION.

The Yuma reservation of 71½ square miles is located in San Diego county, and had a population, June 1, 1900, of 817. In manners and customs these Indians are the most primitive of the California tribes. Their food consists principally of fish and the mesquite bean, which grows in abundance on the reservation.

They cultivate only a small acreage of land, and even in favorable seasons seldom raise more than one hundred bushels each of corn, wheat, and barley. In the census year their crop was a total failure. The Yumas own no cattle, their live stock being limited to a few horses, mules, and burros, and several hundred chickens.

THE MISSION RESERVATIONS.

Most of the Mission Indians are located on small reservations scattered over Riverside and San Diego counties. Few of these reservations have any appreciable amount of arable land, and some are practically desert. The extreme drought of the two years immediately preceding the census year worked great hardship among them, and their crops in 1899 were nearly complete failures. Morongo reservation, the largest and most prosperous of all, is provided with cement irrigation ditches constructed by the Government, and was the only reservation which reported any crops in 1899. Small quantities of corn, wheat, and alfalfa were secured. Orchard products were reported by most farmers on this reservation.

IRRIGATION STATISTICS.

California, with its varied topography, soil, and climate, offers an interesting field for the study of irrigation. No other state produces such a variety of crops, and in no other state have agricultural lands, as such, reached the selling price of the semitropical fruit orchards of southern California. Except in a few localities there is not, in California, the absolute necessity for irrigation that exists in most other western states and territories. On nearly all of the lands that are irrigated some crops will grow, in ordinary seasons, without artificial application of water. The more valuable crops, however, usually require irrigation, and with it the yield of all crops is increased greatly. An irrigation system is an insurance against crop failure in years of drought.

Table A is a comparative exhibit, by counties, of the number of irrigators and the acreages irrigated in 1889 and in 1899.

TABLE A.—NUMBER OF IRRIGATORS, AND ACRES IRRIGATED, WITH PERCENTAGES OF INCREASE, BY COUNTIES: 1889 AND 1899.

COUNTIES.	NUMBER OF IRRIGATORS.			ACRES IRRIGATED.		
	1889.	1899.	Per cent of increase.	1889.	1899.	Per cent of increase.
The State	25,075	13,732	87.0	1,446,114	1,004,233	44.0
Alameda	101			2,532		
Alpine	33	31	6.5	4,391	2,680	63.8
Amador	137	221	138.0	1,167	3,136	162.8
Butte	455	372	22.3	7,332	5,478	33.8
Calaveras	143	57	150.9	1,476	582	153.6
Colusa ¹	62	93		2,995	7,525	141.8
Glenn ²	67		38.7	1,382		121.6
Eldorado	235	425	180.6	3,387	4,318	190.0
Fresno ³	2,459	1,400		283,737	105,665	
Madera ⁴	120		84.2	23,152		
Inyo	302	209	73.2	41,026	46,242	11.3
Kern	653	370	76.5	112,533	154,540	27.2
Kings ⁵	780			92,704		6.6
Tulare ⁴	1,467	1,287	74.6	86,854	168,455	145.4
Lake	45	68	133.8	523	958	111.1
Lassen	813	293	6.8	49,634	55,819	22.1
Los Angeles	4,066	1,843	120.6	85,644	70,164	21.4
Mariposa	66	90	126.7	574	730	24.6
Merced	520	231	125.1	111,330	32,309	12.6
Modoc	467	402	16.2	78,016	80,110	36.0
Mono	97	94	8.2	59,202	43,523	640.2
Monterey	88	21	319.0	891		30.3
Nevada	283	318	111.0	4,003	3,990	0.6
Orange	1,558	1,039	50.0	41,549	31,816	37.8
Placer	618	431	20.2	10,308	7,480	116.9
Plumas	187	186	0.5	28,423	34,196	80.6
Riverside ⁶	1,737			32,947		
San Bernardino ⁶	1,854	1,521	126.5	37,877	37,907	622.3
San Diego ⁶	1,041	524		16,022	10,193	217.1
Sacramento	425	146	191.1	12,409	1,718	719.3
San Benito	166	77	115.6	2,870	905	712.6
San Joaquin	414	84	392.9	18,466	2,254	499.7
San Luis Obispo	78			1,137		
Santa Barbara	182	47	287.2	3,218	396	18.8
Santa Clara	1,129	184	513.6	40,097	6,686	16.2
Shasta	686	475	44.4	16,159	13,662	16.2
Sierra	98	86	14.0	13,003	14,499	55.6
Siskiyou	594	302	96.7	49,108	31,567	419.4
Solano	29			2,805	3,370	60.6
Stanislaus	221	42	426.2	17,503	3,186	47.8
Tehama	209	116	80.2	11,512	7,169	7.5
Trinity	170	140	21.4	4,710	1,285	256.6
Tuolumne	185	100	85.0	1,381	1,602	222.2
Ventura	353	124	163.4	11,935	2,832	113.1
Yolo	167	39	328.2	5,161	1,019	276.3
Yuba	181	122	48.4	2,477		
All other counties	350	112	212.5	3,534		
Indian reservations	64			242		

¹ Decrease.

² Glenn organized from part of Colusa in 1892.

³ Madera organized from part of Fresno in 1893.

⁴ Kings organized from part of Tulare in 1893.

⁵ Riverside organized from parts of San Bernardino and San Diego in 1893.

The sketch map represents, by areas, in solid black, the

principal regions in which irrigation has been successfully applied to any considerable extent.

In the ten years ending with 1899 the number of irrigators in the state increased from 13,732 to 25,075, or 87.0 per cent; and the area irrigated, from 1,004,233 acres to 1,446,114 acres, or 44.0 per cent. Of the total improved acreage in 1900, 12.1 per cent was reported as irrigated, but the area actually irrigated was much greater than reported. In many localities, large areas which are of little value without water, and upon which water has not been directly applied, have been made fertile by the seepage from neighboring irrigated land. In most cases the enumerators did not report such land as irrigated, but correspondence established the fact that extensive areas were benefited in this way.

The census year 1899 was the third consecutive year of extremely light rainfall. New ditches were built to supply lands that do not usually require irrigation, while other ditches were wholly or partially abandoned because of failure of the water supply.

As the artificial application of water requires more than the ordinary amount of labor and capital, there is, in most irrigation districts, a marked tendency toward intensive farming. In 1889 the average size of the irrigated farms of California was 73 acres, while in 1899 it was but 57 acres.

Table B is an exhibit, by counties, of the number of irrigated farms compared with the total number of farms, and of the irrigated acreage compared with the total improved acreage.

TABLE B.—NUMBER OF IRRIGATED FARMS COMPARED WITH TOTAL NUMBER OF FARMS, AND IRRIGATED ACREAGE COMPARED WITH TOTAL IMPROVED ACREAGE, JUNE 1, 1900.

COUNTIES.	NUMBER OF FARMS.			IMPROVED ACREAGE.		
	Total.	Irrigated.	Per cent irrigated.	Total.	Irrigated.	Per cent irrigated.
The State	72,542	25,675	35.4	11,958,837	1,446,114	12.1
Alameda	2,787	101	3.6	226,118	2,532	1.1
Alpine	37	33	89.2	4,391	4,391	100.0
Amador	560	137	24.5	48,936	1,167	2.4
Butte	1,179	455	38.6	302,029	7,332	2.4
Calaveras	575	143	24.9	41,402	1,476	3.6
Colusa	582	62	10.7	358,227	2,995	0.8
Eldorado	759	295	38.9	45,481	3,387	7.4
Fresno	3,290	2,459	74.7	786,837	283,737	36.1
Glenn	523	67	12.7	855,781	1,382	0.4
Inyo	424	362	85.4	43,740	41,026	93.8
Kern	1,008	653	69.5	824,031	112,533	34.7
Kings	932	780	83.7	262,148	92,704	35.4
Lake	723	45	6.2	41,414	523	1.3
Lassen	555	313	56.4	133,266	49,634	37.2
Los Angeles	6,577	4,066	61.8	518,744	85,644	16.5
Madera	523	120	22.9	277,721	23,152	8.3
Mariposa	381	66	17.3	14,063	574	4.1
Merced	999	520	52.1	613,376	111,330	18.2
Modoc	638	467	73.2	122,647	78,016	63.6
Mono	112	97	86.6	65,238	59,202	90.7
Monterey	1,850	88	4.7	373,605	6,675	1.8
Nevada	522	283	54.2	24,898	4,003	16.1
Orange	2,388	1,558	65.2	236,847	41,549	17.5
Placer	1,076	518	48.1	121,068	10,308	8.5
Plumas	267	187	70.0	57,351	28,423	49.6
Riverside	2,340	1,737	74.2	216,093	32,947	15.3
Sacramento	1,392	425	30.5	327,159	12,409	3.8
San Benito	1,907	166	18.3	168,698	2,870	1.7
San Bernardino	2,350	1,854	78.9	96,920	37,877	39.1
San Diego	2,698	1,041	38.6	229,791	16,022	7.0

TABLE B.—NUMBER OF IRRIGATED FARMS COMPARED WITH TOTAL NUMBER OF FARMS, AND IRRIGATED ACREAGE COMPARED WITH TOTAL IMPROVED ACREAGE, JUNE 1, 1900—Continued.

COUNTIES.	NUMBER OF FARMS.			IMPROVED ACREAGE.		
	Total.	Irrigated.	Per cent irrigated.	Total.	Irrigated.	Per cent irrigated.
San Joaquin	1,966	414	21.1	652,923	18,460	2.8
San Luis Obispo	1,813	78	4.3	412,356	1,137	0.3
Santa Barbara	1,149	182	15.8	202,982	3,218	1.6
Santa Clara	3,995	1,129	28.3	290,285	40,097	13.8
Shasta	1,221	686	56.2	86,540	16,159	18.7
Sierra	141	98	69.5	26,687	13,603	51.0
Siskiyou	981	594	60.8	181,029	49,108	27.1
Solano	1,151	29	2.5	344,058	2,805	0.8
Stanislaus	951	221	23.2	622,700	17,505	2.8
Tehama	1,055	209	19.8	269,693	11,512	4.3
Trinity	272	170	62.5	14,144	4,710	33.3
Tulare	2,212	1,467	66.3	546,289	86,851	15.9
Tuolumne	457	185	40.5	36,461	1,381	3.8
Ventura	1,269	353	27.8	174,419	11,935	6.8
Yolo	1,214	167	13.7	351,213	5,161	1.5
Yuba	438	181	41.3	154,013	2,477	1.6
All other counties	12,925	350	2.7	1,150,406	3,834	0.3
Indian reservations	287	64	22.3	5,244	212	4.6

In 1889, 26.0 per cent of the farms of California were irrigated, and in 1899, 35.4 per cent. Of the improved acreage, 8.2 per cent was irrigated in 1889, and 12.1 per cent in 1899.

It is difficult to fix upon any basis for a comparison of land values which will show the actual value added to the land through irrigation alone. Most of the lands have some agricultural value without irrigation. After water is supplied the value depends chiefly upon the use to which the land is put, and, in the case of orchards, upon the age and condition of the trees. While irrigation is not the only agency giving value to the higher-priced farming lands, it is a vital factor in most cases. In every section of the state are tracts of naturally moist land, as productive as the neighboring irrigated lands, and of the same average value. The area of such tracts, however, is small.

Table C gives the acreage and production of all crops, and of the crops grown on irrigated land in 1899.

TABLE C.—ACREAGE AND PRODUCTION OF PRINCIPAL IRRIGATED CROPS IN 1899.

CROPS.	ACREAGE.			PRODUCTION.			
	Total.	Irrigated.	Per cent irrigated.	Unit of measure.	Total.	Irrigated.	Per cent irrigated.
Alfalfa	298,898	228,970	76.6	Tons	838,730	664,274	79.2
Grains cut green for hay	1,506,860	89,158	5.9	Tons	1,714,692	117,257	6.8
Other hay and forage crops	434,802	169,294	38.9	Tons	482,560	216,207	44.8
Grapes	133,362	37,210	27.9	Pounds	721,433,373	329,384,723	45.7
Orchard fruits	340,978	138,778	40.7	Bushels	23,756,589	11,048,703	46.5
Subtropical fruits	119,836	185,922	71.7				
Small fruits	6,353	3,161	49.8				
Barley	1,029,647	83,725	8.1	Bushels	25,149,335	1,532,612	6.1
Corn	53,930	15,215	28.2	Bushels	1,477,093	490,802	33.2
Oats	153,734	5,318	3.5	Bushels	4,972,356	172,125	3.5
Rye	62,925	956	1.5	Bushels	524,451	10,890	2.1
Wheat	2,683,405	161,086	6.0	Bushels	36,534,407	1,649,455	4.5
Potatoes	42,098	20,435	48.5	Bushels	5,242,596	3,119,600	59.5
Sweet potatoes	1,607	1,241	77.2	Bushels	239,029	198,877	83.2
Onions	2,207	1,369	62.0	Bushels	514,859	371,542	72.2

¹ Estimated from number of trees or vines.

California has two great mountain systems, the Sierra Nevada, extending along the eastern border, and the Coast Range, following the coast line. These systems are joined in the northern part of the state in the vicinity of Mt. Shasta, and in the southern part near Mt. Tehachapi. Between the two ranges lie the valleys of the Sacramento and San Joaquin rivers, containing most of the agricultural lands of the state. North of the Sacramento Valley is a rugged region drained by the Klamath River. In the extreme eastern portion of the state are a few rivers which flow east into lakes situated near the California-Nevada boundary line, while along the entire coast are streams flowing from the Coast Range into the ocean. In the southern portion of the state, also, there are several small rivers of great agricultural importance.

For convenience the following divisions—arbitrary in a measure, but conforming as far as practicable to the natural drainage basin divisions—have been adopted: Counties bordering on San Francisco Bay—Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma; counties of the north coast—Del Norte, Humboldt, and Mendocino; counties

drained by Klamath River—Siskiyou and Trinity; counties drained by Sacramento River—Amador, Butte, Colusa, Eldorado, Glenn, Lake, Lassen, Modoc, Nevada, Placer, Plumas, Sacramento, Shasta, Sierra, Sutter, Tehama, Yolo, and Yuba; counties drained by San Joaquin River—Calaveras, Fresno, Kern, Kings, Madera, Mariposa, Merced, San Joaquin, Stanislaus, Tulare, and Tuolumne; drained by Carson River—Alpine county; drained by Owens Lake—Inyo county; drained by Mono Lake and Walker River—Mono county; drained by San Benito River—San Benito county; coast counties from San Francisco Bay south, to and including Los Angeles county—Los Angeles, Monterey, San Luis Obispo, Santa Barbara, Santa Cruz, and Ventura; counties drained by Santa Ana River—Orange, Riverside, San Bernardino, and San Diego. A portion of the area of the counties included in the Sacramento River division is really in other and smaller drainage basins, the most important of which is the Honey Lake basin.

In certain localities the necessity and value of water for particular crops, and especially for fruit, has led to extraordinary and successful efforts to obtain it from under-

ground sources. This is particularly true of Los Angeles, Orange, Riverside, Santa Clara, San Bernardino, and Tulare counties, although in nearly every county some irrigation from wells is reported.

Table D shows, by the above divisions, the number of farms, and the acreage, watered from two sources, namely: From open streams, lakes, and springs, and from wells and tunnels. In some instances land supplied with water from streams during the winter months is irrigated from wells in the summer. Land thus watered has been regarded as irrigated from streams, and the acreage is not included in the figures showing well irrigation.

TABLE D.—NUMBER OF FARMS AND ACRES IRRIGATED FROM STREAMS AND FROM WELLS IN 1899.

DIVISIONS.	NUMBER OF FARMS IRRIGATED.			NUMBER OF ACRES IRRIGATED.		
	Total.	From streams.	From wells.	Total.	From streams.	From wells.
The State	25,675	18,781	6,894	1,446,114	1,293,608	152,506
Counties bordering on San Francisco Bay	1,487	335	1,102	47,619	20,152	27,467
North coast counties	91	70	21	356	286	70
Counties drained by Klamath River ¹	765	756	9	58,828	58,768	55
Counties drained by Sacramento River ²	4,611	4,158	458	248,874	241,128	7,746
Counties drained by San Joaquin River ³	7,049	6,554	495	749,917	732,326	17,591
Alpine county, drained by Carson River	33	33	—	4,391	4,391	—
Inyo county, drained by Owens Lake	362	362	—	41,026	41,021	5
Mono county, drained by Mono Lake and Walker River	97	97	—	59,202	59,202	—
San Benito county, drained by San Benito River	166	84	82	2,870	1,868	1,002
Coast counties from San Francisco Bay south to and including Los Angeles county	4,832	2,044	2,788	109,424	54,863	54,561
Counties drained by Santa Ana River ⁴	5,191	3,708	1,483	112,590	72,798	39,792
San Diego county	1,041	585	456	16,022	11,805	4,217

¹ Includes Hupa Valley Indian reservation.

² Includes irrigated area of Honey Lake basin.

³ Includes Tule River Indian reservation.

⁴ Same acreage irrigated also from streams.

⁵ Includes Mission Indian reservation.

Water is obtained from open streams, lakes, and springs by two methods, gravity and pumping. By the gravity system, water is directed into the ditches usually by temporary or permanent dams thrown across the streams, but in some cases the bottom of the ditch is made lower at its head than the bed of the stream, thus obviating the necessity of dam building. Sometimes the stream is dammed and the water allowed to flood the contiguous lands, no ditches being used. This method is employed chiefly along the Pitt River. In the lower portions of the Sacramento and San Joaquin valleys, several thousand acres of land are moistened by water let in through headgates built in the levees which protect the reclaimed marsh lands from the river. The construction and maintenance of these intake gates and the distributing ditches involve much labor and expense, and the acreage so watered has, therefore, been included with the irrigated area.

Table E presents, by divisions, the principal statistics relating to the canals and ditches receiving water from streams by gravity, and used solely or chiefly for irrigation purposes in 1899.

TABLE E.—NUMBER, LENGTH, AND COST OF CONSTRUCTION OF MAIN CANALS AND DITCHES RECEIVING WATER FROM STREAMS BY GRAVITY, AND USED SOLELY OR CHIEFLY FOR IRRIGATION PURPOSES.

DIVISIONS. ¹	Acreage irrigated in 1899.	MAIN CANALS AND DITCHES.			
		Number.	Length in miles.	Cost of construction.	
				Total.	Per acre irrigated in 1899.
The State ¹	1,248,178	1,913	5,106	\$12,855,012	\$10.30
Counties bordering on San Francisco Bay	15,978	128	87	112,100	7.02
North coast counties	186	64	18	2,475	13.31
Counties drained by Klamath River	58,768	446	651	257,124	4.78
Counties drained by Sacramento River ²	185,358	818	1,819	1,594,900	8.60
Counties drained by San Joaquin River	724,329	201	1,422	6,293,636	8.69
Counties drained by Carson and Walker rivers, Mono Lake, and Owens Lake	104,614	145	531	610,398	5.83
San Benito county drained by San Benito River	1,868	6	17	36,000	19.27
Coast counties from San Francisco Bay south to and including Los Angeles county	48,626	57	210	1,076,492	22.14
Counties drained by Santa Ana River	111,366	43	324	2,782,910	24.99
San Diego county	2,090	15	27	88,977	42.57

¹ Indian reservations not included.

² Includes irrigated area of Honey Lake basin.

In 1899 there were operated in California 1,913 ditches receiving water from open streams, lakes, and springs by gravity, and used chiefly or solely for irrigation purposes. The total cost of constructing these ditches was \$12,855,012, and the area irrigated in the census year was 1,248,178 acres, making the average cost of construction per acre irrigated in 1899, \$10.30. The total length of the main ditches was 5,106 miles.

Many ditches, especially in the southern part of the state, are supplied with water from other canals, although operated as separate systems. The business relations between the operators of the major system and the subsystems are often complicated, and the limitations of an investigation conducted chiefly by correspondence have made it necessary to consider as laterals all ditches not receiving water directly from streams. Consequently, the mileage and the cost of construction of many ditches which are operated, in a measure, under independent management, are not included in Table E.

Santa Clara is the only county of the first division in which irrigation is practiced to any considerable extent. The water taken from streams, which is supplied principally by Penitencia Creek, is used chiefly for orchards, and is applied during the winter season, two or three applications generally being sufficient. In the other counties of this division irrigation is used chiefly for truck farms, although in Alameda county several hundred acres of alfalfa were irrigated from Alameda Creek and other small streams.

The coast counties north of San Francisco Bay have a heavy winter rainfall, and a summer precipitation from dews and fogs. There is some irrigation for truck gardens, and on the higher lands of Mendocino county a number of

farmers apply water to their alfalfa fields. There are no large canals, each irrigator usually operating a small ditch of his own.

In 1899, 53,763 acres in Siskiyou and Trinity counties were irrigated from streams, principally the tributaries of the Klamath River. Irrigation is practiced chiefly for hay and forage crops. The ditches used are generally of simple construction and comparatively inexpensive.

From the Sacramento River and its many tributaries, and from the streams flowing into Honey Lake, 241,128 acres were irrigated in 1899. Gravity ditches used solely or chiefly for irrigation supplied 185,358 acres, while a large area was watered from canals used principally for mining purposes. In the northern counties of this division, the method of damming streams, causing them to flood the contiguous land, is often employed. Irrigation is sometimes used on the reclaimed marsh lands bordering the Sacramento River near its mouth.

The southern portion of the great interior basin of California is composed of the San Joaquin, Tulare, and Kern valleys. There are no distinct lines of demarcation between these valleys, and they are usually included in the general term "San Joaquin Valley," the San Joaquin River being the only drainage outlet to the sea. In this division 749,917 acres were irrigated in 1899, of which area 732,326 acres were supplied with water from streams, and a comparatively small acreage from ditches used principally for mining or power purposes. The owners of a number of farms which were formerly marsh lands, but are now protected from the river by levees, have successfully practiced irrigation by filling ditches with river water siphoned over the levees or let in through flood gates. In 1899 the number of ditches operated by gravity was 201, from which 724,329 acres were watered.

In Alpine, Mono, and Inyo counties, agriculture without irrigation is practically impossible, and in these counties in 1899, 104,614 acres were irrigated. The water was supplied by streams, and was conducted by ditches built for irrigation purposes.

There were six irrigation ditches in San Benito county in 1899, from which 1,868 acres were supplied with water. Alfalfa was the principal crop irrigated.

In the coast counties from San Francisco Bay south to and including Los Angeles county, the number of irrigation ditches obtaining water from streams by gravity in 1899 was 57. From these ditches 48,626 acres, principally in Los Angeles and Ventura counties, were irrigated. Water is used chiefly for orchards and for hay and forage crops.

In the three counties drained by the Santa Ana River there were, in 1899, 111,366 acres irrigated from streams by gravity ditches. In these counties, and in Los Angeles county, the water supply of several gravity systems is supplemented by water pumped from streams and wells, and in some instances by water from artesian wells. In such cases the cost of the pumping plants and sinking wells has been deducted from the construction cost of the systems, as shown in Table E. In the greater portion of California,

most of the water in the rivers runs waste, but in the counties south of the San Joaquin Valley the flow of the streams is completely utilized.

In San Diego county the principal systems from which water is obtained, although constructed as gravity ditches, are not included in the figures of Table E, as, on account of the light rainfall in 1899, the San Diego Land and Water Company and the San Diego Flume Company were compelled to pump water from wells. The majority of ditches reported had water for a short period only, and the acreage irrigated from each was much less than in an average year.

In 1899, 11,780 acres in the state were irrigated with water pumped from open streams and lakes. The plants used were similar to those employed in pumping from wells. On the lower Sacramento River a barge fitted with two 15-inch rotary pumps driven by an engine of 150 horsepower, was successfully operated in irrigating the lands of its owners. The barge had a propelling wheel, and was rigged with pipes, derricks, etc., for lifting the water above the banks. This was the only floating plant reported.

Wells have an important place in the agricultural economy of California. Exclusive of the area watered from ditches whose stream supply was supplemented by water derived from underground sources, there were, in 1899, 152,566 acres irrigated from wells and tunnels. Water from streams is considered better for the soil than that from wells, as it fertilizes as well as moistens the land, while well water is sterile and often contains alkalies to a harmful degree. But, notwithstanding these admitted disadvantages, some prefer well irrigation, as the supply is certain and can be applied at the times and in the quantities desired.

Water is obtained from underground sources in three ways: By pumping from wells, by driving tunnels in the sides of hills and mountains, and by using flowing wells. Windmills are not generally employed, even the smaller plants being operated by steam, gasoline, or electricity. Many of the systems are large and expensive, and plants costing \$10,000 or more, used for single farms, are not uncommon. Repairing is an important matter in the operation of pumping plants, not only on account of the expense, but because a breakdown might occur when the water is most needed. For this reason, and because they are more efficient, centrifugal and pneumatic pumps are preferred to plunger pumps. The principal elements governing the cost of operating a pumping plant are the kind and condition of the machinery, fuel, labor, the height to which the water must be lifted and the distance it must be carried, and repairing. As a rule, the larger the plant the less the cost of water per inch, and for this reason the farmers in many localities have built cooperative plants.

The fuel generally used is oil, either crude or distillate. With the development of California's oil fields this fuel became cheaper, making it profitable to pump water for crops. The oil industry and irrigation are mutually helpful. In 1899 the highest price reported for crude oil was

paid in Tulare county—7 cents per gallon for a drum of 110 gallons. The lowest price was reported from Santa Clara county—85 cents for a barrel of 42 gallons, or a little more than 2 cents per gallon. The price of distillate varied from 9 cents in Los Angeles county to 13 cents in Yolo county; and that of gasoline, from 15 cents in Santa Clara county to 20 cents in Colusa county. Most of the pumping plants in Santa Clara county use wood for fuel.

Wood costs from \$2.50 to \$8.00 per cord. One irrigator reported that he had substituted an oil engine, using \$2.10 worth of crude oil per day for a wood-burning plant which, while consuming \$8.00 worth of fuel per day, pumped only the same quantity of water. Coal is used to some extent, and a few plants burn the branches trimmed from orchards. Most of the plants in Tulare county are operated by electricity furnished by power companies.