
FLOURING AND GRIST MILL PRODUCTS.

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

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

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

	DATE OF CENSUS.						PER CENT OF INCREASE.				
	1900	1890	1880	1870	1860	1850	1890 to 1900	1880 to 1890	1870 to 1880	1860 to 1870	1850 to 1860
Number of establishments	25,258	18,470	24,338	22,573	13,868	11,891	36.8	24.1	7.8	62.8	16.6
Capital	\$218,714,104	\$208,473,500	\$177,361,878	\$151,565,376	\$84,585,004	\$54,415,581	4.9	17.5	17.0	79.2	55.4
Salaried officials, clerks, etc., number	5,790	216,078	(3)	(3)	(3)	(3)	164.0				
Salaries	\$5,404,750	\$8,897,340	(3)	(3)	(3)	(3)	139.3				
Wage-earners, average number	37,073	47,403	58,407	58,448	27,682	23,310	121.3	118.8	10.1	111.1	18.8
Total wages	\$17,703,418	\$18,138,402	\$17,422,316	\$14,577,533	\$8,721,331	\$5,080,164	12.4	4.1	19.5	67.1	53.5
Men, 16 years and over	36,419	46,889	58,239	57,795	27,626	23,260	122.3	119.5	0.8	109.2	18.8
Wages	\$17,540,370	\$18,046,465	(3)	(3)	(3)	(3)	12.8				
Women, 16 years and over	497	308	42	91	56	50	61.4	633.3	153.8	62.5	12.0
Wages	\$142,911	\$70,153	(3)	(3)	(3)	(3)	103.7				
Children, under 16 years	157	206	126	562	(8)	(8)	123.8	63.5	177.6		
Wages	\$20,137	\$21,784	(3)	(3)	(8)	(8)	17.6				
Miscellaneous expenses	\$10,325,588	\$13,152,037	(4)	(4)	(4)	(4)	21.0				
Cost of materials used	\$475,826,345	\$434,152,290	\$441,545,225	\$367,392,122	\$206,497,309	\$113,036,698	9.6	11.7	20.2	76.2	34.5
Value of products	\$560,719,068	\$513,971,474	\$505,136,712	\$444,985,143	\$248,530,365	\$136,056,736	9.1	1.7	13.5	79.0	82.7

¹Decrease.

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

³Not reported separately.

⁴Not reported.

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

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

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

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

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

STATES AND TERRITORIES.	Less than 100 barrels.	100 to 499 barrels.	500 to 999 barrels.	1,000 to 4,999 barrels.	5,000 to 19,999 barrels.	20,000 to 99,999 barrels.	100,000 barrels or more.	Total.
United States ..	1,655	2,554	1,316	4,310	2,584	634	135	13,188
Alabama.....	35	75	34	17	3	1	.....	165
Arizona.....	1	.....	1	4	5	1	.....	12
Arkansas.....	16	32	18	71	34	2	.....	173
California.....	4	7	8	30	28	11	6	94
Colorado.....	.....	2	3	12	12	17	1	47
Connecticut.....	13	5	1	.....	.....	.....	.....	19
Delaware.....	9	13	5	27	7	1	.....	62
District of Columbia.....	.....	.....	.....	.....	.....	2	.....	2
Florida.....	1	.....	1	.....	.....	.....	.....	2
Georgia.....	57	194	91	76	9	5	1	433
Idaho.....	.....	1	1	11	17	4	.....	34
Illinois.....	49	50	22	129	131	50	12	443
Indiana.....	36	41	36	245	235	44	8	645
Indian Territory.....	.....	.....	.....	8	12	3	.....	23
Iowa.....	53	43	24	129	107	21	2	379
Kansas.....	34	17	20	73	97	48	13	302
Kentucky.....	57	65	34	170	117	17	1	461
Louisiana.....	.....	.....	1	.....	.....	.....	.....	1
Maine.....	30	13	5	7	1	.....	.....	56
Maryland.....	15	53	40	128	36	6	2	280
Massachusetts.....	16	7	2	2	.....	.....	.....	27
Michigan.....	33	41	46	236	137	37	4	534
Minnesota.....	15	23	19	93	161	52	24	377
Mississippi.....	7	5	.....	2	.....	.....	.....	14
Missouri.....	58	81	53	330	165	44	9	740
Montana.....	1	1	2	4	7	4	.....	19
Nebraska.....	8	13	16	93	110	18	.....	258
Nevada.....	.....	.....	1	9	1	.....	.....	11
New Hampshire.....	13	8	1	.....	.....	1	.....	23
New Jersey.....	34	31	14	50	27	1	.....	166
New Mexico.....	1	4	2	19	9	.....	.....	35
New York.....	151	129	44	127	80	23	14	571
North Carolina.....	175	423	138	202	36	1	.....	975
North Dakota.....	1	1	2	23	25	17	1	70
Ohio.....	40	66	64	375	282	51	5	833
Oklahoma.....	7	2	1	6	14	13	1	44
Oregon.....	.....	6	9	48	52	13	3	131
Pennsylvania.....	264	355	190	556	185	25	5	1,580
Rhode Island.....	2	3	1	.....	.....	.....	.....	6
South Carolina.....	32	75	46	39	8	1	.....	201
South Dakota.....	1	1	3	27	55	7	.....	94
Tennessee.....	103	197	85	209	98	16	6	719
Texas.....	8	8	5	23	42	25	6	117
Utah.....	.....	.....	1	42	33	3	.....	79
Vermont.....	25	9	1	1	.....	.....	.....	36
Virginia.....	153	301	118	281	56	12	1	922
Washington.....	.....	6	1	12	24	16	4	63
West Virginia.....	64	103	78	151	29	6	.....	428
Wisconsin.....	25	44	30	200	103	16	6	424
Wyoming.....	.....	.....	4	.....	4	.....	.....	8

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

¹A barrel equals 196 pounds.

Pennsylvania, and of mills of the greatest capacity in Minnesota. Of mills of the second size, the largest number was found in North Carolina, of the third and fourth sizes in Pennsylvania, and of the fifth size in Ohio. Minnesota led in the number of large mills as well as in value of products. In number of establishments of all kinds Pennsylvania led, with 1,580; North Carolina was second, with 975; Virginia third, with 922; and Ohio fourth, with 833. Among the states and territories having a small number of mills were Wyoming, with 8; Rhode Island, with 6; and the District of Columbia and Florida, with 2 each. There was no state or territory without at least 1 mill of some one of the sizes mentioned. Unless a state or territory had 3 or more establishments of the kind under consideration, no detailed statement is made concerning it.

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

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

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

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

STATES AND TERRITORIES.	RANK ACCORDING TO—				
	Number of establishments.	Capital invested.	Number of wage-earners.	Wages paid.	Quantity of wheat used.
South Dakota.....	83	27	29	27	25
Tennessee.....	4	18	18	11	11
Texas.....	24	17	18	15	15
Utah.....	38	33	38	34	29
Vermont.....	28	30	36	36	45
Virginia.....	3	15	17	17	19
Washington.....	86	22	22	18	16
West Virginia.....	14	24	26	28	28
Wisconsin.....	15	8	10	10	9
Wyoming.....	49	48	49	48	41

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

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

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

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

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

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

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

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

STATES GRINDING MORE INDIAN CORN THAN WHEAT: 1900.

STATES.	Indian corn (bushels).	Wheat (bushels).
Alabama	4,268,689	661,684
Connecticut	3,008,483	27,924
Delaware	882,216	740,128
District of Columbia	700,886	314,502
Florida	441,868	5,022
Georgia	7,255,621	4,136,857
Louisiana	742,669	8,000
Maine	4,589,793	184,894
Massachusetts	9,718,561	27,840
Mississippi	1,609,736	16,920
New Hampshire	3,608,644	318,324
New Jersey	5,156,897	2,404,670
North Carolina	6,018,505	4,549,396
Rhode Island	2,627,939	5,802
South Carolina	1,861,093	1,000,964
Vermont	4,749,004	33,523
West Virginia	3,080,130	2,818,985

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

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

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

STATES AND TERRITORIES.	Total.	Merchant only.	Custom or exchange only.	Both custom or exchange, and merchant.
United States	25,258	2,620	14,905	7,733
Alabama	781	11	735	85
Arizona	11	5	1	5
Arkansas	410	18	337	55
California	124	71	11	42
Colorado	60	35	10	14

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

STATES AND TERRITORIES.	Total.	Merchant only.	Custom or exchange only.	Both custom or exchange, and merchant.
Connecticut	208	31	69	108
Delaware	83	9	25	49
District of Columbia	9	8	1	4
Florida	95	4	37	104
Georgia	1,123	22	997	104
Idaho	84	6	3	25
Illinois	871	179	459	233
Indiana	897	32	339	476
Indian Territory	61	6	37	19
Iowa	702	32	380	340
Kansas	533	190	187	206
Kentucky	1,145	91	827	227
Louisiana	69	5	64	71
Maine	227	79	77	165
Maryland	407	34	208	165
Massachusetts	231	75	59	97
Michigan	765	111	324	330
Minnesota	512	98	192	222
Mississippi	225	9	210	6
Missouri	1,145	221	547	377
Montana	20	12	3	5
Nebraska	305	85	69	151
Nevada	11	6	2	3
New Hampshire	149	28	41	85
New Jersey	354	62	122	170
New Mexico	85	3	15	17
New York	1,513	103	694	716
North Carolina	1,773	27	1,546	200
North Dakota	97	13	81	53
Ohio	1,150	150	408	592
Oklahoma	55	19	15	21
Oregon	153	54	38	61
Pennsylvania	2,719	186	1,362	1,171
Rhode Island	47	10	12	25
South Carolina	556	8	534	14
South Dakota	120	24	30	66
Tennessee	1,618	96	1,311	211
Texas	289	59	167	73
Utah	80	13	13	54
Vermont	211	15	78	118
Virginia	1,726	83	1,370	273
Washington	85	32	18	35
West Virginia	737	40	553	139
Wisconsin	717	60	390	267
Wyoming	10	4	2	4

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

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

FLOURING AND GRIST MILL PRODUCTS.

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

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

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

STATES AND TERRITORIES.	Rank.	Number of establishments.	RAW MATERIAL, WHEAT.		PRODUCTS, FLOUR.		Average daily production (barrels).	Average value per barrel.	Average bushels of wheat per barrel.	Average cost per bushel (cents).
			Bushels.	Cost.	Barrels.	Value.				
Total		8,987	481,658,179	\$812,632,026	101,823,820	\$342,119,777	37	\$3.36	4.7	65
Minnesota	1	324	102,921,426	66,641,825	22,705,105	72,381,659	234	3.19	4.5	65
Ohio	2	744	85,083,213	24,370,443	7,366,474	26,060,827	33	3.54	4.8	70
Illinois	3	404	27,566,764	18,382,716	6,078,423	20,813,984	60	3.42	4.5	67
Indiana	4	592	29,192,680	19,188,538	5,818,392	20,384,714	33	3.50	5.0	66
New York	5	205	25,232,677	18,432,502	5,494,827	19,928,981	38	3.67	4.6	73
Missouri	6	593	25,368,939	16,263,077	5,245,421	17,800,204	28	3.30	4.8	64
Pennsylvania	7	1,185	22,923,795	16,179,063	4,775,166	17,059,265	11	3.57	4.8	71
Wisconsin	8	313	22,356,963	14,869,326	4,750,253	15,496,295	49	3.26	4.7	66
Kansas	9	260	23,459,171	13,157,846	5,084,251	15,089,529	65	3.00	4.7	56
Michigan	10	479	20,121,661	13,855,780	4,012,867	14,899,096	28	3.71	5.0	69
Tennessee	11	337	16,546,155	11,773,868	3,512,985	18,220,609	35	3.76	4.7	71
Kentucky	12	336	12,325,621	8,294,690	2,549,947	9,341,759	25	3.66	4.8	67
Texas	13	95	12,228,132	8,046,610	2,604,554	8,881,359	90	3.41	4.7	66
Iowa	14	327	12,521,953	7,005,972	2,503,390	8,244,050	26	3.29	5.0	56
California	15	90	12,786,110	7,649,433	2,660,238	7,952,867	99	2.99	4.8	60
Virginia	16	317	8,562,519	6,025,314	1,788,946	6,671,815	18	3.79	4.9	70
Maryland	17	235	7,081,937	4,972,234	1,475,416	5,418,734	21	3.67	4.8	70
Nebraska	18	242	8,687,731	4,546,481	1,821,107	5,319,911	25	2.92	4.8	52
Oregon	19	124	8,847,242	4,403,043	1,826,512	4,769,573	49	2.61	4.8	50
Washington	20	57	8,887,996	4,302,920	1,868,730	4,758,004	109	2.55	4.8	48
North Carolina	21	551	4,549,396	3,609,061	945,761	4,047,340	6	4.28	4.8	79
Georgia	22	271	4,136,857	2,380,435	789,191	3,481,754	10	4.35	5.2	70
North Dakota	23	66	4,827,477	2,756,484	1,029,070	3,274,953	52	3.18	4.7	57
Colorado	24	46	4,869,453	2,716,924	1,012,331	3,063,100	73	3.03	4.8	56
West Virginia	25	334	3,813,985	2,680,322	767,160	2,969,298	8	3.87	5.0	70
Oklahoma	26	30	4,516,853	2,440,518	975,870	2,855,216	108	2.93	4.6	54
South Dakota	27	30	4,427,426	2,380,313	915,541	2,695,024	38	2.94	4.8	54
Arkansas	28	153	2,912,566	1,840,529	605,702	2,005,285	13	3.31	4.8	63
New Jersey	29	119	2,404,670	1,743,080	465,338	1,871,129	13	4.01	5.2	72
Utah	30	72	2,546,301	1,217,169	513,692	1,413,423	24	2.75	5.0	48

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

*

MANUFACTURES.

TABLE 6.—COMPARATIVE SUMMARY, BY STATES

STATES AND TERRITORIES.	Year.	Number of establishments.	Capital.	SALARIED OFFICIALS, CLERKS, ETC		AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES.							
				Number.	Salaries.	Total.		Men, 16 years and over.		Women, 16 years and over.		Children, under 16 years.	
						Average number.	Wages.	Average number.	Wages.	Average number.	Wages.	Average number.	Wages.
1 United States...	{ 1900 1890	25,258 18,470	\$218,714,104 208,473,500	5,790 16,078	\$5,404,760 18,897,340	37,073 47,403	\$17,703,418 18,183,402	36,419 46,889	\$17,540,370 18,046,465	497 308	\$142,911 70,158	157 206	\$20,187 21,784
2 Alabama	{ 1900 1890	781 702	1,047,961 1,410,780	39 399	22,691 109,325	540 1,043	92,858 157,134	539 1,034	92,708 156,672	..... 3	..... 180	1 6	150 282
3 Arizona	{ 1900 1890	11	221,112	11	9,125	36	19,970	36	19,970.....	..........	..........	..........	..........
4 Arkansas	{ 1900 1890	410 376	1,183,052 975,616	36 250	21,526 62,351	443 742	116,445 107,439	440 734	116,253 107,121	..... .....	..... .....	3 3	192 318
5 California	{ 1900 1890	124 101	6,552,642 6,126,305	199 189	259,866 258,391	857 855	525,401 559,300	825 842	516,144 555,818	27 7	8,857 2,860	5 6	900 1,122
6 Colorado	{ 1900 1890	60 33	2,040,774 2,135,085	92 45	78,445 50,226	278 246	169,358 149,554	277 245	168,608 149,242	1	750 .....	..... 1	..... 312
7 Connecticut	{ 1900 1890	208 177	1,565,478 1,516,008	42 164	26,621 96,903	233 286	99,309 128,659	227 284	97,554 128,384	6 1	1,755 200	..... 1	..... 73
8 Delaware	{ 1900 1890	83 56	1,017,503 1,127,592	20 51	17,796 34,401	135 150	48,928 55,691	134 147	48,728 55,091	..... .....	..... .....	1 3	200 600
9 District of Columbia	{ 1900 1890	9 6	198,065 698,417	18 25	13,450 27,218	84 124	30,848 58,500	84 124	30,848 58,500	..........	..........	..........	..........
10 Florida	{ 1900 1890	95 60	128,416 143,884	4 35	3,500 9,845	46 155	7,967 20,593	45 154	7,927 20,543	..... 1	..... 50	1	40
11 Georgia	{ 1900 1890	1,125 719	2,504,033 2,347,835	88 316	58,908 103,378	1,167 1,078	225,933 197,964	1,154 1,055	225,223 196,486	..... 2	..... 156	13 21	710 1,322
12 Idaho	{ 1900 1890	34 13	569,107 228,405	20 11	14,170 7,490	76 52	46,453 23,843	75 52	46,353 23,843	..... .....	..... .....	1	100
13 Illinois	{ 1900 1890	871 647	12,062,626 13,101,860	367 335	861,021 567,762	2,111 3,550	1,098,006 1,480,954	2,104 3,506	1,096,454 1,471,364	1 26	800 7,510	6 18	1,232 2,080
14 Indiana	{ 1900 1890	897 723	10,784,544 10,022,173	286 355	276,708 520,678	2,124 2,785	1,010,877 1,086,214	2,102 2,763	1,005,415 1,082,048	16 15	4,720 3,266	6 7	742 900
15 Indian Territory	{ 1900 1890	61	473,241	26	17,623	119	48,938	119	48,938.....	..........	..........	..........	..........
16 Iowa	{ 1900 1890	702 441	6,421,073 6,696,759	210 501	160,476 231,458	1,285 1,248	526,479 507,414	1,224 1,213	512,119 502,919	49 24	13,570 3,060	12 11	790 1,435
17 Kansas	{ 1900 1890	533 343	3,366,966 7,344,280	281 446	267,737 319,447	1,451 1,623	743,462 734,058	1,441 1,614	741,891 733,039	8 3	1,221 483	2 0	350 586
18 Kentucky	{ 1900 1890	1,145 505	4,928,323 4,285,649	171 488	125,969 237,941	1,134 1,328	483,594 395,806	1,131 1,313	483,032 394,668	2 4	442 215	1 11	120 923
19 Louisiana	{ 1900 1890	69 19	121,281 33,995	2 7	2,100 813	70 41	11,536 6,306	64 41	11,420 6,306	..... .....	..... .....	6	116
20 Maine	{ 1900 1890	227 210	1,235,767 1,194,900	18 201	11,560 91,076	192 262	93,320 95,344	192 262	93,320 95,344	..........	..........	..........	..........
21 Maryland	{ 1900 1890	407 395	3,428,996 3,007,730	85 307	80,275 166,200	541 625	229,335 240,063	532 610	228,009 237,648	5 11	883 2,275	4 4	443 140
22 Massachusetts	{ 1900 1890	231 233	1,930,327 2,003,907	53 246	33,157 135,229	304 524	161,486 240,924	302 520	161,264 240,906	..... 4	..... 1,018	2	222
23 Michigan	{ 1900 1890	765 544	7,933,587 8,472,352	205 573	153,461 336,793	1,423 1,852	718,499 757,068	1,417 1,840	717,354 755,578	1 3	255 658	5 9	390 332
24 Minnesota	{ 1900 1890	512 307	24,125,781 19,518,743	606 529	730,667 495,740	4,086 3,509	2,333,336 1,748,115	3,936 3,503	2,332,946 1,747,460	147 3	50,440 555	3 3	450 100
25 Mississippi	{ 1900 1890	225 408	225,335 652,663	8 203	1,745 37,243	208 777	27,244 85,050	200 770	26,688 87,775	..... 4	..... 158	8 3	556 117
26 Missouri	{ 1900 1890	1,145 710	11,402,827 12,630,045	374 344	355,125 562,304	1,654 3,011	851,377 1,243,091	1,611 2,943	835,168 1,235,277	34 52	14,450 12,063	9 16	1,750 1,761
27 Montana	{ 1900 1890	20 7	715,189 277,900	26 10	27,100 9,738	67 24	51,871 17,918	67 24	51,871 17,918	..........	..........	..........	..........
28 Nebraska	{ 1900 1890	305 135	4,335,934 3,586,090	133 232	101,721 152,433	698 690	363,687 323,308	656 685	355,060 322,390	37	7,336	5 5	791 913
29 Nevada	{ 1900 1890	11	231,247	4	2,700	13	8,586	12	8,456.....	..........	..........	..........	..........
30 New Hampshire	{ 1900 1890	149 121	1,004,990 905,076	15 91	10,688 45,053	185 174	82,214 78,737	185 174	82,214 78,737	..........	..........	..........	..........
31 New Jersey	{ 1900 1890	354 228	3,004,408 2,316,221	62 207	42,098 122,233	431 500	219,951 213,343	427 495	219,265 212,339	..... 3	..... 700	4 2	686 804
32 New Mexico	{ 1900 1890	35 13	235,735 131,050	2 12	1,500 6,975	52 44	27,453 15,372	52 44	27,453 15,372	..........	..........	..........	..........

¹Includes proprietors and firm members, with their salaries; number only reported in 1900, but not included in this table. (See Table 7.)

²Included in "all other states and territories."

³No establishments reported.

FLOURING AND GRIST MILL PRODUCTS.

AND TERRITORIES: 1890 AND 1900.

Miscellaneous expenses.	MATERIALS USED.											
	Total cost.	Wheat.		Corn.		Rye.		Buckwheat.		Barley.		
		Bushels.	Cost.	Bushels.	Cost.	Bushels.	Cost.	Bushels.	Cost.	Bushels.	Cost.	
\$10,325,588 18,162,037	\$475,826,345 484,162,290	489,914,004 885,749,798	\$317,933,257 311,508,007	241,029,249 166,283,313	\$93,882,609 71,378,341	12,720,812 12,140,396	\$6,446,705 5,950,464	8,317,357 7,032,277	\$4,438,480 3,464,265	12,289,036 8,696,344	\$4,460,695 4,193,284	1
84,654 56,585	2,787,684 2,471,828	661,684 438,367	505,308 438,367	4,268,639 2,682,541	2,128,021 1,972,213	9,976 390	5,145 252	190	135	40	28	2
16,053	882,055	320,214	228,648	17,654	9,740					195,888	87,156	3
44,681 58,898	3,029,286 2,041,587	2,912,566 1,046,598	1,840,529 802,945	2,487,206 2,682,541	1,010,523 1,145,344	4,173 508	1,770 384	105 79	32 59	10 670	5 375	4
246,409 484,921	11,077,482 12,047,810	12,786,110 10,188,420	7,649,438 8,116,556	927,500 479,839	492,910 311,493	88,024 88,432	48,603 65,073	14,402 45,849	14,361 42,537	4,566,341 4,910,253	1,721,635 2,503,390	5
131,790 126,540	3,842,194 8,165,919	4,869,458 8,103,564	2,716,924 2,604,653	1,590,554 428,848	517,584 233,891	26,736 9,216	9,956 4,655	665 4,500	430 3,000	16,515 2,700	0,178 2,225	6
32,083 61,924	1,845,545 2,387,155	27,924 25,504	16,101 21,849	3,003,483 3,770,635	1,398,552 1,902,151	50,213 77,519	26,899 49,328	24,393 46,846	16,710 25,822	1,390 5,867	738 2,578	7
28,038 43,952	980,837 1,464,485	740,123 1,282,629	519,653 1,029,603	882,216 815,398	321,124 333,997	1,292 1,829	686 1,050	15,060 8,266	8,180 5,631		10	8
18,167 80,748	587,690 1,359,888	314,502 913,830	212,760 833,897	700,886 566,714	285,932 280,422	2,300 4,000	1,020 2,080					9
2,160 5,860	242,378 150,185	5,020 16	2,510 16	441,868 137,314	218,627 137,314							10
73,455 103,985	7,004,065 4,366,700	4,136,857 1,724,422	2,880,435 1,602,845	7,255,621 4,734,301	3,637,455 2,576,393	9,431 13,504	6,953 8,544	1,561 620	981 260	400	250	11
23,235 8,270	645,444 262,811	1,307,569 381,154	540,242 240,424	4,436 2,030	2,354 1,165	500	300			137,990 6,340	44,199 4,020	12
560,980 905,299	26,848,791 31,738,747	27,566,764 33,018,591	18,382,716 26,617,898	16,418,864 7,734,102	5,650,082 2,545,688	434,581 856,754	212,033 399,515	176,680 139,162	93,290 73,321	87,461 300,645	30,610 168,542	13
570,830 723,134	25,664,120 26,608,127	29,192,680 27,275,988	19,188,538 21,481,528	14,297,771 9,559,754	4,671,786 3,440,429	211,697 248,241	100,169 108,820	152,455 123,792	73,715 72,118	63,495 12,350	22,866 5,543	14
27,593	1,002,013	1,163,234	690,592	794,391	212,541			11,000	6,600			15
804,266 833,998	11,272,217 9,786,174	12,521,953 8,764,487	7,005,972 6,782,772	6,352,045 4,954,526	1,710,147 1,232,837	458,763 552,958	193,222 209,807	277,593 299,422	143,966 155,309	538,740 251,878	164,527 75,547	16
447,747 599,986	18,595,258 14,285,990	23,459,171 16,693,366	13,157,846 11,641,427	12,427,741 5,998,712	3,075,178 1,440,239	143,145 394,024	69,572 127,463	25,980 40,650	17,372 24,782	33,530 10,250	11,019 3,002	17
295,982 272,883	12,018,998 7,917,917	12,325,621 7,663,433	8,294,690 5,824,050	6,641,306 3,836,239	2,918,853 1,560,269	15,028 27,590	7,664 14,709	378 1,560	285 1,170	5,525 1,110	2,782 628	18
2,717 1,680	325,297 41,836	3,000	2,400	742,669 75,924	264,696 33,988							19
43,836 53,632	2,827,443 2,806,869	134,894 27,527	104,767 28,488	4,589,793 4,744,470	2,095,170 2,439,039	16,152 16,045	9,054 11,430	136,510 73,557	74,608 29,019	49,349 42,763	25,867 24,332	20
225,357 236,607	6,731,805 5,778,873	7,081,937 5,070,425	4,972,234 4,302,746	2,837,711 2,137,955	1,116,787 944,404	134,264 135,034	67,174 66,370	100,148 39,245	50,812 21,461	22,415 17,260	9,814 8,360	21
95,774 169,674	4,812,256 5,959,480	27,340 68,933	20,376 63,417	9,718,561 9,424,537	4,094,552 5,027,843	287,972 123,201	147,823 77,301	13,849 24,746	8,180 12,712	80,940 15,432	30,277 7,930	22
896,484 528,927	19,924,980 19,462,779	20,121,661 19,055,917	18,855,780 15,665,688	8,100,200 4,339,870	2,973,316 1,633,014	649,594 603,000	316,277 225,771	618,292 497,663	333,122 230,758	146,017 276,063	61,919 121,635	23
1,300,270 1,712,017	74,509,733 52,338,867	102,921,426 59,123,929	66,641,825 47,231,697	4,226,426 2,353,507	1,254,815 853,287	455,474 333,081	203,787 142,707	37,065 127,603	47,282 52,093	1,193,063 246,453	310,463 88,917	24
8,302 26,002	805,894 1,009,335	16,920 3,215	14,019 2,868	1,609,736 1,737,653	753,566 950,407							25
520,468 966,124	21,937,507 29,210,639	25,368,939 31,210,111	16,203,077 23,688,561	11,842,365 8,617,433	4,116,539 2,959,190	94,018 141,436	43,740 64,479	45,192 33,900	25,117 20,525	121,735 7,565	44,018 4,144	26
41,516 6,037	818,442 237,245	1,231,182 324,000	725,259 223,225	5,503 10	2,352 10	5,485	3,130	27	14	2,195	867	27
171,943 204,134	6,335,719 5,031,858	8,637,731 6,403,491	4,546,481 3,834,912	3,330,234 2,590,365	875,237 572,217	355,960 334,495	143,943 112,767	10,274 68,605	6,162 33,042	63,425 13,350	15,940 6,660	28
5,850	122,815	153,146	101,927	65	75			175	105	24,397	13,400	29
33,034 44,742	2,201,909 2,061,208	313,324 306,560	220,230 290,234	3,608,644 3,318,292	1,547,402 1,615,395	7,070 3,022	5,332 6,036	28,510 16,328	11,535 7,643	10,647 11,332	5,511 7,939	30
102,630 147,020	5,243,121 5,026,694	2,404,670 2,223,660	1,743,080 2,064,539	5,156,897 4,153,116	2,137,045 1,950,506	571,502 332,764	238,533 130,513	216,851 139,478	118,367 73,627	8,096 30,300	2,339 56,330	31
11,009 14,197	413,396 208,607	563,523 283,355	346,852 186,913	41,313 3,442	22,275 6,222					32,000	20,135	32

MANUFACTURES.

TABLE 6.—COMPARATIVE SUMMARY, BY STATES

STATES AND TERRITORIES.	Year.	Number of establishments.	Capital.	SALARIED OFFICIALS, CLERKS, ETC.		AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES.							
				Number.	Salaries.	Total.		Men, 16 years and over.		Women, 16 years and over.		Children, under 16 years.	
						Average number.	Wages.	Average number.	Wages.	Average number.	Wages.	Average number.	Wages.
38 New York	1900	1,518	\$23,384,858	388	\$440,929	2,489	\$1,284,438	2,404	\$1,267,340	85	\$17,098	6	\$1,020
	1890	1,285	21,128,597	1,218	831,063	3,389	1,599,168	3,355	1,590,644	28	7,604		
34 North Carolina	1900	1,773	2,905,310	64	31,816	1,019	213,627	1,010	212,962			9	665
	1890	1,039	2,334,130	597	185,630	1,124	205,946	1,120	205,506	1	50	3	390
35 North Dakota	1900	97	1,359,296	57	47,750	298	159,335	298	159,335			2	387
	1890	35	1,154,040	55	43,602	220	108,048	218	107,661				
36 Ohio	1900	1,150	12,531,150	342	302,791	2,438	1,220,398	2,393	1,209,466	41	10,547	4	385
	1890	910	13,472,455	985	618,923	3,311	1,389,707	3,213	1,365,293	93	23,810	5	604
37 Oklahoma	1900	55	1,080,661	84	66,110	258	125,855	256	125,755			2	100
	1890												
38 Oregon	1900	153	3,172,997	83	83,671	443	246,901	434	242,801	8	4,000	1	100
	1890	86	2,247,389	118	86,564	281	151,371	279	151,206			2	165
39 Pennsylvania	1900	2,719	19,516,993	270	206,001	2,195	1,061,869	2,180	1,059,307			15	2,562
	1890	2,226	21,079,642	1,771	832,900	3,378	1,269,991	3,349	1,265,619	9	1,719	20	2,653
40 Rhode Island	1900	47	532,211	20	14,006	80	37,678	80	37,678				
	1890	31	391,102	37	27,555	98	48,697	97	48,447			1	250
41 South Carolina	1900	556	652,553	22	8,843	281	70,458	281	70,458				
	1890	512	984,791	276	77,331	630	86,416	625	86,162			4	254
42 South Dakota	1900	120	1,754,752	53	47,950	295	155,742	294	155,342			1	409
	1890	62	1,128,554	74	50,634	251	116,366	248	115,976	3	390		
43 Tennessee	1900	1,618	5,931,037	219	192,481	1,154	544,722	1,144	543,181			10	1,541
	1890	918	4,964,437	633	240,054	1,417	402,958	1,413	402,698	1	25	3	235
44 Texas	1900	289	4,273,490	135	145,698	705	398,908	705	398,908				
	1890	690	4,052,802	339	122,940	1,626	409,000	1,615	408,652	1	40	10	308
45 Utah	1900	80	1,101,885	50	32,820	167	82,979	166	82,666			1	313
	1890	49	884,098	44	29,043	133	65,285	133	65,285				
46 Vermont	1900	211	1,289,497	29	20,664	190	81,363	187	80,818	2	445	1	100
	1890	217	1,343,356	154	67,281	251	95,685	250	95,435	1	250		
47 Virginia	1900	1,726	4,682,688	101	67,665	790	328,893	783	327,515	4	1,000	3	373
	1890	1,179	5,498,057	725	274,137	1,475	383,454	1,470	382,702	1	96	4	655
48 Washington	1900	85	2,693,282	107	123,198	488	281,310	474	278,450	12	2,400	2	460
	1890	38	1,140,680	52	42,897	170	97,968	170	97,968				
49 West Virginia	1900	737	2,126,470	24	14,481	314	154,623	308	153,603			6	1,020
	1890	496	1,767,003	385	136,195	645	140,959	644	140,907	1	52		
50 Wisconsin	1900	717	9,611,764	225	248,657	1,412	717,183	1,398	714,217	10	2,312	4	654
	1890	497	9,804,761	530	373,447	1,770	799,058	1,763	797,708	3	710	4	640
51 Wyoming	1900	10	162,675	8	10,240	14	11,360	14	11,860				
	1890	6	128,225	4	2,340	14	9,155	14	9,155				
52 All other states and territories. ²	1900												
	1890	7	122,666	9	6,780	22	10,913	21	10,763			1	150

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

FLOURING AND GRIST MILL PRODUCTS.

AND TERRITORIES: 1890 AND 1900—Continued.

Miscellaneous expenses.	MATERIALS USED.											
	Total cost.	Wheat.		Corn.		Rye.		Buckwheat.		Barley.		
		Bushels.	Cost.	Bushels.	Cost.	Bushels.	Cost.	Bushels.	Cost.	Bushels.	Cost.	
\$1,014,018 1,410,681	\$36,523,959 44,890,115	25,232,677 29,646,319	\$18,432,502 28,326,218	22,469,249 17,608,585	\$9,363,523 8,134,998	1,801,236 2,224,006	\$1,033,432 1,305,976	2,581,749 2,503,512	\$1,436,612 1,225,627	498,608 384,302	\$228,218 132,947	}33
65,895 67,798	7,218,904 4,379,218	4,549,396 2,290,782	3,609,061 2,105,111	6,018,505 3,680,193	3,226,539 2,052,924	108,573 94,464	65,733 68,644	81,358 6,832	16,127 3,757	10,102 4,665	6,403 2,321	}34
66,890 82,509	3,347,067 2,152,006	4,827,477 2,694,236	2,756,484 1,932,500	219,969 16,200	79,810 5,180	19,140 1,700	7,637 700	415 300	209 150	590,564 39,650	112,844 33,937	}35
626,642 908,517	31,826,750 33,418,356	35,033,213 33,888,137	24,370,443 28,062,966	12,609,084 6,671,281	4,354,850 2,493,151	222,598 349,929	118,706 174,855	136,811 144,373	102,448 78,262	76,554 239,526	27,657 92,939	}36
86,925	3,026,785	4,516,868	2,440,518	1,318,293	321,230	7,550	3,125	100	50	7,650	1,390	}37
178,784 189,421	5,335,838 3,386,917	8,847,242 4,641,533	4,403,048 2,916,038	64,875 30,497	32,913 17,980	15,938 11,202	9,441 7,518	14,025 5,295	3,948 4,288	788,698 200,971	296,569 106,653	}38
667,372 865,868	30,566,466 33,238,981	22,923,795 23,594,815	16,179,063 20,986,652	20,537,926 15,684,965	3,195,906 6,741,974	2,263,274 2,096,246	1,193,127 1,118,855	2,526,190 1,755,419	1,277,718 354,146	118,532 116,510	45,057 52,540	}39
22,292 24,012	1,628,852 1,168,188	5,802 11,000	4,081 10,135	2,627,939 1,895,400	1,112,916 1,007,645	10,795 13,188	7,020 9,706	498	304	3,560 1,060	2,201 690	}40
15,742 31,854	1,953,658 1,726,396	1,000,964 520,299	391,161 505,008	1,361,093 1,939,135	938,839 1,164,249	5,140 1,845	4,030 1,412	18 200	150	1,450	1,430	}41
75,006 63,283	2,825,781 2,303,721	4,427,426 2,972,445	2,330,818 2,074,345	390,231 194,020	101,099 59,637	34,570 11,100	13,001 5,024	4,875 10,300	2,262 5,630	219,528 10,650	64,040 3,360	}42
273,851 134,936	13,491,948 10,592,752	16,546,155 8,861,160	11,778,368 7,335,615	12,151,242 5,030,026	5,253,304 2,201,628	11,514 10,158	6,032 6,114	6,130 1,604	3,103 904	2,359 4,275	1,125 1,858	}43
243,390 250,816	10,372,387 8,294,003	12,228,132 7,500,537	3,046,610 6,058,346	3,565,933 3,320,236	1,267,311 1,739,040	22,703 44,939	13,872 31,035			2,700	780	}44
53,425 30,512	1,401,819 1,160,641	2,546,801 1,410,088	1,217,169 1,033,646	62,258 113,525	31,342 74,262	11,628 7,800	5,541 4,875	125	125	71,877 34,827	33,451 15,622	}45
43,985 49,906	2,679,793 2,452,944	33,523 138,088	24,067 123,361	4,749,004 3,899,929	1,993,429 1,917,546	17,037 13,411	9,750 8,920	45,021 63,158	22,019 30,531	110,737 93,550	50,335 43,643	}46
145,014 279,669	10,514,361 9,849,144	8,562,519 6,333,523	6,025,314 5,535,355	3,166,932 7,679,773	3,823,645 3,733,633	241,406 194,733	118,454 105,709	129,625 37,578	55,797 21,746	31,196 19,534	13,952 9,636	}47
167,070 35,764	5,303,909 2,013,304	8,837,996 2,423,494	4,302,920 1,619,197	361,690 62,721	174,153 27,386	16,850 120	10,037 65	45 142	23 96	1,243,066 470,305	545,712 230,435	}48
55,972 64,298	4,555,003 3,228,786	3,813,935 2,464,259	2,630,322 2,127,024	3,030,190 1,351,976	1,409,444 806,645	117,169 43,247	59,214 26,361	233,817 79,952	113,348 46,553	1,568 3,550	767 1,385	}49
697,714 646,648	22,753,056 20,420,677	22,356,963 19,513,549	14,369,326 15,486,331	6,337,488 2,950,515	2,013,065 977,134	3,756,291 2,810,176	1,349,663 1,205,441	545,208 691,193	326,302 291,727	1,101,103 300,354	394,236 315,349	}50
5,243 6,744	153,735 125,265	226,937 137,703	130,233 113,436	20,000	8,000	3,000	1,000	5,000	1,000	2,925	1,205	}51
7,095	100,813	109,844	38,273	15,661	6,701					2,204	900	}52

MANUFACTURES.

TABLE 6.—COMPARATIVE SUMMARY, BY STATES

STATES AND TERRITORIES.	Year.	MATERIALS USED—continued.										
		Other grain.		Barrels purchased.		Sacks purchased.		Cooperage-stock and cloth for sacks.	Fuel.	Rent of power and heat.	Mill supplies.	All other materials.
		Bushels.	Cost.	Number.	Cost.	Number.	Cost.	Cost.	Cost.	Cost.	Cost.	Cost.
1 United States...	{ 1900 1890	70,873,167 47,104,047	\$19,103,524 14,970,089	16,272,590 27,605,081	\$4,674,636 8,849,858	810,080,914 175,147,914	\$11,664,996 7,208,597	\$1,584,478	\$4,756,782 4,816,782	\$878,790 275,291	\$1,695,545 668,433	\$4,805,898 1,886,944
2 Alabama	{ 1900 1890	44,685 22,095	16,385 8,685	24,716 76,817	6,642 18,990	1,394,097 658,088	52,657 42,478	85	27,893 36,230	305 877	15,174 1,593	29,856 7,846
3 Arizona	{ 1900 1890	2,921	980			281,028	12,852		5,035	220	1,809	36,620
4 Arkansas	{ 1900 1890	22,600 480	7,195 884	5,750 16,710	1,585 4,865	1,622,808 949,178	75,080 43,017	19,026	47,661 40,679	454 160	12,029 2,210	13,347 1,215
5 California	{ 1900 1890	857,445 560,543	295,968 287,014	133,743 34,400	41,288 12,835	9,341,011 7,860,638	410,644 377,412	60,000	165,955 218,404	33,772 5,350	41,193 60,069	101,770 47,671
6 Colorado	{ 1900 1890	623,450 255,300	168,236 114,557	40,000	12,000	8,000,361 1,513,492	201,784 116,105		47,629 38,738		17,773 14,405	148,696 29,690
7 Connecticut	{ 1900 1890	882,225 714,664	279,742 283,486	7,400 25,890	1,557 5,750	319,075 204,050	14,386 11,064	20	15,514 13,202	5,525 2,181	7,518 2,112	62,283 67,632
8 Delaware	{ 1900 1890	33,646 24,307	9,595 8,744	65,210 150,090	19,223 44,853	841,687 548,170	20,701 25,235	182	13,189 11,907	70 280	6,552 2,795	61,682 400
9 District of Columbia	{ 1900 1890	700	216	43,000 147,850	10,360 40,122	238,750 161,000	5,315 12,380	1,000	5,761 2,187	3,300 1,650	4,201 1,400	7,825 185,750
10 Florida	{ 1900 1890	8,350 10,400	6,460 3,892		900 57	50,100 25,400	2,185 1,766		2,383 4,998		1,344 615	8,849 976
11 Georgia	{ 1900 1890	406,469 42,238	119,699 19,046	63,300 72,974	13,940 19,185	5,179,908 2,083,488	171,554 80,976	6,204	47,700 35,695	1,340 1,900	26,784 2,193	91,679 9,513
12 Idaho	{ 1900 1890	9,798 14,450	3,432 7,097			638,510 161,392	27,811 5,459		16,132 4,386		5,394 210	5,580 100
13 Illinois	{ 1900 1890	2,486,422 3,080,149	575,819 966,477	1,286,612 3,216,988	370,502 886,375	14,872,456 11,726,183	545,520 604,722	239,576	293,347 366,676	9,369 7,040	96,280 42,196	344,647 84,797
14 Indiana	{ 1900 1890	1,200,091 510,241	296,417 184,559	1,099,456 1,267,249	245,233 592,723	16,905,668 13,546,051	505,519 383,675	38,848	305,506 271,101	5,808 8,235	79,024 46,002	125,691 58,394
15 Indian Territory	{ 1900 1890	55,900	10,374			1,091,987	43,036		19,216		4,889	14,765
16 Iowa	{ 1900 1890	5,859,842 8,624,769	1,269,025 864,637	87,695 646,172	20,733 84,487	10,314,574 5,267,806	349,748 232,715	15,843	190,681 128,293	6,075 1,900	51,936 19,087	145,342 48,733
17 Kansas	{ 1900 1890	604,914 414,148	139,521 85,124	711,282 466,136	90,613 135,012	20,024,928 10,629,863	809,531 517,463	27,148	239,443 217,961	17,552 3,650	68,556 34,795	271,912 55,082
18 Kentucky	{ 1900 1890	107,765 42,980	34,566 14,987	649,334 664,568	160,635 191,096	10,130,586 3,942,440	290,337 124,560	30,972	143,834 133,691	517	43,185 16,669	90,722 36,192
19 Louisiana	{ 1900 1890	16,000	5,600	20 40	2 12	367,745	12,259	4,500	3,882 1,501		845 80	31,163 1,255
20 Maine	{ 1900 1890	1,122,965 544,190	402,974 226,611	1,850 355	525 57	105,215 111,462	6,480 5,591		15,786 13,876	5,425 5,150	8,017 2,348	76,390 20,983
21 Maryland	{ 1900 1890	268,809 202,920	88,093 70,255	388,357 633,691	113,913 206,362	4,065,830 2,418,260	125,523 77,449	30,401	65,052 44,825	2,812 2,495	22,678 11,627	61,512 22,619
22 Massachusetts	{ 1900 1890	1,464,429 1,597,641	414,745 633,167	3,810 62,025	786 17,982	493,280 436,226	13,370 25,406	50	24,896 30,601	10,251 5,446	9,526 4,869	37,474 52,750
23 Michigan	{ 1900 1890	4,890,224 2,351,569	1,812,703 693,750	915,123 1,621,839	267,739 482,966	10,179,372 7,606,345	339,015 219,294	100,809	195,736 203,358	4,333 12,080	52,327 29,818	106,844 39,047
24 Minnesota	{ 1900 1890	3,692,772 1,763,906	843,135 497,478	4,018,103 5,661,732	1,355,550 1,866,378	47,664,716 17,994,231	2,229,989 883,645	60,871	577,275 449,677	154,627 161,634	352,566 56,561	477,543 44,793
25 Mississippi	{ 1900 1890	24,500 35,700	8,280 15,371	17,100 4,760	2,185 700	193,630 124,500	9,241 5,781		11,163 28,227		4,848 747	3,092 5,244
26 Missouri	{ 1900 1890	390,438 1,129,701	99,312 850,706	691,060 3,110,493	176,864 868,350	16,887,761 14,207,842	657,764 653,599	55,944	303,067 455,995	835 160	65,669 53,632	85,561 91,298
27 Montana	{ 1900 1890	42,195	14,647			741,399 240,000	39,646 12,000		8,246 1,000	4,800	10,116 360	9,365 800
28 Nebraska	{ 1900 1890	1,634,615 649,943	339,538 146,189	35,900	9,600	6,009,627 3,111,919	258,671 137,522	6,686	91,099 78,440	1,850 650	33,234 17,752	66,873 26,607
29 Nevada	{ 1900 1890					38,493	4,106		1,400		1,485	317
30 New Hampshire	{ 1900 1890	885,508 284,595	304,977 109,940	5,250 2,099	1,075 516	1,269,815 17,825	14,844 2,060	20,068	9,548 7,744	813 585	6,790 1,757	53,734 11,301
31 New Jersey	{ 1900 1890	2,433,868 1,500,819	736,401 576,298	158,666 51,450	35,896 14,968	2,227,669 1,079,243	69,475 39,168	750	34,296 24,794	2,200 3,000	13,937 5,569	59,802 36,772
32 New Mexico	{ 1900 1890	1,700	700			204,510 112,600	10,519 5,894	300	8,730 8,260		2,457 770	1,393 130

¹Included in "all other states and territories."

FLOURING AND GRIST MILL PRODUCTS.

AND TERRITORIES: 1890 AND 1900—Continued.

PRODUCTS.											
Total value.	Wheat flour.		Rye flour.		Buckwheat flour.		Barley meal.		Corn meal.		
	Barrels.	Value.	Barrels.	Value.	Pounds.	Value.	Pounds.	Value.	Barrels.	Value.	
\$560,719,088 513,971,474	103,524,094 80,948,977	\$348,183,800 350,892,795	1,789,874 2,137,202	\$4,916,001 6,387,704	213,562,952 130,479,108	\$5,065,185 4,256,420	99,730,423 324,854,927	\$1,113,958 3,856,904	40,035,977 36,897,924	\$73,177,402 76,653,478	} 1
3,310,757 3,060,462	144,361 88,209	557,963 451,612	1,961 78	4,810 293	2,400	75	1,500	40	1,034,696 883,558	2,360,562 2,330,382	} 2
455,246	65,617	291,428					5,087,000	64,770	4,498	11,374	} 3
3,708,709 2,498,163	605,702 211,553	2,005,285 949,921	3,070 88	6,707 356	4,100 2,100	62 115	400 10,560	8 475	636,285 645,905	1,134,780 1,319,438	} 4
13,100,944 14,200,320	2,660,238 2,157,333	7,952,867 8,776,205	14,592 14,347	43,681 65,759	552,080 1,364,600	19,674 56,115	59,166,092 209,479,439	572,574 2,521,767	94,592 74,295	221,833 247,416	} 5
4,528,062 3,893,166	1,012,381 657,107	3,063,100 3,041,282	1,028 607	3,635 2,700	1,500 115,000	90 4,500	120,000	2,600	55,246 63,770	105,261 180,047	} 6
2,268,859 2,904,244	2,147 3,799	9,080 21,432	7,514 12,064	23,578 49,640	558,459 1,037,774	16,887 28,466	1,880 166,416	34 1,944	868,555 943,249	1,442,406 2,155,608	} 7
1,165,800 1,675,040	158,032 260,361	605,938 1,032,801	81 339	211 1,005	325,900 235,275	9,384 6,695	1,200	12	165,124 158,735	347,179 3,051,815	} 8
632,754 1,564,062	65,462 202,050	223,644 992,250	200 600	655 1,800					163,000 141,250	266,500 291,500	} 9
302,737 198,110	804 3	3,022 25							87,437 50,296	200,470 134,523	} 10
8,330,439 5,190,311	789,191 361,206	3,481,754 1,779,258	5,605 2,701	12,698 10,237	71,824 18,500	2,326 469	16,800	293	1,772,859 1,147,769	4,139,498 2,904,606	} 11
832,207 376,946	261,223 76,288	655,097 301,426	100	400			234,000	1,894	460 512	1,272 1,558	} 12
31,006,294 37,974,885	6,078,423 6,877,771	20,813,984 29,088,914	67,302 137,373	194,590 413,170	4,848,037 3,862,751	121,704 101,627	1,428,000 3,645,460	16,722 167,893	2,640,395 1,356,238	2,938,766 2,451,834	} 13
30,150,766 31,239,627	5,818,392 5,646,109	20,384,714 23,921,507	26,068 42,365	76,694 123,039	3,952,458 3,316,860	107,277 95,113	59,321 368,600	2,880 5,063	2,159,432 1,767,253	2,397,633 3,051,908	} 14
1,198,472	240,014	744,139			800,000	7,500			123,624	175,041	} 15
13,823,033 11,833,737	2,503,390 1,732,277	8,244,050 7,715,301	68,964 91,899	162,511 234,534	7,400,760 8,123,505	203,604 206,555	4,290,879 5,795,144	52,511 44,085	726,470 935,348	979,290 1,326,272	} 16
21,926,768 17,420,475	5,034,251 3,495,070	15,089,529 13,709,483	17,490 62,370	46,131 148,940	787,019 1,038,649	23,543 35,299	10,800 203,800	134 2,301	1,225,917 1,276,406	1,713,401 1,646,440	} 17
14,515,161 9,681,259	2,549,947 1,554,011	9,341,759 6,861,585	2,556 5,413	5,623 17,810	15,690 40,000	470 1,523	7,880 52,480	130 767	1,552,655 914,956	3,290,275 1,872,819	} 18
338,326 57,964	600	3,000							151,472 19,006	291,454 51,636	} 19
3,399,832 3,254,690	27,060 5,151	115,975 29,787	1,077 3,342	3,901 13,023	2,742,760 1,536,991	44,650 36,269	1,076,400 1,853,500	16,408 27,187	1,027,588 1,136,020	2,242,262 2,775,566	} 20
8,035,343 6,904,888	1,475,416 1,073,352	5,418,784 4,915,263	9,331 22,930	22,659 73,762	2,149,058 993,066	52,123 26,703	70,400 756,480	1,123 11,395	403,390 520,594	822,292 1,092,018	} 21
5,763,523 6,905,493	7,323 13,700	27,744 12,959	5,750 18,266	19,398 78,014	423,143 672,482	10,882 15,956	262,457 723,140	13,900 9,749	2,443,998 2,599,376	4,477,134 5,697,859	} 22
23,593,991 22,778,829	4,012,367 3,921,363	14,890,096 17,024,535	53,307 81,599	152,884 226,298	16,350,928 12,338,110	345,102 388,812	772,260 3,919,768	15,669 100,137	629,328 765,325	1,197,749 1,393,590	} 23
33,877,709 60,158,038	22,705,165 13,012,005	72,381,659 54,029,614	82,087 61,330	203,731 173,158	2,025,939 3,227,901	52,848 65,973	4,163,150 6,482,600	41,489 62,273	192,522 250,888	292,866 437,667	} 24
932,816 1,249,669	4,696 643	17,755 3,273							355,736 406,653	791,339 1,069,242	} 25
26,393,928 34,436,795	5,245,421 6,588,393	17,800,204 27,056,990	21,345 25,652	43,497 77,734	1,203,933 906,395	32,283 28,974	3,440 268,420	73 7,257	1,822,881 1,900,919	3,219,065 3,371,863	} 26
995,702 302,965	257,085 66,922	852,133 264,066	1,767	4,308	1,080	20			1,481 2	2,980 15	} 27
8,100,794 6,865,492	1,821,107 1,296,314	5,319,911 4,738,472	54,475 62,716	135,722 138,842	277,040 1,767,050	7,863 46,726	210,000 480,640	1,484 8,885	328,070 527,562	464,167 630,469	} 28
137,847	31,249	117,713			8,225	123	92,073	1,480	17	95	} 29
2,505,936 2,853,616	62,644 65,164	245,439 806,585	1,713 1,331	5,149 8,214	515,501 434,415	6,746 9,378	276,632 496,960	3,837 8,346	944,545 853,032	1,654,916 1,340,942	} 30
6,371,997 5,928,352	466,333 443,613	1,371,129 2,259,793	53,164 41,394	160,577 132,341	5,379,300 2,918,400	122,174 71,261	44,000 1,224,000	800 30,200	632,011 742,739	1,245,001 1,613,739	} 31
551,108 307,805	115,960 59,396	403,072 270,200					1,000,000	20,000	6,612 2,164	21,752 7,222	} 32

* No establishments reported.

*

MANUFACTURES.

TABLE 6.—COMPARATIVE SUMMARY, BY STATES

STATES AND TERRITORIES.	Year.	MATERIALS USED—continued.										
		Other grain.		Barrels purchased.		Sacks purchased.		Cooperage stock and cloth for sacks.	Fuel.	Rent of power and heat.	Mill supplies.	All other materials.
		Bushels.	Cost.	Number.	Cost.	Number.	Cost.	Cost.	Cost.	Cost.	Cost.	Cost.
33 New York	1900	13,024,789	\$4,001,625	1,372,359	\$441,638	13,812,221	\$359,586	\$588,853	\$264,264	\$27,393	\$35,778	\$260,535
	1890	9,553,069	3,319,769	3,644,959	1,081,046	10,613,104	526,339	.....	250,488	20,967	74,001	441,799
34 North Carolina	1900	193,236	71,426	2,370	171	1,474,782	70,848	1,796	60,270	1,300	27,191	62,039
	1890	146,767	69,156	13,459	4,071	606,770	24,923	.....	36,627	25	2,059	19,606
35 North Dakota	1900	403,274	108,455	54,350	4,150	1,651,923	120,248	5,200	84,644	45	24,826	42,465
	1890	183,900	44,150	24,603	9,121	781,282	61,103	.....	57,090	.....	5,825	2,200
36 Ohio	1900	4,571,896	1,120,315	1,330,026	392,177	21,598,395	630,815	66,232	340,823	11,824	94,537	195,923
	1890	3,255,069	956,245	2,511,988	715,488	12,724,804	396,081	.....	313,665	9,145	51,678	74,331
37 Oklahoma	1900	149,525	31,939	16,310	4,619	3,330,000	136,685	.....	59,754	1,500	13,841	11,634
38 Oregon	1900	521,640	186,766	180	54	6,172,847	268,373	.....	26,545	20,514	18,380	04,281
	1890	295,206	113,300	25,960	8,345	2,527,131	175,955	.....	25,367	2,500	4,703	4,470
39 Pennsylvania	1900	7,794,403	2,387,258	685,323	188,740	17,867,594	462,077	140,542	212,059	7,106	92,046	180,767
	1890	7,269,787	2,407,669	854,967	244,806	12,536,425	395,458	.....	203,052	5,474	30,783	197,667
40 Rhode Island	1900	546,115	172,097	1,000	250	143,953	7,533	.....	8,230	800	4,923	308,891
	1890	308,950	119,945	10,000	2,000	35,050	5,607	.....	5,820	2,712	2,084	1,450
41 South Carolina	1900	48,520	20,007	7,000	758	698,608	21,579	4	15,001	587	7,136	8,054
	1890	108,885	29,433	23,755	2,563	127,663	4,341	.....	16,474	.....	923	3,318
42 South Dakota	1900	207,620	46,168	5,800	687	2,019,810	91,196	.....	66,701	650	20,930	88,229
	1890	130,200	36,525	40,075	12,020	1,028,380	36,207	.....	66,953	.....	5,150	3,470
43 Tennessee	1900	530,573	162,657	852,409	239,946	15,570,043	520,330	29,159	152,261	272	48,890	306,001
	1890	41,215	15,423	250,250	289,916	9,831,479	130,553	.....	113,945	380	6,149	29,432
44 Texas	1900	270,894	66,296	109,270	33,745	11,595,655	499,922	24,000	149,460	4,024	42,754	223,613
	1890	31,780	12,722	115,825	39,406	4,446,990	204,382	.....	180,655	200	7,543	19,624
45 Utah	1900	84,788	29,846	.....	700	1,195,870	60,060	150	7,413	2,370	6,617	7,735
	1890	2,100	1,560	2,000	.....	472,660	23,823	.....	4,892	85	426	750
46 Vermont	1900	1,163,378	374,584	33,120	1,776	201,690	9,441	.....	9,974	1,720	6,854	175,844
	1890	792,297	301,882	3,755	434	52,965	6,119	.....	4,780	300	2,091	8,837
47 Virginia	1900	262,961	78,988	319,127	88,215	5,195,702	182,575	8,408	42,586	6,170	31,647	33,612
	1890	223,946	78,736	523,728	169,118	2,174,515	87,418	.....	16,053	7,230	7,193	21,707
48 Washington	1900	653,330	203,697	.....	.....	8,419,400	335,959	.....	54,113	10,584	31,952	184,709
	1890	60,317	25,686	.....	.....	3,712,380	90,660	.....	15,023	210	1,764	2,332
49 West Virginia	1900	469,146	149,957	69,196	14,214	2,065,031	43,747	225	48,974	.....	11,125	18,666
	1890	162,358	51,016	82,991	27,171	676,840	13,150	.....	33,416	100	2,108	2,457
50 Wisconsin	1900	9,878,295	2,089,789	997,958	309,750	10,213,171	506,624	681	215,549	8,298	57,756	100,567
	1890	5,132,453	1,264,068	874,148	278,154	6,050,144	376,173	.....	132,105	1,570	28,793	63,332
51 Wyoming	1900	23,625	7,450	.....	.....	162,628	7,836	.....	1,106	.....	770	85
	1890	10,000	5,000	.....	.....	106,600	4,774	.....	1,930	.....	75	.....
52 All other states and territories. ²	1900	.....	.....	.....	.....	5,000	195	.....	2,201	.....	.....	2,043
	1890	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

FLOURING AND GRIST MILL PRODUCTS.

AND TERRITORIES: 1890 AND 1900—Continued.

PRODUCTS.											
Total value.	Wheat flour.		Rye flour.		Buckwheat flour.		Barley meal.		Corn meal.		
	Barrels.	Value.	Barrels.	Value.	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.	
\$42,786,340 52,550,744	5,434,827 6,370,817	\$19,928,981 31,410,188	262,496 396,201	\$908,545 1,341,475	70,122,672 66,066,825	\$1,853,506 1,450,752	6,797,542 9,823,690	\$89,099 138,851	3,986,409 8,984,214	\$6,734,840 8,646,094	}88
8,867,462 5,279,068	945,761 462,594	4,047,840 2,841,640	29,394 17,642	60,022 64,051	627,323 193,650	12,995 5,382	247,751 201,400	9,239 2,575	1,547,704 922,449	8,721,010 2,427,275	}84
4,134,023 2,624,198	1,029,070 562,860	3,274,958 2,801,746	1,009 340	2,168 860	600 9,000	18 180	313,000 4,240,000	2,916 37,400	5,695 4,050	9,815 6,265	}85
37,390,367 39,468,409	7,866,474 6,950,080	26,060,827 31,127,953	40,258 67,008	117,769 221,861	4,416,605 3,920,641	108,656 95,245	1,137,830 6,293,692	11,157 48,625	1,532,994 1,362,478	2,708,191 2,532,297	}86
3,745,434	975,870	2,855,216	966	2,577	3,000	90	8,500	100	175,335	250,237	}87
6,864,023 4,184,473	1,826,512 962,845	4,769,573 3,294,082	1,949 1,060	5,937 4,819	232,875 144,900	6,370 5,833	1,069,000 3,750,700	10,680 48,055	4,775 6,692	13,647 21,960	}88
35,689,423 39,478,076	4,775,166 4,817,238	17,059,265 28,082,330	155,592 356,641	464,070 1,122,703	62,267,953 43,717,600	1,327,939 997,924	196,790 3,133,750	4,108 39,549	1,315,892 3,227,103	2,139,964 6,634,317	}89
1,895,921 1,349,843	1,240 2,220	4,655 11,600	1,574 1,248	4,270 4,586	12,460	370	102,760 50,800	1,972 336	996,174 481,650	1,566,120 1,131,892	}40
2,347,790 2,033,126	204,089 104,530	999,781 567,573	1,066 369	4,253 1,648	8,846 5,000	822 200	56,700	1,653	447,299 441,183	1,079,008 1,262,574	}41
3,379,843 2,793,701	915,541 605,812	2,695,024 2,378,228	3,101 2,040	7,472 5,920	27,100 267,700	1,063 7,002	347,007 235,200	4,980 1,901	16,214 43,546	26,369 63,646	}42
21,798,929 12,474,284	3,512,985 1,853,114	18,220,609 8,734,426	780 2,009	2,430 7,127	147,465 40,975	2,953 1,093	44,815 202,950	633 2,261	2,963,559 1,261,038	5,887,950 2,694,392	}43
12,333,730 9,903,455	2,604,554 1,555,891	8,881,359 6,827,647	4,219 8,468	14,171 32,792	14,171 32,792	14,171 32,792			728,974 946,527	1,419,561 2,092,610	}44
1,829,840 1,468,681	513,692 284,018	1,413,428 1,192,307	1,007 560	2,558 2,155	6,000	225	500,000 1,562,440	7,277 17,708	1,830 28,328	5,100 88,822	}45
3,222,347 2,890,174	5,549 27,337	21,970 132,715	1,365 2,542	4,599 9,748	752,909 1,570,000	18,137 35,570	2,364,465 4,227,900	28,274 54,951	1,017,878 1,000,113	2,102,622 2,250,346	}46
12,687,267 11,716,356	1,758,946 1,300,864	6,671,815 6,139,217	25,081 29,591	62,025 95,651	3,257,250 960,591	57,340 25,505	579,106 356,728	10,820 4,275	2,064,955 1,926,437	4,423,544 4,419,928	}47
6,875,672 2,460,809	1,868,780 507,369	4,758,004 1,859,971	4,119 24	12,872 30	1,300 3,640	30 116	378,200 7,112,400	14,400 88,600	10,309 16,656	29,356 33,699	}48
5,541,353 3,902,994	767,160 497,013	2,969,298 2,384,484	3,247 9,278	8,081 29,971	6,630,603 2,045,367	122,115 55,086	2,300 170,400	30 2,200	680,053 460,555	1,512,513 1,067,658	}49
26,327,942 24,252,297	4,750,253 4,100,965	15,496,295 17,232,413	701,104 552,402	1,898,432 1,451,078	15,158,212 17,470,835	360,576 349,723	7,321,200 37,323,440	88,466 360,638	279,032 608,647	503,942 965,716	}50
215,447 157,251	45,164 31,512	164,475 131,336	14,900	144	}51
157,087	22,735	127,887	106,000	1,400	2,449	4,895	}52

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MANUFACTURES.

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

STATES AND TERRITORIES.	Year.	PRODUCTS—continued.					MACHINERY AND CAPACITY.		
		Horny.		Ofl.		All other products.	Pairs of rolls.	Runs of stone.	Estimated maximum capacity per day of 24 hours.
		Pounds.	Value.	Pounds.	Value.	Value.	Number.	Number.	Bushels.
United States...	1890	805,725,866	\$2,723,448	6,559,835,116	\$38,112,424	\$87,426,850	77,989	31,218	10,019,740
	1890	229,888,287	2,446,868	7,001,953,412	36,844,825	82,632,480	53,567	31,477	5,731,620
Alabama	1890	2,444,735	25,715	11,185,742	73,771	287,821	176	981	91,330
	1890	1,075,700	16,000	7,137,480	38,204	224,061	77	929	100,950
Arizona	1890			3,563,775	24,210	63,464	67	7	3,785
	1890								
Arkansas	1890			84,395,937	215,386	346,471	609	490	93,940
	1890	65,300	649	17,694,100	88,847	143,357	173	498	34,410
California	1890	8,097,560	36,835	168,551,691	1,157,424	3,096,156	1,183	161	135,162
	1890	4,023,000	51,800	177,043,736	1,834,754	1,146,504	937	126	30,374
Colorado	1890			74,745,383	502,408	853,573	520	21	42,049
	1890	3,000,000	45,000	57,188,200	417,540	204,497	324	38	20,830
Connecticut	1890	1,280,000	12,300	1,874,818	20,111	744,463	61	825	203,095
	1890	421,800	3,762	838,690	6,375	637,017	26	318	45,314
Delaware	1890	1,972,972	37,861	5,818,718	35,067	130,160	263	128	24,300
	1890	19,800	560	5,554,750	46,964	189,188	221	124	21,719
District of Columbia	1890	3,816,000	57,360	3,520,000	25,760	58,835	64	20	7,570
	1890	1,248,000	17,160	9,800,000	71,201	190,151	118	8	10,090
Florida	1890	1,369,768	15,185	416,000	2,161	81,899	4	117	9,442
	1890	89,940	1,293			62,209	2	71	8,134
Georgia	1890	637,098	14,097	28,790,218	278,312	451,254	261	1,339	165,035
	1890	8,302,210	127,021	29,278,980	195,299	113,128	250	1,240	131,425
Idaho	1890			23,748,430	105,180	68,364	254	14	13,185
	1890	4,000	90	6,754,000	50,162	23,720	59	15	3,785
Illinois	1890	34,739,328	271,070	406,366,404	2,333,321	4,271,137	4,580	831	539,626
	1890	22,018,000	263,543	625,602,607	3,197,841	2,290,058	4,214	1,050	335,080
Indiana	1890	97,033,739	717,337	378,867,354	2,234,878	3,729,303	4,890	797	432,057
	1890	93,864,800	728,354	515,823,603	2,548,426	766,220	4,281	847	236,934
Indian Territory	1890			13,520,000	88,318	133,474	257	40	26,770
	1890								
Iowa	1890	4,427,260	29,337	151,737,058	789,441	3,362,339	2,395	315	306,407
	1890	2,018,620	19,107	167,212,682	715,224	1,572,709	2,252	772	160,922
Kansas	1890	4,671,000	37,964	352,553,736	1,453,397	3,557,669	3,487	322	391,236
	1890	3,782,000	26,770	302,341,466	1,292,629	558,613	2,083	480	144,245
Kentucky	1890	39,850	13,271	184,623,651	1,210,908	652,725	2,563	1,214	239,213
	1890	6,457,760	74,941	142,268,000	711,019	140,790	1,280	673	119,633
Louisiana	1890	200,000	2,100			91,772	15	66	9,333
	1890					6,278		26	2,335
Maine	1890			20,969,113	124,322	352,314	213	349	119,321
	1890	55,700	618	833,044	2,466	369,774	67	401	112,145
Maryland	1890	11,234,589	135,120	53,109,242	394,448	1,188,844	1,511	578	95,729
	1890	1,434,900	20,619	624,519,317	27,619,317	240,494	372	660	67,491
Massachusetts	1890	2,564,600	23,134	19,267,731	101,888	1,039,443	81	343	106,325
	1890	4,444,000	57,039	1,665,590	11,004	965,863	68	422	135,994
Michigan	1890	2,889,950	21,822	308,396,390	1,965,296	4,996,373	4,240	849	403,310
	1890	1,420,500	26,765	349,134,056	1,873,433	1,745,259	3,234	933	250,394
Minnesota	1890	6,037,250	51,000	1,392,441,288	6,790,661	4,063,455	6,455	406	630,421
	1890	650	10	918,351,834	3,934,852	1,449,536	4,753	478	360,839
Mississippi	1890	1,051,625	13,562	33,000	330	109,330	22	264	35,491
	1890	184,300	2,790	48,550	264	174,100	59	464	59,697
Missouri	1890	49,773,450	365,738	366,957,482	1,938,476	2,994,557	4,387	1,053	501,119
	1890	35,645,200	512,339	565,351,390	2,056,107	774,931	4,133	1,042	309,303
Montana	1890	7,242	37	10,954,146	58,637	77,537	153	9	3,640
	1890			5,935,000	38,384		41	6	2,975
Nebraska	1890	5,617,000	43,061	141,168,626	733,078	1,395,508	2,225	133	134,516
	1890	9,000	125	119,107,765	423,346	378,127	1,260	278	80,235
Nevada	1890			2,455,906	17,516	20,920	59	4	4,335
	1890								
New Hampshire	1890	1,736,600	19,532	1,428,300	13,535	556,632	47	230	129,249
	1890	12,600	162	5,329,200	22,705	164,284	23	276	60,377
New Jersey	1890	5,264,400	49,520	50,097,473	373,573	2,544,223	763	639	147,516
	1890	1,031,000	10,229	42,116,102	235,407	1,570,322	450	414	53,610
New Mexico	1890			9,550,137	76,304	29,930	109	43	6,409
	1890			5,372,100	26,683	3,700	38	25	3,359

¹ Included in "all other states and territories."

² No establishments reported.

FLOURING AND GRIST MILL PRODUCTS.

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

STATES AND TERRITORIES.	Year.	PRODUCTS—continued.					MACHINERY AND CAPACITY.		
		Hominy. ¹		Oat.		All other products.	Pairs of rolls.	Runs of stone.	Estimated maximum capacity per day of 24 hours.
		Pounds.	Value.	Pounds.	Value.	Value.	Number.	Number.	Bushels.
New York	1900	1,089,400	\$18,710	232,876,679	\$1,782,550	\$11,535,109	4,080	2,722	1,005,918
	1890	2,256,864	22,562	510,943,808	3,351,363	6,189,959	2,917	2,983	649,029
North Carolina	1900	4,694,987	54,163	56,990,593	465,882	496,811	1,228	2,564	194,100
	1890	1,415,150	17,981	45,325,110	277,042	143,222	185	1,617	100,070
North Dakota	1900	259,200	2,385	46,509,660	272,293	569,520	688	14	50,936
	1890	.....	.....	49,005,960	222,112	55,635	341	10	21,757
Ohio	1900	5,579,900	57,429	414,242,305	2,513,665	5,807,673	6,074	1,178	575,513
	1890	14,595,955	157,525	670,675,204	3,431,489	1,853,414	5,362	1,381	357,577
Oklahoma	1900	.....	.....	54,604,688	296,384	340,330	421	22	31,835
	1890	.....	.....	.....	.....	.....	.....	.....	.....
Oregon	1900	24,000	480	96,835,948	562,673	994,658	1,018	93	70,812
	1890	22,000	440	79,422,302	569,331	239,363	420	131	85,896
Pennsylvania	1900	17,090,080	173,232	355,582,188	2,626,874	12,793,921	6,863	4,452	1,015,704
	1890	11,509,450	110,505	451,637,157	2,323,101	4,717,647	4,952	5,220	480,124
Rhode Island	1900	10,000	100	1,851,390	11,714	307,090	12	47	30,422
	1890	600,000	8,400	300,220	1,521	190,578	26	46	17,134
South Carolina	1900	3,248,984	40,521	10,071,540	77,661	144,591	310	698	67,839
	1890	8,126,268	109,612	9,429,688	60,332	81,184	43	770	61,199
South Dakota	1900	.....	.....	69,057,648	343,545	296,390	314	25	55,796
	1890	.....	.....	56,963,360	279,566	57,438	522	22	26,632
Tennessee	1900	10,541,350	166,241	236,606,810	1,653,638	864,470	2,761	1,956	333,451
	1890	1,800	66	163,315,095	966,240	68,679	1,037	1,401	142,017
Texas	1900	75,000	600	166,331,139	1,119,892	898,147	1,257	212	130,838
	1890	349,500	9,305	133,737,535	776,993	164,108	1,217	770	152,650
Utah	1900	10,000	150	31,502,886	190,590	210,512	555	33	23,453
	1890	.....	.....	28,060,560	157,269	10,420	125	89	11,652
Vermont	1900	350,700	5,470	10,268,173	73,950	967,325	131	874	136,106
	1890	1,140	16	2,857,090	16,394	390,434	40	512	84,139
Virginia	1900	3,092,048	35,955	139,009,098	852,636	573,732	2,080	2,449	234,715
	1890	279,080	3,131	130,051,370	818,063	210,531	593	2,145	183,024
Washington	1900	.....	.....	117,144,888	643,947	1,412,003	758	40	85,415
	1890	.....	.....	45,026,640	256,930	221,413	160	29	15,109
West Virginia	1900	193,613	5,099	64,277,453	333,103	541,109	1,103	929	133,547
	1890	2,800	24	49,923,260	239,531	74,090	456	336	70,671
Wisconsin	1900	17,550,000	175,400	200,714,671	1,103,307	6,701,024	4,333	771	509,994
	1890	.....	.....	400,130,304	2,045,797	1,846,932	3,331	929	253,723
Wyoming	1900	.....	.....	4,198,000	23,933	21,330	33	.....	2,390
	1890	.....	.....	3,027,337	20,032	5,333	64	4	1,170
All other states and territories. ²	1900	.....	.....	.....	.....	.....	.....	.....	.....
	1890	.....	.....	2,193,520	16,354	6,550	17	18	2,350

¹No establishments reported.

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

HISTORICAL AND DESCRIPTIVE.

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

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

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

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

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

In the reduction of cereal grains to a fine powder by any process of pounding, abrasion, or pressure, the various constituents of which the grains are composed behave differently toward the impact forces. The outer hulls of grain tend to break up into scales or fragments of more or less superficial area and of the thickness of the coatings themselves. The starchy remainder of the grain, and a large part of the nitrogenous or protein¹ matter, on the other hand, are broken by the grinding process into small fragments. In the case of starchy kernels there is a tendency to disintegration, and the protein matter breaks up into particles of regular size and of small dimensions. The germ of the cereal grains, on the other hand, always contains a large excess of oil, which has a tendency to spread out and agglutinate into particles of a regular size, in which are incorporated additional particles of starchy and protein matter.

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

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

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

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

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

¹ Constituents containing nitrogen.

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

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

¹United States Department of Agriculture, Bureau of Chemistry, Part 9, Bulletin 13.

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

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

MANUFACTURES.

TABLE 7.—FLOURING AND GRIST MILL PRODUCTS.

	United States.	Alabama.	Arizona.	Arkansas.	California.	Colorado.	Connecticut.
1 Number of establishments.....	25,268	781	11	410	124	60	208
2 Character of organization:							
3 Individual.....	17,808	626	3	291	57	14	152
4 Firm and limited partnership.....	6,517	142	4	104	20	13	41
5 Incorporated company.....	1,425	13	4	15	46	33	12
6 Miscellaneous.....	13				1		
7 Capital:							
8 Total.....	\$218,714,104	\$1,047,961	\$221,112	\$1,183,052	\$6,552,642	\$2,040,774	\$1,565,478
9 Land.....	\$24,041,170	\$118,425	\$10,575	\$75,683	\$690,081	\$193,262	\$204,477
10 Buildings.....	\$47,003,592	\$240,400	\$41,690	\$249,321	\$1,124,802	\$436,966	\$134,477
11 Machinery, tools, and implements.....	\$71,933,412	\$494,533	\$58,280	\$620,403	\$1,555,248	\$618,550	\$309,394
12 Cash and sundries.....	\$75,735,930	\$194,603	\$110,567	\$237,660	\$3,182,451	\$791,996	\$525,430
13 Proprietors and firm members.....	30,240	934	10	506	101	36	243
14 Salaried officials, clerks, etc.:							
15 Total number.....	5,790	39	11	86	199	92	42
16 Total salaries.....	\$5,404,750	\$22,691	\$9,125	\$21,526	\$269,866	\$78,445	\$28,621
17 Officers of corporations—							
18 Number.....	1,259	7	5	12	58	22	7
19 Salaries.....	\$1,679,803	\$9,100	\$5,580	\$8,570	\$95,390	\$18,610	\$1,930
20 General superintendents, managers, clerks, etc.—							
21 Total number.....	4,531	32	6	24	141	70	35
22 Total salaries.....	\$3,724,947	\$13,591	\$3,545	\$12,956	\$174,476	\$64,835	\$24,691
23 Men—							
24 Number.....	3,979	32	5	23	131	70	39
25 Salaries.....	\$3,507,785	\$13,591	\$3,320	\$12,356	\$170,764	\$64,835	\$23,097
26 Women—							
27 Number.....	552		1	1	10		5
28 Salaries.....	\$217,162		\$225	\$600	\$3,712		\$1,594
29 Wage-earners, including pieceworkers, and total wages:							
30 Greatest number employed at any one time during the year.....	50,124	894	57	671	1,094	338	302
31 Least number employed at any one time during the year.....	38,549	643	26	496	748	227	243
32 Average number.....	37,073	540	36	443	857	278	233
33 Wages.....	\$17,703,418	\$92,868	\$19,970	\$116,445	\$525,401	\$169,358	\$99,309
34 Men, 16 years and over—							
35 Average number.....	36,419	539	36	440	825	277	227
36 Wages.....	\$17,540,370	\$92,708	\$19,970	\$116,253	\$516,144	\$168,008	\$97,654
37 Women, 16 years and over—							
38 Average number.....	497				27	1	6
39 Wages.....	\$142,911				\$8,357	\$750	\$1,755
40 Children, under 16 years—							
41 Average number.....	157	1		3	5		
42 Wages.....	\$20,137	\$150		\$192	\$900		
43 Average number of wage-earners, including pieceworkers, employed during each month:							
44 Men, 16 years and over—							
45 January.....	37,284	519	42	423	803	290	252
46 February.....	36,746	485	42	405	791	286	249
47 March.....	35,940	451	41	385	793	294	243
48 April.....	34,267	435	39	382	771	282	225
49 May.....	33,167	427	37	373	782	260	210
50 June.....	31,204	417	26	351	797	237	202
51 July.....	32,744	418	29	392	809	240	190
52 August.....	34,307	434	27	404	863	250	193
53 September.....	38,359	664	30	499	924	280	221
54 October.....	41,141	764	37	560	890	294	241
55 November.....	41,640	761	39	570	865	308	244
56 December.....	40,229	692	43	535	812	302	249
57 Women, 16 years and over—							
58 January.....	451				31	1	7
59 February.....	479				31	1	6
60 March.....	491				28	1	6
61 April.....	496				29	1	6
62 May.....	562				23	1	6
63 June.....	498				23	1	6
64 July.....	454				23	1	6
65 August.....	433				23	1	6
66 September.....	502				23	1	6
67 October.....	539				23	1	6
68 November.....	547				23	1	6
69 December.....	512				28	1	6
70 Children, under 16 years—							
71 January.....	149	1		3	5		
72 February.....	156	1		3	5		
73 March.....	165	1		3	5		
74 April.....	146	1		3	5		
75 May.....	135	1		3	5		
76 June.....	127	1		3	5		
77 July.....	147	1		3	5		
78 August.....	145	1		3	5		
79 September.....	173	1		3	5		
80 October.....	186	1		3	5		
81 November.....	192	1		3	5		
82 December.....	173	1		3	5		
83 Miscellaneous expenses:							
84 Total.....	\$10,325,588	\$84,654	\$15,053	\$44,681	\$246,409	\$131,790	\$92,083
85 Rent of works.....	\$800,345	\$9,783	\$800	\$2,207	\$14,428	\$7,362	\$3,989
86 Taxes, not including internal revenue.....	\$1,445,244	\$9,162	\$1,560	\$3,929	\$43,342	\$24,257	\$10,330
87 Rent of offices, insurance, interest, and all sundry expenses not hitherto included.....	\$7,977,467	\$14,765	\$12,693	\$31,006	\$188,049	\$100,171	\$17,330
88 Contract work.....	\$42,532	\$944		\$2,539	\$690		\$425

FLOURING AND GRIST MILL PRODUCTS.

BY STATES AND TERRITORIES: 1900.

Delaware.	District of Columbia.	Florida.	Georgia.	Idaho.	Illinois.	Indiana.	Indian Territory.	Iowa.	Kansas.	
83	9	95	1,128	84	871	897	61	702	588	1
64	4	85	876	16	514	473	36	427	315	2
17	4	9	222	9	258	348	17	219	167	3
2	1	1	28	9	99	76	8	55	61	4
			2					1		5
\$1,017,508	\$198,065	\$128,416	\$2,504,083	\$569,107	\$12,062,626	\$10,734,544	\$478,241	\$9,421,078	\$8,866,966	6
\$200,070	\$30,700	\$17,208	\$289,073	\$89,114	\$1,016,422	\$923,427	\$18,700	\$702,946	\$625,680	7
\$239,459	\$97,800	\$26,340	\$977,812	\$144,350	\$2,457,192	\$2,223,946	\$138,938	\$1,481,670	\$1,915,743	8
\$309,585	\$58,875	\$47,655	\$1,025,920	\$206,384	\$3,887,102	\$4,034,608	\$196,525	\$2,379,941	\$2,702,193	9
\$267,794	\$71,690	\$32,218	\$611,228	\$179,259	\$4,701,910	\$3,552,568	\$129,078	\$1,796,521	\$3,123,850	10
96	15	97	1,315	80	1,050	1,207	76	806	639	11
20	18	4	88	20	867	286	25	210	281	12
\$17,796	\$13,460	\$8,500	\$58,908	\$14,170	\$861,021	\$276,708	\$17,623	\$160,475	\$267,737	18
4	2		15	6	109	88	2	49	74	14
\$8,575	\$2,400		\$18,180	\$4,850	\$139,728	\$120,792	\$2,400	\$53,620	\$108,671	15
16	16	4	78	14	258	198	24	161	207	16
\$9,221	\$11,050	\$8,500	\$40,728	\$9,320	\$221,298	\$155,916	\$15,223	\$106,855	\$164,006	17
15	14	4	70	14	225	157	21	135	193	18
\$8,805	\$10,500	\$8,500	\$39,328	\$9,320	\$204,997	\$188,345	\$14,123	\$98,987	\$158,470	19
1	2		8		33	41	3	26	14	20
\$416	\$550		\$1,400		\$16,296	\$17,571	\$1,100	\$7,869	\$5,596	21
171	92	88	1,512	107	2,748	2,688	178	1,592	1,996	22
137	79	78	1,202	74	2,081	1,988	121	1,202	1,468	23
185	84	46	1,167	76	2,111	2,124	119	1,285	1,451	24
\$48,928	\$30,848	\$7,907	\$225,938	\$46,458	\$1,098,006	\$1,010,877	\$48,988	\$526,479	\$743,462	25
184	84	45	1,154	75	2,104	2,102	119	1,224	1,441	26
\$48,728	\$30,848	\$7,927	\$225,223	\$46,853	\$1,096,454	\$1,005,415	\$48,988	\$512,119	\$741,891	27
					1	16		49	8	28
					\$300	\$4,720		\$18,570	\$1,221	29
1		1	13	1	6	6		12	2	30
\$200		\$40	\$710	\$100	\$1,262	\$742		\$790	\$350	31
189	81	88	1,122	70	2,154	2,153	112	1,823	1,450	32
129	81	86	1,113	70	2,153	2,117	107	1,814	1,428	33
142	80	30	1,094	84	2,098	2,089	118	1,800	1,383	34
136	79	84	1,077	78	2,081	2,007	116	1,205	1,355	35
184	80	83	1,029	83	1,947	1,936	113	1,161	1,351	36
181	78	83	1,082	69	1,854	1,869	86	1,067	1,270	37
188	80	82	1,024	55	2,087	2,020	102	1,069	1,336	38
160	88	83	1,057	67	2,069	2,106	119	1,125	1,362	39
153	90	61	1,305	76	2,122	2,187	127	1,231	1,522	40
181	89	69	1,361	80	2,251	2,239	142	1,292	1,600	41
181	91	71	1,350	88	2,273	2,265	146	1,298	1,618	42
184	91	66	1,284	81	2,257	2,239	134	1,308	1,616	43
					3	14		59	3	44
					2	14		59	7	45
						14		59	3	46
						15		59	3	47
						14		59	2	48
						14		20	1	49
						14		20	1	50
						15		20	7	51
						3		58	21	52
						3		58	22	53
						3		59	12	54
						3		59	13	55
1			13	1	6	6		12	3	56
1			13	1	6	6		12	3	57
1			14	1	6	5		12	3	58
1			14	1	6	6		11	3	59
1			14	1	6	6		11	1	60
			13	1	6	6		18	1	61
			13	1	6	6		13	1	62
			13	1	5	6		14	1	63
		1	14	1	6	6		18	1	64
		2	14	1	7	7		11	6	65
		2	14	1	6	6		11	8	66
1		2	14	1	6	6		11	1	67
1		2	13	1	6	6		11	7	68
\$28,098	\$18,167	\$2,160	\$78,455	\$23,235	\$560,080	\$570,830	\$27,598	\$304,256	\$447,747	68
\$8,741	\$5,156	\$180	\$8,050	\$725	\$48,267	\$22,015	\$1,220	\$18,387	\$28,264	69
\$3,772	\$676	\$1,303	\$28,120	\$5,692	\$69,258	\$61,209	\$2,806	\$45,865	\$69,084	70
\$15,195	\$12,336	\$677	\$42,118	\$10,818	\$443,465	\$457,606	\$21,767	\$289,832	\$347,739	71
\$330			\$172				\$1,800	\$672	\$4,650	72

MANUFACTURES.

TABLE 7.—FLOURING AND GRIST MILL PRODUCTS,

	United States.	Alabama.	Arizona.	Arkansas.	California.	Colorado.	Connecticut.
Materials used:							
73 Total cost.....	\$475,826,345	\$2,787,634	\$382,055	\$3,029,286	\$11,077,482	\$3,842,194	\$1,845,545
74 Wheat, bushels.....	489,914,004	661,684	320,214	2,912,566	12,786,110	4,869,458	27,921
75 Cost.....	\$317,933,257	\$505,308	\$228,643	\$1,840,529	\$7,649,433	\$2,716,924	\$16,101
76 Corn, bushels.....	241,029,249	4,268,639	17,664	2,487,206	927,500	1,590,554	3,063,483
77 Cost.....	\$93,882,609	\$2,128,021	\$9,740	\$1,010,523	\$492,910	\$517,634	\$1,398,352
78 Rye, bushels.....	12,720,812	9,976	.....	4,173	88,024	26,738	50,213
79 Cost.....	\$6,446,705	\$5,145	.....	\$1,770	\$48,603	\$9,056	\$20,899
80 Buckwheat, bushels.....	8,317,357	190	.....	105	14,402	666	24,393
81 Cost.....	\$4,438,480	\$135	.....	\$32	\$14,861	\$439	\$16,710
82 Barley, bushels.....	12,289,036	40	195,888	10	4,566,311	10,515	1,399
83 Cost.....	\$4,460,695	\$28	\$37,156	\$5	\$1,721,635	\$5,173	\$734
84 Oats, bushels.....	65,352,637	40,700	2,921	20,300	822,895	618,265	780,487
85 Cost.....	\$17,150,744	\$13,260	\$980	\$6,105	\$275,013	\$165,524	\$241,648
86 Other grain, bushels.....	5,520,530	3,985	.....	2,300	34,550	6,185	101,733
87 Cost.....	\$1,952,780	\$3,125	.....	\$1,090	\$20,955	\$2,712	\$38,091
88 Barrels purchased, number.....	16,272,590	24,716	.....	5,760	133,743	40,000	7,400
89 Cost.....	\$4,674,636	\$6,642	.....	\$1,585	\$41,288	\$12,000	\$1,557
90 Sacks purchased, number.....	310,080,914	1,394,097	281,028	1,622,808	9,341,011	3,000,361	819,075
91 Cost.....	\$11,664,996	\$52,657	\$12,852	\$75,080	\$410,644	\$201,784	\$41,383
92 Cooperage stock and cloth for sacks.....	\$1,584,478	\$85	.....	\$19,026	\$60,000	.....	\$20
93 Fuel.....	\$4,756,732	\$27,893	\$5,035	\$47,661	\$105,955	\$47,629	\$15,514
94 Rent of power and heat.....	\$378,790	\$305	\$220	\$454	\$33,772	.....	\$5,325
95 Mill supplies.....	\$1,695,545	\$15,174	\$1,809	\$12,029	\$41,193	\$17,773	\$7,518
96 All other materials.....	\$1,046,759	\$11,559	\$620	\$6,479	\$20,331	\$12,876	\$4,061
97 Freight.....	\$3,759,139	\$18,297	\$35,000	\$6,868	\$31,389	\$130,920	\$58,219
Products:							
98 Total value.....	\$560,719,063	\$3,310,757	\$455,246	\$3,708,709	\$13,100,944	\$4,528,062	\$2,263,859
99 Wheat flour, barrels.....	108,524,094	144,361	65,617	605,702	2,660,288	1,012,331	2,147
100 Value.....	\$348,133,800	\$567,963	\$291,428	\$2,005,295	\$7,952,877	\$3,063,800	\$9,800
101 Rye flour, barrels.....	1,739,374	1,961	.....	3,070	14,592	1,028	7,614
102 Value.....	\$4,916,001	\$4,810	.....	\$6,707	\$43,681	\$3,635	\$23,578
103 Buckwheat flour, pounds.....	213,562,952	2,400	.....	4,100	552,080	1,500	555,459
104 Value.....	\$5,065,135	\$75	.....	\$62	\$19,574	\$90	\$16,887
105 Barley meal, pounds.....	99,730,423	1,500	5,087,000	400	59,166,092	.....	1,880
106 Value.....	\$1,113,958	\$40	\$64,770	\$3	\$572,574	.....	\$31
107 Corn meal, barrels.....	40,035,977	1,034,696	4,498	636,285	94,592	55,246	803,555
108 Value.....	\$73,177,402	\$2,360,562	\$11,374	\$1,134,730	\$221,833	\$105,261	\$1,412,406
109 Hominy, pounds.....	305,725,866	2,444,785	.....	.....	3,097,560	.....	1,230,000
110 Value.....	\$2,723,443	\$25,715	.....	.....	\$36,835	.....	\$12,300
111 Feed, pounds.....	10,061,312,069	26,254,730	5,832,090	42,285,779	225,640,992	107,225,303	52,429,233
112 Value.....	\$31,347,132	\$204,276	\$304,048	\$2,203,107	\$304,048	\$353,573	\$645,663
113 Offal, pounds.....	6,559,835,116	11,185,742	3,533,775	34,395,937	168,551,691	74,745,383	1,874,818
114 Value.....	\$38,112,424	\$73,771	\$24,210	\$215,386	\$1,157,424	\$502,403	\$20,111
115 Barrels, made (not used), number.....	217,361	.....	.....	4,400	.....	.....	.....
116 Value.....	\$60,329	.....	.....	\$1,270	.....	.....	.....
117 Sacks, made (not used), number.....	950,171	.....	.....	.....	.....	.....	.....
118 Value.....	\$37,591	.....	.....	.....	.....	.....	.....
119 Amount received for custom sawing.....	\$248,513	\$5,677	.....	\$3,318	\$450	.....	\$19,020
120 Amount received for custom ginning.....	\$301,622	\$48,768	.....	\$36,073	.....	.....	\$198
121 All other products.....	\$5,431,663	\$29,100	\$4,342	\$1,767	\$832,599	.....	\$79,689
122 Amount received for custom grinding, including value of grain received as toll. ¹	\$16,431,155	\$237,138	.....	\$9,039	\$212,288	\$18,488	\$53,404
Machinery and capacity:							
123 Pairs of rolls, number.....	77,989	176	67	609	1,133	520	61
124 Runs of stone, number.....	31,218	981	7	480	161	21	325
125 Estimated maximum capacity per day of 24 hours, bushels.....	10,019,740	94,336	3,735	93,940	135,162	42,049	203,095
Comparison of products:							
126 Number of establishments reporting for both years.....	13,030	468	4	211	88	36	143
127 Value for census year.....	\$389,238,162	\$2,131,013	\$34,300	\$2,142,239	\$10,303,976	\$3,721,233	\$1,561,701
128 Value for preceding business year.....	\$371,357,354	\$1,899,182	\$70,592	\$1,891,282	\$10,269,105	\$3,333,233	\$1,460,864
Power:							
129 Number of establishments reporting.....	24,147	780	11	411	123	60	203
130 Total horsepower.....	1,016,859	14,436	604	10,091	11,058	4,319	6,930
Owned—							
Engines—							
131 Steam, number.....	11,946	219	6	287	89	49	54
132 Horsepower.....	533,765	4,867	312	7,533	7,800	3,741	1,830
133 Gas or gasoline, number.....	972	10	.....	4	3	3	11
134 Horsepower.....	21,236	220	.....	34	77	48	213
135 Water wheels, number.....	20,765	698	6	162	36	19	200
136 Horsepower.....	451,373	9,279	292	2,448	1,412	1,020	4,597
137 Electric motors, number.....	50	.....	.....	.....	2	.....	.....
138 Horsepower.....	1,987	.....	.....	.....	550	10	.....
139 Other power, number.....	86	.....	.....	.....	.....	.....	.....
140 Horsepower.....	880	12	.....	.....	.....	.....	4
Rented horsepower—							
141 Electric.....	6,125	.....	.....	15	1,075	.....	123
142 Other kind.....	1,443	58	.....	6	144	.....	113
143 Furnished to other establishments, horsepower.....	1,667	77	.....	9	.....	.....	50
Establishments classified by number of persons employed, not including proprietors and firm members:							
144 Total number of establishments.....	25,258	781	11	410	124	60	203
145 No employees.....	10,272	354	1	149	11	8	71
146 Under 5.....	12,749	395	5	230	65	25	126
147 5 to 20.....	1,892	32	5	30	32	25	10
148 21 to 50.....	262	.....	.....	.....	10	1	1
149 51 to 100.....	64	.....	.....	.....	5	1	.....
150 101 to 250.....	14	.....	.....	.....	1	.....	.....
151 251 to 500.....	2	.....	.....	.....	.....	.....	.....
152 501 to 1,000.....	3	.....	.....	.....	.....	.....	.....

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

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FLOURING AND GRIST MILL PRODUCTS.

BY STATES AND TERRITORIES: 1900—Continued.

Delaware.	District of Columbia.	Florida.	Georgia.	Idaho.	Illinois.	Indiana.	Indian Territory.	Iowa.	Kansas.	
\$980,837	\$537,690	\$242,378	\$7,004,065	\$645,444	\$26,848,791	\$25,664,120	\$1,002,013	\$11,272,217	\$18,595,268	73
740,123	314,502	5,020	4,136,857	1,307,569	27,566,704	29,192,680	1,168,231	12,521,953	23,459,171	74
\$519,658	\$212,760	\$2,610	\$2,880,485	\$540,242	\$18,332,716	\$19,188,538	\$690,592	\$7,005,972	\$13,157,846	75
882,216	700,836	441,868	7,255,621	4,426	16,413,864	14,297,771	794,391	6,352,045	12,427,741	76
\$321,124	\$285,932	\$218,027	\$3,637,455	\$2,354	\$5,650,082	\$4,671,786	\$212,541	\$1,710,147	\$3,675,178	77
1,292	2,300		9,431	500	494,581	211,697		458,763	143,145	78
\$686	\$1,020		\$6,953	\$300	\$212,033	\$100,169		\$193,222	\$69,572	79
15,060			1,551		176,680	162,455	11,000	277,593	25,980	80
\$3,180			\$931		\$98,290	\$78,715	\$6,600	\$148,966	\$17,372	81
				137,990	87,461	63,495		538,740	33,580	82
				\$44,199	\$30,610	\$22,866		\$164,527	\$11,019	83
83,646	700	3,840	398,810	9,498	2,429,807	1,123,941	55,800	5,729,396	431,856	84
\$9,695	\$216	\$1,754	\$118,539	\$3,332	\$559,781	\$260,017	\$10,324	\$1,229,870	\$102,043	85
		4,510	7,620	300	56,615	76,150	100	130,446	123,058	86
		\$4,728	\$5,551	\$100	\$16,038	\$35,800	\$50	\$39,155	\$37,478	87
65,210	45,000		63,900		1,286,612	1,099,466		87,095	711,232	88
\$19,223	\$10,360		\$13,940		\$370,502	\$245,233		\$20,783	\$90,613	89
\$41,687	238,750	50,100	5,179,908	633,610	14,872,456	16,905,668	1,091,937	10,314,574	20,024,928	90
\$20,701	\$5,315	\$2,185	\$171,554	\$27,811	\$545,520	\$505,519	\$43,086	\$349,748	\$809,531	91
\$182	\$1,000		\$6,204		\$239,576	\$38,848		\$15,843	\$27,143	92
\$13,189	\$5,761	\$2,888	\$47,700	\$16,132	\$293,347	\$305,506	\$19,216	\$190,681	\$239,443	93
\$70	\$3,300		\$1,340		\$9,369	\$5,808		\$6,075	\$17,552	94
\$6,552	\$4,201	\$1,344	\$26,784	\$5,394	\$95,280	\$79,024	\$4,889	\$51,938	\$68,556	95
\$2,112	\$50	\$802	\$13,466	\$1,650	\$257,426	\$31,252	\$528	\$22,017	\$20,725	96
\$59,670	\$7,775	\$8,547	\$78,213	\$3,930	\$57,221	\$94,489	\$14,237	\$123,325	\$251,187	97
\$1,165,800	\$632,754	\$302,787	\$3,330,439	\$332,207	\$31,006,294	\$30,150,766	\$1,198,472	\$13,323,083	\$21,926,768	98
153,032	65,462	804	789,191	261,223	6,078,423	5,818,392	240,014	2,503,390	5,034,251	99
\$605,938	\$223,644	\$3,022	\$3,431,754	\$655,097	\$20,813,984	\$20,384,714	\$744,189	\$3,244,050	\$15,089,529	100
81	200		5,605	100	67,302	26,068		68,964	17,490	101
\$211	\$655		\$12,698	\$400	\$194,590	\$76,694		\$162,511	\$46,131	102
\$26,900			71,824		4,848,087	3,952,458	800,000	7,400,760	787,019	103
\$9,384			\$2,826		\$121,704	\$107,277	\$7,500	\$203,604	\$28,543	104
				234,000	1,428,000	59,321		4,290,379	10,800	105
				\$1,894	\$16,722	\$2,880		\$52,511	\$184	106
165,124	165,000	87,487	1,772,359	460	2,640,395	2,159,432	123,624	726,470	1,225,917	107
\$347,179	\$266,500	\$200,470	\$4,139,498	\$1,272	\$2,983,766	\$2,897,633	\$175,041	\$979,290	\$1,713,401	108
1,972,972	3,316,000	1,369,768	637,638		34,739,326	97,088,789		4,427,260	4,671,000	109
\$37,861	\$57,360	\$15,185	\$14,097		\$271,070	\$717,337		\$29,337	\$37,964	110
17,355,917	6,390,264	5,025,470	42,647,196	8,034,373	577,999,942	435,699,827	28,087,580	405,736,508	559,051,705	111
\$127,436	\$42,730	\$77,128	\$372,581	\$68,364	\$4,112,188	\$2,993,037	\$181,553	\$2,708,417	\$3,546,310	112
5,818,718	3,520,000	416,000	23,790,218	23,748,430	406,366,404	378,867,854	18,520,000	151,737,058	352,553,736	113
\$35,067	\$25,760	\$2,161	\$278,312	\$105,180	\$2,333,321	\$2,234,878	\$38,318	\$789,441	\$1,453,397	114
					\$9,719	3,550				115
					2,512	1,030				116
500					21,000	4,000		50	22,000	117
\$26					\$560	\$120		\$3	\$1,100	118
\$800		\$965	\$6,195		\$1,946	\$5,636	\$522	\$6,383	\$440	119
		\$3,463	\$55,455		\$25,077					120
\$1,898	\$16,105	\$343	\$17,023		\$128,854	\$729,480	\$1,399	\$647,566	\$9,319	121
\$52,948	\$420	\$20,312	\$436,804	\$32,767	\$501,332	\$978,825	\$46,315	\$749,895	\$218,312	122
										123
268	64	4	261	254	4,580	4,890	257	2,395	3,487	124
128	20	117	1,339	14	831	797	40	815	322	125
24,300	7,570	9,442	165,035	13,165	539,626	482,057	26,770	306,407	391,286	126
										127
42	8	51	670	17	400	527	21	376	272	128
\$379,588	\$602,754	\$224,422	\$6,052,697	\$437,214	\$22,338,913	\$23,022,237	\$452,172	\$10,110,330	\$14,564,083	129
\$310,013	\$604,379	\$214,685	\$4,309,057	\$400,600	\$21,337,497	\$22,182,824	\$372,250	\$9,176,033	\$13,937,353	130
										131
83	9	95	1,114	34	866	896	61	693	522	132
3,303	686	1,607	25,037	1,833	46,467	51,757	2,278	33,695	31,336	133
										134
31	4	42	227	23	806	769	55	509	363	135
1,215	300	745	6,341	1,017	40,924	40,301	2,066	20,465	21,324	136
4	1		7		68	45	1	72	65	137
92	6		81		1,146	1,587	10	1,218	1,246	138
106	2	57	1,244	22	134	369	8	490	194	139
2,484	280	762	18,410	816	3,853	9,735	202	11,554	8,207	140
1	1		3		5	2		3	1	141
12	80		80		145	27		22	10	142
					5			7	11	143
					95			34	140	144
										145
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MANUFACTURES.

TABLE 7.—FLOURING AND GRIST MILL PRODUCTS,

	Kentucky.	Louisiana.	Maine.	Maryland.	Massachu- setts.	Michigan.	Minnesota.
1 Number of establishments.....	1,145	69	227	407	281	765	512
2 Character of organization:							
3 Individual.....	785	59	142	324	169	459	273
4 Firm and limited partnership.....	326	9	73	69	54	255	171
5 Incorporated company.....	34	1	12	18	7	51	68
6 Miscellaneous.....				1	1		
7 Capital:							
8 Total.....	\$4,928,928	\$121,281	\$1,235,767	\$3,428,996	\$1,980,927	\$7,983,587	\$24,125,781
9 Land.....	\$440,784	\$10,945	\$125,492	\$296,633	\$203,518	\$1,195,394	\$1,225,645
10 Buildings.....	\$964,408	\$80,871	\$265,164	\$775,281	\$401,901	\$1,580,139	\$3,091,009
11 Machinery, tools, and implements.....	\$1,893,110	\$47,865	\$277,261	\$918,016	\$340,838	\$2,832,239	\$9,104,731
12 Cash and sundries.....	\$1,680,626	\$31,610	\$567,850	\$1,489,066	\$984,670	\$2,375,815	\$10,704,596
13 Proprietors and firm members.....	1,465	75	287	461	270	979	630
14 Salaried officials, clerks, etc.:							
15 Total number.....	171	2	18	85	53	205	606
16 Total salaries.....	\$125,969	\$2,100	\$11,560	\$80,275	\$33,157	\$153,461	\$730,667
17 Officers of corporations—							
18 Number.....	25		4	13	4	27	101
19 Salaries.....	\$27,720		\$3,200	\$26,473	\$5,600	\$31,590	\$190,886
20 General superintendents, managers, clerks, etc.—							
21 Total number.....	146	2	14	72	49	178	505
22 Total salaries.....	\$98,249	\$2,100	\$8,860	\$53,802	\$27,557	\$121,871	\$539,731
23 Men—							
24 Number.....	128	2	12	66	33	147	445
25 Salaries.....	\$91,267	\$2,100	\$7,760	\$52,362	\$22,043	\$110,514	\$507,123
26 Women—							
27 Number.....	18		2	6	16	31	60
28 Salaries.....	\$6,982		\$600	\$1,440	\$5,514	\$11,557	\$32,058
29 Wage-earners, including pieceworkers, and total wages:							
30 Greatest number employed at any one time during the year.....	1,898	146	256	683	384	1,824	4,711
31 Least number employed at any one time during the year.....	1,359	137	224	610	311	1,467	3,817
32 Average number.....	1,134	70	192	541	304	1,423	4,036
33 Wages.....	\$483,594	\$11,636	\$93,820	\$229,335	\$161,486	\$718,499	\$2,883,836
34 Men, 16 years and over—							
35 Average number.....	1,131	64	192	532	302	1,417	3,933
36 Wages.....	\$483,032	\$11,420	\$93,820	\$228,009	\$161,264	\$717,354	\$2,882,946
37 Women, 16 years and over—							
38 Average number.....	2			5		1	147
39 Wages.....	\$442			\$888		\$255	\$50,440
40 Children, under 16 years—							
41 Average number.....	1	6		4	2	5	3
42 Wages.....	\$120	\$116		\$443	\$222	\$890	\$450
43 Average number of wage-earners, including pieceworkers, employed during each month:							
44 Men, 16 years and over—							
45 January.....	1,216	57	198	485	319	1,464	3,963
46 February.....	1,188	80	194	479	319	1,451	4,045
47 March.....	1,086	79	183	433	306	1,443	4,097
48 April.....	976	86	176	433	286	1,366	3,911
49 May.....	903	60	167	509	279	1,307	3,867
50 June.....	779	45	161	522	270	1,213	3,721
51 July.....	1,021	44	178	532	276	1,268	3,604
52 August.....	1,050	30	180	533	281	1,329	3,788
53 September.....	1,241	60	203	569	294	1,468	4,020
54 October.....	1,385	80	213	592	320	1,547	4,168
55 November.....	1,415	77	225	600	339	1,582	4,072
56 December.....	1,338	69	220	598	341	1,576	3,946
57 Women, 16 years and over—							
58 January.....	2			5		1	156
59 February.....	2			5		1	156
60 March.....	2			5		1	156
61 April.....	2			5		1	154
62 May.....	2			5			149
63 June.....	2			4			149
64 July.....	2			4			139
65 August.....	2			4			139
66 September.....	2			4			139
67 October.....	2			4			139
68 November.....	2			5			135
69 December.....	2			5			144
70 Children, under 16 years—							
71 January.....	1	8		4	2	3	4
72 February.....	1	8		4	2	3	4
73 March.....	1	9		4	2	3	4
74 April.....	1	3		4	2	3	2
75 May.....	1	3		4	1	3	2
76 June.....	2	2		4	1	3	2
77 July.....	2	2		4	1	3	2
78 August.....	2	3		4	1	3	2
79 September.....	2	3		4	1	3	2
80 October.....	1	3		4	1	3	2
81 November.....	1	8		4	1	3	2
82 December.....	1	8		4	1	3	2
83 Miscellaneous expenses:							
84 Total.....	\$295,932	\$2,717	\$43,836	\$225,357	\$95,774	\$395,484	\$1,300,270
85 Rent of works.....	\$3,836	\$50	\$11,475	\$30,754	\$28,094	\$33,678	\$33,654
86 Taxes, not including internal revenue.....	\$38,585	\$1,040	\$9,700	\$20,252	\$15,107	\$37,332	\$110,313
87 Rent of offices, insurance, interest, and all sundry expenses not hitherto included.....	\$246,446	\$1,627	\$22,661	\$174,351	\$52,573	\$266,380	\$1,148,023
88 Contract work.....	\$2,165	\$25		\$338		\$9,034	\$2,275

FLOURING AND GRIST MILL PRODUCTS.

BY STATES AND TERRITORIES: 1900—Continued.

Mississippi.	Missouri.	Montana.	Nebraska.	Nevada.	New Hamp- shire.	New Jersey.	New Mexico.	New York.	North Carolina.	
225	1,145	20	305	11	149	354	35	1,513	1,773	1
195	672	7	157	2	105	273	29	1,078	1,293	2
28	358	4	104	5	39	58	5	376	451	3
2	114	8	44	4	5	18	1	59	28	4
	1	1							1	5
\$225, 335	\$11,402, 827	\$715, 189	\$4, 395, 984	\$281, 247	\$1, 004, 990	\$3, 004, 408	\$238, 735	\$23, 334, 858	\$2, 905, 310	6
\$21, 026	\$868, 775	\$25, 445	\$358, 470	\$7, 820	\$106, 260	\$370, 695	\$30, 715	\$6, 275, 033	\$281, 764	7
\$51, 610	\$2, 309, 234	\$127, 186	\$934, 903	\$50, 500	\$222, 240	\$775, 210	\$60, 450	\$5, 563, 206	\$711, 162	8
\$126, 096	\$4, 201, 332	\$160, 045	\$1, 089, 576	\$63, 485	\$200, 740	\$733, 574	\$101, 890	\$4, 792, 699	\$1, 459, 324	9
\$26, 603	\$4, 028, 436	\$402, 513	\$1, 357, 985	\$109, 442	\$475, 750	\$1, 124, 929	\$45, 680	\$6, 753, 890	\$452, 580	10
297	1, 446	16	365	11	189	398	39	1, 844	2, 042	11
8	374	26	138	4	15	62	2	388	64	12
\$1, 745	\$355, 125	\$27, 100	\$101, 721	\$2, 700	\$10, 688	\$42, 098	\$1, 500	\$440, 929	\$31, 316	13
	106	8	27	8	1	16	1	70	9	14
	\$189, 085	\$6, 980	\$24, 156	\$2, 100	\$2, 000	\$14, 839	\$900	\$136, 435	\$3, 080	15
8	268	18	111	1	14	46	1	318	55	16
\$1, 745	\$216, 040	\$20, 120	\$77, 565	\$600	\$8, 688	\$27, 259	\$600	\$304, 494	\$23, 236	17
8	230	16	103	1	13	33	1	262	54	18
\$1, 745	\$200, 655	\$18, 920	\$74, 585	\$600	\$3, 438	\$24, 958	\$600	\$284, 336	\$23, 136	19
	38	2	8		1	8		56	1	20
	\$15, 385	\$1, 200	\$3, 000		\$250	\$2, 301		\$20, 158	\$100	21
381	2, 425	97	926	23	231	594	75	3, 251	1, 469	22
276	1, 863	76	693	10	179	528	51	2, 276	1, 216	23
208	1, 654	67	698	13	185	431	52	2, 439	1, 019	24
\$27, 244	\$351, 877	\$51, 871	\$363, 687	\$3, 686	\$32, 214	\$219, 951	\$27, 453	\$1, 234, 438	\$213, 627	25
200	1, 611	67	656	12	185	427	52	2, 404	1, 010	26
\$26, 688	\$335, 163	\$51, 871	\$355, 060	\$3, 456	\$32, 214	\$219, 265	\$27, 453	\$1, 267, 340	\$212, 962	27
	34		37	1				85		28
	\$14, 450		\$7, 836	\$130				\$17, 038		29
8	9		5			4			9	30
\$556	\$1, 759		\$791			\$686			\$665	31
181	1, 679	31	690	12	198	459	49	2, 558	1, 058	32
171	1, 655	35	665	9	194	449	48	2, 531	1, 028	33
149	1, 626	36	633	9	201	446	50	2, 429	989	34
141	1, 645	91	616	12	201	424	47	2, 357	929	35
142	1, 443	32	611	13	197	371	43	2, 132	882	36
140	1, 211	68	560	11	173	328	37	2, 032	843	37
139	1, 406	42	593	8	167	349	49	2, 100	850	38
161	1, 524	43	617	9	163	377	55	2, 174	834	39
279	1, 691	48	681	14	174	434	63	2, 420	1, 036	40
302	1, 894	56	733	15	185	430	65	2, 669	1, 226	41
312	1, 869	67	735	18	193	501	63	2, 775	1, 237	42
289	1, 794	49	729	19	183	509	57	2, 614	1, 164	43
	25		21					42		44
	40		33					39		45
	40		33					54		46
	40		33					62		47
	40		35	1				147		48
	31		35	1				188		49
	31		33	1				130		40
	31		42	1				76		51
	31		26					85		52
	31		32	1				96		53
	31		37	1				87		54
	31		45					68		55
6	9		8			1			8	56
6	9		8			5			8	57
5	10		4			5			8	58
4	10		1			5			9	59
4	11		1			2			7	60
4	8		1			2			7	61
4	9		3						8	62
3	8		7			2			11	63
15	9		7			4			11	64
16	8		7			6			12	65
17	9		7			10			10	66
10	8		5			8			10	67
\$3, 302	\$520, 468	\$41, 516	\$171, 948	\$5, 350	\$33, 084	\$102, 630	\$11, 009	\$1, 014, 018	\$65, 395	68
\$132	\$26, 512	\$500	\$14, 109	\$30	\$30	\$25, 033	\$1, 560	\$90, 102	\$6, 006	69
\$2, 139	\$63, 596	\$8, 583	\$27, 221	\$1, 442	\$3, 442	\$16, 947	\$2, 782	\$119, 038	\$20, 403	70
\$1, 336	\$430, 160	\$32, 133	\$130, 102	\$4, 275	\$16, 330	\$60, 600	\$6, 655	\$304, 578	\$33, 249	71
\$35	\$200	\$250	\$616	\$103			\$12	\$300	\$737	72

MANUFACTURES.

TABLE 7.—FLOURING AND GRIST MILL PRODUCTS,

	Kentucky.	Louisiana.	Maine.	Maryland.	Massachu- setts.	Michigan.	Minnesota.
Materials used:							
73 Total cost	\$12,018,998	\$825,297	\$2,827,448	\$6,781,805	\$4,812,256	\$19,924,980	\$74,509,733
74 Wheat, bushels.....	12,825,621	3,000	134,894	7,081,937	27,840	20,121,661	102,921,426
75 Cost	\$8,294,690	\$2,400	\$104,767	\$4,972,234	\$20,376	\$13,855,780	\$66,641,825
76 Corn, bushels.....	6,641,306	742,669	4,559,798	2,887,711	9,718,561	8,100,200	4,226,426
77 Cost	\$2,918,858	\$264,696	\$2,099,170	\$1,116,737	\$4,094,562	\$2,978,316	\$1,254,815
78 Rye, bushels.....	15,028		16,152	49,840	134,264	649,594	455,474
79 Cost	\$7,664		\$9,054	\$67,174	\$147,823	\$916,277	\$203,787
80 Buckwheat, bushels.....	973		186,510	100,148	18,849	618,292	87,065
81 Cost	\$286		\$74,608	\$50,812	\$8,180	\$393,122	\$47,282
82 Barley, bushels.....	5,625		49,840	80,940	22,415	146,017	1,198,068
83 Cost	\$2,782		\$25,867	\$9,814	\$90,277	\$61,919	\$310,468
84 Oats, bushels.....	63,230	10,000	841,998	210,740	1,831,703	4,609,253	3,397,576
85 Cost	\$17,066	\$5,600	\$273,911	\$63,877	\$378,575	\$1,196,278	\$764,983
86 Other grain, bushels.....	44,505		280,967	82,726	58,069	280,971	205,197
87 Cost	\$17,500		\$129,063	\$24,216	\$96,170	\$116,485	\$78,162
88 Barrels purchased, number.....	849,334	20	3,850	388,357	3,810	\$116,485	\$78,162
89 Cost	\$160,635	\$2	\$525	\$118,913	\$786	\$267,739	\$1,355,550
90 Sacks purchased, number.....	10,130,588	367,745	105,215	4,065,830	493,230	10,179,372	47,064,716
91 Cost	\$290,337	\$12,259	\$6,480	\$125,623	\$13,370	\$889,016	\$2,229,989
92 Coopersage stock and cloth for sacks.....	\$30,972	\$1,500		\$50,401	\$50	\$100,809	\$60,871
93 Fuel	\$143,834	\$9,332	\$15,786	\$65,052	\$24,896	\$195,736	\$577,275
94 Rent of power and heat.....	\$517		\$6,805	\$2,812	\$10,251	\$4,533	\$154,627
95 Mill supplies.....	\$49,135	\$845	\$3,017	\$22,678	\$9,526	\$52,327	\$352,566
96 All other materials.....	\$9,575	\$610	\$7,977	\$39,108	\$8,108	\$39,546	\$91,767
97 Freight.....	\$81,147	\$30,653	\$63,413	\$44,515	\$29,366	\$67,298	\$386,736
Products:							
98 Total value.....	\$14,515,151	\$888,324	\$3,899,832	\$8,035,343	\$5,768,528	\$23,593,991	\$83,377,709
99 Wheat flour, barrels.....	2,549,947	600	27,060	1,475,416	7,323	4,012,867	22,705,105
100 Value.....	\$9,341,759	\$3,000	\$115,975	\$5,418,734	\$27,744	\$14,899,096	\$72,381,659
101 Rye flour, barrels.....	2,556		9,831	5,750	6,307	53,307	\$203,781
102 Value.....	\$6,623		\$3,901	\$22,659	\$19,398	\$162,884	\$203,781
103 Buckwheat flour, pounds.....	15,690		2,742,760	2,149,053	428,143	16,360,928	2,025,959
104 Value.....	\$470		\$44,650	\$62,123	\$10,882	\$945,102	\$52,816
105 Barley meal, pounds.....	7,880		70,400	252,467	772,260	4,165,160	\$11,469
106 Value.....	\$130		\$16,408	\$1,123	\$13,900	\$15,669	\$11,469
107 Corn meal, barrels.....	1,552,655	151,472	1,027,588	403,390	2,443,998	629,328	192,522
108 Value.....	\$9,290,275	\$291,454	\$2,242,262	\$822,292	\$4,477,194	\$1,197,749	\$292,866
109 Hominy, pounds.....	39,850	200,000		11,284,589	2,589,950	2,889,950	6,037,250
110 Value.....	\$18,271	\$2,100		\$135,120	\$23,134	\$21,822	\$51,000
111 Feed, pounds.....	69,348,281	11,221,600	74,823,033	145,693,200	106,739,202	540,099,628	568,308,859
112 Value.....	\$635,754	\$89,566	\$329,232	\$1,164,496	\$1,047,932	\$4,726,347	\$9,977,563
113 Oflal, pounds.....	184,623,651		20,969,113	53,109,242	19,267,731	308,396,890	1,332,441,289
114 Value.....	\$1,210,903		\$124,322	\$894,448	\$101,888	\$1,965,296	\$6,790,661
115 Barrels made (not used), number.....	100		6,900			74,097	500
116 Value.....	\$35			\$1,800		\$22,539	\$160
117 Sacks made (not used), number.....	2,500			1,000		1,000	516,221
118 Value.....	\$50			\$60		\$50	\$18,677
119 Amount received for custom sawing.....	\$10,655	\$116	\$212	\$2,125	\$6,914	\$27,142	\$2,730
120 Amount received for custom ginning.....	\$72	\$1,855					
121 All other products.....	\$6,279	\$235					
122 Amount received for custom grinding, including value of grain received as toll.....	\$506,535	\$17,292	\$22,870	\$20,363	\$34,597	\$220,295	\$64,325
Machinery and capacity:							
123 Pairs of rolls, number.....	2,563	15	218	1,511	81	4,240	6,465
124 Runs of stone, number.....	1,214	66	349	578	348	849	406
125 Estimated maximum capacity per day of 24 hours, bushels.....	289,218	9,833	119,321	95,729	166,325	408,310	680,421
Comparison of products:							
126 Number of establishments reporting for both years.....	470	86	132	208	159	381	232
127 Value for census year.....	\$8,860,396	\$296,031	\$2,341,674	\$5,832,708	\$4,737,596	\$14,003,627	\$68,856,312
128 Value for preceding business year.....	\$8,995,647	\$243,310	\$2,154,329	\$5,859,950	\$4,862,085	\$13,293,335	\$69,044,637
Power:							
129 Number of establishments reporting.....	1,144	57	225	411	227	765	511
130 Total horsepower.....	81,086	1,102	8,619	14,132	9,536	43,980	69,569
Owned—							
Engines—							
131 Steam, number.....	784	53	52	136	61	468	373
132 Horsepower.....	22,780	1,047	1,561	5,765	2,376	22,797	44,742
133 Gas or gasoline, number.....	9		25	17	17	49	60
134 Horsepower.....	152		530	16	16	1,014	1,263
135 Water wheels, number.....	508	2	251	242	362	621	265
136 Horsepower.....	8,108	25	6,492	8,085	6,464	19,780	23,200
137 Electric motors, number.....						2	7
138 Horsepower.....						90	223
139 Other power, number.....	1	2	2			2	5
140 Horsepower.....	4	30	11			9	49
Rented, horsepower—							
141 Electric.....	47			100	290	270	83
142 Other kind.....			25	40	40		
143 Furnished to other establishments, horsepower.....	1		333				240
Establishments classified by number of persons employed, not including proprietors and firm members:							
144 Total number of establishments.....	1,145	69	227	407	231	765	512
145 No employees.....	528	16	82	160	66	205	105
146 Under 5.....	522	50	139	219	147	474	289
147 5 to 20.....	36	2	6	23	17	74	80
148 21 to 50.....	7	1		4	1	9	25
149 51 to 100.....	1					3	7
150 101 to 250.....	1						1
151 251 to 500.....							
152 501 to 1,000.....							3

FLOURING AND GRIST MILL PRODUCTS.

BY STATES AND TERRITORIES: 1900—Continued.

Mississippi.	Missouri.	Montana.	Nebraska.	Nevada.	New Hampshire.	New Jersey.	New Mexico.	New York.	North Carolina.	
\$805,894	\$21,987,507	\$818,442	\$6,885,719	\$122,815	\$2,201,909	\$5,243,121	\$413,396	\$36,523,959	\$7,218,904	73
16,920	25,368,989	1,231,182	8,687,731	158,146	313,324	2,404,670	563,523	25,232,677	4,549,396	74
\$14,019	\$16,263,077	\$725,259	\$4,546,481	\$101,927	\$220,230	\$1,743,080	\$346,852	\$18,432,502	\$3,609,061	75
1,609,736	11,842,365	5,603	3,330,284	65	3,608,644	5,156,897	41,313	22,469,249	6,018,505	76
\$753,566	\$4,116,539	\$2,352	\$875,237	\$75	\$1,547,402	\$2,137,045	\$22,275	\$9,363,523	\$3,226,539	77
94,018	5,485	356,980	356,980	7,070	7,070	571,502	1,801,236	1,801,236	108,673	78
\$43,740	\$3,130	\$143,948	\$143,948	\$5,332	\$5,332	\$238,533	\$1,033,432	\$1,033,432	\$95,733	79
45,192	27	10,274	10,274	175	28,510	216,851	2,581,749	2,581,749	31,358	80
\$25,117	\$14	\$6,162	\$6,162	\$105	\$11,585	\$118,867	\$1,436,612	\$1,436,612	\$19,127	81
121,735	2,196	63,425	63,425	24,397	10,647	8,096	32,000	498,608	10,102	82
\$44,018	\$867	\$15,940	\$15,940	\$13,400	\$5,511	\$2,839	\$20,165	\$223,218	\$6,403	83
24,500	371,680	35,945	1,606,140	714,840	714,840	2,228,443	1,700	11,833,615	116,210	84
\$8,280	\$91,351	\$13,997	\$331,483	\$223,901	\$223,901	\$662,704	\$700	\$3,564,642	\$2,685	85
18,758	6,250	28,475	28,475	170,659	170,659	205,425	1,191,124	1,191,124	77,026	86
\$7,961	\$1,250	\$8,055	\$8,055	\$81,076	\$81,076	\$3,697	\$436,983	\$436,983	\$28,741	87
17,100	691,080	5,250	5,250	5,250	5,250	158,666	1,372,359	1,372,359	2,370	88
\$2,185	\$176,364	\$1,075	\$1,075	\$1,075	\$1,075	\$35,896	\$441,638	\$441,638	\$171	89
193,630	16,887,761	741,399	6,009,627	98,493	1,269,815	2,227,669	204,510	13,812,221	1,474,782	90
\$9,241	\$657,764	\$39,646	\$258,671	\$4,106	\$14,844	\$69,475	\$10,519	\$359,586	\$70,848	91
55,944	\$55,944	\$6,686	\$6,686	\$20,068	\$20,068	\$750	\$300	\$588,863	\$1,796	92
\$11,163	\$303,067	\$8,246	\$91,099	\$1,400	\$9,548	\$34,296	\$8,730	\$264,294	\$60,790	93
84,348	\$835	\$4,800	\$1,850	\$813	\$813	\$2,200	\$27,393	\$27,393	\$1,300	94
\$2,092	\$65,669	\$10,116	\$33,234	\$1,485	\$6,790	\$3,937	\$2,457	\$35,778	\$27,191	95
\$1,000	\$32,792	\$1,240	\$38,867	\$3,817	\$3,817	\$14,090	\$881	\$63,080	\$9,559	96
\$932,816	\$52,769	\$8,125	\$28,066	\$317	\$50,417	\$45,712	\$517	\$197,455	\$52,480	97
4,696	\$26,393,928	\$995,702	\$8,100,794	\$167,847	\$2,505,936	\$6,371,997	\$551,108	\$42,796,340	\$8,867,462	98
\$17,755	5,245,421	257,035	1,821,107	81,249	62,644	466,338	115,960	5,434,827	945,761	99
21,345	\$17,800,204	\$852,138	\$5,319,911	\$117,713	\$245,439	\$1,871,129	\$408,072	\$19,928,981	\$4,047,340	100
\$43,497	21,345	1,767	54,475	1,713	85,149	53,164	262,496	262,496	29,394	101
1,203,933	\$43,497	\$4,308	\$135,722	\$6,746	\$5,501	\$160,577	\$908,645	\$908,645	\$60,022	102
\$32,268	1,203,933	1,080	277,040	8,225	515,501	5,379,300	70,122,672	70,122,672	627,328	103
3,440	\$32,268	\$20	\$7,863	\$123	\$6,746	\$22,174	\$1,858,506	\$1,858,506	\$12,995	104
\$73	3,440	210,000	210,000	92,073	276,632	44,000	1,000,000	6,797,642	247,751	105
355,736	\$73	\$1,484	\$1,484	\$1,480	\$3,887	\$800	\$20,000	\$59,099	\$9,239	106
\$791,339	1,822,381	1,481	328,070	17	944,545	632,011	6,612	3,996,409	1,547,704	107
1,051,625	\$3,219,065	\$2,980	\$464,167	\$95	\$1,654,916	\$1,245,001	\$21,752	\$6,734,840	\$3,721,010	108
\$13,562	49,778,450	7,242	5,617,000	1,736,600	1,736,600	5,264,400	1,089,400	1,089,400	4,694,937	109
9,783,760	\$365,788	\$87	\$43,061	\$19,582	\$19,582	\$49,520	\$13,710	\$13,710	\$54,163	110
\$88,033	334,644,158	9,418,067	181,445,329	1,727,956	57,479,588	252,736,044	3,146,320	1,203,607,302	39,070,488	111
33,000	\$2,506,515	\$64,685	\$1,144,335	\$20,620	\$530,797	\$2,473,082	\$29,980	\$11,246,285	\$412,191	112
\$330	366,957,482	10,954,146	141,168,626	2,455,906	1,428,800	50,097,473	9,550,137	232,376,679	56,990,593	113
10,500	\$1,938,476	\$58,637	\$733,078	\$17,516	\$13,535	\$378,573	\$76,804	\$1,732,550	\$465,882	114
\$3,150	10,500	8,400	8,400	8,400	8,400	8,400	8,400	8,400	8,400	115
1,200	\$3,150	\$1,014	\$1,014	\$1,014	\$1,014	\$1,014	\$1,014	\$1,014	\$1,014	116
\$100	1,200	1,014	1,014	1,014	1,014	1,014	1,014	1,014	1,014	117
\$1,609	\$5,741	\$320	\$320	\$4,495	\$4,495	\$4,519	\$26,488	\$26,488	\$20,761	118
\$24,538	\$3,006	\$12,532	\$251,173	\$300	\$21,390	\$66,622	\$261,322	\$261,322	\$41,190	119
\$600	\$476,045	\$8,372	\$312,326	\$2,762	\$50,466	\$224,305	\$40,662	\$1,184,566	\$62,669	120
\$63,865	\$762,725	\$8,372	\$312,326	\$2,762	\$50,466	\$224,305	\$40,662	\$1,184,566	\$62,669	121
22	4,887	153	2,225	59	47	768	109	4,080	1,228	123
264	1,053	9	183	4	230	639	43	2,722	2,564	124
35,491	501,119	8,640	134,515	4,335	129,249	147,516	6,409	1,005,918	194,100	125
115	526	9	142	5	87	192	11	808	866	126
\$497,235	\$17,693,697	\$606,364	\$4,669,393	\$74,480	\$1,957,499	\$3,668,933	\$229,568	\$31,133,292	\$4,664,594	127
\$414,703	\$16,415,634	\$630,197	\$4,419,094	\$68,944	\$1,831,454	\$3,389,354	\$213,415	\$29,640,012	\$4,352,770	128
224	1,135	18	304	11	149	353	35	1,507	1,770	129
3,950	47,947	1,451	16,649	463	7,249	13,975	1,086	90,347	37,504	130
142	938	8	149	2	32	96	16	563	298	131
2,737	40,744	420	3,033	90	1,040	3,673	547	28,579	3,598	132
2	38	6	26	6	6	20	1	76	7	133
35	769	656	656	120	120	534	20	2,123	140	134
104	317	22	208	11	220	403	24	2,131	2,058	135
1,178	6,291	931	7,375	373	5,922	9,712	519	58,384	28,658	136
55	2	1	1	1	1	1	1	30	1	137
6	6	4	4	4	4	4	4	4	4	138
43	43	22	22	22	22	22	22	22	22	139
45	100	10	10	10	10	50	1,034	1,034	12	140
225	1,145	20	305	11	149	354	35	1,513	1,773	141
61	439	2	61	5	41	117	7	670	935	142
155	582	10	191	5	103	198	22	725	798	143
9	102	7	49	1	4	37	6	92	37	144
	18	1	3	1	1	2		19	3	145
	4		1					6		146
								1		147
								1		148
								1		149
								1		150
								1		151
								1		152

MANUFACTURES.

TABLE 7.—FLOURING AND GRIST MILL PRODUCTS,

	North Dakota.	Ohio.	Oklahoma.	Oregon.	Pennsylvania.	Rhode Island.	South Carolina.
1 Number of establishments	97	1,150	55	158	2,719	47	556
2 Character of organization:							
3 Individual	51	619	24	79	2,145	40	462
4 Firm and limited partnership	23	458	13	48	521	6	80
5 Incorporated company	23	73	18	26	53	1	13
6 Miscellaneous							1
7 Capital:							
8 Total	\$1,359,296	\$12,581,150	\$1,080,661	\$3,172,997	\$19,516,993	\$582,211	\$652,553
9 Land	\$56,270	\$863,866	\$37,492	\$286,760	\$2,673,364	\$33,152	\$50,195
10 Buildings	\$249,080	\$2,811,132	\$227,740	\$523,045	\$5,073,724	\$112,757	\$153,014
11 Machinery, tools, and implements	\$331,242	\$4,684,325	\$351,007	\$866,978	\$5,741,177	\$94,058	\$383,934
12 Cash and sundries	\$522,754	\$4,271,827	\$464,422	\$1,496,214	\$6,028,728	\$232,244	\$64,810
13 Proprietors and firm members	100	1,621	46	172	3,210	52	531
14 Salaried officials, clerks, etc.:							
15 Total number	57	842	84	83	270	20	22
16 Total salaries	\$47,750	\$302,791	\$66,110	\$83,671	\$206,001	\$14,006	\$3,843
17 Officers of corporations—							
18 Number	23	71	22	18	49	1	4
19 Salaries	\$17,080	\$99,994	\$23,320	\$30,460	\$57,978		\$1,900
20 General superintendents, managers, clerks, etc.—							
21 Total number	34	271	62	65	221	20	18
22 Total salaries	\$30,670	\$202,797	\$42,790	\$53,211	\$148,028	\$14,006	\$6,943
23 Men—							
24 Number	33	219	61	60	169	19	18
25 Salaries	\$30,630	\$186,023	\$42,370	\$50,864	\$131,358	\$13,122	\$6,943
26 Women—							
27 Number	1	52	1	5	52	2	
28 Salaries	\$40	\$16,774	\$420	\$2,347	\$16,670	\$884	
29 Wage-earners, including pieceworkers, and total wages:							
30 Greatest number employed at any one time during the year	387	3,019	330	685	2,329	92	313
31 Least number employed at any one time during the year	253	2,496	226	373	2,475	78	637
32 Average number	293	2,438	253	443	2,195	80	281
33 Wages	\$159,335	\$1,220,398	\$125,855	\$246,001	\$1,061,369	\$37,678	\$70,458
34 Men, 16 years and over—							
35 Average number	293	2,393	256	434	2,180	80	281
36 Wages	\$159,335	\$1,209,466	\$125,755	\$242,801	\$1,059,307	\$37,678	\$70,458
37 Women, 16 years and over—							
38 Average number		41		8			
39 Wages		\$10,547		\$4,000			
40 Children, under 16 years—							
41 Average number		4	2	1	15		
42 Wages		\$385	\$100	\$100	\$2,562		
43 Average number of wage-earners, including pieceworkers, employed during each month:							
44 Men, 16 years and over—							
45 January	308	2,452	268	406	2,253	84	251
46 February	287	2,475	269	402	2,224	85	241
47 March	284	2,421	258	412	2,170	85	210
48 April	283	2,299	256	401	2,061	82	171
49 May	288	2,237	252	395	1,947	79	160
50 June	265	2,117	221	382	1,867	72	172
51 July	251	2,201	214	393	1,975	76	177
52 August	255	2,355	235	455	2,019	76	205
53 September	317	2,473	269	516	2,206	78	301
54 October	347	2,557	278	554	2,447	82	495
55 November	343	2,594	280	469	2,531	83	471
56 December	336	2,538	278	418	2,459	84	418
57 Women, 16 years and over—							
58 January		44		10			
59 February		47		8			
60 March		51		10			
61 April		50		9			
62 May		49		7			
63 June		46		8			
64 July		4		5			
65 August		37		5			
66 September		41		7			
67 October		45		8			
68 November		45		10			
69 December		43		10			
70 Children, under 16 years—							
71 January		4	2		15		
72 February		4	2		16		
73 March		4	2		14		
74 April		2	2		13		
75 May		2	2		15		
76 June		2	2		14		
77 July		2	2		14		
78 August		2	1		14		
79 September		2	1		15		
80 October		6	1		16		
81 November		9	1		17		
82 December		6	1		18		
83 Miscellaneous expenses:							
84 Total	\$65,890	\$626,642	\$86,925	\$173,784	\$607,372	\$22,292	\$15,742
85 Rent of works	\$860	\$36,651	\$530	\$12,093	\$171,092	\$5,197	\$2,094
86 Taxes, not including internal revenue	\$12,258	\$111,915	\$9,186	\$23,038	\$95,781	\$2,037	\$5,427
87 Rent of offices, insurance, interest, and all sundry expenses not hitherto included	\$52,772	\$478,068	\$77,209	\$142,818	\$400,199	\$5,738	\$3,161
88 Contract work		\$3		\$335	\$350	\$6,320	\$60

FLOURING AND GRIST MILL PRODUCTS.

BY STATES AND TERRITORIES: 1900—Continued.

South Dakota.	Tennessee.	Texas.	Utah.	Vermont.	Virginia.	Washington.	West Virginia.	Wisconsin.	Wyoming.	
120	1,618	289	80	211	1,726	85	737	717	10	1
58	1,180	176	23	155	1,336	81	514	427	3	2
38	392	74	21	50	857	22	212	228	2	3
28	46	39	35	6	32	32	11	62	5	4
1			1		1				5	5
\$1,754,752	\$5,981,037	\$4,273,490	\$1,101,885	\$1,289,497	\$4,682,688	\$2,693,282	\$2,126,470	\$9,611,764	\$162,675	6
\$110,530	\$554,033	\$233,704	\$141,395	\$172,155	\$346,139	\$180,715	\$173,478	\$1,018,100	\$3,775	7
\$341,255	\$1,287,592	\$994,377	\$244,900	\$327,215	\$1,815,407	\$379,052	\$461,466	\$2,819,496	\$46,800	8
\$701,122	\$2,254,527	\$1,452,368	\$450,228	\$276,826	\$1,893,212	\$645,677	\$1,012,528	\$3,189,046	\$65,600	9
\$601,845	\$1,834,885	\$1,542,541	\$265,362	\$513,301	\$1,127,870	\$1,487,938	\$479,008	\$2,585,122	\$41,600	10
133	1,933	329	59	251	1,372	75	948	903	5	11
53	219	135	50	29	101	107	24	226	8	12
\$47,950	\$192,431	\$145,698	\$32,320	\$20,664	\$67,665	\$123,193	\$14,481	\$248,657	\$10,240	13
9	42	34	14	6	16	25	3	45	3	14
\$10,130	\$58,313	\$50,010	\$6,635	\$6,120	\$12,720	\$39,328	\$2,520	\$52,010	\$2,820	15
44	177	101	36	23	85	82	21	181	5	16
\$37,790	\$134,118	\$95,688	\$26,135	\$14,544	\$54,945	\$33,870	\$11,961	\$196,647	\$7,420	17
42	167	99	36	19	76	76	19	164	5	18
\$36,770	\$129,666	\$94,360	\$26,135	\$13,142	\$51,211	\$30,405	\$11,326	\$190,230	\$7,420	19
2	10	2		4	9	6	2	17		20
\$1,020	\$4,452	\$328		\$1,402	\$3,734	\$3,465	\$635	\$6,417		21
862	1,829	1,003	209	261	1,287	630	487	1,942	22	22
240	1,413	656	146	212	1,150	410	482	1,447	14	23
295	1,154	705	167	190	790	488	314	1,412	14	24
\$155,742	\$544,722	\$398,908	\$82,979	\$31,363	\$323,398	\$231,310	\$154,623	\$717,133	\$11,800	25
294	1,144	705	166	187	783	474	308	1,398	14	26
\$155,342	\$543,181	\$398,908	\$82,666	\$30,318	\$327,515	\$278,450	\$153,603	\$714,217	\$11,360	27
				2	4	12		10		28
				\$445	\$1,000	\$2,400		\$2,312		29
1	10		1	1	3	2	6	4		30
\$400	\$1,541		\$313	\$100	\$378	\$400	\$1,020	\$654		31
307	1,219	707	173	204	788	473	309	1,307	17	32
311	1,150	706	170	197	740	468	293	1,346	14	33
302	1,082	655	168	204	692	468	275	1,310	13	34
286	980	601	162	190	664	452	255	1,205	15	35
271	891	573	157	177	614	418	245	1,424	15	36
244	832	541	149	163	604	387	241	1,302	12	37
230	1,025	675	181	160	629	417	285	1,294	14	38
267	1,092	690	149	166	672	440	305	1,333	14	39
310	1,233	787	179	175	855	527	340	1,526	10	40
333	1,337	838	132	192	1,014	548	377	1,527	15	41
335	1,437	854	191	204	1,084	553	399	1,605	14	42
332	1,395	837	177	207	1,038	529	375	1,457	18	43
				2	4	12		9		44
				2	4	12		5		45
				2	4	12		5		46
				2	4	12		5		47
				2	4	12		4		48
				2	4	12		2		49
				2	4	13		2		50
				3	8	12		8		51
				3	8	12		16		52
				2	4	12		24		53
				2	4	12		18		54
				2	4	12		18		55
1	11		1	1	2	1	2	4		56
1	10		1	1	3	3	4	4		57
1	11		1	1	3	3	5	4		58
1	10		1	1	2	3	6	4		59
1	8		1	1	3	3	9	4		60
1	9		1	1	2	1	8	3		61
2	9		1	1	12	1	8	3		62
2	7		1	1	3	1	7	4		63
2	9		1	1	3	1	7	4		64
2	11		1	1	2	1	7	4		65
2	12		1	1	2	1	6	4		66
2	14		1	1	1	1	4	4		67
\$75,006	\$273,851	\$243,390	\$58,425	\$48,985	\$145,014	\$167,070	\$55,972	\$697,714	\$5,243	68
\$2,092	\$18,426	\$4,068	\$7,156	\$3,245	\$29,277	\$10,017	\$3,653	\$45,435		69
\$15,661	\$36,210	\$32,774	\$9,660	\$9,790	\$30,370	\$16,551	\$13,197	\$72,686	\$1,406	70
\$56,017	\$218,369	\$205,953	\$40,359	\$30,950	\$85,292	\$137,922	\$34,117	\$579,343	\$3,837	71
\$1,236	\$346		\$1,250		\$75	\$2,580		\$300		72

SLAUGHTERING AND MEAT PACKING.

SLAUGHTERING AND MEAT PACKING.

By HARRY C. McCARTY.

The process of converting live stock into food for human consumption is an industry that, directly and indirectly, furnishes employment to a considerable portion of the population of the United States, and sustenance to all. The Census Office recognizes two classifications of this process—one, slaughtering, wholesale, not including meat packing, which involves the preparation of fresh meat; the other, slaughtering and

meat packing, wholesale, which comprehends the packing of meat and the preparation of the various other animal products and by-products. Up to the census of 1890 these two branches were reported together under various names, but at that time the classification was subdivided as indicated above. This classification was also adopted at the Twelfth Census in 1900. The figures of these subdivisions are united in Table 1.

TABLE 1.—COMBINED SLAUGHTERING AND MEAT PACKING: 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.....	921	1,118	872	768	259	185	117.6	28.2	18.5	196.5	40.0
Capital.....	\$189,198,264	\$116,837,504	\$49,419,213	\$24,224,692	\$10,158,362	\$3,482,500	61.9	136.5	104.0	138.5	191.7
Salaries, officials, clerks, etc., number.....	10,227	23,971	(3)	(3)	(3)	(3)	187.5	.....	.....	.....	.....
Salaries.....	\$10,123,247	\$4,536,600	(3)	(3)	(3)	(3)	123.1	.....	.....	.....	.....
Wage-earners, average number.....	68,534	48,976	27,297	8,366	5,058	3,276	55.8	61.1	225.3	65.4	54.4
Total wages.....	\$33,457,013	\$24,304,976	\$10,503,580	\$2,553,447	\$1,019,266	\$1,231,536	37.7	131.3	311.5	150.5	117.2
Men, 16 years and over.....	63,922	42,285	26,113	7,906	5,039	3,267	61.2	61.9	230.3	66.9	54.2
Wages.....	\$32,239,847	\$23,837,890	(3)	(3)	(3)	(3)	35.0	.....	.....	.....	.....
Women, 16 years and over.....	2,945	990	.....	202	19	9	197.5	.....	100.0	933.2	111.1
Wages.....	\$853,813	\$285,554	.....	(3)	(3)	(3)	199.0	.....	.....	.....	.....
Children, under 16 years.....	1,667	700	1,184	258	(3)	(3)	133.1	40.9	858.9	.....	.....
Wages.....	\$863,953	\$181,532	(3)	(3)	(3)	(3)	176.3	.....	.....	.....	.....
Miscellaneous expenses.....	\$24,060,412	\$15,716,735	(4)	(4)	(4)	(4)	58.1	.....	.....	.....	.....
Cost of materials used.....	\$683,583,577	\$480,992,211	\$267,738,902	\$61,674,024	\$23,564,433	\$9,451,096	42.1	79.6	324.1	161.7	149.8
Value of products.....	\$785,562,433	\$501,611,668	\$303,562,413	\$75,826,500	\$23,441,776	\$11,981,642	39.9	85.0	300.3	157.5	145.7

¹ Decrease.

² Includes proprietors and firm members, with their salaries; number only reported in 1900, but not included in this table. (See Table 12.)

³ Not reported separately.

⁴ Not reported.

The development of this industry during the half century covered by the table has been almost phenomenal. The settlement of the Western country and the consequent expansion of territory devoted to stock raising; the extension of railroads and the increased facility of communication; the methods devised to insure preservation of meats, such as improved methods of curing, and the introduction and improvement of mechanical and chemical processes of refrigeration, rendering summer packing possible; the utilization of every part of the animal; and the adoption of labor-saving devices, are among the factors that have contributed to its growth. In the fifty years the number of establishments increased from 185 to 921; the capital invested, from \$3,482,500 to \$189,198,264; the number of wage-earners, from 3,276 to 68,534; the wages paid,

from \$1,231,536 to \$33,457,013; the cost of materials used, from \$9,451,096 to \$683,583,577; and the value of products, from \$11,981,642 to \$785,562,433. The average amount of capital invested per establishment grew from \$18,824 in 1850 to \$205,427 in 1900; the average yearly earnings of the wage-earners grew from \$376 to \$488; and the average value of products per establishment rose from \$64,766 to \$852,945. The growth was steady.

During the ten years covered by the Eighth Census, taken in 1860, the center of the meat industry was at Cincinnati and in the Ohio Valley. The average amount of capital invested per establishment increased from \$18,824 to \$39,221, or 108.4 per cent, while the average value of products per establishment increased from \$64,766 to \$113,675, or 75.5 per cent. From that time

concentration in definite centers was a marked feature of the growth. The effects of the industrial crisis of 1857, with its wholesale reduction of wages, is seen by the difference in the average yearly wage paid in 1850 and 1860. In 1850 it was \$376, which decreased to \$202 in 1860, a decrease of 46.3 per cent. The winter packing in six principal Western centers grew from 720,500 hogs in 1850 to 992,310 hogs in 1860.

In the following decade, from 1860 to 1870, a still greater relative growth is shown. The number of establishments increased 509, or 196.5 per cent, the largest increase in this item recorded in the half century. The sum of \$14,066,330 was added to the capital invested; 3,308 wage-earners more than formerly found employment, and the benefit to the stock raiser is shown approximately in the increase of \$38,109,591, or 161.7 per cent paid for materials used. The value of the product increased \$46,384,724, or 157.5 per cent. It should be remembered, however, that these values were expressed in a currency which was at a discount in gold, and should therefore be reduced about one-fifth for purposes of comparison with the other census years. This decade saw the beginning of the dressed-beef trade. The refrigerator car was invented, and in September, 1869, the first cargo of dressed beef was shipped from Chicago to Boston. The capital invested per establishment decreased from \$39,221 to \$31,543, or 19.6 per cent. This decrease was due principally to the large increase in the number of small establishments. The average value of products per establishment decreased from \$113,675 to \$98,732, or 13.1 per cent.

The development in the decade from 1870 to 1880 was due primarily to the improvement in various refrigerating processes, and the consequent inauguration of summer packing on a large scale. Up to 1872, in the pork-packing branch of the industry, summer slaughtering and packing had not assumed large proportions, but in the packing year 1872-1873, 505,500 hogs were killed during the summer season. The increase was steady until the summer season of 1879-1880, when 4,051,248 hogs were killed and packed. In 1872-1873 summer packing amounted to 8.5 per cent of the pack for the entire year, while in 1879-1880 it had grown to 37.7 per cent. During the same period, winter packing grew from 5,410,314 hogs in 1872-1873 to 6,950,451 hogs in 1879-1880. Winter packing increased 28.5 per cent, while summer packing increased 701.6 per cent. This latter growth affords an illustration of the influence that refrigeration had on the growth of the meat trade. The yearly pack increased from 5,915,814 hogs in 1872-1873 to 11,001,699 in 1879-1880, or 86 per cent. The dressed-beef trade, too, was given an impetus by the introduction of the refrigerating processes. Up to 1875

this trade had been of minor importance except for local consumption, but with the introduction of the refrigerator car, allowing shipment to markets at a distance from the place of slaughtering, it assumed large proportions. The beginning of the export of fresh beef dates from 1876. The canning of beef was attempted in Chicago in the sixties, and had some growth, but it was not until 1879 that it was taken up on a large scale. The decrease in the number of women employed, and the increase in the number of children, is a noticeable feature. The table shows, however, a large increase in all other items.

In the ninth decade (1880-1890), the capital invested and the wages had very nearly the same growth per cent, although the total amount of wages was a little more than one-fifth the amount of capital invested. The value of products increased \$258,049,255, or 85 per cent. The number of establishments increased faster than in the preceding decade. The average amount of the capital invested per establishment increased from \$53,673 in 1880 to \$104,551 in 1890; the average value of products per establishment increased from \$348,122 to \$502,336, an increase of 44.3 per cent. This decade is the only one in which the growth per cent of the value of products exceeded the growth per cent of the cost of materials used. This was due to the fact that the packer began to utilize the waste that was formerly thrown away, thus giving an increased value to the product, while the value of the stock, as purchased from the stock raiser, did not increase in corresponding ratio.

In the tenth decade (1890-1900), the progress of concentration went steadily on. In 1900 there were 921 establishments, with an invested capital of \$189,198,264, an average capital of \$205,427, as against 1,118 establishments in 1890, with a capital of \$116,887,504, and an average of \$104,551 invested per establishment, or an increase in the individual establishment in the ten years of 96.5 per cent. These figures show this period to be the most rapid in its tendency toward concentration. The more extended use and consequent increased operating expenses of the refrigerator car system, owned by the packers, explains part of the increase in the miscellaneous expenses. In 1890 the miscellaneous expenses were 2.8 per cent of the value of the product, and 3.1 per cent in 1900. The largest percentage of increase appears in the number of women and children employed and the wages paid them. The number of women employed increased 197.5 per cent, and their wages 199 per cent; the number of children employed increased 138.1 per cent, and their wages 176.3 per cent.

A reference to Table 2, showing the comparative summary, by states, is instructive as indicating the geographical location of this industry, and, roughly, its movement during the decade 1890-1900.

SLAUGHTERING AND MEAT PACKING.

TABLE 2.—COMBINED SLAUGHTERING AND MEAT PACKING: COMPARATIVE SUMMARY, BY STATES, 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.
						Total.		Men, 16 years and over.		Women, 16 years and over.		Children, under 16 years.				
						Number.	Salaries.	Average number.	Wages.	Average number.	Wages.	Average number.	Wages.			
United States	1900	921	\$189,198,264	10,227	\$10,123,247	68,534	\$33,457,018	63,922	\$32,230,847	2,945	\$853,818	1,667	\$363,353	\$24,060,412	\$683,588,577	\$785,562,433
	1890	1,118	116,887,504	18,971	14,536,600	42,975	24,304,976	42,285	23,887,890	990	285,554	700	131,532	15,716,735	480,962,211	561,611,668
California	1900	58	3,913,081	180	254,567	925	544,659	915	538,611	10	6,048			441,210	13,555,445	15,717,712
	1890	50	2,220,536	144	190,430	436	333,697	435	333,457			1	240	290,208	8,075,060	9,768,858
Colorado	1900	14	1,380,518	48	60,896	261	170,744	259	170,244	2	500			56,384	3,721,610	4,343,983
	1890	5	348,660	14	21,668	81	58,424	81	58,424					29,665	1,872,849	2,184,580
Connecticut	1900	12	562,564	87	36,662	380	174,289	378	173,829	2	410			76,721	3,143,590	3,663,393
	1890	15	662,885	42	46,527	384	190,559	383	190,039	1	520			42,365	3,428,072	4,153,378
Delaware	1900	4	234,420	22	13,610	87	20,398	36	20,242			1	156	9,899	442,389	521,076
	1890	5	149,400	6	4,840	40	20,210	40	20,210					3,522	250,750	320,206
Dist. Columbia	1900	7	248,200	32	15,784	116	63,607	114	62,931	2	676			19,935	2,013,827	2,210,860
	1890	24	118,230	27	19,970	82	37,113	80	36,697			2	416	11,029	664,753	8,553,439
Georgia	1900	7	115,827	84	20,236	104	32,440	102	32,115	1	75	1	260	11,234	483,695	591,227
	1890															
Illinois	1900	64	71,229,262	4,226	4,424,285	27,861	14,044,838	25,792	13,462,377	1,473	427,208	596	155,268	14,211,393	246,713,309	287,922,277
	1890	81	40,807,115	984	1,087,807	17,932	10,500,038	17,022	10,271,345	502	152,412	408	76,281	6,463,616	180,903,912	212,291,332
Indiana	1900	36	8,800,284	303	314,603	3,597	1,565,752	3,157	1,455,428	387	101,499	58	8,825	530,056	88,608,841	43,862,273
	1890	21	5,346,255	142	139,559	2,107	1,018,104	1,956	983,724	117	29,196	34	5,184	1,358,233	24,425,470	27,913,840
Iowa	1900	27	6,351,353	193	197,376	2,887	1,208,167	2,643	1,163,421	29	9,906	215	34,840	441,986	21,556,644	25,695,044
	1890	29	4,485,020	158	189,262	2,575	1,122,695	2,518	1,103,755	29	2,100	50	11,840	526,765	20,665,223	23,925,576
Kansas	1900	14	16,486,177	1,841	1,631,896	8,117	3,575,049	7,170	3,330,031	661	190,802	286	53,616	2,003,771	67,908,960	77,411,838
	1890	18	11,086,058	205	253,350	5,018	2,646,309	4,698	2,554,568	217	69,581	103	22,160	3,322,200	36,120,014	44,696,077
Kentucky	1900	28	1,323,976	62	61,799	511	214,271	507	213,711	4	540			105,694	4,444,621	5,177,167
	1890	26	1,447,945	55	49,617	414	130,767	413	130,663			1	104	135,116	2,604,664	3,374,011
Maine	1900	11	132,680	6	2,840	38	17,900	37	17,600	1	300			6,819	467,031	553,742
	1890	7	70,875	10	6,450	23	15,238	23	15,238					6,057	354,607	418,811
Maryland	1900	32	1,548,488	68	48,804	597	276,413	584	273,819	10	2,118	3	476	109,017	7,109,079	8,046,369
	1890	17	993,051	55	55,724	389	182,568	382	181,812	3	650	4	606	70,159	3,969,563	4,070,600
Massachusetts	1900	22	11,314,075	220	250,296	2,748	1,313,077	2,724	1,311,395	18	3,532	11	3,100	591,102	28,040,069	31,833,433
	1890	24	7,137,735	113	130,806	1,779	820,409	1,769	824,277	10	2,132			497,332	10,372,177	20,221,645
Michigan	1900	29	1,433,351	71	65,661	456	230,637	453	230,137	2	450	1	50	87,291	4,770,640	5,337,417
	1890	30	1,026,223	87	70,209	329	163,089	326	167,408	2	481	1	200	58,733	3,446,164	3,938,978
Minnesota	1900	20	1,355,011	125	102,709	668	303,977	650	299,105	9	3,000	9	1,872	90,796	6,823,255	7,810,555
	1890	18	741,346	41	43,064	222	119,792	216	113,710	1	800	5	732	60,453	2,062,957	2,510,431
Missouri	1900	37	7,944,033	242	253,775	3,102	1,440,742	2,977	1,416,457	8	2,160	117	22,125	364,267	39,108,137	43,040,885
	1890	68	4,986,780	175	223,096	1,204	645,322	1,189	632,202	78	12,620	2	500	385,743	15,142,352	18,320,193
Montana	1900	5	241,826	9	12,600	87	33,698	35	32,493	2	1,200			7,798	321,070	374,640
	1890															
Nebraska	1900	12	16,524,895	721	634,240	6,090	2,990,863	5,602	2,862,441	173	57,425	315	70,997	1,591,516	63,048,136	71,230,366
	1890	7	5,069,499	146	142,935	2,144	1,191,595	2,075	1,173,596	16	4,800	53	7,900	525,618	20,296,950	23,941,144
New Jersey	1900	41	1,583,339	100	94,080	558	331,825	556	331,565			2	260	164,281	12,849,902	14,046,217
	1890	50	1,325,650	136	138,566	610	437,322	610	437,322					157,625	16,233,631	17,313,166
New York	1900	110	15,357,075	602	584,386	3,099	1,846,434	3,009	1,820,954	79	23,636	11	1,844	1,274,534	50,523,136	57,431,293
	1890	181	12,605,400	559	730,026	3,744	2,434,142	3,725	2,430,284	15	3,402	4	390	960,083	67,560,730	76,042,151
North Dakota	1900	3	104,371	8	8,760	34	15,977	33	15,677	1	300			8,975	198,175	256,160
	1890															
Ohio	1900	71	5,355,626	313	266,001	1,765	811,398	1,717	798,514	29	8,656	19	4,228	639,008	17,927,953	20,660,780
	1890	138	3,532,540	237	301,369	1,346	632,531	1,335	679,325	6	2,300	5	456	284,933	14,341,520	17,012,198
Oregon	1900	9	760,448	41	47,130	172	87,821	166	86,441	1	480	5	900	35,768	1,350,361	1,638,450
	1890	7	1,587,600	21	39,500	107	91,500	105	91,150	1	100	1	250	37,548	1,552,760	1,973,625
Pennsylvania	1900	111	6,548,577	376	317,153	1,609	920,430	1,646	914,467	13	3,895	10	1,828	526,972	21,601,810	25,238,772
	1890	242	6,180,789	388	396,326	1,532	772,422	1,568	763,524	11	3,100	3	798	316,572	18,573,330	21,931,604
Rhode Island	1900	7	759,850	16	17,636	208	107,104	206	106,268			3	336	44,736	2,246,780	2,503,466
	1890	10	753,100	49	50,630	242	133,329	239	134,579			3	750	45,149	4,213,329	4,627,366
Tennessee	1900	8	651,740	15	17,365	156	60,945	152	60,775	4	170			25,268	1,453,128	1,671,218
	1890	3	54,500	8	6,120	26	11,700	26	11,700					1,782	124,090	150,742
Texas	1900	12	1,232,267	49	61,797	414	179,505	394	173,433	19	5,837	1	200	66,749	3,170,536	3,904,491
	1890															
Utah	1900	8	117,027	6	2,472	42	13,653	42	13,653					5,940	335,353	453,456
	1890	4	302,134	12	14,770	62	46,984	61	45,840			1	144	16,096	457,064	545,200
Virginia	1900	4	159,500	19	14,340	65	28,884	65	28,884					3,938	637,730	743,620
	1890															

¹ Includes proprietors and firm members, with their salaries; number only reported in 1900 but not included in this table. (See Table 12.)

² Included in "all other states."

³ None reported in 1890.

TABLE 2.—COMBINED SLAUGHTERING AND MEAT PACKING: COMPARATIVE SUMMARY, BY STATES, 1890 AND 1900—Continued.

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.
						Total.		Men, 16 years and over.		Women, 16 years and over.		Children, under 16 years.				
						Number.	Salaries.	Average number.	Wages.	Average number.	Wages.	Average number.	Wages.			
Washington	1900	18	\$1,014,086	88	\$81,116	231	\$156,531	229	\$155,631	2	\$900	.....	.....	\$80,008	\$4,252,435	\$4,892,857
	1890	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
West Virginia.....	1900	3	313,000	16	11,800	84	42,646	76	40,642	6	1,620	2	\$384	4,623	1,138,954	1,337,578
	1890	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Wisconsin.....	1900	13	3,811,616	123	145,333	1,367	563,208	1,365	562,883	2	375	.....	.....	408,991	11,889,524	13,649,750
	1890	22	2,622,821	63	69,179	360	392,688	342	389,033	3	1,400	15	2,250	108,512	9,176,678	10,346,308
All other states and territories. ²	1900	14	216,671	15	10,270	137	59,426	131	58,113	.....	.....	6	1,808	12,779	1,188,352	1,374,953
	1890	16	625,277	49	43,084	177	94,384	168	93,709	5	400	4	275	44,616	2,082,050	2,485,979

¹ Included in "all other states."

² Includes establishments distributed as follows: 1890—Florida, 2; Georgia, 1; New Hampshire, 2; North Carolina, 1; South Dakota, 2; Vermont, 1; Virginia, 1; Washington, 4; West Virginia, 2; 1900—Alabama, 2; Arkansas, 2; North Carolina, 1; New Hampshire, 1; New Mexico, 2; Oklahoma, 2; South Carolina, 1; South Dakota, 1; Wyoming, 2.

In value of products Illinois was the leading state in both years. As between the two census years it is seen that Kansas advanced from third place to second, New York dropped from second place to fourth, Nebraska advanced from fourth to third, Indiana occupied fifth place in both years, Iowa fell from sixth to eighth, Massachusetts advanced from eighth to seventh, and California from thirteenth to eleventh. The list of the leading 13 states, in their order, in 1890 is as follows: Illinois, New York, Kansas, Nebraska, Indiana, Iowa, Pennsylvania, Massachusetts, Missouri, New Jersey, Ohio, Wisconsin, and California; in 1900 the order was: Illinois, Kansas, Nebraska, New York, Indiana, Missouri, Massachusetts, Iowa, Pennsylvania, Ohio, California, New Jersey, and Wisconsin. The falling off in the value of products in New York and New Jersey is noteworthy. Of these 13 states the greatest gain per cent was made by Nebraska, with 146.3 per cent, followed by Missouri, with 134.9 per cent. During the decade Illinois made by far the greatest absolute gain, \$75,630,895, an amount nearly equal to the entire value of products for Kansas, the second state in 1900. In absolute gain, Nebraska, with \$42,339,222, held second place; Kansas, with \$32,715,806, third; and Missouri, with \$24,720,692, fourth; Indiana came next with \$15,948,433. In these 5 states the number of establishments decreased from 195 to 163; their capitalization increased by \$53,748,944, of which Illinois was credited with \$30,422,147, or more than the increase of the other four put together. The products of the leading thirteen states increased \$198,206,503, which was 88.5 per cent of the total increase of \$223,950,765 reported for the country.

Table 2 shows the expansion that has taken place in this industry in the Middle West. Illinois is far in the lead. This state in 1900 had 6.9 per cent of the establishments, 37.6 per cent of the capital, 40.7 per cent of the wage-earners, paid 42 per cent of the wages, and

produced 36.7 per cent of the products. The industry in the Southern states can hardly be said to exist in an industrial sense, except as a so-called "neighborhood" industry. The Northeastern states are coming more and more to rely upon the West as the source of their meat supply. The decline in New York of 25.1 per cent in the value of products, and in New Jersey of 21.1 per cent, shows that the Western dressed meat is supplying much of the demand that was formerly filled by the Eastern dressed article.

In the extreme West the fact that the production of Oregon decreased from \$1,978,625 to \$1,638,480, or 17.2 per cent, while that of California increased from \$9,768,858 to \$15,717,712, or 60.9 per cent, is noteworthy. No comparison can be made for the state of Washington, owing to the fact that the figures for 1890 can not be shown without disclosing the operations of individual establishments. The table shows a growth of 65 establishments in Maryland. Minnesota shows a growth of \$5,300,124, or 211.1 per cent, in the value of products. Texas reported no establishments in 1890, but in 1900 returned 12 establishments, with a capital invested of \$1,232,267, employing 414 wage-earners, who earned \$179,505 during the census year, and produced a product valued at \$3,904,491. Utah, although reporting an increase of 4 establishments (from 4 to 8), shows a decrease of \$91,744, or 16.8 per cent, in the value of products. The progress of concentration is shown in Pennsylvania, where the number of establishments decreased from 242 to 111, or 54.1 per cent. Delaware shows a loss of 1 establishment, but an increase in the value of products from \$320,206 to \$521,076, an increase of \$200,870, or 62.7 per cent. The number of establishments in the District of Columbia decreased from 24 to 7, but the value of products increased \$1,352,421, or 157.5 per cent. Connecticut lost 3 establishments and \$489,985 in value of products, or 11.8 per cent.

In consulting Table 3 it should be borne in mind that these figures do not represent an actual increase or decrease in amounts, but a change as compared with the figures for the industry for the entire country.

TABLE 3.—COMBINED SLAUGHTERING AND MEAT PACKING: PERCENTAGES OF CAPITAL AND PRODUCTS FOR THIRTEEN STATES LEADING IN 1900 IN VALUE OF PRODUCTS TO TOTAL CAPITAL AND TOTAL VALUE OF PRODUCTS, 1890 AND 1900.

STATES.	PER CENT OF TOTAL CAPITAL OF THE UNITED STATES.		PER CENT OF TOTAL VALUE OF PRODUCTS OF THE UNITED STATES.	
	1890	1900	1890	1900
Illinois.....	34.9	37.6	37.8	36.7
Kansas.....	9.5	8.7	8.0	9.9
Nebraska.....	4.8	8.7	5.2	9.1
New York.....	10.8	8.1	13.6	7.3
Indiana.....	4.6	4.7	5.0	5.6
Missouri.....	4.8	4.2	3.3	5.5
Massachusetts.....	6.1	6.0	3.6	4.0
Iowa.....	3.8	3.4	4.2	3.3
Pennsylvania.....	5.3	3.5	3.9	3.2
Ohio.....	3.1	2.8	3.0	2.6
California.....	1.9	2.1	1.7	2.0
New Jersey.....	1.6	0.8	3.2	1.8
Wisconsin.....	2.2	2.0	1.8	1.7

This table presents the percentage of capital invested and of value of products in the 13 states leading in

value of products in 1890 and 1900, as compared with the totals of these items for the United States. It shows the figures of Table 2 in this regard, expressed to make clearer the relative importance of these states. Illinois gained 2.7 per cent in capital invested, but lost 1.1 per cent in value of products. A large decrease is shown in New York, where the capital invested fell off 2.7 per cent and the products 6.3 per cent. Kansas shows a loss of 0.8 per cent in capital invested, but a gain of 1.9 per cent in value of products. Nebraska shows a gain of 4.4 per cent in capital and 3.9 per cent in value of products. Massachusetts shows a falling off of 0.1 per cent in capital invested, but a gain of 0.4 per cent in value of products. The gain in California indicates a normal and steady growth, due to increase of population and of export demand. Missouri shows a slight loss per cent in capital invested, but a considerable gain in value of products. New Jersey suffered a loss in both items. In connection with this table it should be noticed that although in 1900 Iowa led in the production of hogs, and stood second in the number of cattle raised, it was eighth, as shown by Table 3, in the value of meat products. This indicates the tendency for slaughtering and packing operations to concentrate in well-defined centers, as shown in Table 4.

TABLE 4.—COMBINED SLAUGHTERING AND MEAT PACKING: COMPARATIVE SUMMARY OF CITIES HAVING A PRODUCT VALUED AT OVER \$1,000,000, 1880 TO 1900.¹

CITIES.	Year.	Number of establishments.	Capital.	SALARIED OFFICIALS, CLERKS, ETC.		WAGE-EARNERS.		Miscellaneous expenses.	Cost of materials used.	Value of products.
				Number.	Salaries.	Average number.	Total wages.			
Allegheny, Pa.....	1900	8	\$1,497,666	52	\$57,800	438	\$238,028	\$111,646	\$3,338,805	\$3,906,807
	1890	7	140,860	213	29,750	42	17,390	7,104	238,876	294,065
	1880									
Baltimore, Md.....	1900	78	1,344,953	57	44,724	508	233,898	99,546	6,257,558	7,066,461
	1890	14	958,521	253	253,904	368	171,208	75,232	3,668,147	4,811,412
	1880	6	705,000	(²)	(³)	194	85,300	(⁴)	2,559,662	2,742,645
Boston, Mass.....	1900	6	40,915	14	8,996	34	23,030	14,006	1,144,276	1,329,010
	1890	8	452,087	219	234,507	199	140,466	22,175	2,524,447	2,782,823
	1880	21	918,000	(²)	(³)	211	158,263	(⁴)	6,509,139	7,096,777
Brooklyn Borough, N. Y.....	1900	10	618,825	35	32,660	227	136,777	59,293	3,783,042	4,126,632
	1890	37	1,672,528	295	215,258	449	335,959	120,002	11,640,449	13,087,354
	1880	28	1,126,000	(²)	(³)	260	194,568	(⁴)	7,340,450	8,010,492
Buffalo, N. Y.....	1900	24	5,173,694	203	146,523	928	436,869	342,373	10,026,676	11,601,167
	1890	34	2,915,280	290	296,374	766	377,849	128,844	8,437,164	9,951,044
	1880	6	372,500	(²)	(³)	239	170,433	(⁴)	3,028,924	3,441,230
Chicago, Ill.....	1900	38	67,137,569	4,010	4,238,994	25,845	12,375,676	13,329,325	218,241,331	256,527,949
	1890	57	39,222,195	2,900	2,003,668	16,975	10,002,573	6,213,023	173,568,365	203,606,402
	1880	70	3,455,200	(²)	(³)	7,478	3,392,748	(⁴)	74,546,319	85,324,371
Cincinnati, Ohio.....	1900	27	2,893,064	98	103,880	856	414,621	437,339	8,306,652	10,370,177
	1890	33	2,215,490	2149	2,173,404	675	373,859	152,452	7,373,703	9,511,183
	1880	49	4,074,682	(²)	(³)	1,143	338,302	(⁴)	10,454,991	11,614,810
Cleveland, Ohio.....	1900	10	1,327,288	173	135,836	577	235,023	175,132	6,759,023	7,514,470
	1890	13	744,465	273	279,080	332	200,981	30,570	4,333,627	5,582,666
	1880	12	447,000	(²)	(³)	416	192,892	(⁴)	4,886,771	6,427,938
Dayton, Ohio.....	1900	10	242,925	12	9,900	147	75,881	10,332	959,661	1,097,525
	1890	4	63,750	215	214,500	42	23,700	3,342	265,436	336,923
	1880	5	50,500	(²)	(³)	29	20,980	(⁴)	178,136	236,318
Denver, Colo.....	1900	7	333,618	27	36,496	171	103,274	33,184	2,404,458	2,853,947
	1890	3	200,150	29	213,920	59	44,322	23,946	1,415,849	1,625,711
	1880	4	49,000	(²)	(³)	40	15,990	(⁴)	536,920	590,945
Detroit, Mich.....	1900	16	1,184,776	61	59,581	338	177,856	70,537	3,628,440	4,047,749
	1890	19	313,023	278	270,526	280	145,238	46,009	2,953,937	3,404,424
	1880	7	485,000	(²)	(³)	147	79,067	(⁴)	1,418,426	1,721,231

¹The following cities, having a product valued at over \$1,000,000, are not included in the above table, because in 1900 they had less than 3 establishments, except Patterson, N. J., and Seattle, Wash., which cities, together with those of 1880 and 1890 shown below, are not included because they are no comparative figures. These establishments are distributed as follows: 1890—Cambridge, Mass., 2; Cedar Rapids, Iowa, 1; Chicopee, Mass., 1; Clinton, Iowa, 1; Hammond, Ind., 1; Los Angeles, Cal., 1; Marshalltown, Iowa, 1; Nebraska City, Neb., 1; New Haven, Conn., 2; Orange, Conn., 1; Ottumwa, Iowa, 1; Paterson, N. J., 3; Seattle, Wash., 3; Topeka, Kans., 1; Wheeling (and Ohio County), W. Va., 2; Wichita, Kans., 1. 1890—Los Angeles, Cal., 6. 1880—Cambridge, Mass., 5; Wheeling, W. Va., 4; Worcester, Mass., 5.
²Includes proprietors and firm members, with their salaries; number only reported in 1900, but not included in this summary.
³Not reported separately.
⁴Not reported.

MANUFACTURES.

TABLE 4.—COMBINED SLAUGHTERING AND MEAT PACKING: COMPARATIVE SUMMARY OF CITIES HAVING A PRODUCT VALUED AT OVER \$1,000,000, 1880 TO 1900¹—Continued.

CITIES.	Year.	Number of establishments.	Capital.	SALARIED OFFICIALS, CLERKS, ETC.		WAGE-EARNERS.		Miscellaneous expenses.	Cost of materials used.	Value of products.
				Number.	Salaries.	Average number.	Total wages.			
East St. Louis, Ill.....	1900	3	\$3,183,288	166	\$188,259	2,159	\$985,497	\$305,594	\$25,370,548	\$27,070,818
	² 1890	3	1,550,000	(²)	(²)	2,540	680,019	(²)	6,104,019	7,950,000
Indianapolis, Ind.....	1900	7	3,807,246	186	128,884	1,943	783,226	218,989	17,400,330	18,781,442
	1890	8	990,220	⁴ 61	⁴ 48,000	827	386,472	108,015	5,408,063	6,295,975
	1880	7	1,618,000	(²)	(²)	892	345,236	(²)	7,890,208	9,014,422
Jersey City, N. J.....	1900	13	473,485	27	26,882	183	180,707	53,342	5,872,946	6,243,217
	1890	18	691,640	⁴ 57	⁴ 88,332	240	197,304	51,295	10,712,166	11,856,511
	1880	20	1,272,200	(²)	(²)	433	303,800	(²)	17,404,689	18,551,783
Kansas City, Kans.....	1900	8	15,114,601	1,771	1,579,436	7,713	3,381,510	1,919,411	65,082,581	78,787,771
	1890	6	8,964,586	⁴ 159	⁴ 180,378	4,458	2,378,153	3,058,931	32,284,123	39,927,192
	1880	8	437,500	(²)	(²)	288	160,500	(²)	789,071	965,000
Louisville, Ky.....	1900	12	1,218,426	52	45,789	449	189,417	100,312	3,328,486	4,444,978
	1890	12	1,272,415	⁴ 83	⁴ 22,967	327	101,328	124,475	2,023,501	2,555,154
	1880	23	2,144,500	(²)	(²)	366	141,092	(²)	3,438,459	4,287,158
Milwaukee, Wis.....	⁵ 1900	7	3,578,690	116	140,333	1,293	530,488	385,102	11,405,186	13,045,970
	1890	9	2,291,971	⁴ 43	⁴ 56,728	742	358,830	96,989	8,685,671	9,704,966
	1880	7	789,000	(²)	(²)	953	187,596	(²)	5,520,618	6,099,480
Newark, N. J.....	1900	10	363,777	39	32,708	176	94,993	40,275	3,276,004	3,637,896
	1890	14	511,910	⁴ 84	⁴ 56,640	207	141,144	80,032	3,205,374	3,606,696
	1880	7	232,000	(²)	(²)	88	58,322	(²)	1,368,288	1,527,650
New York (Manhattan and Bronx boroughs)....	1900	42	8,648,436	320	378,194	1,705	1,166,749	829,740	34,230,835	38,752,636
	1890	56	7,143,468	⁴ 282	⁴ 418,226	2,165	1,677,238	639,538	44,761,605	50,251,604
	1880	58	1,801,000	(²)	(²)	895	675,521	(²)	27,763,677	29,297,627
Pawtucket, R. I.....	1900	3	501,480			84	47,280	12,129	1,045,754	1,134,946
	1890	3	495,000	⁴ 23	⁴ 30,262	102	56,650	31,258	2,670,000	2,895,191
	² 1880									
Philadelphia, Pa.....	1900	58	1,882,732	141	111,925	617	372,610	221,674	10,321,065	12,020,462
	1890	202	3,722,207	⁴ 264	⁴ 291,776	908	514,177	207,080	13,674,466	16,094,498
	1880	19	1,965,625	(²)	(²)	359	165,858	(²)	7,042,781	7,860,114
Pittsburg, Pa.....	1900	5	786,810	47	42,713	150	93,950	28,001	1,779,600	2,054,521
	1890	4	321,500	⁴ 18	⁴ 21,600	61	33,012	37,261	1,149,965	1,341,900
	1880	9	693,000	(²)	(²)	110	41,379	(²)	1,302,167	1,451,816
Portland, Oreg.....	1900	4	604,282	34	39,790	121	54,025	29,700	1,109,989	1,806,496
	1890	5	439,600	⁴ 18	⁴ 35,100	82	78,800	16,718	1,222,330	1,570,935
	² 1880									
Providence, R. I.....	1900	3	252,720	16	17,636	122	58,024	30,597	1,155,026	1,316,220
	1890	6	245,500	⁴ 26	⁴ 20,418	136	76,636	13,641	1,520,940	1,695,105
	1880	6	273,000	(²)	(²)	89	44,362	(²)	1,318,116	1,458,740
St. Joseph (including South St. Joseph), Mo.....	1900	5	5,200,899	131	106,001	2,216	980,749	190,550	27,645,318	29,794,973
	² 1890									
	⁶ 1880	5	184,500	(²)	(²)	204	37,290	(²)	1,224,208	1,439,843
St. Louis, Mo.....	1900	25	2,608,249	103	142,573	841	448,287	171,902	11,120,325	12,943,376
	1890	60	3,216,571	⁴ 129	⁴ 170,226	681	366,011	98,539	9,864,639	12,048,114
	1880	82	1,243,000	(²)	(²)	584	269,763	(²)	7,085,909	8,424,064
St. Paul, Minn.....	1900	6	250,908	16	11,390	84	42,252	21,097	989,749	1,288,364
	1890	6	443,600	⁴ 16	⁴ 15,700	62	35,476	14,067	659,686	783,370
	1880	5	165,000	(²)	(²)	33	17,100	(²)	371,050	429,747
San Francisco, Cal.....	1900	26	2,305,362	114	177,490	532	323,931	306,403	8,622,994	9,991,690
	1890	25	1,591,779	⁴ 86	⁴ 122,090	249	193,687	226,259	5,675,801	6,670,474
	1880	24	1,586,200	(²)	(²)	300	239,868	(²)	4,611,721	6,013,602
Sioux City, Iowa.....	1900	3	1,209,695	21	24,250	892	471,944	165,222	6,856,684	8,982,896
	1890	3	1,662,736	⁴ 32	⁴ 43,340	594	233,155	192,373	6,872,132	7,539,228
	² 1880									
Somerville, Mass.....	1900	4	6,801,141	45	70,618	1,435	692,999	314,036	14,233,788	16,692,242
	² 1890									
	1880	3	760,840	(²)	(²)	263	122,889	(²)	3,368,396	3,702,601
South Omaha, Nebr.....	1900	6	15,657,418	712	677,256	5,940	2,915,732	1,475,848	60,159,430	67,889,749
	² 1890									
	² 1880									
Washington, D. C.....	1900	7	248,200	32	15,784	116	63,607	19,935	2,013,827	2,210,860
	1890	24	118,230	⁴ 27	⁴ 19,970	82	37,113	10,274	664,754	853,439
	² 1880									

¹The following cities, having a product valued at over \$1,000,000, are not included in the above table, because in 1900 they had less than 3 establishments, except Paterson, N. J. and Seattle, Wash., which cities, together with those of 1880 and 1890 shown below, are not included because there are no comparative figures. These establishments are distributed as follows: 1900—Cambridge, Mass., 2; Cedar Rapids, Iowa, 1; Chicopee, Mass., 1; Clinton, Iowa, 1; Hammond, Ind., 1; Los Angeles, Cal., 1; Marshalltown, Iowa, 1; Nebraska City, Neb., 1; New Haven, Conn., 2; Orange, Conn., 1; Ottumwa, Iowa, 1; Paterson, N. J., 3; Seattle, Wash., 8; Topeka, Kans., 1; Wheeling (and Ohio County), W. Va., 2; Wichita, Kans., 1. 1890—Los Angeles, Cal., 6. 1880—Cambridge, Mass., 5; Wheeling, W. Va., 4; Worcester, Mass., 5.

²Not reported separately.

³Not reported.

⁴Includes proprietors and firm members, with their salaries; number only reported in 1900, but not included in this summary.

⁵Includes, for 1900, Cudahy, Wis.

⁶Does not include South St. Joseph, Mo., for 1880.

Table 4 is a comparative summary for 1880, 1890, and 1900, of those cities that, in 1900, showed a production to the value of \$1,000,000 and over. The product of Chicago alone reached a value of \$256,527,949 in 1900, or 32.7 per cent of the total value for the United States; in 1890, this ratio was 36.3 per cent, a net loss during the decade of 3.6 per cent. Chicago's advance in value of products during these ten years was \$52,921,547, or 26 per cent. The number of establishments steadily decreased, falling from 70 in 1880 to 57 in 1890 and 38 in 1900. Kansas City stood second in value of products, in 1900, gaining during the decade, \$33,860,579, or 84.8 per cent. Of the total value of products in the United States, Kansas City furnished 9.4 per cent in 1900 and 7.1 per cent in 1890, a gain of 2.3 per cent. Unfortunately the figures upon which to base such a comparison for South Omaha are not available. The industry had no existence there in 1880, and the figures for 1890 were not published separately. The total production for the state of Nebraska for 1890, however, of which South Omaha constituted a part, was \$28,941,144, which was exceeded in 1900 by \$38,948,605 by South Omaha alone. In 1900 South Omaha produced 8.6 per cent of the total value of the product of the United States.

At the Twelfth Census New York city (boroughs of Manhattan and Bronx) stood fourth in value of products, showing a decrease between 1890 and 1900 of \$11,498,918. Brooklyn in the same time fell off \$8,960,722. Jersey City and Newark also show a decrease.

This was not due to any decrease in the amount of local consumption, but to the growing importance of the western dressed meat in the eastern markets. Boston shows a continuous and steady decrease in the value of products. Baltimore, on the other hand, steadily gained in number of establishments and in value of products. Philadelphia shows a gain from 1880 to 1890, but a decrease from 1890 to 1900. South St. Joseph, Mo., sprang into prominence between 1890 and 1900, and in 1900, with St. Joseph, produced 3.8 per cent of the total value of the product for the United States. The product of St. Louis, Mo., remained about the same. The figures for East St. Louis, Ill., for 1890 were not reported separately, so that no comparison can be made. In the extreme West, San Francisco gained 58.8 per cent in production between 1890 and 1900, while Portland, Oreg., fell off 16.8 per cent in the same period.

This table as a whole indicates a growth of the average establishment. While in many cases a considerable decrease is shown in the number of establishments, yet a large increase is shown in the average capital invested, and in the average value of the product of the single establishment.

The statistics of slaughtering as conducted separately from packing operations was not included in the census returns prior to the taking of the Eleventh Census, in 1890. Tables 5 and 6 should be consulted together, in order to arrive at the relative importance of the two branches for the several states.

MANUFACTURES.

TABLE 5.—SLAUGHTERING, WHOLESALE, NOT INCLUDING

	United States.	California.	Colorado.	Connecticut.	Georgia.	Illinois.	Indiana.	Iowa.	Kansas.	Kentucky.
1	Number of establishments.....	348	85	7	7	8	18	11	7	3
	Character of organization:									
2	Individual.....	205	14	8	8	2	1	9	4	1
3	Firm and limited partnership.....	96	15	.....	2	1	6	2	1	1
4	Incorporated company.....	47	0	4	2	.....	6	.....	1	.....
	Capital:									
5	Total.....	\$15,108,567	\$1,087,098	\$118,448	\$150,814	\$6,427	\$446,901	\$202,250	\$86,775	\$75,700
6	Land.....	\$1,719,794	\$85,600	\$13,000	\$25,500	\$3,200	\$37,100	\$39,850	\$26,800	\$21,500
7	Buildings.....	\$3,645,060	\$92,400	\$15,700	\$51,885	\$1,325	\$112,500	\$49,200	\$53,900	\$19,000
8	Machinery, tools, and implements.....	\$1,608,570	\$76,555	\$21,000	\$5,460	\$102	\$85,430	\$49,250	\$15,700	\$6,000
9	Cash and sundries.....	\$8,280,143	\$782,588	\$68,743	\$67,969	\$1,800	\$211,871	\$64,450	\$10,875	\$35,270
10	Proprietors and firm members.....	398	45	8	5	4	12	13	6	1
	Salaried officials, clerks, etc.:									
11	Total number.....	569	57	11	7	2	45	5	8	11
12	Total salaries.....	\$650,594	\$80,415	\$9,860	\$4,910	\$610	\$48,686	\$3,500	\$1,820	\$11,856
	Officers of corporations—									
13	Number.....	51	9	2	.....	.....	5	.....	2	.....
14	Salaries.....	\$123,738	\$14,400	\$2,400	.....	.....	\$10,000	.....	\$720	\$6,240
	General superintendents, managers, clerks, etc.									
15	Total number.....	518	48	9	7	2	40	5	1	8
16	Total salaries.....	\$526,856	\$66,015	\$6,960	\$4,910	\$610	\$38,576	\$3,500	\$600	\$5,616
	Men—									
17	Number.....	475	47	8	4	2	39	5	1	8
18	Salaries.....	\$506,975	\$65,715	\$6,840	\$3,350	\$610	\$38,226	\$3,500	\$600	\$5,616
	Women—									
19	Number.....	48	1	1	3	.....	1	.....	.....	.....
20	Salaries.....	\$19,881	\$300	\$120	\$1,560	.....	\$350	.....	.....	.....
	Wage-earners, including pieceworkers, and total wages:									
21	Greatest number employed at any one time during the year.....	4,799	314	68	19	8	274	52	17	59
22	Least number employed at any one time during the year.....	3,916	247	45	18	8	285	44	18	35
23	Average number.....	3,751	265	49	12	6	235	47	13	49
24	Wages.....	\$2,377,298	\$200,470	\$31,234	\$6,814	\$1,390	\$145,888	\$28,728	\$6,486	\$31,272
	Men, 16 years and over—									
25	Average number.....	3,725	265	49	10	5	235	46	13	49
26	Wages.....	\$2,371,183	\$200,470	\$31,234	\$5,904	\$1,315	\$145,888	\$28,628	\$6,486	\$31,272
	Women, 16 years and over—									
27	Average number.....	.....	.....	.....	2	.....	.....	.....	.....	.....
28	Wages.....	\$3,839	.....	.....	\$410	.....	\$75	.....	.....	.....
	Children, under 16 years—									
29	Average number.....	16	.....	.....	.....	.....	.....	.....	.....	.....
30	Wages.....	\$2,276	.....	.....	.....	.....	.....	.....	.....	.....
	Average number of wage-earners, including pieceworkers, employed during each month:									
	Men, 16 years and over—									
31	January.....	3,766	268	55	15	7	222	50	14	59
32	February.....	3,785	287	55	15	7	222	48	14	54
33	March.....	3,743	267	53	12	7	260	46	14	54
34	April.....	3,698	267	53	12	7	239	40	13	49
35	May.....	4,144	269	44	12	7	254	41	13	49
36	June.....	3,401	260	44	7	7	233	43	13	31
37	July.....	3,561	259	41	9	4	228	42	11	40
38	August.....	3,612	258	41	9	4	234	44	11	40
39	September.....	3,648	261	43	7	4	233	51	12	59
40	October.....	3,746	264	43	7	4	238	51	12	59
41	November.....	3,811	271	55	7	4	238	51	12	59
42	December.....	3,835	270	55	11	4	232	49	16	59
	Women, 16 years and over—									
43	January.....	.....	.....	.....	2	.....	.....	.....	.....	.....
44	February.....	.....	.....	.....	2	.....	.....	.....	.....	.....
45	March.....	.....	.....	.....	2	.....	.....	.....	.....	.....
46	April.....	.....	.....	.....	1	.....	.....	.....	.....	.....
47	May.....	.....	.....	.....	1	.....	.....	.....	.....	.....
48	June.....	.....	.....	.....	1	.....	.....	.....	.....	.....
49	July.....	.....	.....	.....	1	.....	.....	.....	.....	.....
50	August.....	.....	.....	.....	2	.....	.....	.....	.....	.....
51	September.....	.....	.....	.....	2	.....	.....	.....	.....	.....
52	October.....	.....	.....	.....	2	.....	.....	.....	.....	.....
53	November.....	.....	.....	.....	1	.....	.....	.....	.....	.....
54	December.....	.....	.....	.....	1	.....	.....	.....	.....	.....
	Children, under 16 years—									
55	January.....	17	.....	.....	.....	.....	.....	.....	.....	.....
56	February.....	17	.....	.....	.....	.....	.....	.....	.....	.....
57	March.....	17	.....	.....	.....	.....	.....	.....	.....	.....
58	April.....	14	.....	.....	.....	.....	.....	.....	.....	.....
59	May.....	14	.....	.....	.....	.....	.....	.....	.....	.....
60	June.....	14	.....	.....	.....	.....	.....	.....	.....	.....
61	July.....	17	.....	.....	.....	.....	.....	.....	.....	.....
62	August.....	15	.....	.....	.....	.....	.....	.....	.....	.....
63	September.....	17	.....	.....	.....	.....	.....	.....	.....	.....
64	October.....	16	.....	.....	.....	.....	.....	.....	.....	.....
65	November.....	17	.....	.....	.....	.....	.....	.....	.....	.....
66	December.....	17	.....	.....	.....	.....	.....	.....	.....	.....
	Miscellaneous expenses:									
67	Total.....	\$1,375,575	\$69,526	\$12,419	\$6,809	\$489	\$58,225	\$8,887	\$4,888	\$3,766
68	Rent of works.....	\$271,202	\$19,270	\$2,600	\$640	\$60	\$9,012	\$446	.....	\$720
69	Taxes, not including internal revenue.....	\$84,767	\$4,644	\$1,269	\$888	\$29	\$3,209	.....	.....	\$226
70	Rent of offices, insurance, interest, and all sundry expenses not hitherto included.....	\$1,018,799	\$45,562	\$8,550	\$5,280	\$400	\$41,004	\$7,295	\$381	\$2,790
71	Contract work.....	\$807	\$50	.....	.....	.....	.....	.....	.....	.....
	Materials used:									
72	Total cost.....	\$77,411,990	\$6,756,619	\$692,525	\$220,079	\$27,340	\$6,955,880	\$847,970	\$361,878	\$506,715
	Slaughtered—									
73	Beef, number.....	900,169	112,407	10,159	408	1,420	92,786	14,122	6,776	18,820
74	Cost.....	\$41,281,671	\$3,892,975	\$393,472	\$16,240	\$26,340	\$3,191,721	\$529,640	\$241,160	\$421,100
75	Sheep, number.....	3,893,706	476,189	25,394	20,707	100	63,940	11,710	1,474	12,260
76	Cost.....	\$12,970,850	\$1,463,436	\$140,017	\$74,835	\$300	\$219,642	\$31,725	\$6,084	\$16,500
77	Hogs, number.....	1,911,782	66,373	8,944	58	100	265,240	29,289	8,424	8,300
78	Cost.....	\$14,312,037	\$344,645	\$86,925	\$580	\$500	\$3,410,220	\$240,346	\$37,588	\$37,600

SLAUGHTERING AND MEAT PACKING.

MEAT PACKING: BY STATES AND TERRITORIES, 1900.

Maine.	Maryland.	Massachu- setts.	Michigan.	Minne- sota.	Missouri.	Montana.	Ne- braska.	New Jersey.	New York.	Ohio.	Pennsyl- vania.	Utah.	Washing- ton.	All other states and terri- tories. (1)
8	35	11	21	7	6	5	4	19	57	11	43	8	4	15
5	32	7	14	7	3	3	2	11	28	8	28	2	1	6
2	1	2	6	6	2	2	2	8	19	2	18	1	1	6
1	1	2	1	1	1	2	1	10	10	2	2	2	2	8
\$97,880	\$229,571	\$2,297,408	\$178,200	\$148,925	\$99,979	\$241,826	\$36,050	\$554,542	\$8,047,013	\$181,400	\$539,230	\$38,125	\$72,300	\$209,950
\$8,400	\$63,806	\$300,650	\$30,750	\$9,150	\$2,900	\$7,600	\$4,550	\$25,633	\$874,980	\$22,175	\$64,800	\$4,600	\$12,100	\$21,950
\$34,750	\$101,000	\$303,300	\$41,025	\$60,400	\$200	\$22,700	\$4,400	\$44,200	\$2,410,425	\$32,550	\$149,700	\$9,000	\$19,900	\$27,300
\$2,430	\$30,175	\$103,615	\$18,025	\$11,750	\$31,755	\$10,959	\$2,600	\$20,600	\$867,680	\$22,175	\$52,984	\$4,525	\$5,300	\$5,200
\$52,300	\$35,000	\$1,589,838	\$32,800	\$62,025	\$65,124	\$200,567	\$24,500	\$464,209	\$3,904,828	\$54,500	\$272,246	\$15,000	\$41,000	\$107,500
7	36	13	18	6	6	3	6	30	78	14	57	4	3	10
2	5	46	8	6	10	9	1	18	271	27	27	9	17	11
\$1,625	\$1,980	\$65,166	\$8,920	\$4,820	\$9,800	\$12,600	.....	\$21,854	\$323,612	.....	\$27,988	.....	\$7,788	\$9,894
.....	2	8	1	.....	4	2	.....	17	.....	.....	.....	.....	1	13
.....	\$700	\$18,000	\$2,000	.....	\$5,800	\$5,000	.....	.....	\$56,918	.....	.....	.....	.....	\$1,500
2	8	48	7	6	6	7	.....	18	254	.....	27	9	16	15
\$1,625	\$1,280	\$47,166	\$6,920	\$4,820	\$3,500	\$7,600	.....	\$21,854	\$266,694	.....	\$27,988	.....	\$7,788	\$7,894
2	8	39	7	6	6	7	.....	18	227	.....	25	8	18	17
\$1,625	\$1,280	\$44,388	\$6,920	\$4,820	\$3,500	\$7,600	.....	\$21,854	\$254,869	.....	\$26,920	.....	\$7,128	\$6,644
.....	.....	4	.....	.....	.....	.....	.....	.....	27	.....	2	1	8	19
.....	.....	\$2,808	.....	.....	.....	.....	.....	.....	\$11,825	.....	\$1,068	.....	\$660	\$1,100
74	96	481	101	44	67	47	9	222	2,248	70	297	12	28	162
15	78	281	80	38	55	32	6	195	1,978	62	269	11	19	113
24	83	411	81	41	59	37	7	206	1,569	65	286	8	22	194
\$10,680	\$34,324	\$204,184	\$44,164	\$23,514	\$24,062	\$33,693	\$4,035	\$145,088	\$1,068,696	\$36,110	\$186,258	\$3,676	\$20,635	\$67,014
23	82	411	80	40	57	35	6	206	1,567	65	282	8	22	127
\$10,380	\$33,874	\$204,184	\$44,114	\$22,914	\$23,812	\$32,493	\$3,975	\$145,088	\$1,068,292	\$36,110	\$185,506	\$3,676	\$20,635	\$65,550
1	1	.....	.....	1	.....	2	.....	1	.....	.....	1	.....	.....	27
\$300	\$450	.....	.....	\$600	.....	\$1,200	.....	.....	\$304	.....	\$500	.....	.....	28
.....	.....	.....	1	.....	2	.....	1	.....	1	.....	3	.....	.....	7
.....	.....	.....	\$50	.....	\$250	.....	\$60	.....	\$100	.....	\$262	.....	.....	\$1,464
14	91	483	96	39	61	31	7	208	1,552	63	282	6	22	183
14	91	447	83	39	63	36	7	201	1,626	62	283	6	22	180
14	79	460	80	39	64	38	7	203	1,606	62	280	7	25	129
10	79	438	76	39	64	37	6	197	1,526	62	280	12	28	121
10	80	334	76	38	62	36	6	197	2,076	62	285	12	28	120
10	79	281	78	38	42	33	6	204	1,459	64	286	7	22	121
58	79	366	79	38	51	37	6	204	1,490	64	279	7	20	127
47	79	401	79	39	51	35	6	207	1,484	64	279	7	20	121
33	78	416	79	42	53	36	5	210	1,512	64	285	7	21	127
80	79	433	77	42	56	38	7	211	1,543	70	284	7	21	181
10	88	451	78	42	59	32	7	221	1,570	69	282	7	21	130
9	87	481	81	43	59	34	7	215	1,565	69	282	7	22	134
2	2	.....	.....	1	.....	.....	.....	.....	.....	.....	1	.....	.....	43
2	2	.....	.....	1	.....	.....	.....	.....	.....	.....	1	.....	.....	44
2	2	.....	.....	1	.....	.....	.....	.....	.....	.....	1	.....	.....	45
2	2	.....	.....	1	.....	.....	.....	.....	.....	.....	1	.....	.....	46
1	1	.....	.....	1	.....	.....	.....	.....	.....	.....	1	.....	.....	47
1	1	.....	.....	1	.....	.....	.....	.....	.....	.....	1	.....	.....	48
1	1	.....	.....	1	.....	.....	.....	.....	.....	.....	1	.....	.....	49
1	1	.....	.....	1	.....	.....	.....	.....	.....	.....	1	.....	.....	50
1	1	.....	.....	1	.....	.....	.....	.....	.....	.....	1	.....	.....	51
1	1	.....	.....	1	.....	.....	.....	.....	.....	.....	1	.....	.....	52
1	1	.....	.....	1	.....	.....	.....	.....	.....	.....	1	.....	.....	53
1	1	.....	.....	1	.....	.....	.....	.....	.....	.....	1	.....	.....	54
.....	.....	.....	1	.....	2	.....	1	.....	1	.....	3	.....	.....	8
.....	.....	.....	1	.....	2	.....	1	.....	1	.....	3	.....	.....	55
.....	.....	.....	1	.....	2	.....	1	.....	1	.....	3	.....	.....	56
.....	.....	.....	1	.....	2	.....	1	.....	1	.....	3	.....	.....	57
.....	.....	.....	1	.....	2	.....	1	.....	1	.....	3	.....	.....	58
.....	.....	.....	1	.....	2	.....	1	.....	1	.....	3	.....	.....	59
.....	.....	.....	1	.....	2	.....	1	.....	1	.....	3	.....	.....	60
.....	.....	.....	1	.....	2	.....	1	.....	1	.....	3	.....	.....	61
.....	.....	.....	1	.....	2	.....	1	.....	1	.....	3	.....	.....	62
.....	.....	.....	1	.....	2	.....	1	.....	1	.....	3	.....	.....	63
.....	.....	.....	1	.....	2	.....	1	.....	1	.....	3	.....	.....	64
.....	.....	.....	1	.....	2	.....	1	.....	1	.....	3	.....	.....	65
.....	.....	.....	1	.....	2	.....	1	.....	1	.....	3	.....	.....	66
.....	.....	.....	1	.....	2	.....	1	.....	1	.....	3	.....	.....	67
.....	.....	.....	1	.....	2	.....	1	.....	1	.....	3	.....	.....	68
.....	.....	.....	1	.....	2	.....	1	.....	1	.....	3	.....	.....	69
.....	.....	.....	1	.....	2	.....	1	.....	1	.....	3	.....	.....	70
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	71
\$322,693	\$1,662,362	\$3,436,871	\$1,444,906	\$866,884	\$716,894	\$821,070	\$209,424	\$7,406,647	\$38,542,478	\$921,159	\$6,478,714	\$98,876	\$515,777	\$2,063,700
1,865	12,517	33,244	31,189	18,500	12,275	12,395	4,487	24,670	332,847	21,311	89,157	2,213	6,672	35,709
\$70,260	\$561,962	\$1,305,157	\$1,154,406	\$495,350	\$378,250	\$572,580	\$116,800	\$1,345,380	\$19,486,940	\$635,178	\$4,551,674	\$69,622	\$258,895	\$1,243,579
44,815	185,580	407,466	51,305	34,275	6,608	23,092	165	324,957	1,468,474	82,402	146,321	3,705	26,080	32,487
\$150,603	\$792,120	\$1,498,278	\$172,936	\$163,200	\$22,494	\$91,053	\$985	\$1,308,217	\$5,837,934	\$81,856	\$638,355	\$13,042	\$101,660	\$128,869
425	1,800	125	7,802	21,222	29,200	8,401	1,230	675,896	605,553	9,775	80,764	620	10,855	55,714
\$5,250	\$10,600	\$1,100	\$59,412	\$170,164	\$259,600	\$34,943	\$12,650	\$4,027,833	\$3,902,045	\$88,900	\$594,350	\$6,673	\$122,040	\$463,248

(1) Includes establishments distributed as follows: Alabama, 1; Arkansas, 1; Delaware, 1; District of Columbia, 1; New Mexico, 2; North Carolina, 1; Oklahoma, 2; Rhode Island, 1; South Carolina, 1; Virginia, 1; Wisconsin, 2; Wyoming, 1.

SLAUGHTERING AND MEAT PACKING.

MEAT PACKING: BY STATES AND TERRITORIES, 1900—Continued.

Maine.	Maryland.	Massachusetts.	Michigan.	Minnesota.	Missouri.	Montana.	Nebraska.	New Jersey.	New York.	Ohio.	Pennsylvania.	Utah.	Washington.	All other states and territories. (1)
2,984	38,780	73,288	5,824	3,664	5,285	3,396	3,900	55,623	256,245	14,080	19,583	456	1,216	12,687
\$20,864	\$263,180	\$462,684	\$44,900	\$29,537	\$43,076	\$50,490	\$64,200	\$496,033	\$2,039,320	\$100,820	\$151,065	\$4,214	\$10,474	\$89,405
\$70,080	\$14,600	\$9,760				\$4,525		\$1,600	\$1,600		\$62,000		\$1,592	\$1,300
					\$6,000	\$25,000		\$100,324	\$2,000	\$231,500			\$100	\$58,500
\$593	\$4,850	\$20,020	\$3,217	\$3,978	\$3,425	\$2,450	\$714	\$668	\$80,870	\$3,855	\$10,070	\$290	\$2,465	\$5,049
	\$860	\$3,780						\$3,175	\$400	\$86	\$4,000			83
\$5	\$225	\$1,075	\$375	\$90	\$310	\$100	\$50	\$365	\$20,500	\$342	\$1,045	\$85		84
\$138	\$4,455	\$31,885	\$3,340	\$875	\$8,740	\$6,820	\$14,025	\$3,000	\$1,382,315	\$1,192	\$29,300		\$250	\$45,980
\$4,800	\$250	\$97,442	\$6,320	\$8,190	\$33,149	\$33,149	\$1,000	\$221,866	\$740,229	\$5,980	\$200,855		\$18,226	\$27,429
\$897,506	\$1,836,502	\$4,127,785	\$1,612,656	\$1,007,443	\$811,768	\$934,640	\$262,027	\$7,846,422	\$37,807,106	\$1,051,476	\$7,412,075	\$110,012	\$398,904	\$2,288,811
1,148,600	6,647,180	17,960,150	15,395,100	6,850,000	5,100,000	7,406,687	1,868,500	16,277,350	230,585,496	8,608,430	57,708,976	1,054,000	3,936,500	16,864,050
\$74,470	\$535,024	\$1,365,198	\$1,113,752	\$498,700	\$368,000	\$557,785	\$117,275	\$1,326,405	\$18,533,291	\$585,293	\$4,912,417	\$72,921	\$286,750	\$1,240,915
	133,320								4,393,048					47,500
	\$8,289								\$221,760					\$5,750
2,431,164	7,026,000	16,207,400	1,871,023	1,620,506	278,100	1,142,048	12,000	13,570,273	60,162,992	986,100	5,839,748	199,250	1,299,200	1,438,050
\$207,059	\$774,860	\$1,311,978	\$154,895	\$156,423	\$24,434	\$100,395	\$1,200	\$1,082,166	\$5,001,173	\$74,046	\$605,649	\$14,897	\$104,644	\$131,705
\$247,040	2,474,200	5,173,540	506,800	358,598	416,000	669,954	1,020,000	4,658,125	23,324,717	991,000	1,500,402	49,850	104,650	996,465
\$24,484	\$257,200	\$408,934	\$50,295	\$32,618	\$48,920	\$60,302	\$78,780	\$518,994	\$2,242,979	\$97,033	\$144,301	\$4,401	\$12,500	\$95,955
95,000	95,000	20,000	583,213	2,302,960	4,785,000	1,128,716	530,800	66,264,561	64,792,761	1,622,500	14,609,690	112,500	1,680,000	6,783,550
\$6,900	\$8,500	\$1,295	\$37,847	\$196,945	\$208,200	\$80,891	\$14,600	\$4,265,416	\$4,827,250	\$114,468	\$968,170	\$7,332	\$134,320	\$546,692
	30,000		121,200			50,000			2,000				110,000	99
	\$1,800		\$7,272			\$3,500			\$160					\$11,000
	30,000		92,663			100,000			1,000					101
	\$2,700		\$9,266			\$10,000			\$100					102
	30,000		60,563			150,000								103
	\$2,100		\$4,844			\$18,500								104
	\$2,500		70,859		240,000	50,000		24,500	6,900	6,000			39,000	171,000
	\$2,450		\$4,251		\$14,400	\$5,000		\$1,750	\$513	\$540			\$8,300	\$14,620
	15,000					59,080			95,500	24,000	1,000,000		22,400	21,000
	\$2,100					\$5,908			\$6,730	\$2,100	\$74,000		\$1,732	\$1,438
	10,000		48,450		831,000	50,000		1,650,328	1,905,021	21,875			36,000	133,000
	\$1,000		\$3,391		\$26,660	\$3,000		\$91,393	\$115,502	\$1,075			\$2,780	\$9,850
		82,021							350,000					111
		\$81,250							1,626,509					112
									\$938,819					113
	5,000								187,767					114
	\$2,000								\$60,029					115
	300								3,445					116
	\$4,500	1,392		247		\$790	45	113	\$3,892	\$71,802				117
	53,097	\$18,100		\$790		17,510	7,787	61,113	61,113	524,067	\$88			\$10,200
4,755	1,019,280	32,519,320	37,073	17,714	17,510	15,675	4,750	2,058,530	23,335,641	35,391	108,740	2,669	7,888	55,626
126,050	\$84,228	\$237,662	1,767,218	804,390	715,575	734,350	297,635	2,058,530	\$2,217,864	1,274,870	5,445,447	108,550	\$87,032	1,558,210
\$11,089	\$5,460	\$442,250	\$153,006	\$97,322	\$64,715	\$65,216	\$24,333	\$172,676	2,625,676	\$33,050	\$456,678	\$9,002	\$90,338	\$122,743
121,240	\$1,385							75,000	2,625,676		33,400		5,000	121
\$27,810	\$123,871	\$311,118	\$73,637	\$58,210	\$6,429	\$31,145	\$25,089	\$356,522	\$3,243,137	\$83,270	\$243,177	\$1,899	\$700	122
\$45,694	\$24,500			\$1,438			\$300	\$2,708	\$19,719				\$21,160	123
													\$500	\$6,899
1,830,100	12,393,400	32,181,970	39,356,400	13,610,000	10,340,000	13,491,800	3,737,000	28,340,500	405,240,900	16,885,500	101,801,780	2,148,000	7,688,000	30,991,861
1,148,500	6,872,730	17,773,762	15,542,575	6,970,000	5,460,250	7,424,061	1,868,500	16,277,350	229,423,733	8,608,430	57,837,276	1,054,000	4,041,620	16,874,050
5,105,200	14,035,600	32,519,320	3,788,750	3,238,750	507,700	2,111,660	24,000	26,909,810	115,006,941	1,782,200	12,079,700	390,500	2,698,400	2,809,770
2,468,970	7,024,000	16,236,680	1,871,198	1,620,500	278,180	1,146,361	12,000	13,571,273	60,735,367	936,100	6,092,478	1,97,250	1,299,200	1,407,590
124,375	270,000	25,000	1,370,760	3,539,950	5,840,000	1,438,845	261,000	90,966,100	86,061,575	1,965,250	13,318,315	139,160	2,173,000	8,370,211
95,000	213,000	20,000	1,096,200	2,302,960	4,960,000	1,081,251	208,300	63,738,820	68,038,890	1,646,500	10,093,690	112,500	1,735,400	6,779,933
409,260	4,139,000	7,716,310	799,700	500,990	685,250	953,750	1,278,000	5,695,430	33,457,885	1,702,100	2,565,205	64,224	222,900	1,767,550
247,040	2,474,200	5,187,290	567,000	355,098	417,150	653,931	1,020,000	3,738,125	23,395,849	90,100	1,591,962	49,350	165,772	963,365
4	33	8	14	5	1			1	15	49	11	33	1	11
\$228,866	\$846,752	\$3,657,581	\$909,009	\$300,317	\$276,600			\$20,000	\$7,424,096	\$31,533,516	\$1,051,476	\$6,696,747	\$33,680	\$1,560,391
\$215,137	\$840,625	\$3,813,111	\$820,900	\$633,613	\$137,000			\$17,000	\$7,637,439	\$23,894,634	\$1,061,255	\$6,291,440	\$37,284	\$1,773,730
	2	2	4	2	2	2	2	2	2	16	5	2	2	8
	68	315	74	26	176	55	82	174	1,666	113	384	84	14	266
	2	2	4	3	4	2	2	2	39	6	4	2	2	10
	68	290	74	26	156	55	82	45	1,551	110	149	84	14	268
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¹ Includes establishments distributed as follows: Alabama, 1; Arkansas, 1; Delaware, 1; District of Columbia, 1; New Mexico, 2; North Carolina, 1; Oklahoma, 2; Rhode Island, 1; South Carolina, 1; Virginia, 1; Wisconsin, 2; Wyoming, 1.

TABLE 6.—SLAUGHTERING AND MEAT

	United States.	California.	Colorado.	Connecticut.	Delaware.	District of Columbia.
1	Number of establishments	578	28	7	5	3
2	Character of organization:					
3	Individual	211	8	2	2	1
4	Firm and limited partnership	190	5	2	2	1
5	Incorporated company	172	10	5	1	
6	Capital:					
7	Total	\$174,094,697	\$2,875,988	\$1,262,075	\$411,750	\$224,220
8	Land	\$10,415,240	\$411,474	\$149,800	\$51,500	\$20,000
9	Buildings	\$80,859,070	\$688,560	\$494,000	\$104,500	\$33,000
10	Machinery, tools, and implements	\$18,681,278	\$425,156	\$88,000	\$80,250	\$41,060
11	Cash and sundries	\$114,189,114	\$1,860,798	\$535,275	\$195,500	\$130,160
12	Proprietors and firm members	664	19	4	8	6
13	Salaried officials, clerks, etc.:					
14	Total number	9,658	123	37	30	12
15	Total salaries	\$9,472,653	\$174,152	\$51,536	\$31,752	\$9,040
16	Officers of corporations—					
17	Number	320	8	14	2	
18	Salaries	\$940,948	\$26,520	\$25,836	\$5,000	
19	General superintendents, managers, clerks, etc.—					
20	Total number	9,338	115	23	28	12
21	Total salaries	\$8,531,705	\$147,632	\$25,700	\$26,752	\$9,040
22	Men—					
23	Number	8,438	109	23	27	12
24	Salaries	\$8,023,509	\$144,182	\$25,700	\$26,282	\$9,040
25	Women—					
26	Number	900	6	1		
27	Salaries	\$508,196	\$3,450	\$520		
28	Wage-earners, including pieceworkers, and total wages:					
29	Greatest number employed at any one time during the year	81,416	744	232	381	29
30	Least number employed at any one time during the year	57,119	623	198	352	29
31	Average number	64,738	660	212	368	29
32	Wages	\$31,079,715	\$944,189	\$189,510	\$167,925	\$16,602
33	Men, 16 years and over—					
34	Average number	80,197	650	210	368	29
35	Wages	\$29,868,664	\$938,141	\$189,010	\$167,925	\$16,602
36	Women, 16 years and over—					
37	Average number	2,935	10	2		
38	Wages	\$849,974	\$6,048	\$500		
39	Children, under 16 years—					
40	Average number	1,651				
41	Wages	\$361,077				
42	Average number of wage-earners, including pieceworkers, employed during each month:					
43	Men, 16 years and over—					
44	January	61,151	649	215	378	29
45	February	60,000	639	212	378	29
46	March	59,368	652	217	373	29
47	April	57,463	653	219	352	29
48	May	58,095	663	214	352	29
49	June	58,399	640	204	355	29
50	July	58,954	640	200	355	29
51	August	59,260	647	204	355	29
52	September	59,350	651	208	370	29
53	October	62,006	670	209	381	29
54	November	63,576	641	210	381	29
55	December	64,751	657	207	381	29
56	Women, 16 years and over—					
57	January	2,955	9	2		
58	February	2,880	8	2		
59	March	2,756	7	2		
60	April	2,667	7	2		
61	May	2,582	8	2		
62	June	2,423	7	2		
63	July	2,717	8	2		
64	August	2,982	10	2		
65	September	3,169	17	2		
66	October	3,313	19	2		
67	November	3,405	15	2		
68	December	3,366	8	2		
69	Children, under 16 years—					
70	January	1,574				
71	February	1,578				
72	March	1,503				
73	April	1,517				
74	May	1,549				
75	June	1,046				
76	July	1,722				
77	August	1,759				
78	September	1,784				
79	October	1,657				
80	November	1,797				
81	December	1,776				
82	Miscellaneous expenses:					
83	Total	\$22,694,887	\$371,684	\$48,905	\$69,913	\$9,610
84	Rent of works	\$343,228	\$13,212	\$1,515	\$600	\$8,120
85	Taxes, not including internal revenue	\$742,688	\$12,383	\$5,656	\$5,859	\$566
86	Rent of offices, insurance, interest, and all sundry expenses not hitherto included	\$21,588,111	\$344,464	\$36,794	\$68,454	\$5,894
87	Contract work	\$10,815	\$1,600			
88	Materials used:					
89	Total cost	\$606,171,587	\$6,798,826	\$3,029,085	\$2,923,511	\$352,835
90	Slaughtered—					
91	Beeves, number	4,680,742	61,706	24,775		5,085
92	Cost	\$206,084,141	\$2,124,777	\$1,086,345		\$101,700
93	Sheep, number	5,796,784	218,869	39,694		2,050
94	Cost	\$24,166,692	\$738,926	\$147,826		\$4,200
95	Hogs, number	28,742,551	162,302	151,203	254,723	15,200
96	Cost	\$264,424,924	\$1,444,533	\$1,417,472	\$2,547,594	\$193,040
97	Calves, number	847,417	8,151	2,440		128
98	Cost	\$3,012,435	\$76,205	\$26,340		\$20,280
99	All other animals, cost	\$282,284	\$36,252	\$4,200		\$636
100	Dressed meat, purchased, fresh or partly cured, cost	\$54,212,627	\$1,838,354	\$509,200	\$182,000	\$48,800
101	Fuel	\$2,574,878	\$68,290	\$15,612	\$19,100	\$1,917
102	Rent of power and heat	\$16,122				
103	Mill supplies	\$309,058				
104	All other materials	\$46,726,986	\$3,212	\$1,900		\$103
105	Freight	\$4,881,440	\$102,347	\$43,295	\$144,850	\$1,425
106				\$26,400	\$78,982	\$1,514

SLAUGHTERING AND MEAT PACKING.

PACKING, WHOLESALE: BY STATES, 1900.

Georgia.	Illinois.	Indiana.	Iowa.	Kansas.	Kentucky.	Maine.	Maryland.	Massachusetts.	Michigan.	Minnesota.	
4	51	25	20	11	15	3	47	11	8	18	1
2	8	6	6	2	10	2	32	4	2	4	2
1	16	10	4	1	2	1	14	2	4	7	3
1	27	9	10	8	3	1	1.	5	2	2	4
\$109,400	\$70,732,361	\$8,658,084	\$6,264,578	\$16,410,477	\$1,256,106	\$34,800	\$1,818,917	\$9,016,672	\$1,265,151	\$1,211,086	5
\$18,500	\$3,381,255	\$437,536	\$151,750	\$771,728	\$85,160		\$100,009	\$882,182	\$123,945	\$62,000	6
\$27,700	\$10,447,918	\$1,718,947	\$1,198,153	\$2,639,200	\$157,550		\$301,500	\$2,073,715	\$166,040	\$186,540	7
\$24,700	\$6,859,804	\$1,402,127	\$499,375	\$1,658,062	\$210,133	\$3,100	\$188,660	\$1,219,523	\$100,771	\$120,442	8
\$48,500	\$50,093,384	\$5,100,024	\$4,415,800	\$11,841,487	\$803,263	\$31,700	\$728,748	\$4,841,252	\$374,395	\$842,104	9
4	50	27	13	8	15	5	72	8	11	21	10
32	4,181	298	190	1,830	62	4	63	174	68	119	11
\$19,625	\$4,380,649	\$311,103	\$196,056	\$1,620,010	\$51,799	\$1,215	\$46,824	\$185,130	\$57,741	\$97,889	12
4	74	22	12	9	5			2	8		13
\$4,000	\$352,380	\$80,200	\$36,000	\$47,450	\$10,500			\$7,500	\$18,500		14
28	4,107	276	178	1,821	57	4	63	172	55	119	15
\$15,625	\$4,028,269	\$230,903	\$160,056	\$1,572,560	\$41,299	\$1,215	\$46,824	\$177,630	\$39,241	\$97,889	16
28	3,786	255	166	1,515	57	2	61	157	48	89	17
\$15,625	\$3,822,285	\$220,944	\$155,019	\$1,397,200	\$41,299	\$790	\$45,904	\$170,064	\$35,681	\$60,449	18
	321	21	12	306		2	2	15	7	16	19
	\$205,984	\$9,959	\$5,087	\$175,360		\$425	\$920	\$7,566	\$3,560	\$7,440	20
185	31,672	3,952	3,453	9,446	549	21	553	2,538	429	1,016	21
74	24,369	3,227	2,436	6,995	455	21	471	2,226	334	540	22
98	27,626	3,550	2,874	8,068	469	14	514	2,387	375	627	23
\$81,050	\$13,898,950	\$1,587,024	\$1,201,681	\$3,543,777	\$194,887	\$7,220	\$242,089	\$1,113,948	\$186,473	\$280,463	24
97	25,557	3,111	2,630	7,121	465	14	502	2,813	373	610	25
\$80,800	\$13,316,489	\$1,426,800	\$1,156,955	\$3,299,359	\$194,277	\$7,220	\$239,945	\$1,107,251	\$186,023	\$276,191	26
	1,473	387	29	661	4		9	13	2	8	27
	\$427,203	\$101,499	\$9,906	\$190,802	\$560		\$1,668	\$3,582	\$450	\$2,400	28
1	596	52	215	286			3	11		9	29
\$250	\$155,258	\$8,725	\$34,840	\$53,616			\$476	\$3,100		\$1,372	30
118	26,137	3,240	2,951	6,787	532	21	514	2,477	416	673	31
118	26,048	3,140	2,635	6,724	480	21	514	2,346	369	608	32
116	25,335	2,948	2,571	6,460	452	21	505	2,292	362	570	33
87	24,579	2,931	2,523	6,007	437	21	498	2,239	351	548	34
83	24,758	2,958	2,628	6,793	438	21	491	2,237	345	566	35
87	24,421	3,079	2,729	7,002	438	9	497	2,273	345	573	36
81	24,486	3,140	2,624	7,011	453	9	475	2,273	333	563	37
79	24,926	3,104	2,473	7,221	452	9	479	2,250	372	558	38
77	24,769	3,099	2,360	7,636	438	9	495	2,267	379	589	39
110	26,289	3,309	2,421	7,366	437	9	516	2,330	389	630	40
105	27,174	3,166	2,686	7,319	504	9	526	2,370	408	662	41
107	27,764	3,216	2,961	7,527	525	9	518	2,388	404	776	42
	1,543	366	25	685	11		9	14	2	2	43
	1,534	358	25	685	5		9	13	2	2	44
	1,521	344	25	513	1		9	13	2	2	45
	1,409	346	26	525	1		9	12	2	2	46
	1,303	362	32	549	1		9	12	2	2	47
	1,050	401	33	572	1		9	14	2	2	48
	1,209	472	34	616	1		9	14	2	7	49
	1,454	459	33	652	1		9	14	2	10	50
	1,510	409	31	795	1		9	14	2	9	51
	1,632	386	31	810	1		9	14	2	18	52
	1,736	374	27	826	11		9	14	2	23	53
	1,767	367	25	754	11		9	14	2	22	54
2	570	41	292	205			3	12		7	55
3	582	38	281	200			3	11		9	56
2	590	38	167	221			3	9		8	57
1	564	36	172	239			3	11		9	58
	551	44	180	281			3	10		11	59
	530	52	181	320			3	12		15	60
	533	77	181	361			3	11		14	61
	603	73	182	345			3	9		11	62
	611	61	182	356			3	10		12	63
	634	64	172	313			3	12		2	64
	658	53	287	314			3	11		4	65
4	681	47	297	267			3	9		6	66
\$10,745	\$14,158,171	\$522,069	\$437,103	\$2,000,085	\$99,425	\$5,717	\$99,239	\$464,526	\$76,659	\$79,062	67
\$860	\$64,252	\$3,190	\$4,130	\$4,460	\$2,240	\$802	\$12,427	\$3,130	\$745	\$2,600	68
\$1,360	\$273,231	\$47,256	\$19,345	\$108,644	\$6,398	\$127	\$7,310	\$61,793	\$10,054	\$6,848	69
\$8,525	\$18,820,688	\$471,623	\$413,628	\$1,846,931	\$90,787	\$4,788	\$78,002	\$399,603	\$65,360	\$69,114	70
							\$1,500			\$500	71
\$456,855	\$239,757,479	\$37,760,871	\$21,195,066	\$67,402,245	\$3,899,243	\$134,333	\$5,446,717	\$24,603,698	\$3,325,734	\$5,956,371	72
9,186	1,964,273	344,463	71,070	908,519	11,478	925	7,320		2,110	39,200	73
\$198,800	\$90,097,822	\$18,776,065	\$2,271,225	\$37,743,953	\$421,142	\$36,800	\$249,510		\$68,350	\$1,404,491	74
2,700	3,075,220	352,127	12,212	624,672	2,607	3,750			1,055	59,442	75
\$5,150	\$13,339,156	\$1,591,410	\$54,072	\$2,282,246	\$8,196	\$11,250			\$4,702	\$248,920	76
25,895	8,026,466	1,921,081	1,014,274	2,341,648	487,134	2,500	663,935	1,876,120	334,013	401,103	77
\$164,500	\$79,539,458	\$13,465,016	\$17,433,707	\$23,472,678	\$3,204,898	\$25,000	\$3,995,229	\$19,853,661	\$2,932,063	\$3,453,232	78
1,675	139,314	3,488	1,252	35,570	1,297	535	752		1,060	2,555	79
\$5,940	\$1,302,686	\$71,627	\$10,436	\$288,254	\$9,133	\$3,175	\$4,420		\$9,320	\$21,052	80
\$2,425	\$70,959	\$100					\$540			\$8,080	81
\$60,800	\$21,378,908	\$2,646,377	\$415,891	\$683,879	\$54,500	\$54,000	\$863,997	\$2,154,746	\$161,675	\$500,293	82
\$2,400	\$703,904	\$80,138	\$140,816	\$335,927	\$26,785	\$433	\$46,175	\$129,400	\$19,878	\$38,462	83
	\$6,920			\$300				\$1,096		\$400	84
\$1,200	\$132,714	\$14,349	\$18,963	\$13,510	\$1,190	\$55	\$4,782	\$14,000	\$1,285	\$3,400	85
\$1,790	\$32,593,245	\$868,654	\$845,420	\$2,650,542	\$33,401	\$3,375	\$148,784	\$1,157,878	\$116,961	\$269,600	86
\$13,350	\$596,707	\$247,135	\$4,536	\$30,956	\$50	\$200	\$133,280	\$1,292,707	\$11,000	\$3,441	87

TABLE 6.—SLAUGHTERING AND MEAT

	United States.	California.	Colorado.	Connecticut.	Delaware.	District of Columbia.
88 Products:						
Total value.....	\$698,206,548	\$8,232,680	\$3,562,357	\$3,380,112	\$415,144	\$1,181,312
89 Beef—						
Sold fresh, pounds.....	2,391,900,433	31,805,131	14,164,180		1,522,500	1,573,300
90 Value.....	\$170,638,844	\$2,154,147	\$1,050,333		\$106,575	\$146,400
91 Canned, pounds.....	112,449,021	868,332	16,000			
92 Value.....	\$9,167,531	\$31,450	\$1,440			
93 Salted or cured, pounds.....	132,984,035	2,495,732	52,500	450,000	281	400,000
94 Value.....	\$9,423,802	\$172,021	\$4,950	\$45,000	\$45	\$16,000
95 Mutton, sold fresh, pounds.....	264,051,036	9,335,937	1,639,700		78,750	37,130
96 Value.....	\$21,212,314	\$701,140	\$147,376		\$4,675	\$3,713
97 Veal, sold fresh, pounds.....	30,953,896	1,024,528	279,000		7,860	131,500
98 Value.....	\$3,216,196	\$96,934	\$27,520		\$709	\$10,350
Pork—						
Sold fresh, pounds.....	982,009,421	9,155,109	8,370,600	7,044,000	453,900	2,260,300
100 Value.....	\$67,739,092	\$743,370	\$566,214	\$513,520	\$39,634	\$130,965
101 Salted, pounds.....	1,375,155,558	2,502,691	9,500,000	4,300,000	522,000	1,069,337
102 Value.....	\$88,644,534	\$199,324	\$413,580	\$333,500	\$41,700	\$76,512
103 Hams, pounds.....	737,295,310	11,974,749	4,650,000	3,434,000	732,000	1,227,000
104 Value.....	\$73,769,736	\$1,303,290	\$400,460	\$315,240	\$78,760	\$125,617
105 Smoked bacon, sides and shoulder, pounds.....	985,471,649	14,243,394	3,227,000	11,320,000	601,000	2,433,235
106 Value.....	\$74,352,123	\$1,367,537	\$230,010	\$387,300	\$42,320	\$214,179
107 Sausage, fresh or cured, pounds.....	291,124,691	1,332,347	2,417,600	2,651,700	157,000	2,147,500
108 Value.....	\$21,396,846	\$113,200	\$146,492	\$167,000	\$11,860	\$161,330
109 All other meat, sold fresh, pounds.....	77,556,231	745,977	140,000			203,000
110 Value.....	\$7,532,965	\$39,733	\$9,400			\$10,000
111 Refined lard, pounds.....	836,135,443	3,935,612	7,672,000	6,163,334	963,000	1,404,000
112 Value.....	\$52,234,619	\$307,937	\$417,430	\$390,400	\$70,080	\$163,730
113 Neutral lard, pounds.....	123,931,232	172,500	6,000	750,000		20,000
114 Value.....	\$3,561,150	\$10,433	\$430	\$53,000		\$1,320
115 Oleomargarine oil, gallons.....	17,402,590					
116 Value.....	\$10,514,473					
117 Other oils, gallons.....	8,094,752	5,275				
118 Value.....	\$3,374,749	\$2,699				
119 Fertilizers, tons.....	160,129	1,570	160	2,330	30	6,300
120 Value.....	\$3,177,445	\$37,323	\$1,230	\$30,100	\$450	
121 Hides, number.....	4,906,392	69,357	26,940	50	5,213	
122 Pounds.....	273,437,633	3,531,977	1,551,700	350	303,000	223,500
123 Value.....	\$23,709,975	\$360,511	\$113,310	\$42	\$17,266	\$17,697
124 Wool, pounds.....	8,330,370	99,710	200			
125 Value.....	\$2,033,930	\$19,942	\$30			
126 All other products, value.....	\$41,324,201	\$511,414	\$31,702	\$33,510	\$1,020	\$9,214
127 Custom work, value.....	\$76,473	\$9,100				
Weight of animals slaughtered:						
128 Beeves—						
Gross weight, on hoof.....	4,933,475,865	60,344,394	25,710,000		3,052,000	4,050,000
129 Net weight, dressed.....	2,636,146,926	32,933,303	14,022,550		1,526,350	2,170,000
130 Sheep—						
Gross weight, on hoof.....	492,574,476	18,977,310	3,510,400		159,500	166,000
131 Net weight, dressed.....	249,761,744	9,131,608	1,725,112		30,125	36,250
132 Hogs—						
Gross weight, on hoof.....	6,374,499,561	29,300,534	36,405,700	54,933,913	4,047,000	11,942,500
133 Net weight, dressed.....	4,965,925,575	23,336,290	29,320,200	43,363,632	3,234,400	9,437,700
134 Calves—						
Gross weight, on hoof.....	53,260,926	1,313,961	410,000		19,432	323,000
135 Net weight, dressed.....	33,526,409	1,025,242	279,000		10,732	131,500
Comparison of products:						
136 Number of establishments reporting for both years.....	467	17	4	5	2	6
137 Value for census year.....	\$665,510,992	\$7,078,351	\$2,354,401	\$3,330,112	\$273,034	\$1,131,912
138 Value for preceding business year.....	\$615,733,547	\$7,070,355	\$2,365,000	\$2,993,949	\$269,993	\$1,095,504
Power:						
139 Number of establishments reporting.....	500	16	7	5	2	6
140 Total horsepower.....	90,553	1,035	627	335	112	312
Owned—						
Engines—						
141 Steam, number.....	1,075	24	17	6	3	10
142 Horsepower.....	79,518	933	612	335	112	207
143 Gas or gasoline, number.....	24	2				
144 Horsepower.....	425	16				
145 Electric motors, number.....	563					
146 Horsepower.....	10,021					
147 Other power, number.....	4					
148 Horsepower.....	95					
Rented—						
149 Electric, horsepower.....	430	30	15			
150 Other kind, horsepower.....	12	1				
151 Furnished to other establishments, horsepower.....	183					
Establishments classified by number of persons employed, not including proprietors and firm members:						
152 Total number of establishments.....	573	23	7	5	3	0
153 No employees.....	1					
154 Under 5.....	98	4			1	2
155 5 to 20.....	210	9	3	2	1	
156 21 to 50.....	133	6	2	1	1	4
157 51 to 100.....	52	2	1			
158 101 to 250.....	29	1	1			
159 251 to 500.....	12	1		2		
160 501 to 1,000.....	14					
161 Over 1,000.....	19					

SLAUGHTERING AND MEAT PACKING.

PACKING, WHOLESALE: BY STATES, 1900—Continued.

Georgia.	Illinois.	Indiana.	Iowa.	Kansas.	Kentucky.	Maine.	Maryland.	Massachusetts.	Michigan.	Minnesota.	
\$557,831	\$279,842,885	\$42,891,243	\$25,296,518	\$76,829,139	\$4,541,482	\$156,236	\$6,209,857	\$27,605,698	\$3,724,761	\$6,803,112	88
3,900,000	1,001,320,043	212,195,474	27,299,788	445,493,433	4,216,939	510,000	2,808,000	.....	1,072,525	19,809,666	89
\$205,000	\$71,219,927	\$15,999,386	\$1,899,063	\$30,622,996	\$298,292	\$37,900	\$189,640	.....	\$70,646	\$1,189,202	90
5,200	75,296,560	5,343,207	1,627,920	14,034,995	.....	1,800	6,000	.....	.....	.....	91
\$312	\$5,446,283	\$995,116	\$85,466	\$1,341,215	.....	\$180	\$600	.....	.....	.....	92
56,000	67,917,743	1,598,988	1,305,205	8,967,600	601,334	.....	175,800	1,116,500	17,285	807,115	93
\$4,800	\$5,066,862	\$172,930	\$84,838	\$540,960	\$40,036	.....	\$10,750	\$62,000	\$1,185	\$56,449	94
118,000	145,454,835	15,332,070	1,081,036	24,257,945	100,276	112,500	200	.....	54,595	2,965,342	95
\$8,630	\$11,614,616	\$1,975,753	\$91,238	\$1,871,164	\$9,095	\$12,730	\$25	.....	\$4,957	\$203,032	96
110,000	16,769,680	733,493	197,801	3,763,293	89,683	\$2,620	40,800	.....	107,600	285,312	97
\$5,980	\$1,402,438	\$97,517	\$18,015	\$274,381	\$9,049	\$3,684	\$4,745	.....	\$10,520	\$22,821	98
1,408,000	356,448,731	24,456,275	30,227,091	85,152,483	4,741,510	398,333	11,924,713	44,487,608	11,503,214	14,552,028	99
\$107,440	\$24,868,977	\$1,702,160	\$2,237,437	\$5,001,307	\$362,236	\$32,000	\$915,147	\$3,525,294	\$733,598	\$850,162	100
782,000	522,096,362	30,704,461	135,518,117	78,884,690	21,371,233	202,500	3,769,909	57,884,874	12,375,700	23,819,650	101
\$53,749	\$36,179,893	\$1,819,740	\$9,408,838	\$4,814,529	\$1,091,135	\$12,600	\$626,583	\$3,785,017	\$773,692	\$1,362,540	102
230,000	228,284,156	42,658,638	39,741,810	\$7,996,957	10,662,435	220,000	12,800,500	57,184,534	8,295,567	5,920,898	103
\$28,900	\$22,746,708	\$3,552,687	\$3,565,033	\$4,940,298	\$974,201	\$23,200	\$1,314,003	\$4,719,653	\$623,224	\$667,570	104
220,000	185,240,920	117,787,185	30,781,171	138,485,260	10,680,870	140,000	20,154,859	92,227,863	15,009,216	7,718,147	105
\$17,800	\$14,434,759	\$3,222,656	\$2,399,670	\$9,657,119	\$791,894	\$10,400	\$1,525,178	\$3,108,673	\$1,051,953	\$671,336	106
647,000	96,536,421	8,532,381	8,917,769	24,905,403	4,089,403	65,000	10,277,552	22,800,805	8,599,898	3,679,898	107
\$42,187	\$7,881,854	\$579,760	\$502,536	\$1,467,522	\$239,951	\$4,450	\$706,588	\$1,674,612	\$208,784	\$275,740	108
332,000	\$7,936,836	5,732,510	1,800	6,489,044	42,684	.....	37,000	21,086	160,000	2,466,636	109
\$45,840	\$6,159,827	\$373,351	890	\$412,237	\$1,779	.....	\$2,921	\$1,265	\$10,000	\$271,634	110
62,000	326,130,241	45,038,290	63,036,913	91,949,141	6,824,546	173,000	6,955,261	68,843,633	2,098,116	8,248,174	111
\$5,840	\$18,658,450	\$2,777,173	\$3,530,506	\$4,969,091	\$369,724	\$11,300	\$455,922	\$4,220,038	\$148,812	\$507,922	112
29,400	45,455,528	3,583,150	7,354,874	24,038,748	1,381,570	.....	5,396,552	1,000,000	188,317	.....	113
.....	\$3,596,474	\$260,329	\$491,049	\$1,255,008	\$90,050	.....	\$331,606	\$60,000	\$9,682	.....	114
.....	9,760,701	1,146,483	175,708	1,928,313	.....	.....	.....	.....	.....	.....	115
.....	\$5,907,572	\$750,628	\$37,854	\$1,204,905	.....	.....	.....	.....	.....	.....	116
.....	4,385,191	175,933	206,509	1,268,691	.....	.....	.....	.....	.....	.....	117
.....	\$2,010,394	\$34,666	\$95,277	\$536,487	.....	.....	.....	.....	.....	.....	118
.....	51,849	6,921	6,921	26,118	1,675	.....	295	3,707	430	157,633	119
175	\$1,204,945	\$139,011	\$84,189	\$504,080	\$23,256	.....	\$4,190	.....	\$6,245	\$76,821	120
\$2,840	2,103,415	352,951	72,255	880,762	12,775	.....	8,072	\$70,710	\$3,245	1,218	121
9,611	123,309,352	22,699,324	3,907,803	49,076,135	742,993	1,160	56,850	.....	3,170	\$20,515	122
380,440	\$12,563,343	\$2,655,994	\$337,526	\$5,496,695	\$74,101	.....	\$3,907	395,340	140,700	2,247,136	123
\$24,318	8,389,307	.....	.....	2,000	.....	.....	.....	\$28,997	\$12,551	\$227,450	124
3,600	\$1,935,373	.....	.....	\$975	2,000	.....	.....	.....	.....	.....	125
\$1,200	\$25,949,345	\$2,061,836	\$210,925	\$1,855,162	\$116,473	\$3,825	\$65,952	\$1,264,483	\$7,662	\$499,858	126
\$2,742	\$300	.....	\$1,275	13,578	.....	.....	\$20,950	\$13,983	\$1,000	\$90	127
\$750	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	128
7,790,000	2,099,506,022	395,743,511	74,573,710	961,609,827	10,888,967	930,000	6,602,000	.....	2,102,410	41,879,920	129
3,804,750	1,134,336,783	222,787,621	41,144,172	523,454,771	5,752,879	610,000	3,479,000	.....	1,081,326	21,237,859	130
202,500	259,684,321	30,466,196	1,100,840	50,859,686	158,127	225,000	.....	.....	103,950	3,941,282	131
95,700	133,251,174	15,586,613	532,103	26,561,080	78,210	112,500	.....	.....	52,595	2,955,964	132
4,017,600	1,913,417,755	335,669,541	451,547,489	651,788,374	85,473,592	515,000	85,588,321	431,016,694	63,911,930	87,559,045	133
2,375,930	1,489,691,738	269,617,295	322,458,065	504,500,285	67,102,451	407,500	66,539,723	343,614,967	54,720,300	67,929,170	134
179,500	21,942,668	1,310,600	199,407	5,857,680	151,493	59,200	77,840	.....	153,400	407,880	135
100,200	14,063,920	805,273	130,829	3,615,542	39,683	32,625	46,440	.....	107,600	273,890	136
3	42	25	15	9	10	2	39	11	8	7	137
\$254,939	\$277,472,607	\$42,891,248	\$23,824,046	\$76,191,207	\$4,392,894	\$137,170	\$4,137,546	\$27,505,698	\$3,724,761	\$5,863,299	138
\$253,700	\$254,322,753	\$40,703,181	\$24,613,416	\$72,611,901	\$3,840,179	\$128,000	\$4,014,338	\$30,647,950	\$3,193,406	\$4,709,393	139
4	48	22	15	11	18	8	41	10	10	12	139
127	27,870	4,868	4,099	12,802	435	52	1,595	2,707	609	939	140
6	181	58	49	66	23	8	47	27	14	18	141
119	24,007	4,464	3,078	10,778	425	52	1,594	2,584	574	919	142
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	143
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	144
1	166	86	40	83	1	.....	.....	.....	.....	.....	145
8	3,603	404	1,005	1,715	10	.....	.....	.....	.....	.....	146
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	147
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	148
.....	260	.....	.....	.....	.....	.....	.....	.....	.....	.....	149
.....	145	1	.....	.....	.....	.....	.....	.....	.....	.....	150
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	151
4	51	25	20	11	15	3	47	11	8	13	152
.....	8	5	3	1	5	1	19	.....	.....	.....	153
.....	19	9	5	2	4	2	18	2	5	7	154
2	9	6	5	2	4	.....	7	3	1	1	155
2	5	.....	2	.....	1	.....	2	.....	.....	.....	156
.....	.....	3	2	2	.....	.....	.....	.....	.....	.....	157
.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	158
.....	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	159
.....	8	2	1	8	.....	.....	.....	.....	.....	.....	160
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	161

TABLE 6.—SLAUGHTERING AND MEAT

	Missouri.	Nebraska.	New Jersey.	New York.	North Dakota.	Ohio.
1 Number of establishments.....	31	8	22	58	8	60
2 Character of organization:						
3 Individual.....	15	1	10	31	1	18
4 Firm and limited partnership.....	5	.....	9	15	1	25
5 Incorporated company.....	11	7	3	7	1	17
6 Capital:						
7 Total.....	\$7,844,054	\$16,488,845	\$1,038,847	\$7,309,162	\$104,371	\$5,224,226
8 Land.....	\$892,756	\$828,209	\$110,000	\$725,365	\$10,500	\$274,665
9 Buildings.....	\$1,663,141	\$4,060,054	\$258,000	\$1,213,556	\$30,750	\$688,071
10 Machinery, tools, and implements.....	\$1,059,749	\$1,327,895	\$182,421	\$800,888	\$11,900	\$482,605
11 Cash and sundries.....	\$4,728,408	\$10,277,687	\$488,426	\$4,569,353	\$51,221	\$3,778,884
12 Proprietors and firm members.....	27	1	30	67	3	76
13 Salaried officials, clerks, etc.:						
14 Total number.....	292	721	82	381	8	313
15 Total salaries.....	\$244,475	\$684,240	\$72,226	\$260,774	\$8,780	\$266,001
16 Officers of corporations—						
17 Number.....	21	8	3	14	1	47
18 Salaries.....	\$51,080	\$27,816	\$9,500	\$32,380	\$2,400	\$71,926
19 General superintendents, managers, clerks, etc.—						
20 Total number.....	211	713	79	317	7	260
21 Total salaries.....	\$193,305	\$656,424	\$62,726	\$228,394	\$6,360	\$194,075
22 Men—						
23 Numbers.....	194	677	74	234	6	249
24 Salaries.....	\$185,824	\$632,867	\$60,622	\$194,457	\$5,860	\$187,189
25 Women—						
26 Numbers.....	17	36	5	83	1	17
27 Salaries.....	\$7,571	\$28,557	\$2,104	\$88,987	\$500	\$8,866
28 Wage-earners, including pieceworkers, and total wages:						
29 Greatest number employed at any one time during the year.....	4,036	6,997	394	1,719	85	1,959
30 Least number employed at any one time during the year.....	2,454	5,344	330	1,374	33	1,551
31 Average number.....	3,043	6,083	352	1,530	34	1,700
32 Wages.....	\$1,416,680	\$2,986,828	\$186,737	\$777,738	\$15,977	\$775,288
33 Men, 16 years and over—						
34 Average number.....	2,920	5,596	350	1,442	33	1,652
35 Wages.....	\$1,392,645	\$2,858,466	\$186,477	\$752,662	\$15,677	\$762,404
36 Women, 16 years and over—						
37 Average number.....	8	173	.....	78	1	29
38 Wages.....	\$2,160	\$97,425	.....	\$23,332	\$300	\$8,666
39 Children, under 16 years—						
40 Average number.....	115	314	2	10	.....	19
41 Wages.....	\$21,875	\$70,937	\$260	\$1,744	.....	\$4,228
42 Average number of wage-earners, including pieceworkers, employed during each month:						
43 Men, 16 years and over—						
44 January.....	2,677	5,112	381	1,496	34	1,798
45 February.....	2,690	5,100	378	1,467	34	1,737
46 March.....	3,521	5,235	374	1,453	34	1,655
47 April.....	2,691	5,299	359	1,417	32	1,592
48 May.....	2,550	5,612	334	1,387	32	1,632
49 June.....	2,639	5,852	311	1,390	32	1,685
50 July.....	3,122	5,883	309	1,377	32	1,554
51 August.....	3,250	5,776	310	1,373	32	1,515
52 September.....	3,037	5,735	344	1,401	32	1,583
53 October.....	2,888	5,980	360	1,481	34	1,599
54 November.....	2,863	5,876	364	1,521	34	1,742
55 December.....	3,110	5,688	373	1,542	34	1,832
56 Women, 16 years and over—						
57 January.....	7	138	.....	67	1	29
58 February.....	7	139	.....	68	1	29
59 March.....	7	165	.....	69	1	29
60 April.....	14	170	.....	69	1	29
61 May.....	8	146	.....	70	1	29
62 June.....	10	152	.....	92	1	29
63 July.....	10	171	.....	88	1	29
64 August.....	17	156	.....	89	1	29
65 September.....	16	137	.....	90	1	29
66 October.....	3	245	.....	82	1	29
67 November.....	.....	193	.....	83	1	24
68 December.....	.....	215	.....	67	1	29
69 Children, under 16 years—						
70 January.....	109	278	3	10	.....	24
71 February.....	115	282	3	10	.....	24
72 March.....	130	286	3	10	.....	20
73 April.....	119	315	3	10	.....	16
74 May.....	107	316	2	10	.....	16
75 June.....	116	369	2	10	.....	19
76 July.....	122	321	2	10	.....	19
77 August.....	123	363	2	10	.....	16
78 September.....	116	336	2	10	.....	16
79 October.....	104	304	.....	10	.....	16
80 November.....	114	304	2	10	.....	24
81 December.....	107	300	3	10	.....	24
82 Miscellaneous expenses:						
83 Total.....	\$350,599	\$1,591,078	\$97,274	\$520,208	\$8,975	\$619,628
84 Rent of works.....	\$8,005	\$13,708	\$7,585	\$35,988	\$720	\$26,120
85 Taxes, not including internal revenue.....	\$14,742	\$43,862	\$6,097	\$29,843	\$430	\$24,262
86 Rent of offices, insurance, interest, and all sundry expenses not hitherto included.....	\$327,352	\$1,528,508	\$83,592	\$452,697	\$7,225	\$569,246
87 Contract work.....	\$500	.....	.....	\$1,680	\$300	.....
88 Materials used:						
89 Total cost.....	\$38,391,243	\$62,888,762	\$5,443,255	\$16,980,708	\$193,175	\$17,006,794
90 Slaughtered—						
91 Cows, number.....	334,552	523,545	4,410	45,986	1,700	77,325
92 Cost.....	\$14,539,993	\$24,413,087	\$207,600	\$2,005,555	\$65,000	\$2,994,656
93 Sheep, number.....	245,407	723,865	55,449	33,683	900	38,337
94 Cost.....	\$1,008,852	\$3,075,686	\$277,466	\$137,231	\$3,400	\$142,703
95 Hogs, number.....	1,828,753	2,732,074	255,853	1,095,543	12,500	1,273,822
96 Cost.....	\$18,816,386	\$27,893,464	\$2,381,151	\$3,664,583	\$121,400	\$11,100,887
97 Calves, number.....	5,154	7,414	.....	20,771	400	17,391
98 Cost.....	\$120,856	\$97,678	\$74,516	\$164,620	\$4,000	\$146,460
99 All other animals, cost.....	11,725	56,074	12,178	2,000	.....	300
100 Dressed meat, purchased, fresh or partly cured, cost.....	\$1,842,384	\$4,426,618	\$2,266,059	\$5,294,941	.....	\$1,141,022
101 Fuel.....	\$155,874	\$364,495	\$23,919	\$73,298	\$375	\$83,554

SLAUGHTERING AND MEAT PACKING.

PACKING, WHOLESALE: BY STATES, 1900—Continued.

Oregon.	Pennsylvania.	Rhode Island.	Tennessee.	Texas.	Utah.	Virginia.	Washington.	West Virginia.	Wisconsin.	All other states and territories. ¹	
9	68	6	8	12	5	3	14	8	11	5	1
2	28	-----	2	1	1	1	2	1	2	1	2
3	31	4	2	3	4	1	6	1	5	1	3
4	9	2	4	8	-----	1	6	1	4	3	4
\$760,448	6,009,347	\$727,850	\$651,740	\$1,232,267	\$83,902	\$156,500	\$941,786	\$313,000	\$3,784,216	\$121,721	5
\$189,021	\$700,503	\$9,800	\$45,300	\$53,871	\$22,369	\$34,000	\$38,100	\$22,000	\$268,832	\$4,000	6
\$238,500	\$1,291,502	\$17,400	\$119,589	\$244,329	\$7,000	\$23,000	\$127,500	\$55,000	\$525,152	\$26,803	7
\$115,356	\$675,700	\$25,700	\$129,227	\$222,952	\$10,772	\$21,500	\$125,942	\$33,000	\$425,330	\$46,372	8
\$217,571	\$3,341,532	\$674,950	\$357,624	\$711,115	\$43,761	\$78,000	\$650,244	\$203,000	\$2,564,852	\$44,546	9
9	101	9	5	6	10	4	15	3	17	3	10
41	349	16	15	49	6	17	79	16	122	12	11
\$47,130	\$239,105	\$17,636	\$17,365	\$61,737	\$2,472	\$13,140	\$73,328	\$11,800	\$144,833	\$7,270	12
9	9	5	9	10	-----	3	3	5	10	3	13
\$16,400	\$19,200	\$8,000	\$12,500	\$20,800	-----	\$4,940	\$6,120	\$6,000	\$35,000	\$3,000	14
32	340	11	6	39	6	14	76	11	112	9	15
\$30,730	\$269,905	\$9,636	\$4,865	\$40,997	\$2,472	\$8,200	\$67,208	\$5,800	\$109,833	\$4,270	16
30	323	11	6	38	5	14	72	11	105	9	17
\$29,380	\$264,053	\$9,636	\$4,865	\$40,467	\$2,172	\$8,200	\$65,438	\$5,800	\$105,735	\$4,270	18
2	17	-----	-----	1	1	-----	4	-----	7	-----	19
\$800	\$5,912	-----	-----	\$540	\$300	-----	\$1,770	-----	\$4,098	-----	20
219	7,457	211	349	535	40	57	253	92	1,672	149	21
145	1,261	133	109	345	31	30	195	75	1,119	117	22
172	1,333	199	156	414	34	42	209	84	1,861	75	23
\$87,821	\$733,932	\$102,424	\$60,945	\$179,505	\$14,978	\$17,884	\$135,896	\$42,646	\$560,808	\$34,633	24
166	1,364	196	152	394	34	42	207	76	1,359	75	25
\$86,441	\$728,961	\$101,588	\$60,775	\$173,438	\$14,978	\$17,884	\$134,996	\$40,642	\$560,433	\$34,633	26
1	12	-----	4	19	-----	-----	2	6	2	-----	27
\$480	\$3,395	-----	\$170	\$5,867	-----	-----	\$900	\$1,620	\$375	-----	28
5	7	3	-----	1	-----	-----	-----	2	-----	-----	29
\$900	\$1,576	\$336	-----	\$200	-----	-----	-----	\$384	-----	-----	30
166	1,399	183	197	457	34	57	216	83	1,552	73	31
166	1,386	183	180	433	33	52	214	73	1,407	64	32
150	1,377	191	139	473	32	42	216	73	1,339	66	33
136	1,320	194	118	447	34	42	210	69	1,268	64	34
136	1,319	196	122	408	34	34	230	77	1,271	59	35
153	1,292	193	122	349	35	34	207	77	1,305	52	36
135	1,301	195	137	341	34	30	196	77	1,287	122	37
135	1,339	199	76	326	35	32	193	77	1,172	126	38
162	1,308	199	90	352	33	32	199	69	1,176	73	39
172	1,338	204	115	357	33	37	193	74	1,339	64	40
191	1,409	200	247	370	31	51	204	84	1,545	61	41
187	1,478	201	273	366	38	56	201	84	1,649	75	42
1	11	-----	-----	22	-----	-----	2	6	1	-----	43
1	10	-----	-----	21	-----	-----	2	6	1	-----	44
1	11	-----	-----	23	-----	-----	2	6	1	-----	45
1	11	-----	-----	19	-----	-----	2	6	2	-----	46
1	15	-----	-----	18	-----	-----	2	6	2	-----	47
1	16	-----	-----	17	-----	-----	2	6	2	-----	48
1	14	-----	-----	17	-----	-----	2	6	2	-----	49
1	14	-----	-----	17	-----	-----	2	6	2	-----	50
1	16	-----	-----	18	-----	-----	2	6	2	-----	51
1	10	-----	3	14	-----	-----	2	6	1	-----	52
1	11	-----	23	19	-----	-----	2	6	1	-----	53
1	11	-----	26	24	-----	-----	2	6	1	-----	54
5	7	3	-----	1	-----	-----	-----	2	-----	-----	55
5	7	3	-----	-----	-----	-----	-----	2	-----	-----	56
5	6	3	-----	-----	-----	-----	-----	2	-----	-----	57
5	7	3	-----	2	-----	-----	-----	2	-----	-----	58
5	7	3	-----	1	-----	-----	-----	2	-----	-----	59
5	6	3	-----	1	-----	-----	-----	2	-----	-----	60
5	7	3	-----	2	-----	-----	-----	2	-----	-----	61
5	6	3	-----	2	-----	-----	-----	2	-----	-----	62
5	6	4	-----	2	-----	-----	-----	2	-----	-----	63
5	6	4	-----	1	-----	-----	-----	2	-----	-----	64
5	7	4	-----	-----	-----	-----	-----	2	-----	-----	65
5	7	4	-----	-----	-----	-----	-----	2	-----	-----	66
\$35,763	\$372,368	\$43,794	\$25,268	\$66,749	\$5,076	\$2,533	\$66,156	\$4,623	\$405,589	\$6,439	67
\$3,026	\$34,842	\$10,373	\$347	\$5,120	\$1,300	-----	\$9,033	-----	\$21,362	\$916	68
\$4,764	\$26,167	\$302	\$1,513	\$5,070	\$611	\$933	\$3,304	\$1,575	\$10,015	\$533	69
\$27,933	\$309,074	\$32,619	\$23,253	\$56,559	\$2,664	\$1,600	\$53,319	\$3,043	\$374,212	\$4,990	70
-----	\$2,285	-----	\$150	-----	-----	-----	-----	-----	-----	-----	71
\$1,359,361	\$15,128,096	\$2,164,400	\$1,453,123	\$3,170,536	\$291,477	\$477,230	\$3,736,653	\$1,133,954	\$11,850,136	\$524,500	72
14,451	40,916	-----	3,933	24,375	4,707	1,300	33,197	4,670	45,470	7,490	73
\$549,650	\$1,945,533	-----	\$243,015	599,514	\$100,413	\$36,000	\$1,454,260	\$200,200	\$1,720,361	132,120	74
47,819	85,235	-----	4,200	6,649	9,104	50	106,676	2,560	36,502	4,510	75
\$158,520	\$333,223	-----	\$12,700	\$13,311	\$35,092	\$150	\$357,647	\$3,400	\$140,047	\$16,270	76
21,832	751,057	133,200	115,572	208,270	1,750	32,000	61,234	79,120	947,176	24,550	77
\$213,040	\$6,443,115	\$1,459,300	\$1,060,324	\$1,386,067	\$15,000	\$271,200	\$660,733	\$785,010	\$3,627,543	\$257,550	78
1,661	31,927	-----	1,900	7,544	710	300	6,055	760	21,323	460	79
\$12,470	\$294,746	-----	\$10,900	\$60,205	\$5,930	\$1,500	\$65,095	\$4,404	\$137,233	\$2,200	80
\$10,364	\$25,603	-----	\$50	\$21	-----	-----	\$5,691	-----	\$14,467	-----	81
\$294,621	\$5,236,543	\$559,300	\$73,757	\$173,733	\$59,099	\$130,000	\$61,063	\$117,950	\$161,402	\$21,000	82
\$12,639	\$76,731	\$3,625	\$14,145	\$33,853	\$300	\$2,210	\$10,160	\$4,025	\$54,025	\$13,150	83

¹ Includes establishments distributed as follows: Alabama, 1; Arkansas, 1; New Hampshire, 1; South Dakota, 1; Wyoming, 1.

TABLE 6.—SLAUGHTERING AND MEAT

	Missouri.	Nebraska.	New Jersey.	New York.	North Dakota.	Ohio.
Materials used—Continued.						
Total cost—Continued.						
84						
85						
86						
87						
88						
89						
90						
91						
92						
93						
94						
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120						
121						
122						
123						
124						
125						
126						
127						
Weight of animals slaughtered:						
Beef—						
128						
129						
Sheep—						
130						
131						
Hogs—						
132						
133						
Calves—						
134						
135						
Comparison of products:						
136						
137						
138						
Power:						
139						
140						
Engines—						
141						
142						
143						
144						
145						
146						
147						
148						
Rented—						
149						
150						
Furnished to other establishments, horsepower.						
151						
Establishments classified by number of persons employed, not including proprietors and firm members:						
152						
153						
154						
155						
156						
157						
158						
159						
160						
161						

In connection with these tables, the fact should be noted that in New York and New Jersey, states showing a decrease in value of products for the last decade, the value of products of establishments engaged in slaughtering only considerably exceeded, in 1900, the value of products of the establishments conducting packing operations. On the other hand, in Illinois, Kansas, Nebraska, Missouri, and Indiana, the packing industry led the slaughtering industry by a large margin. The figures are significant. They illustrate the importance of the demand of the market, in the large eastern cities, for fresh meat for local consumption, although a considerable proportion of the meat from eastern establishments is exported. The immense proportion of the western packing trade shows the local demand was inconsiderable as compared with the amounts necessary to supply the demand in other states and foreign countries.

TABLE 7.—COMBINED SLAUGHTERING AND MEAT PACKING: QUANTITY AND COST OF MATERIALS USED, 1890 AND 1900, WITH PER CENT OF INCREASE.

	1900	1890	Per cent of increase.
Total cost.....	\$688,588,577	\$480,962,211	42.1
Beeves slaughtered:			
Number.....	5,580,911	5,422,044	2.0
Cost.....	\$247,365,812	\$193,348,810	27.9
Sheep slaughtered:			
Number.....	9,190,490	6,178,449	48.8
Cost.....	\$87,137,542	\$24,358,179	52.5
Hogs slaughtered:			
Number.....	30,651,333	22,849,451	37.2
Cost.....	\$278,736,961	\$207,228,609	34.5
All other animals slaughtered:			
Cost.....	\$7,916,399	\$5,246,661	50.9
Dressed meat:			
Cost.....	\$54,715,496	\$25,674,343	113.1
Fuel.....	\$2,747,606	\$1,669,396	75.1
Rent of power and heat.....	\$30,946	\$25,240	22.6
All other materials, including mill supplies and freight.....	\$54,982,815	\$23,510,973	133.6

A comparative summary between 1890 and 1900, of quantities and cost of materials used, is presented in Table 7. The value of "all other animals slaughtered" shows an increase of 50.9 per cent. This item consisted almost wholly of poultry, and affords evidence of the extent to which this phase of slaughtering has increased among the concerns engaged in the slaughtering of cattle, hogs, and sheep. The total for the value of hogs killed amounted to \$278,736,961, an increase of 34.5 per cent in the decade. During the same period, the number of hogs killed increased in a greater ratio than their value, showing a decreased value for the single hog. The number of cattle killed increased only 2 per cent, while the cost increased 27.9 per cent. The number of sheep killed increased 48.8 per cent, while the value increased 52.5 per cent, showing an increase in the cost of the single sheep. The value of dressed meat purchased increased from \$25,674,343 to \$54,715,496, or 113.1 per cent, showing the extent to which establishments engaged in packing only increased. This item is largely a duplication of the

value reported of the animals slaughtered. The increase in the cost of fuel of 75.1 per cent was due principally to the more general use and improvement of the cold storage and refrigeratory processes, and the introduction of electric transportation in plants of some of the larger concerns. The increase of 133.6 per cent in the cost of all other materials was caused in part by the cost of materials needed in the more extended utilization of the "waste" materials, and the materials used in box factories, plants for the manufacture of tin cans and cases, etc., the increasing pressure of competition forcing the establishments to manufacture many of the articles previously purchased from outside concerns. This table shows that the cost of cattle per animal increased from \$35.66 to \$44.72, and the cost of the single sheep from \$3.94 to \$4.05, while that of the single hog decreased from \$9.27 to \$9.09.

Table 8 is a comparative summary between 1890 and 1900, of the quantities and value of products, with the percentage of increase.

TABLE 8.—COMBINED SLAUGHTERING AND MEAT PACKING: QUANTITY AND VALUE OF PRODUCTS, 1890 AND 1900, WITH PER CENT OF INCREASE.

	1900	1890	Per cent of increase.
Total value.....	\$785,562,483	\$561,611,668	39.9
Beef, sold fresh:			
Pounds.....	2,920,458,297	2,708,819,960	7.8
Value.....	\$211,068,934	\$152,591,963	38.3
Beef, canned:			
Pounds.....	112,449,021	133,428,456	115.7
Value.....	\$9,167,531	\$3,950,582	2.4
Beef, salted or cured:			
Pounds.....	137,589,303	576,289,731	176.1
Value.....	\$9,661,834	\$23,318,414	168.6
Mutton, sold fresh:			
Pounds.....	404,133,601	267,353,788	51.2
Value.....	\$32,963,219	\$21,998,023	49.8
Pork, sold fresh:			
Pounds.....	1,125,038,988	1,125,648,541	8.7
Value.....	\$84,019,387	\$66,719,585	25.9
Pork, salted:			
Pounds.....	1,375,524,758	1,264,956,287	8.7
Value.....	\$38,674,016	\$77,737,470	14.1
Hams:			
Pounds.....	737,526,973	529,387,213	48.8
Value.....	\$78,793,012	\$48,732,905	51.4
Smoked bacon, sides, and shoulders:			
Pounds.....	985,722,212	666,229,376	48.0
Value.....	\$74,873,847	\$44,664,041	67.6
Sausage, fresh or cured:			
Pounds.....	292,164,075	149,281,545	95.7
Value.....	\$21,472,413	\$9,293,335	130.9
Refined lard:			
Pounds.....	891,438,417	586,485,829	66.2
Value.....	\$52,620,348	\$33,401,563	57.5
Neutral lard:			
Pounds.....	129,845,282	104,986,465	23.2
Value.....	\$3,588,350	\$6,740,246	27.4
Oleomargarine oil:			
Gallons.....	19,111,120	16,600,652	15.1
Value.....	\$11,432,542	\$12,202,117	15.9
Other oils:			
Gallons.....	8,245,569	4,427,555	86.2
Value.....	\$3,440,353	\$3,590,012	14.2
Fertilizers:			
Tons.....	168,510	115,400	46.0
Value.....	\$3,300,132	\$2,343,777	40.8
Hides:			
Number.....	6,281,952	5,346,919	17.5
Pounds.....	336,527,907	384,481,325	112.5
Value.....	\$33,925,911	\$21,245,782	59.7
Wool:			
Pounds.....	13,132,146	11,127,851	18.5
Value.....	\$3,335,324	\$2,009,133	66.0
All other products, including custom work.....	\$63,174,775	\$26,067,717	142.3

¹Decrease.

Two notable features of this table are the decrease in the quantity and value of the salted and cured beef,

and the increase in the value of "all other products," due to the increase in the production and value of the the so-called by-products. Salted beef, while it has decreased both in quantity and in total value, yet has increased in value per pound, as is indicated by the fact that the percentage of value did not fall so fast as did the percentage of quantity produced. The value of "all other products" has increased from \$26,067,717 to \$63,174,775, or 142.3 per cent. Compared with the rate of increase in the total value of all products of 39.9 per cent, it increased very nearly three and one-half times as fast. Of the increase of \$223,950,765 in the value of all products, the increase of \$37,107,058 in the value of "all other products" constituted 16.6 per cent, or very nearly one-sixth. The production of beef, sold fresh, is so large as to be almost incomprehensible—2,920,458,297 pounds were produced in 1900, an increase of 212,138,337 pounds, or 7.8 per cent, over 1890. The value of this beef increased in greater proportion, advancing from an average price of 5.6 cents per pound in 1890 to 7.2 cents per pound in 1900, or 28.6 per cent. Of canned beef, 20,979,435 fewer pounds were canned in 1900 than in 1890, while the value increased by \$216,949. Beef, salted or cured, suffered a decline in production of 438,700,428 pounds, falling from 576,289,731 pounds to 137,589,303 pounds, or 76.1 per cent. The decrease in value was \$13,656,580, or 58.6 per cent. Of mutton sold fresh, there was a gain of 136,829,813 pounds, or 51.2 per cent. The value of the fresh mutton increased \$10,965,196, or 49.8 per cent. The quantity of pork sold fresh and of pork salted each increased 8.7 per cent. The values of these items, however, show considerable variation, the value of the fresh pork increasing 25.9 per cent, and of the pork salted 14.1 per cent. Both show an increased value per pound.

The production of hams increased 258,139,760 pounds, or 48.8 per cent, while the increase in value was \$25,060,104, or 51.4 per cent. The production of smoked bacon, sides, and shoulders in-

creased 48 per cent, and the value 67.6 per cent. In 1900 both the production of these and their value exceeded the production and value of hams. The production of sausage, fresh and cured, almost doubled in quantity during the decade, increasing 95.7 per cent, while the gain in value was 130.9 per cent. The quantity of both refined and neutral lard shows a large percentage of increase, indicating, when compared with the production of fresh and salt pork, that a greater portion of the carcass was being devoted to lard than formerly. This is due probably to the fact that lard is considered one of the most valuable products of the hog. The production of oleo oil increased 15.1 per cent in quantity, but fell 5.9 per cent in value. While this decrease in value was largely due to increased production, caused by improved methods of production, yet it is not possible to ascribe the whole decrease to this fact, since the price of this oil is fixed in Rotterdam, the greatest oleo market in the world, where American oleo oil is brought into competition with that from Germany, the Netherlands, and other nations. Under "other oils" the production increased 86.2 per cent, while the value fell 4.2 per cent. The value per ton of fertilizers also fell, while the quantity of production increased. The number of hides increased, although their total weight fell off, showing a decrease in the weight of the average hide, while their value increased 59.7 per cent. The value of the wool increased in a much larger proportion than did the quantity, the value increasing 66 per cent and the quantity 18.5 per cent. This product of 13,182,146 pounds of pulled wool amounted to 35.6 per cent of the 37,000,000 pounds of pulled wool produced in the United States during the calendar year of 1900, as estimated by the National Association of Wool Manufacturers.

Table 9 is interesting in showing the extent to which this industry has tended to group itself about certain centers, and the relative importance of these centers.

TABLE 9.—SUMMARY, CITIES HAVING A PRODUCT VALUED AT \$1,000,000 AND OVER: 1900.

	Allegheny, Pa.	Baltimore, Md.	Boston, Mass.	Buffalo, N. Y.	Chicago, Ill.	Cincinnati, Ohio.	Cleveland, Ohio.	Dayton, Ohio.
Number of establishments.....	8	78	6	24	88	27	10	10
Capital.....	\$1,497,666	\$1,844,958	\$40,915	\$5,178,604	\$67,137,569	\$2,893,064	\$1,827,288	\$242,925
Salaries officials, clerks, etc., number.....	52	57	14	208	4,010	98	178	12
Salaries.....	\$57,800	\$44,724	\$8,996	\$146,523	\$4,288,994	\$103,880	\$135,886	\$9,900
Wage-earners.....	488	508	84	928	25,345	866	577	147
Wages.....	\$283,028	\$233,898	\$23,030	\$486,869	\$12,875,676	\$414,621	\$235,023	\$75,881
Miscellaneous expenses.....	\$111,546	\$99,546	\$14,006	\$342,878	\$18,829,825	\$487,889	\$176,182	\$10,332
Materials used:								
Total cost.....	\$3,388,805	\$6,257,558	\$1,144,276	\$10,026,676	\$218,241,381	\$8,806,652	\$6,759,023	\$959,661
Beef slaughtered, number.....	13,521	15,357	12,325	68,451	1,666,847	62,267	13,949	8,368
Cost.....	\$648,079	\$665,122	\$606,125	\$2,591,030	\$78,947,641	\$1,879,390	\$886,059	\$312,515
Sheep slaughtered, number.....	40,529	184,480	19,580	248,093	2,878,440	50,200	12,782	8,289
Cost.....	\$152,686	\$787,620	\$52,546	\$882,962	\$12,583,093	\$136,744	\$63,910	\$10,551
Hogs slaughtered, number.....	182,295	564,035	624,915	6,966,960	588,327	582,700	582,909	69,001
Cost.....	\$1,638,782	\$8,408,829	\$220,184	\$5,490,289	\$72,041,692	\$5,831,026	\$4,519,927	\$594,041
All other animals slaughtered, cost.....	\$81,187	\$269,580	\$284,854	\$1,114,460	\$187,770	\$80,692	\$80,692	\$8,643
Dressed meat, cost.....	\$445,456	\$848,107	\$284,000	\$285,616	\$21,006,384	\$1,076,700	\$26,052	\$2,760
All other materials.....	\$377,665	\$288,300	\$31,421	\$491,925	\$88,148,161	\$195,022	\$1,282,388	\$81,151

TABLE 9.—SUMMARY, CITIES HAVING A PRODUCT VALUED AT \$1,000,000 AND OVER: 1900—Continued.

	Allegheny, Pa.	Baltimore, Md.	Boston, Mass.	Buffalo, N. Y.	Chicago, Ill.	Cincinnati, Ohio.	Cleveland, Ohio.	Dayton, Ohio.
Products:								
Total value	\$3,996,807	\$7,066,461	\$1,829,010	\$11,601,167	\$256,527,949	\$10,370,177	\$7,514,470	\$1,007,625
Beef—								
Sold fresh, pounds	8,258,977	6,984,180	6,214,500	30,504,150	848,262,248	23,998,890	8,141,940	4,835,220
Value	\$653,268	\$570,764	\$638,575	\$2,058,750	\$61,964,934	\$1,507,768	\$821,170	\$222,590
Salted or cured, pounds	59,700	307,820		1,500,000	57,860,743	4,050,000		32,000
Value	\$3,150	\$24,959		\$105,000	\$5,062,662	\$234,850		\$4,790
Canned, pounds				500,000	76,296,560	1,200,000		
Value				\$36,000	\$6,446,283	\$78,500		
Mutton—								
Sold fresh, pounds	1,369,520	6,966,000	708,200	9,879,720	187,228,651	1,460,850	626,318	123,015
Value	\$153,486	\$768,860	\$58,614	\$770,826	\$11,053,224	\$125,965	\$62,631	\$9,113
Pork—								
Sold fresh, pounds	6,261,038	10,276,713		24,843,910	345,967,335	24,792,702	15,814,790	1,181,600
Value	\$506,182	\$795,207		\$1,737,751	\$24,416,666	\$1,745,133	\$1,223,916	\$30,247
Salted, pounds	2,507,806	7,694,909		12,939,640	464,600,797	9,248,127	13,380,522	97,000
Value	\$165,385	\$550,783		\$815,946	\$92,293,688	\$618,446	\$939,101	\$6,965
Hams, pounds	6,868,842	10,969,840	2,000,000	15,253,672	215,263,955	23,137,011	11,531,435	1,766,120
Value	\$695,134	\$1,135,283	\$180,000	\$1,999,099	\$21,562,171	\$2,076,895	\$1,099,415	\$108,050
Smoked bacon, sides, and shoulders, pounds	5,403,251	18,218,089	500,000	28,916,752	159,607,624	23,927,418	24,171,198	2,427,480
Value	\$508,763	\$1,871,110	\$40,000	\$2,008,015	\$12,688,911	\$1,687,498	\$2,032,889	\$175,907
Sausage, fresh or cured, pounds	4,698,460	9,455,752	780,000	6,556,300	91,756,941	6,133,780	5,452,045	610,100
Value	\$320,136	\$647,538	\$51,000	\$443,216	\$7,588,254	\$422,669	\$418,747	\$35,001
Refined lard, pounds	5,665,171	4,440,261	100,000	13,417,216	316,745,272	17,786,463	7,160,448	1,038,500
Value	\$363,805	\$289,882	\$70,000	\$917,459	\$13,124,463	\$1,099,945	\$484,693	\$146,007
Neutral lard, pounds		5,196,552		2,847,900	44,785,888	633,300	2,000,000	150,000
Value		\$319,066		\$141,346	\$3,634,188	\$38,000	\$160,000	\$7,500
Oleo oil, gallons	494,872			34,490	8,671,660	76,000		
Value	\$244,687			\$17,245	\$5,227,763	\$38,000		
Other oils, gallons	3,100	5,000		27,648	4,335,991			
Value	\$1,550	\$2,000		\$14,726	\$1,990,360			
Fertilizers, tons	2,520	590	250	2,312	39,852	2,206	1,616	125
Value	\$79,297	\$8,600	\$2,500	\$34,870	\$393,455	\$33,433	\$23,307	\$1,100
Hides, number	23,037	55,237	38,223	100,039	1,779,678	87,038	16,725	9,539
Pounds	833,590	1,167,330	873,230	3,968,057	104,873,610	8,479,270	707,817	501,950
Value	\$90,843	\$93,860	\$78,820	\$353,460	\$10,773,897	\$328,692	\$79,551	\$40,771
Wool, pounds		5,460		518,826	8,389,307			
Value		\$1,885		\$103,765	\$1,935,873			
All other products, including custom work	\$211,181	\$486,564	\$209,501	\$646,094	\$30,966,762	\$334,388	\$119,050	\$121,774

	Denver, Colo.	Detroit, Mich.	East St. Louis, Ill.	Indianapolis, Ind.	Jersey City, N. J.	Kansas City, Kans.	Louisville, Ky.	Milwaukee and Cudahy, Wis.
Number of establishments	7	16	3	7	13	8	12	7
Capital	\$833,618	\$1,184,776	\$3,183,288	\$3,807,246	\$473,485	\$15,114,601	\$1,218,426	\$3,578,690
Salaries officials, clerks, etc., number	27	61	156	136	1,771	52	52	116
Salaries	\$36,496	\$59,681	\$138,259	\$128,834	\$26,882	\$1,579,436	\$45,739	\$140,333
Wage-earners	171	333	2,159	1,949	183	7,713	440	1,233
Wages	\$103,274	\$177,856	\$985,497	\$788,226	\$130,707	\$3,861,510	\$180,417	\$590,463
Miscellaneous expenses	\$33,184	\$70,587	\$305,594	\$218,939	\$58,342	\$1,919,411	\$100,312	\$385,102
Materials used:								
Total cost	\$2,404,458	\$3,628,440	\$25,370,543	\$17,400,330	\$5,872,940	\$65,082,581	\$3,828,386	\$11,405,168
Beeves slaughtered, number	26,716	19,648	361,873	77,595	17,530	618,206	13,038	45,442
Cost	\$1,095,817	\$633,105	\$13,842,581	\$3,825,588	\$900,540	\$7,011,089	\$482,242	\$1,720,449
Sheep slaughtered, number	41,518	37,410	254,060	25,807	269,957	635,655	6,507	30,139
Cost	\$204,363	\$124,845	\$929,361	\$72,883	\$1,085,717	\$2,294,133	\$19,496	\$138,363
Hogs slaughtered, number	91,866	295,728	1,134,662	1,221,743	490,607	2,599,841	474,915	500,374
Cost	\$338,452	\$2,554,679	\$9,212,843	\$10,083,574	\$2,361,204	\$21,402,061	\$3,157,874	\$8,217,633
All other animals slaughtered, cost	\$25,300	\$20,140	\$271,264	\$31,279	\$345,543	\$289,335	\$12,058	\$149,185
Dressed meat, cost	\$209,990	\$130,000	\$297,863	\$2,450,977	\$465,636	\$525,077	\$50,000	\$141,353
All other materials	\$30,536	\$137,771	\$816,131	\$915,929	\$174,222	\$2,760,896	\$106,816	\$1,038,393
Products:								
Total value	\$2,858,947	\$4,047,749	\$27,676,818	\$18,781,442	\$6,243,217	\$78,787,771	\$4,444,978	\$13,045,979
Beef—								
Sold fresh, pounds	15,000,250	9,241,000	185,908,693	44,859,495	11,991,650	447,087,693	5,142,439	23,682,779
Value	\$1,090,818	\$613,189	\$11,301,559	\$2,775,363	\$332,505	\$30,692,151	\$362,082	\$1,575,321
Salted or cured, pounds	25,000			558,355		8,615,600		828,796
Value	\$1,250			\$124,088		\$680,280		\$58,267
Canned, pounds				86,976		14,094,995		52,186
Value				\$6,722		\$1,841,215		\$5,445
Mutton—								
Sold fresh, pounds	2,146,245	1,381,000	10,229,819	960,360	11,290,773	24,260,625	260,276	1,582,803
Value	\$178,179	\$116,088	\$740,819	\$69,979	\$360,116	\$1,890,008	\$20,615	\$127,269
Pork—								
Sold fresh, pounds	6,240,000	10,287,290	53,281,492	8,618,426	48,273,851	79,695,358	4,043,610	23,632,404
Value	\$382,300	\$693,282	\$3,868,464	\$605,148	\$3,108,578	\$4,578,597	\$239,978	\$1,331,817
Salted, pounds	8,358,000	11,630,000	55,672,697	22,180,134	1,000,000	71,712,071	21,130,733	71,937,711
Value	\$345,000	\$727,400	\$3,764,849	\$1,817,137	\$60,000	\$4,375,466	\$1,077,335	\$4,242,508
Hams, pounds	2,350,000	7,336,000	8,417,044	32,365,020	1,500,000	53,040,207	10,490,435	24,687,987
Value	\$180,000	\$545,060	\$787,001	\$2,617,900	\$135,000	\$4,488,458	\$957,501	\$2,124,199
Smoked bacon, sides, and shoulders, pounds	1,950,000	13,790,000	16,827,989	106,827,000	2,243,175	124,833,023	10,236,026	8,069,373
Value	\$122,000	\$963,200	\$1,084,579	\$7,357,198	\$179,454	\$3,575,144	\$700,932	\$556,063
Sausage, fresh or cured, pounds	2,057,800	2,962,500	2,641,619	4,044,370	500,000	21,570,287	3,859,556	7,219,189
Value	\$123,624	\$187,000	\$158,694	\$277,686	\$30,000	\$1,379,985	\$271,087	\$520,134
Refined lard, pounds	4,950,000	790,000	3,657,723	33,759,538	2,234,682	37,978,088	6,306,946	17,794,231
Value	\$235,000	\$60,300	\$195,627	\$2,061,666	\$128,105	\$4,740,010	\$332,528	\$972,153
Neutral lard, pounds		669,645		3,576,980		23,075,743		1,851,570
Value		\$53,791		\$269,350		\$1,281,428		\$90,050
Oleo oil, gallons		1,089,041		24,800		11,775		45,322
Value		\$879,809		\$47,745		\$1,204,905		\$24,048
Other oils, gallons		49,200		100,000		1,263,691		5,931
Value		\$45,600		\$45,600		\$560,487		\$1,651
Fertilizers, tons	150	360	13,257	4,464		11,775	1,675	8,157
Value	\$1,710	\$5,400	\$309,074	\$65,823		\$225,317	\$23,256	\$7,321
Hides, number	28,825	22,678	890,801	83,507	48,093	890,963	15,019	66,448
Pounds	1,700,680	1,055,790	23,113,317	5,801,425	1,472,980	49,955,565	798,077	2,828,136
Value	\$120,812	\$86,065	\$2,170,931	\$561,279	\$127,857	\$5,514,648	\$82,063	\$293,954
Wool, pounds						2,000		
Value						\$975		
All other products, including custom work	\$78,754	\$66,765	\$2,557,037	\$586,048	\$682,102	\$2,521,297	\$128,465	\$955,212

SLAUGHTERING AND MEAT PACKING.

TABLE 9.—SUMMARY, CITIES HAVING A PRODUCT VALUED AT \$1,000,000 AND OVER: 1900—Continued.

	Newark, N. J.	New York, N. Y.	Paterson, N. J.	Pawtucket, R. I.	Philadel- phia, Pa.	Pittsburg, Pa.	Portland, Oreg.	Providence, R. I.	St. Joseph and South St. Joseph, Mo.
Number of establishments	10	52	8	3	58	5	4	3	5
Capital	\$363,777	\$9,267,261	\$399,800	\$501,480	\$1,882,732	\$786,810	\$604,282	\$252,720	\$5,200,899
Salaried officials, clerks, etc., number	39	355	11	141	47	34	16	16	131
Salaries	\$32,708	\$410,854	\$15,464	\$111,925	\$42,713	\$39,790	\$17,686	\$106,001	\$106,001
Wage-earners	176	1,932	75	84	617	150	121	122	2,216
Wages	\$94,993	\$1,303,526	\$41,562	\$47,280	\$372,610	\$93,950	\$54,025	\$58,024	\$980,749
Miscellaneous expenses	\$40,275	\$339,033	\$30,965	\$12,129	\$221,674	\$28,001	\$29,700	\$30,597	\$190,550
Materials used:									
Total cost	\$3,276,004	\$38,013,877	\$1,042,952	\$1,045,754	\$10,821,065	\$1,779,600	\$1,109,939	\$1,155,026	\$27,645,318
Beeves slaughtered, number	2,000	306,261	1,000	33,682	7,395	10,857	10,857	220,849	220,849
Cost	\$165,000	\$18,460,183	\$35,000	\$4,882,008	\$409,711	\$415,200	\$42,469	\$10,198,052	\$10,198,052
Sheep slaughtered, number	28,000	1,218,925	4,409	152,896	21,072	42,469	42,469	216,548	216,548
Cost	\$134,000	\$5,014,732	\$233,226	\$673,280	\$34,128	\$139,400	\$139,400	\$600,094	\$600,094
Hogs slaughtered, number	163,850	991,113	86,708	76,000	282,908	72,609	15,818	57,200	1,387,591
Cost	\$1,684,808	\$6,488,117	\$645,213	\$320,300	\$2,337,626	\$543,502	\$155,400	\$629,000	\$14,322,513
All other animals slaughtered, cost	\$92,000	\$1,657,340	\$45,778	\$2,800	\$265,493	\$114,628	\$5,450	\$28,422	\$28,422
Dressed meat, cost	\$1,090,656	\$4,084,532	\$56,300	\$59,300	\$2,277,645	\$596,992	\$285,021	\$456,000	\$467,534
All other materials	\$109,540	\$2,308,973	\$62,440	\$118,354	\$482,013	\$30,639	\$103,628	\$70,226	\$1,728,673
Products:									
Total value	\$3,537,896	\$42,879,218	\$1,370,486	\$1,134,946	\$12,020,462	\$2,054,521	\$1,306,996	\$1,316,220	\$29,704,973
Beef—									
Sold fresh, pounds	2,220,000	216,481,931	500,000	57,752,000	4,326,676	5,616,400	124,422,447	8,593,981	8,593,981
Value	\$177,600	\$17,523,685	\$33,600	\$4,983,255	\$382,500	\$393,301	\$3,220,000	\$195,400	\$195,400
Salted or cured, pounds	90,000	8,420,240	50,000	1,933,433	125,646	40,000	2,220,000	2,220,000	2,220,000
Value	\$16,000	\$580,838	\$5,500	\$125,646	40,000	\$4,000	\$140,000	\$140,000	\$140,000
Canned, pounds									
Value									
Mutton—									
Sold fresh, pounds	1,160,000	51,524,941	1,898,000	6,877,093	698,565	2,100,400	3,341,712	3,341,712	3,341,712
Value	\$118,000	\$4,311,494	\$215,080	\$684,750	\$70,758	\$146,923	\$67,672	\$67,672	\$67,672
Pork—									
Sold fresh, pounds	4,488,310	75,641,107	3,693,000	6,198,000	25,964,220	1,860,500	4,154,400	79,629,518	79,629,518
Value	\$350,403	\$5,067,432	\$290,575	\$405,840	\$1,965,033	\$140,380	\$264,516	\$4,967,097	\$4,967,097
Salted, pounds	4,449,627	9,706,403	1,516,641	1,500,000	3,837,702	257,666	5,934,000	80,354,128	80,354,128
Value	\$295,087	\$630,577	\$109,200	\$93,000	\$292,784	\$47,400	\$94,660	\$4,090,819	\$4,090,819
Hams, pounds	7,479,348	24,154,716	2,884,000	1,811,500	11,964,220	5,121,530	2,606,000	17,393,204	17,393,204
Value	\$711,896	\$2,389,390	\$294,000	\$180,150	\$1,181,430	\$497,320	\$146,884	\$212,900	\$1,447,332
Smoked bacon, sides, and shoulders, pounds	12,485,488	20,822,653	1,488,782	3,298,500	9,245,491	2,972,811	1,845,147	2,007,000	31,991,549
Value	\$1,026,927	\$1,652,841	\$127,600	\$168,792	\$707,174	\$234,876	\$169,400	\$165,290	\$2,178,331
Sausage, fresh or cured, pounds	4,040,509	7,768,101	692,000	598,500	5,347,447	601,667	349,891	1,585,200	1,585,200
Value	\$293,209	\$649,098	\$55,400	\$47,780	\$444,980	\$38,835	\$28,266	\$80,041	\$80,041
Refined lard, pounds	4,654,864	12,804,781	2,379,000	1,777,400	8,556,106	1,863,153	918,132	2,158,500	26,716,200
Value	\$279,444	\$789,569	\$154,890	\$115,609	\$572,292	\$111,553	\$87,035	\$130,016	\$1,457,135
Neutral lard, pounds	1,450,833	750,000							8,472,001
Value	\$87,050	\$42,000							\$432,912
Oleo oil, gallons		1,626,509			8,333	4,000	3,085		1,084,787
Value		\$936,819			\$2,500	\$2,000	\$1,446		\$647,419
Other oils, gallons		137,767			8,333	4,000	3,085		342,229
Value		\$60,029			\$2,500	\$2,000	\$1,446		\$154,146
Fertilizers, tons	160	3,221	326	800	153	140	187		11,377
Value	\$2,405	\$68,942	\$6,410	\$4,500	\$2,873	\$1,040	\$2,815		\$216,369
Hides, number	3,000	446,291	3,270	1,400	105,822	17,496	11,407		224,481
Value	\$18,900	\$2,047,699	\$3,587	\$4,550	\$425,466	\$49,588	\$57,065		\$1,487,813
Wool, pounds	75,000	2,099,050	134,000	33,400	33,400	200,000	200,000		
Value	\$25,000	\$681,710	\$41,700	\$31,125	\$619,629	\$468,271	\$73,971	\$56,956	\$2,979,106
All other products, including custom work	\$140,975	\$5,447,095	\$67,544	\$81,125	\$619,629	\$468,271	\$73,971	\$56,956	\$2,979,106

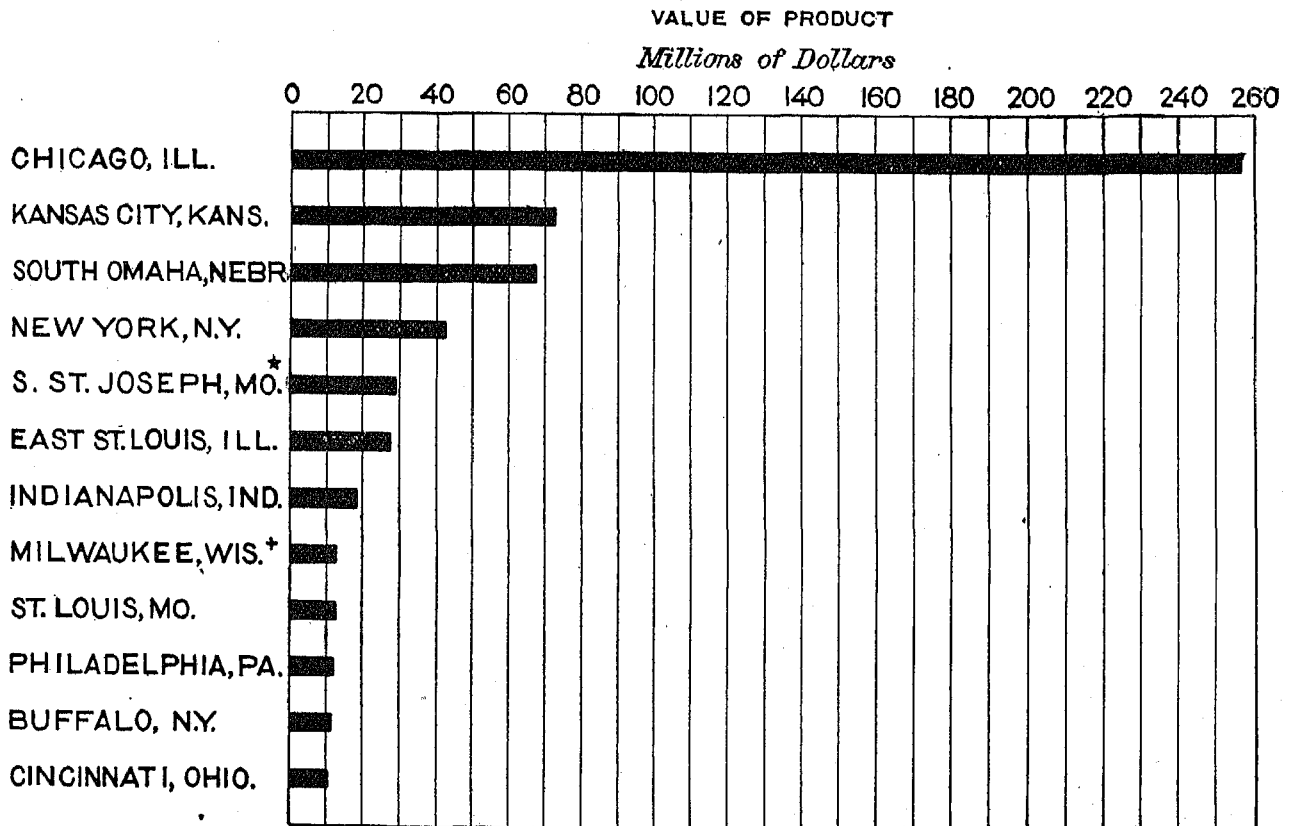
	St. Louis, Mo.	St. Paul, Minn.	San Francis- co, Cal.	Seattle, Wash.	Sioux City, Iowa.	Somerville, Mass.	South Oma- ha, Nebr.	Washington, D. C.
Number of establishments	25	6	26	8	3	4	6	7
Capital	\$2,608,249	\$250,998	\$2,305,362	\$570,350	\$1,209,695	\$6,801,141	\$15,657,418	\$248,200
Salaried officials, clerks, etc., number	103	16	114	48	21	45	712	82
Salaries	\$142,573	\$11,390	\$177,490	\$44,930	\$24,250	\$70,618	\$677,256	\$15,734
Wage-earners	841	84	532	182	892	1,455	5,940	116
Wages	\$448,287	\$42,262	\$323,931	\$89,105	\$471,944	\$692,939	\$2,915,732	\$63,607
Miscellaneous expenses	\$171,902	\$21,097	\$306,408	\$45,761	\$165,222	\$314,036	\$1,475,848	\$19,935
Materials used:								
Total cost	\$11,120,325	\$989,749	\$8,622,994	\$2,666,655	\$6,856,684	\$14,233,788	\$60,159,480	\$2,013,827
Beeves slaughtered, number	123,113	9,200	102,815	18,132	54,672	18,948	529,435	14,975
Cost	\$4,671,591	\$925,800	\$3,445,742	\$834,216	\$1,647,456	\$648,182	\$24,482,287	\$763,275
Sheep slaughtered, number	35,179	18,225	501,645	65,275	6,500	371,832	723,505	17,850
Cost	\$180,428	\$92,500	\$1,521,458	\$213,100	\$31,723	\$1,360,420	\$9,076,611	\$38,675
Hogs slaughtered, number	464,075	50,476	138,323	44,880	505,764	900,430	2,473,723	127,300
Cost	\$4,703,059	\$380,507	\$1,143,635	\$495,520	\$4,554,562	\$9,004,900	\$25,054,840	\$910,000
All other animals slaughtered, cost	\$145,534	\$19,625	\$301,645	\$42,875	\$3,480	\$213,450	\$177,102	\$53,600
Dressed meat, cost	\$1,243,320	\$168,422	\$1,535,477	\$517,303	\$191,868	\$1,550,364	\$4,426,513	\$145,200
All other materials	\$226,393	\$32,895	\$675,037	\$263,576	\$423,906	\$1,461,472	\$2,942,572	\$49,077
Products:								
Total value	\$12,943,376	\$1,288,364	\$9,991,599	\$3,072,195	\$8,982,896	\$15,692,242	\$67,889,749	\$2,210,860
Beef—								
Sold fresh, pounds	40,086,867	4,780,000	56,680,253	9,715,200	18,901,479	8,795,200	302,040,449	8,128,300
Value	\$3,301,408	\$394,600	\$3,468,632	\$730,740	\$1,351,029	\$663,792	\$22,575,825	\$609,800
Salted or cured, pounds	14,758,683		2,402,848	921,250	1,305,205		11,925,638	400,000
Value	\$881,031		\$164,966	\$69,825	\$84,838		\$771,956	\$16,000
Canned, pounds								
Value			\$40,401				\$504,854	
Mutton—								
Sold fresh, pounds	1,338,586	613,250	21,097,445	3,101,375	871,880	14,850,000	32,990,407	719,180
Value	\$143,748	\$61,103	\$1,526,238	\$232,750	\$74,073	\$1,188,000	\$2,695,109	\$69,278
Pork—								
Sold fresh, pounds	26,471,711	1,160,000	12,659,898	4,262,000	9,859,441	28,815,680	80,936,436	6,823,300
Value	\$1,844,480	\$79,300	\$962,614	\$402,960	\$787,090	\$2,905,254	\$5,395,371	\$556,965
Salted, pounds	12,656,870	100,000	1,493,450	26,400	36,947,224	4,000,000	179,456,338	1,035,357
Value	\$763,454	\$5,500	\$2,402,848	\$26,240	\$2,402,019	\$320,000	\$10,729,379	\$76,512
Hams, pounds	15,400,059	1,550,398	8,516,357	5,393,500	14,571,292	20,000,000	58,199,346	1,227,000
Value	\$1,441,701	\$200,870	\$903,298	\$567,593	\$1,889,273	\$2,000,000	\$5,551,145	\$123,647
Smoked bacon, sides, and shoulders, pounds	19,270,600	270,870	10,005,888	4,619,400	9,588,093	47,700,000	75,015,619	2,430,285
Value	\$1,581,810	\$57,200	\$936,359	\$445,595	\$780,048	\$4,240,944	\$5,689,468	\$214,179

TABLE 9.—SUMMARY, CITIES HAVING A PRODUCT VALUED AT \$1,000,000 AND OVER: 1900—Continued.

	St. Louis, Mo.	St. Paul, Minn.	San Francis- co, Cal.	Seattle, Wash.	Sioux City, Iowa.	Somerville, Mass.	South Oma- ha, Nebr.	Washington, D. C.
Products—Continued.								
Total value—Continued.								
Sausage, fresh or cured, pounds	9,146,940	505,000	702,375	604,500	3,031,639	9,004,900	21,321,139	2,141,500
Value	\$527,498	\$42,300	\$57,257	\$47,595	\$180,902	\$720,390	\$1,483,458	\$191,330
Refined lard, pounds	18,973,689	1,000,000	1,652,687	1,287,000	18,451,414	40,000,000	75,228,106	1,404,000
Value	\$865,689	\$70,000	\$124,168	\$126,825	\$1,068,831	\$2,400,000	\$4,671,699	\$106,780
Neutral lard, pounds	2,953,516				5,410,420		15,612,418	26,000
Value	\$177,212				\$851,677		\$986,368	\$1,820
Oleo oil, gallons	350,000				175,708	82,021	2,302,914	
Value	\$210,000				\$87,854	\$81,250	\$1,382,115	
Other oils, gallons	15,300	600	3,710	4,200			419,004	
Value	\$4,590	\$192	\$2,188	\$2,480			\$128,998	
Fertilizers, tons	7,318	370	1,002	3,600	2,247	3,542	14,394	120
Value	\$130,940	\$5,110	\$25,227	\$90,000	\$29,211	\$66,600	\$239,114	\$2,160
Hides, number	142,186	10,900	118,135	21,757	55,067	61,698	526,484	37,015
Pounds	6,385,531	509,750	5,960,608	1,208,580	2,908,140	1,607,480	31,337,139	688,250
Value	\$666,130	\$36,655	\$582,876	\$120,987	\$288,668	\$149,117	\$2,917,953	\$83,977
Wool, pounds			18,000			1,450,000		
Value			\$3,800			\$442,250		
All other products, including custom work..	\$453,690	\$334,534	\$1,064,122	\$108,605	\$21,917	\$1,164,645	\$2,103,407	\$97,412

Chicago led in value of products, as is shown in the diagram accompanying the table. After Chicago came Kansas City, then South Omaha, New York city, St. Joseph and South St. Joseph, Mo., East St. Louis,

Indianapolis, Milwaukee and Cudahy, Wis., St. Louis, Philadelphia, Buffalo, and Cincinnati, in the order named. The relative importance of these cities, in the value of products, is shown in the following diagram:



* Including St. Joseph, Mo.

+ Including Cudahy, Wis.

In number of establishments Baltimore ranked first, with 73 establishments, followed by Philadelphia with 58, and New York city with 52, while Chicago, with 38, stood fourth. In the order of capital invested, wages paid, and number of wage-earners, the relative rank of the cities followed closely the same rank as under the value of production. The widest variations occurred in the average amount of capital invested and average

value of product per establishment in the different cities. South Omaha had the largest average single establishment, with an average investment of \$2,609,570, Kansas City's average capitalization per establishment was \$1,889,325; Chicago's, \$1,766,788; South St. Joseph's (with St. Joseph), \$1,040,180. In the average value of products per establishment, South Omaha led with \$11,314,958; Kansas City had \$9,223,471; Chicago,

SLAUGHTERING AND MEAT PACKING.

\$6,750,736; and South St. Joseph (with St. Joseph), \$5,940,995.

Table 10 presents the statistics of exports of live stock, and Table 11 the figures for the exports of meat products, as shown by the tables of the Bureau of Sta-

tistics for the fiscal years from 1890 to 1900, both inclusive. A comparison of Table 11 with Table 8, on page 22, shows the proportion of the total product that is sent abroad.

TABLE 10.—QUANTITY AND VALUES OF ANIMALS IMPORTED, AND OF DOMESTIC AND FOREIGN ANIMALS EXPORTED: 1890-1900.¹

ARTICLES.	1900	1899	1898	1897	1896	1895	1894	1893	1892	1891	1890
<i>Imports.</i>											
Cattle, free:											
Number	1,045	624	577	204	784	14,956	312	174	132	2,740	3,982
Value	\$202,615	\$95,358	\$76,631	\$24,860	\$15,091	\$99,104	\$5,849	\$21,024	\$27,077	\$49,826	\$72,831
Cattle, dutiable:											
Number	179,961	199,128	291,012	828,778	217,092	134,825	1,280	3,119	2,036	9,652	26,760
Value	\$2,055,079	\$2,225,009	\$2,886,592	\$2,565,497	\$1,494,705	\$666,749	\$13,855	\$24,658	\$20,889	\$53,652	\$171,916
Sheep, free:											
Number	2,427	2,396	3,047	2,382	3,950	1,942	2,537	4,932	4,316	9,606	16,308
Value	\$48,324	\$46,132	\$42,805	\$32,640	\$42,848	\$30,885	\$68,022	\$111,197	\$112,134	\$127,221	\$118,444
Sheep, dutiable:											
Number	379,365	343,515	339,267	403,251	313,742	289,519	240,031	454,552	376,498	336,159	377,491
Value	\$1,316,702	\$1,153,949	\$1,068,517	\$987,023	\$810,682	\$651,733	\$725,169	\$1,571,730	\$1,328,396	\$1,091,985	\$1,149,765
<i>Exports, domestic.</i>											
Cattle:											
Number	397,286	389,490	439,255	392,190	372,461	331,722	359,278	287,094	394,607	374,679	394,836
Value	\$80,636,153	\$80,516,833	\$7,827,500	\$36,357,451	\$34,560,672	\$30,603,796	\$33,461,922	\$26,032,428	\$35,099,095	\$30,445,249	\$31,261,131
Hogs:											
Number	51,180	33,031	14,411	28,751	21,049	7,180	1,553	27,875	31,963	95,654	91,148
Value	\$394,813	\$227,241	\$110,487	\$295,998	\$227,297	\$72,424	\$14,753	\$397,162	\$364,081	\$1,146,630	\$909,042
Sheep:											
Number	125,772	143,286	199,690	244,120	491,565	405,748	132,870	37,260	46,960	60,947	67,521
Value	\$783,477	\$853,555	\$1,213,886	\$1,531,645	\$3,076,384	\$2,630,686	\$382,768	\$126,394	\$161,105	\$261,109	\$243,077
<i>Exports, foreign.</i>											
Cattle:											
Number	8,971	4,307	23	1	.....	.....	.....	16	.....	.....	8
Value	\$118,583	\$63,770	\$1,230	\$50	.....	.....	\$45	\$690	.....	.....	\$5,875
Sheep:											
Number	106	61	67	22	89	80	.....	11	.....	.....	.....
Value	\$1,999	\$875	\$390	\$92	\$361	\$256	.....	\$330	.....	.....	.....

¹ Statistical Abstract of the United States Treasury Department, 1899-1900.

TABLE 11.—QUANTITY AND VALUE OF SLAUGHTERING AND MEAT PRODUCTS IMPORTED, AND OF DOMESTIC AND FOREIGN SLAUGHTERING AND MEAT PRODUCTS EXPORTED: 1890-1900.¹

ARTICLES.	1900	1899	1898	1897	1896	1895	1894	1893	1892	1891	1890
<i>Imports.</i>											
Bones, crude	(2)	(2)	(2)	\$224,039	\$157,046	\$306,049	\$307,033	\$360,573	\$345,668	\$322,009	\$353,286
Bones, horns, and hoofs, un-				(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)
manufactured	\$880,063	\$704,959	\$492,544	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)
Bristles, crude, not sorted,											
bunched, or prepared, pounds	27,140	21,421	1,203	630	726	4,741	(2)	(2)	(2)	(2)	(2)
Value	\$22,390	\$12,399	\$416	\$385	\$1,620	\$1,892	(2)	(2)	(2)	(2)	(2)
Bristles, sorted, bunched, or											
prepared, pounds	2,503,018	1,835,156	1,533,837	1,347,270	1,571,804	1,296,753	892,520	1,593,818	1,495,003	1,404,832	1,261,609
Value	\$2,130,537	\$1,445,853	\$1,248,703	\$1,216,794	\$1,433,728	\$1,212,259	\$929,231	\$1,508,258	\$1,455,058	\$1,357,938	\$1,286,219
Glue, pounds	5,577,082	5,358,063	4,103,814	4,925,620	6,276,926	4,751,048	4,132,524	6,170,162	5,541,776	5,501,142	5,715,210
Value	\$537,492	\$479,460	\$423,507	\$472,312	\$555,979	\$416,394	\$400,240	\$567,756	\$495,519	\$497,340	\$471,820
Grease and oils, pounds	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)
Value	\$779,666	\$696,674	\$593,239	\$984,332	\$1,232,001	\$1,336,388	\$1,093,929	\$1,093,737	\$1,093,737	\$1,093,737	\$1,093,737
Hide cuttings, raw, and other											
glue stock	\$1,223,521	\$708,968	\$408,262	\$289,686	\$279,692	\$263,175	\$280,062	\$365,525	\$303,202	\$353,943	\$348,440
Hides of cattle, pounds	163,865,165	130,396,020	126,243,595	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)
Value	\$19,408,217	\$13,621,946	\$13,624,989	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)
Hoofs, horns, and parts of, un-											
manufactured	(4)	(4)	(4)	\$150,134	\$568,445	\$268,800	\$235,232	\$554,902	\$797,529	\$587,444	\$236,648
<i>Meat products:</i>											
Meat and meat extracts	\$365,589	\$263,845	\$345,108	\$601,808	\$493,393	\$479,336	\$412,666	\$558,284	\$430,048	\$521,322	\$407,038
All other	\$105,726	\$109,647	\$80,031	\$49,484	\$39,129	\$5,244	\$12,291	\$16,717	\$15,386	\$66,385	\$196,696
Sausages, bologna	\$95,944	\$93,714	\$32,646	\$76,303	\$30,887	\$98,188	\$102,610	\$98,659	\$32,507	\$77,664	\$75,503
Sausage casings	\$646,889	\$622,949	\$537,871	\$542,317	\$588,657	\$419,345	\$495,118	\$583,217	\$566,650	\$572,317	\$494,958
<i>Exports of domestic.</i>											
Bones, hoofs, horn, and horn											
tips, strips, and waste	\$199,194	\$195,759	\$174,361	\$280,140	\$321,680	\$288,084	\$260,675	\$319,848	\$218,639	\$335,710	\$271,533
Glue, pounds	2,349,014	2,368,087	2,318,711	1,400,363	1,760,470	1,178,323	999,052	736,446	580,815	986,552	723,696
Value	\$225,344	\$222,072	\$209,441	\$132,531	\$166,930	\$114,493	\$101,372	\$74,722	\$66,403	\$110,292	\$38,434
Grease, grease scraps, and all											
soap stock	\$2,944,322	\$2,576,307	\$1,964,565	\$2,070,111	\$1,516,763	\$904,071	\$1,380,299	\$1,067,723	\$1,293,598	\$2,033,886	\$1,506,819
Hides and skins, other than											
fur, pounds	7,486,256	10,140,840	11,536,073	31,119,166	39,545,324	36,002,859	(2)	(2)	(2)	(2)	(2)
Value	\$804,674	\$929,117	\$1,015,032	\$2,838,530	\$3,868,946	\$2,310,323	\$3,972,494	\$1,497,003	\$1,223,895	\$1,333,655	\$1,823,635
Hair, and manufactures of	\$676,688	\$508,712	\$635,716	\$517,469	\$455,880	\$505,029	\$353,729	\$459,648	\$370,169	\$394,544	\$344,558
Oil, lard, gallons	783,724	917,007	775,102	961,407	833,935	553,421	681,081	486,812	901,575	1,092,448	1,214,611
Value	\$337,260	\$412,447	\$305,325	\$419,803	\$426,						

TABLE 11.—QUANTITY AND VALUE OF SLAUGHTERING AND MEAT PRODUCTS IMPORTED, AND OF DOMESTIC AND FOREIGN SLAUGHTERING AND MEAT PRODUCTS EXPORTED: 1890-1900¹—Continued.

ARTICLES.	1900	1899	1898	1897	1896	1895	1894	1893	1892	1891	1890
<i>Exports of domestic—Continued.</i>											
Meat products:											
Beef products—											
Beef, canned, pounds	55,553,745	38,385,472	37,109,570	54,019,772	63,698,180	64,102,263	55,974,910	79,089,493	87,028,084	109,585,727	82,038,507
Value	\$5,233,982	\$3,503,293	\$3,279,657	\$4,656,308	\$5,636,958	\$5,720,933	\$5,120,851	\$7,222,824	\$7,876,454	\$9,068,906	\$6,787,193
Beef, fresh, pounds	329,078,609	282,139,974	274,768,074	290,395,936	224,783,225	191,338,487	193,891,824	206,294,724	220,554,617	194,045,638	173,237,596
Value	\$29,643,830	\$23,545,185	\$22,966,556	\$22,653,742	\$18,974,107	\$16,832,800	\$16,700,168	\$17,754,041	\$18,063,732	\$15,322,054	\$12,862,384
Beef, salted or pickled, pounds	47,306,513	46,564,876	44,314,479	67,712,940	70,709,209	62,473,325	62,682,667	58,423,963	70,204,736	90,286,979	97,508,410
Value	\$2,697,940	\$2,525,784	\$2,368,467	\$3,514,126	\$3,976,113	\$3,568,230	\$3,572,054	\$3,185,321	\$3,987,829	\$5,048,788	\$5,250,068
Beef, other, cured, pounds	2,319,165	1,579,313	1,589,052	939,448	514,303	821,673	1,218,334	898,920	953,712	1,621,833	102,110
Value	\$197,051	\$146,996	\$150,051	\$83,701	\$59,371	\$73,569	\$100,631	\$87,776	\$92,524	\$147,518	\$9,233
Tallow, pounds	89,030,943	107,861,009	81,744,809	75,108,834	52,759,212	25,834,300	54,661,524	61,819,153	89,780,010	111,689,251	112,745,879
Value	\$4,938,204	\$4,367,356	\$3,141,653	\$2,782,595	\$2,323,764	\$1,293,059	\$2,766,104	\$3,129,059	\$4,425,630	\$5,501,040	\$5,242,158
Hog products—											
Bacon, pounds	512,153,729	562,651,480	650,108,933	500,399,448	425,352,187	452,549,976	416,657,577	391,758,175	507,919,830	514,675,557	531,893,677
Value	\$38,975,915	\$41,657,067	\$46,380,918	\$34,187,147	\$33,442,847	\$37,776,293	\$38,338,843	\$35,781,470	\$39,384,933	\$37,404,980	\$39,149,635
Hams, pounds	196,414,412	225,846,750	200,185,861	165,247,302	129,036,351	105,494,123	86,970,571	82,178,154	76,856,559	84,410,108	76,691,279
Value	\$20,416,367	\$20,774,084	\$18,987,525	\$15,970,021	\$12,669,768	\$10,960,567	\$9,845,062	\$9,938,096	\$7,757,717	\$8,245,685	\$7,907,125
Pork, canned, pounds	3,496,074	(²)	(²)	(²)	(²)	(²)	(²)	(²)	(²)	(²)	(²)
Value	\$658,402	(²)	(²)	(²)	(²)	(²)	(²)	(²)	(²)	(²)	(²)
Pork, fresh, pounds	25,946,905	41,310,364	12,224,285	1,306,424	744,656	818,581	1,168,647	912,644	377,746	818,875	270,463
Value	\$1,925,772	\$2,722,661	\$815,075	\$94,816	\$43,739	\$60,660	\$92,095	\$79,817	\$30,240	\$56,358	\$15,406
Pork, salted or pickled, pounds	133,199,683	137,197,200	88,133,078	66,768,920	69,498,378	58,266,893	63,575,881	52,459,722	80,336,481	81,317,364	79,788,868
Value	\$3,243,797	\$7,917,066	\$4,906,961	\$3,297,214	\$3,978,461	\$4,138,400	\$5,067,773	\$4,116,946	\$4,792,049	\$4,787,343	\$4,753,488
Lard, pounds	661,813,663	711,259,851	709,344,045	568,315,640	509,534,266	474,895,274	447,566,867	365,693,501	460,045,776	498,343,927	471,083,698
Value	\$41,939,164	\$42,208,465	\$39,710,672	\$29,126,485	\$33,589,861	\$36,821,508	\$40,089,309	\$34,648,993	\$33,201,621	\$34,414,323	\$31,455,720
Lard compounds and substitutes for (cottonole, lardine, etc.), pounds	25,852,685	22,144,717	21,343,023	16,261,991	1,649,928	444,045	524,300	(²)	(²)	(²)	(²)
Value	\$1,476,004	\$1,200,231	\$1,118,659	\$857,708	\$102,279	\$34,309	\$39,693	\$44,832	(²)	(²)	(²)
Casings for sausages	\$2,307,571	\$1,671,052	\$1,821,519	\$1,514,651	\$1,771,630	\$1,581,891	\$1,280,514	\$1,409,280	\$878,675	\$841,075	\$697,772
Mutton, pounds	773,760	879,110	329,169	361,955	422,950	591,449	2,197,900	108,214	101,463	199,395	250,711
Value	\$64,313	\$29,427	\$27,961	\$28,341	\$31,798	\$47,832	\$174,404	\$9,175	\$9,022	\$18,969	\$21,760
Oleo, the oil, pounds	146,739,081	142,390,492	132,573,277	113,506,152	103,276,756	78,098,878	123,295,895	113,939,363	91,581,703	80,231,035	63,218,098
Value	\$10,503,856	\$9,188,659	\$7,904,413	\$6,742,061	\$8,087,905	\$7,107,018	\$11,942,842	\$11,207,250	\$9,011,889	\$7,859,130	\$6,476,258
Oleomargarine (imitation butter), pounds	4,256,067	5,549,322	4,328,536	4,804,351	6,063,699	10,100,897	3,898,950	3,479,822	1,610,837	1,986,743	2,535,926
Value	\$416,544	\$509,703	\$386,297	\$472,856	\$587,269	\$992,464	\$475,003	\$416,866	\$195,587	\$255,024	\$297,261
All other meat products—											
Canned	\$1,724,064	(²)	(²)	(²)	(²)	(²)	(²)	(²)	(²)	(²)	(²)
All other	\$3,941,894	(²)	(²)	(²)	(²)	(²)	(²)	(²)	(²)	(²)	(²)
Stearin, pounds	(⁴)	1,174,167	3,987,258	1,388,555	668,585	36,429	321,898	(²)	1,350,513	1,347,386	2,620,142
Value	(⁴)	\$56,821	\$188,579	\$70,584	\$34,289	\$2,157	\$17,938	\$14,069	\$66,470	\$62,194	\$103,043
<i>Exports of foreign.</i>											
Bones, crude	(²)	\$4,153	\$5,861	\$91	(²)	\$13,454	\$4,007	\$1,910	\$1,908	\$1,681	\$1,053
Bristles, crude, not sorted, bunched, or prepared, pounds	446	4,321	40	(²)	(²)	3,593	(²)	(²)	(²)	(²)	(²)
Value	\$220	\$2,740	\$18	(²)	(²)	\$974	(²)	(²)	(²)	(²)	(²)
Bristles, sorted, bunched, or prepared, pounds	42,154	46,366	25,481	36,268	33,015	23,317	60,880	26,046	36,153	43,385	47,225
Value	\$21,952	\$19,150	\$21,571	\$36,096	\$21,465	\$16,468	\$41,331	\$24,092	\$28,643	\$34,608	\$39,473
Glue, pounds	3,359	7,215	23,109	16,247	65,484	8,971	40,148	29,748	40,148	6,524	6,691
Value	\$245	\$679	\$2,809	\$1,486	\$6,615	\$865	\$3,035	\$1,908	\$1,570	\$706	\$521
Grease	\$3,699	\$20,650	\$4,247	\$1,138	\$4,807	\$1,525	\$8,578	\$5,091	\$678	\$1,038	\$2,556
Hide cuttings	\$1,408	\$2,477	(²)	\$1,367	\$440	\$602	\$96	(²)	(²)	(²)	(²)
Hoofs, horns, and parts of, unmanufactured	\$1,315	(²)	(²)	\$392	\$147	\$438	\$129	(²)	(²)	(²)	(²)
Sausages, bologna	\$23	\$15	\$24	\$269	\$234	\$36	\$54	\$81	(²)	(²)	(²)
Meat products:											
Meats and meat extracts	\$2,334	\$15,464	\$6,662	\$6,958	\$2,337	\$1,980	\$1,745	\$4,012	\$777	\$4,860	\$891
All other	\$4,545	\$61,075	\$8,132	\$1,304	\$310	\$205	\$978	\$115	\$2	\$73	\$277
Hides and skins, other than fur: Cattle hides, pounds	2,380,290	3,548,455	7,057,057	(²)	(²)	(²)	(²)	(²)	(²)	(²)	(²)
Value	\$296,478	\$482,460	\$878,167	(²)	(²)	(²)	(²)	(²)	(²)	(²)	(²)

¹ Statistical Abstract of the United States Treasury Department, 1899-1900.
² Not separately reported.

³ Included with "lard."
⁴ Included with "lard compounds."

HISTORICAL AND DESCRIPTIVE.¹

The year 1493 witnessed the first importation of cattle to America, when it is said Columbus brought cattle, sheep, and hogs with him on his second voyage. The Portuguese took cattle to Newfoundland and Nova Scotia in 1553, where they increased rapidly.² Black cattle, swine, and sheep were introduced into Florida

about 1565, and neat cattle into Canada by the French in 1608. In 1609 the English colony at Jamestown possessed between 500 and 600 hogs and some sheep. They were killed or carried off by the natives or eaten by the colonists in their destitution. Sir Ralph Lane brought cattle from the West Indies to Virginia in 1610, the slaughter of which was forbidden on pain of death. In 1611 Sir Thomas Gates arrived with a hundred or more cows and some swine. To this stock were added in 1613 a few obtained by a raid on the French settlements in Arcadia. In 1620 the cattle had increased to 500 and in 1649 to 20,000. They were early exported to New England, and many were killed to supply the

¹For valuable data used in the preparation of this historical and descriptive sketch, acknowledgment is made to "Ice and Refrigeration," Volume 21, Nos. 1 to 6, July, 1901, to December, 1901, both inclusive; History of American Manufactures, by J. L. Bishop; Philip D. Armour in "One Hundred Years of American Commerce," Volume II, edited by Hon. Chauncey M. Depew; the Yearbooks of the United States Department of Agriculture; and the Statistical Annuals published by the Cincinnati Price Current.
²History of American Manufactures, by J. L. Bishop, Vol. I, page 427.

shipping from London, Bristol, Holland, and New England. By 1656 the sale of beef, pork, and bacon to the shipping and to the West Indies was a source of much profit.

In New England the first neat cattle, consisting of three heifers and a bull, were introduced into the Plymouth Colony by Edward Winslow in the spring of 1624. The number grew to about 200 in 1629.¹

From that time cattle increased rapidly in number and rose in value. During the Indian wars live stock was a precarious property, but nevertheless continued to increase and furnished articles for exportation. The continued arrival of new settlers kept up the demand for cattle and maintained their price at from £20 to £30 a head. Their number increased rapidly, but they were too valuable for slaughter. As emigration decreased, stock was well diffused through New England, and the colonists became consumers and exporters of beef in considerable quantity. The West India Company imported domestic cattle for breeding into New Netherlands in 1625. In 1678, 400 cattle were killed in the city of New York, and in 1694 the number reached nearly 4,000.² Stock raising and the production of beef for the New York and Philadelphia markets, furnished a profitable industry for the settlers in New Jersey. In 1627 the Swedes were supplied with neat cattle by the Swedish West India Company.³ In 1697 an Englishman, residing in Pennsylvania, stated that 20 fat bullocks besides many sheep, calves, and hogs were killed each week in Philadelphia, even in mid-summer. A fat cow could be bought for £3 and salted beef and pork were regularly exported.⁴ Before the Revolution great numbers of cattle were raised in Georgia, North Carolina, and South Carolina. They were raised at small cost, being allowed to run wild in the woods. Many farmers owned from 500 to 1,500 head each. Little beef was exported. The cattle were sold in the lean state and driven to Pennsylvania where they were fattened for market.⁴

The cattle of the Northern colonies were fewer in number, but owing to the severe climate received more attention, and greater care was bestowed in the selection of animals for breeding. On the frontier stock raising was an important factor, the cattle furnishing food and other necessities for the rough life of the pioneer. These herds of the colonies, with those brought to Spanish America, were the chief progenitors of the American cattle of to-day. Cattle raising followed the settlement of the country, and crossed the Alleghenies with the pioneers into the fertile valley of the Ohio.

The rise of slaughtering, and packing of meat in the

United States as a distinct industry, dates back to 1818, when a packer is reported as conducting packing operations at Cincinnati. Slaughtering operations at Chicago began in 1823, but packing was not instituted until 1827. In that year a Chicago establishment packed some pork for a firm in Detroit, but the packing statistics of Chicago were of small account until 1850. It is said that 9,600 hogs were packed there in 1834, but it was not until 1861-62 that Chicago attained preeminence as a packing center. In the winter season of 1832-33, there were several establishments at Cincinnati, and in that season it is claimed that 85,000 hogs were slaughtered there. The development of the agricultural resources of the Ohio Valley cheapened the cost of raising stock, and the demands of the Southern and Eastern markets caused an increased production, particularly of hogs. These facilities for stock raising naturally caused the inauguration of packing operations, and small plants sprang up in the more important towns. At first these centers were confined closely to the towns upon the rivers, owing to the greater facility of transportation by water.

In those days the packing was confined almost exclusively to the curing and packing of hog products. Much of the slaughtering was done by farmers in the winter, who, after supplying their own demands, sold the remainder of the carcass to some neighboring storekeeper or small packer, who, in turn, cured the carcass for market. Curing operations were sometimes conducted on flatboats that floated down the rivers, after the spring breakup to the larger cities on the Mississippi, particularly New Orleans, where the cured product was exchanged for sugar, molasses, rice, and other products of the Southern states. A large proportion of the pork, hams, etc., reaching New Orleans, was shipped to Baltimore, Philadelphia, New York, Boston, and other cities along the Atlantic coast. Cincinnati at this time was the chief center of the packing industry, owing to its location in the stock-raising region, and to its superior banking facilities, for the packing industry demanded that large sums be paid in ready cash. Again, it was often necessary to employ large gangs of laborers and coopers at short notice, thus making the location of a packing plant most advantageous where these demands could be most readily supplied. The necessities of the trade also demanded an ample supply of salt, and this could be obtained readily only at Cincinnati. An added advantage was found in the denser population that afforded a market for the surplus product. In 1844 there were 26 packing houses at Cincinnati; in 1853-54 the number had increased to 41, and in 1855-56, was 42. A large packing plant had been established at Louisville, Ky., prior to 1844. Other important packing places during the period were Columbus, Chillicothe, Circleville, and Hamilton, in

¹ History of American Manufactures, by J. L. Bishop, Vol. I, page 429 ff.

² Ibid., page 439.

³ Ibid., page 444.

⁴ Ibid., page 449.

Ohio; Lafayette, Lawrenceburg, Madison, Terre Haute, and Vincennes, in Indiana; Alton, Beardstown, Pekin, Peoria, and Quincy, in Illinois, and many places of lesser importance.¹ The volume of packing at Cincinnati during the decade prior to 1851-52 was 27 per cent of the total for the West. Cincinnati slaughtered 475,000 hogs in the packing year 1848-49. As settlement moved westward, the extension of the cornfields gave an impetus to stock raising, and the Western cities assumed increasing importance as slaughtering and packing centers.

About 20,000 hogs were killed at Chicago in 1850-51, and from that time the amount of business done in Chicago increased rapidly. The early fifties saw the beginning of railroad operations in the West. Naturally, this had a great influence on the packing business, and to this cause much of Chicago's prominence as a packing center may be traced. Up to this time St. Louis was unimportant as a packing center, and other prominent packing cities of to-day, such as Kansas City, South Omaha, and South St. Joseph, were unknown to the packing world. These cities did not assume importance until later. Cincinnati was the leading packing center in the United States until 1861-62, when Chicago took the lead, which it has retained. With its \$256,527,949 worth of products during the census year of 1900, the city of Chicago stands as the chief center of the slaughtering and meat-packing industry of the United States. The preparation of animal food products at this point has come to be one of the greatest

¹ Philip D. Armour, in One Hundred Years of American Commerce, Vol. II, page 384.

industrial and commercial enterprises that has been evolved by the American people. This has not been due to accident nor wholly to the alert and businesslike qualities of her citizens. It has been chiefly because of Chicago's location. Nature located Chicago. As early as 1673, Joliet saw that if a canal were cut through half a league of prairie, boats could pass from the lake of Illinois (Lake Michigan) into the St. Louis River (the Illinois, including the Des Plaines). A city possessing such a location, between the lakes and the great West, was naturally early seen to be a gateway of commerce, and Chicago became the center for the vast systems of transportation that converge there to-day and that include more than one-half of the railroad systems of the United States. The Union Stock Yards was founded in 1865, when 320 acres of land were purchased, and the yard opened in December, 1865. This plant is now worth at least \$10,000,000, and on the square mile of land upon which the yards are located are the slaughtering and packing houses that, in 1900, reported a capital invested of over \$67,000,000. More than 50,000 men found employment in and about the stock yards in 1900, in the packing establishments, and in the service necessary to the handling of the stock. Within the stock yards are 200 acres of yardage, 20 miles of street, 20 miles of water troughs, 75 miles of drainage and water pipes, and 150 miles of railroad track, which is the property of the stock-yards company, which also owns and operates the locomotives. The table below shows the number of cattle, hogs, and sheep, received, shipped, and slaughtered at Chicago, from 1870 to 1900, inclusive.

LIVE STOCK RECEIVED, SHIPPED, AND SLAUGHTERED IN CHICAGO, ILL.: 1870 TO 1900.¹

YEARS.	HOGS.			CATTLE.			SHEEP.		
	Received.	Shipped.	Slaught- ered.	Received.	Shipped.	Slaught- ered.	Received.	Shipped.	Slaught- ered.
1870.....	1,698,158	924,458	768,705	582,964	391,709	141,255	849,858	116,711	223,142
1871.....	2,380,083	1,162,286	1,217,797	543,050	401,927	141,023	815,053	185,084	179,909
1872.....	3,252,623	1,835,594	1,417,029	684,075	510,025	174,050	810,211	145,016	165,195
1873.....	4,487,750	2,197,557	2,240,193	761,428	574,181	187,247	291,784	115,255	176,499
1874.....	4,258,379	2,330,361	1,928,018	843,966	622,929	221,037	338,055	180,555	153,100
1875.....	3,912,110	1,682,648	2,329,487	920,843	696,534	224,309	418,948	248,604	175,314
1876.....	4,190,006	1,181,635	3,058,371	1,096,745	797,724	299,021	364,095	195,925	168,170
1877.....	4,025,970	951,221	3,074,749	1,033,151	703,402	329,749	810,240	155,354	154,886
1878.....	1,266,906	1,266,906	5,072,748	1,083,068	699,108	883,960	810,420	166,727	153,693
1879.....	6,448,330	1,692,361	4,755,969	1,215,732	726,903	488,829	325,119	159,266	165,853
1880.....	7,059,355	1,394,990	5,664,365	1,382,477	886,614	495,863	335,810	156,518	179,292
1881.....	6,474,844	1,289,679	5,185,165	1,498,560	938,712	559,838	493,624	263,930	229,694
1882.....	5,817,504	1,747,722	4,069,782	1,582,580	921,009	661,521	628,887	814,200	814,087
1883.....	5,640,625	1,819,392	4,321,233	1,378,944	966,768	912,186	749,917	374,463	875,464
1884.....	5,851,967	1,892,615	3,959,352	1,817,697	791,884	1,025,813	801,630	290,352	511,278
1885.....	6,987,535	1,797,446	5,140,089	1,905,518	744,093	1,161,425	1,008,598	260,277	743,321
1886.....	6,718,761	2,090,784	4,627,977	1,963,900	704,675	1,259,225	1,008,790	266,612	742,178
1887.....	5,470,852	1,812,001	3,658,851	2,382,008	791,433	1,590,525	1,360,862	445,094	915,708
1888.....	4,921,712	1,751,829	3,169,883	2,611,543	968,385	1,643,158	1,515,014	601,241	913,773
1889.....	5,998,526	1,786,650	4,211,877	3,023,281	1,259,971	1,763,310	1,332,469	711,815	1,121,154
1890.....	7,059,355	1,985,700	5,073,655	3,484,230	1,260,309	2,223,971	2,182,667	929,854	1,252,813
1891.....	8,600,805	2,962,514	5,638,291	3,250,359	1,066,264	2,184,095	2,153,537	688,205	1,465,332
1892.....	7,714,435	2,926,145	4,788,290	3,571,796	1,121,075	2,450,721	2,145,079	433,368	1,661,711
1893.....	6,057,278	2,149,410	3,907,868	3,133,406	900,133	2,233,273	3,031,174	442,855	2,588,309
1894.....	7,483,228	2,465,058	5,018,170	2,974,363	950,738	2,023,625	3,099,625	333,398	2,766,227
1895.....	7,885,283	2,100,613	5,784,670	2,588,558	785,092	1,803,466	3,406,739	474,646	2,932,093
1896.....	7,659,472	1,896,812	5,763,660	2,600,476	818,326	1,782,150	3,590,655	561,299	3,029,416
1897.....	8,363,724	1,629,984	6,733,740	2,554,924	843,392	1,711,532	3,606,640	638,110	2,968,530
1898.....	9,166,095	1,840,644	7,325,451	2,480,897	865,642	1,615,255	3,589,439	543,425	3,046,014
1899.....	8,721,625	1,689,439	7,032,186	2,514,436	811,874	1,702,562	3,682,832	386,991	3,295,841
1900.....	8,696,097	1,452,183	7,243,914	2,729,046	934,649	1,794,397	3,548,885	487,254	3,061,631

¹ Compiled from data furnished by Cincinnati Price Current.

SLAUGHTERING AND MEAT PACKING.

With the development of the country west of the Mississippi, St. Louis took its rise as a packing center. Covered with corn fields, the territory adjoining St.

Louis is devoted largely to the live-stock industry, particularly the rising of hogs. The following table shows the growth of the slaughtering industry at St. Louis:

LIVE STOCK RECEIVED, SHIPPED, AND SLAUGHTERED IN ST. LOUIS, MO.: 1868 TO 1900.¹

YEARS.	HOGS.			CATTLE.			SHEEP.		
	Received.	Shipped.	Slaught- ered.	Received.	Shipped.	Slaught- ered.	Received.	Shipped.	Slaught- ered.
1868.....	301,560	16,277	285,283	115,852	37,277	78,075	79,315	6,415	72,900
1869.....	344,848	39,076	305,772	124,666	59,807	64,698	96,626	12,416	84,210
1870.....	310,850	17,156	293,694	201,422	129,748	71,674	94,477	11,649	82,828
1871.....	688,370	118,913	519,457	199,527	130,018	69,509	118,899	37,465	81,434
1872.....	759,076	188,700	570,376	263,404	164,870	98,534	115,904	29,540	86,364
1873.....	973,512	224,873	748,639	279,678	180,662	99,016	86,434	18,902	67,532
1874.....	1,126,566	463,710	672,876	360,925	226,678	134,247	114,913	36,677	79,386
1875.....	628,589	126,729	501,840	335,742	216,701	119,041	125,679	37,784	87,895
1876.....	877,160	232,876	644,284	349,043	220,430	128,618	167,831	67,886	89,945
1877.....	896,319	314,287	582,032	411,969	261,566	160,403	200,502	67,569	112,938
1878.....	1,461,634	528,627	923,007	406,235	261,723	144,512	168,095	74,433	93,662
1879.....	1,762,724	686,089	1,076,625	420,654	226,255	194,399	182,648	88,083	94,565
1880.....	1,840,684	770,769	1,069,915	424,720	228,879	195,841	205,969	98,522	112,447
1881.....	1,672,153	889,909	782,244	503,862	293,092	210,770	334,426	170,395	164,031
1882.....	816,228	264,584	551,644	443,169	188,486	254,683	443,120	245,071	198,049
1883.....	1,161,785	609,388	542,397	405,090	249,523	159,567	598,612	217,370	181,242
1884.....	1,474,475	678,874	795,601	450,717	315,433	135,284	380,822	248,546	132,277
1885.....	1,455,585	789,487	666,048	386,320	233,249	153,071	302,858	239,391	129,467
1886.....	1,264,471	520,362	744,109	377,550	212,958	164,592	328,985	202,728	126,257
1887.....	1,052,240	324,785	727,455	464,823	277,406	187,422	417,425	287,018	180,407
1888.....	929,230	294,869	634,361	546,875	336,206	210,669	456,669	316,676	139,938
1889.....	1,120,930	420,930	700,000	508,190	297,879	210,311	368,495	255,375	103,120
1890.....	1,369,791	665,471	694,320	689,014	361,705	277,309	388,496	251,728	106,768
1891.....	1,380,569	704,378	676,191	779,449	464,794	314,655	402,989	277,880	125,103
1892.....	1,310,311	715,969	594,342	801,811	465,323	326,483	376,922	243,035	128,837
1893.....	1,105,108	576,846	529,262	903,257	473,966	429,291	397,725	281,476	166,249
1894.....	1,439,856	642,699	847,157	778,571	381,260	492,311	359,895	90,526	269,969
1895.....	1,440,342	605,480	834,862	851,275	272,856	578,419	510,660	119,148	391,512
1896.....	1,997,895	885,462	1,112,433	955,613	360,036	605,577	632,872	254,602	378,270
1897.....	2,065,233	837,896	1,227,338	960,763	366,127	594,636	660,830	212,243	448,137
1898.....	2,136,328	573,516	1,562,812	795,611	264,619	540,992	477,091	127,184	349,907
1899.....	2,147,144	578,067	1,569,077	766,032	224,177	541,855	432,566	97,722	334,844
1900.....	2,150,972	513,561	1,643,411	795,800	207,998	587,802	484,133	65,199	368,934

¹ Compiled from data furnished by Cincinnati Price Current.

Up to 1870 slaughtering at Kansas City was of relatively small importance. Cattle were driven overland from the Southwest, the journey often consuming as much as three months. At Kansas City they were loaded on cars for shipment to Eastern markets or driven overland to markets in the interior. In 1870 the Kansas City stock yards had their inception in a movement to afford better facilities for handling live stock at that point. As far back as 1873, three small packing houses were located at Kansas City, and in 1875, 48,492 cattle, 47,560 hogs, and 7,585 sheep were

slaughtered there. In 1886, of the total number of animals received, 24.6 per cent of the cattle, 76.2 per cent of the hogs, and 51.8 per cent of the sheep were slaughtered; in 1900 these figures had grown to 56.7 per cent for cattle, 92.8 per cent for hogs, and 75.2 per cent for sheep. The stock yards are situated close to the business center of the city and occupy about 200 acres. The following figures show the number of animals slaughtered at Kansas City each year from 1875 to 1900, inclusive:

LIVE STOCK RECEIVED, SHIPPED, AND SLAUGHTERED IN KANSAS CITY, MO.: 1875 TO 1900.¹

YEARS.	HOGS.			CATTLE.			SHEEP.		
	Received.	Shipped.	Slaught- ered.	Received.	Shipped.	Slaught- ered.	Received.	Shipped.	Slaught- ered.
1875.....	63,850	15,790	47,560	174,754	126,262	48,492	25,327	17,742	7,585
1876.....	153,777	26,264	127,513	183,378	120,340	63,038	55,045	22,400	32,585
1877.....	192,645	15,973	176,672	215,768	126,570	89,198	42,190	28,329	13,861
1878.....	427,777	91,671	336,106	175,344	131,761	43,588	36,700	30,483	6,217
1879.....	583,908	208,851	380,057	211,415	155,881	55,584	61,684	47,782	18,902
1880.....	676,477	152,920	523,557	244,709	194,421	50,288	50,611	36,285	14,326
1881.....	1,014,304	195,524	818,780	285,863	223,989	61,874	79,924	61,078	18,846
1882.....	963,036	191,325	771,711	439,671	359,012	80,659	80,724	62,562	28,072
1883.....	1,379,401	313,879	1,065,522	460,780	387,598	73,182	119,665	61,977	57,688
1884.....	1,723,686	590,133	1,133,553	533,526	443,001	90,525	237,964	105,973	131,991
1885.....	2,358,718	801,162	1,557,556	506,627	402,381	104,246	221,801	115,755	106,046
1886.....	2,264,484	538,005	1,726,479	490,971	370,350	120,621	172,659	83,234	89,425
1887.....	2,423,262	524,492	1,898,770	669,224	433,372	185,852	209,956	103,126	106,880
1888.....	2,008,964	413,937	1,595,047	1,056,086	632,622	373,464	351,050	169,932	181,118
1889.....	2,073,910	381,484	1,742,476	1,220,343	744,510	475,833	370,772	174,851	195,921
1890.....	2,365,171	558,227	2,306,944	1,472,229	923,552	548,677	535,869	336,207	199,662
1891.....	2,599,109	605,457	1,993,652	1,270,917	789,093	481,824	386,760	173,271	208,489
1892.....	2,397,477	591,623	1,805,854	1,479,078	810,010	669,068	438,263	219,230	219,038
1893.....	1,943,373	520,694	1,422,679	1,660,807	761,676	899,131	569,517	196,892	372,625
1894.....	2,547,077	496,804	2,050,273	1,689,193	764,592	924,601	539,555	196,061	393,494
1895.....	2,457,697	268,340	2,171,357	1,613,454	719,704	893,750	864,713	287,294	577,419
1896.....	2,605,875	341,699	2,263,876	1,714,632	819,799	894,733	933,126	303,693	639,433
1897.....	3,850,796	268,841	3,086,955	1,817,526	875,756	941,770	1,134,236	306,356	827,880
1898.....	3,672,909	373,219	3,299,690	1,767,964	861,136	906,778	980,303	330,365	649,438
1899.....	2,959,073	257,718	2,701,355	1,912,019	919,573	922,446	953,241	308,403	644,838
1900.....	3,094,139	223,963	2,870,176	1,969,718	853,303	1,116,415	860,449	216,272	644,177

¹ Compiled from data furnished by Cincinnati Price Current.

The rise of South Omaha as a slaughtering and packing center dates from 1884. The figures below show the development of the industry at this point:

LIVE STOCK RECEIVED, SHIPPED, AND SLAUGHTERED IN OMAHA, NEBR.: 1884 TO 1900.¹

YEARS. ²	HOGS.			CATTLE.			SHEEP.		
	Received.	Shipped.	Slaught- tered.	Received.	Shipped.	Slaught- tered.	Received.	Shipped.	Slaught- tered.
1884.....	1,863	500	1,863	86,898	81,955	4,943	4,188	1,273	2,915
1885.....	130,867	71,919	58,948	114,163	83,233	30,930	18,985	8,408	10,577
1886.....	390,487	187,869	208,118	144,457	78,120	71,337	40,195	17,728	22,467
1887.....	1,011,706	140,726	870,980	235,723	151,419	84,304	76,014	56,444	19,570
1888.....	1,283,600	333,228	950,372	340,489	206,064	134,405	158,508	118,208	40,295
1889.....	1,208,605	179,916	1,026,689	467,340	227,921	239,419	159,503	103,250	56,253
1890.....	1,678,314	275,688	1,397,676	606,699	283,880	322,819	156,186	94,464	61,722
1891.....	1,462,423	245,046	1,217,377	593,044	267,730	325,314	170,849	89,416	81,433
1892.....	1,705,687	381,723	1,323,964	738,186	282,092	456,094	185,457	83,445	102,012
1893.....	1,435,271	363,116	1,072,155	852,642	309,776	542,866	242,581	91,814	150,767
1894.....	1,904,288	400,640	1,503,648	829,171	311,627	517,544	252,218	115,704	136,451
1895.....	1,188,421	100,705	1,087,716	602,222	287,910	314,312	208,633	113,793	94,810
1896.....	1,197,638	78,790	1,118,848	570,515	235,421	335,094	333,332	131,451	201,878
1897.....	1,610,931	83,061	1,527,920	810,949	355,175	455,774	627,160	205,617	421,543
1898.....	2,101,387	172,024	1,929,363	812,244	322,194	490,050	1,085,186	483,171	601,905
1899.....	2,216,482	25,999	2,190,483	837,563	288,474	549,089	1,086,319	342,247	744,072
1900.....	2,200,926	36,996	2,163,930	828,204	274,479	553,725	1,276,775	552,234	724,541

¹ Compiled from data furnished by Cincinnati Price Current.

² Previous to 1897 the movement represents years ending with November.

The prominence that has been attained by South St. Joseph, Mo., in the slaughtering and packing industry was the result of a remarkable development between 1897 and 1900. The receipts at South St. Joseph for 1898, 1899, and 1900 were as follows:

YEARS.	Cattle.	Hogs.	Sheep.
1898.....	232,074	1,034,035	121,407
1899.....	294,950	1,401,794	258,432
1900.....	390,361	1,078,521	390,308

About eighty years ago, when packing was begun at Cincinnati, and even until the late sixties, packing was confined to the curing and salting of pork products and some barreling of beef. The barreling of beef was carried on in the West to a considerable extent and the products sent to the Eastern markets. Beef barreled in the Eastern cities was sent all over the world on board ship. The development in the packing of beef on a large scale has been due to the adoption of the various systems of artificial refrigeration within the last thirty years. No other one factor has had so much influence upon the meat industry. All meat curing depends for its success upon thorough chilling, properly conducted, of the carcass. Artificial refrigeration has practically lengthened the packing year from four months to twelve months, by rendering summer slaughtering possible. The importance of artificial refrigeration to the meat trade would be hard to overestimate. The most important step in the development of American beef as an article of commerce, was the invention of the refrigerator car by William Davis of Detroit. The patents were issued in 1868, and in September, 1869, the first cargo of fresh beef was shipped from Chicago to Boston. This was the commencement of a great industry in the United States, and the initial step toward the foreign trade. The cars now used by the great meat packers of the West are founded on the Davis patent of 1868.¹

¹ Ice and Refrigeration, September, 1901, Vol. 21, No. 3, page 98.

The object of chilling and freezing meat is not only that it shall be preserved, but also that it be so frozen that it can be thawed, fresh and sweet, with its nutritive qualities intact. To attain this end, the problem is to chill the meat without driving the animal heat inward and thereby causing decay of the marrow and bone. With proper treatment in freezing, however, the quality of the meat need not be impaired. For fifteen to eighteen hours the temperature of the meat is kept at 36° F., and it is then chilled or refrigerated for twenty-four to thirty hours.

The canning of beef was attempted in Chicago in the sixties and enjoyed some growth, but the packers did not take it up on a large scale until 1879. Of late years the production of canned beef has fallen from 133,428,456 pounds in 1890 to 123,249,021 pounds in 1900, and the exports from 82,638,507 pounds in 1890 to 55,553,745 pounds in 1900.

Prior to 1875 the dressed beef trade was not of much importance. The invention of the refrigerator car and its improvement gave a great impetus to the industry. The exportation of fresh beef began in 1876 in a small way. In the early days of cattle raising in the West they were brought East on the hoof and slaughtered in local abattoirs. The journey of 1,500 to 2,000 miles East affected the physical condition of the animal to the extent that it caused the quality of the beef to deteriorate. The adoption of the refrigerator car made it possible to slaughter these cattle in the West, and the Western packers were quick to fill the demand created for the slaughter of these cattle, and ship the product East, thus preserving all the good qualities of the beef. To-day the Western packer competes with the local producer in the Eastern market, and his beef is in far better condition than when it came East on the hoof to be slaughtered at the end of a long, tiresome journey.

Until within comparatively late years little attempt was made to utilize the waste products of the abattoir. The blood was allowed to drain away, and the disposal

of heads, feet, tankage, and other waste material was a source of expense, men being hired to cart it away and bury it. After a time industries grew up in the vicinity of the slaughtering establishments, using as their raw materials the waste product of the abattoir. Glue, tallow, soap, and fertilizers were among the articles so produced from the waste. With increasing competition the packing house gradually absorbed these industries, until the utilization of "waste" materials constituted a source of no little profit. The aim is that nothing shall be wasted. The large packing houses utilize the horns, hoofs, bones, sinews, hide trimmings, and the other so-called waste materials. From these are manufactured glue, gelatin, brewers' isinglass, curled hair, bristles, wool felt, hair felt, laundry soap and soap powders, toilet soaps, glycerin, anhydrous ammonia, fertilizers, dried blood (after the albumen is extracted), bone meal, cut bones, poultry food, albumen, neat's-foot oil, pepsin, knife handles, and many other things. Each large establishment has its chemical laboratory, where expert chemists are constantly seeking for new combinations to render more valuable and extensive the already long list of by-products.

It is obvious to even the most casual observer, that an industry putting out a product in a single year of over \$785,000,000 is of the utmost importance to the people of the United States. It is essentially Western in its location and growth. The largest establishments are located in the Mississippi Valley. The states leading in the production of live stock for slaughter are west of the Mississippi. Indeed, a large part of the industrial welfare of the West may be said to be based upon the live-stock industry. The territory devoted to the raising of hogs on a large scale is coextensive with the corn belt. The corn crop, the hay crop, and the grasses take on an added value when converted into the form of meat products. The corn crop is the foundation upon which depends the live-stock industry, and this industry is coming more and more to be a question of corn supply. Sheep raising is confined chiefly to the upper Rocky Mountain states, owing to the fact that the successful raising of sheep depends upon the availability of pasturage. From this western stock-raising territory, the movement is northward and eastward to Chicago, Kansas City, South Omaha, St. Louis, South St. Joseph, and the other great slaughtering centers. The geographical movement of the slaughtering and packing area furnishes a view of the settlement and development of the West.

The advantages of the transportation facilities possessed by Chicago, backed with the wide area devoted to stock raising, spreading westward from Lake Michigan to the Rocky Mountains, give that city the lead in this industry. The tendency, however, is for the slaughtering centers to move still nearer the corn belt. The rise within recent years of Kansas City and South Omaha, and more lately of South St. Joseph, may be traced directly

to this factor, and to the improved railroad facilities that followed any enlargement of the territory devoted to corn production. Within recent years, overpasturage on many of the Western grazing lands has caused the number of cattle to decrease. Increasing attention devoted to sheep raising, too, has caused a crowding of the cattle, and settlers have been crowding in and fencing the ranges. The place of the large herds that formerly ranged the plains during the entire year is being taken by the small herds that range the free grazing lands in the summer and are carefully pastured and fed during the winter. A loss of one-third of the herd from exposure was a common thing under the old conditions, but under the new system this element of loss is almost wholly removed. Greater attention is being paid to breeding, and almost fabulous prices have been paid for high-class animals for breeding purposes. Another comparatively new development is the extension of the feeding or fattening operations for market. The conversion of the surplus corn into beef, pork, and mutton, yields a large profit to the feeder. Poor-grade stock is bought in the fall, fattened during the winter, and later is sent back to market to be sold at a considerable advance.

The Union Stock Yards at Chicago present a monument to the opportunity and good business sense of the American people. To the stranger entering the yards for the first time, the scene is novel. He enters the main entrance beneath an iron arch bearing an inscription that informs him that the territory within is the "Union Stock Yards, chartered 1865." Once within, factories, pens, and viaducts surround him on every side. Noise and confusion reign everywhere, but the apparent confusion is well ordered; and, considering the immense number of animals that are constantly being handled, the wonder is that they are handled with so much facility. On every hand is heard the "hi-yah" of the drovers and the deep lowing of the cattle. Everywhere is movement.

The stock arrives at the yard in the night or early morning, often after a long, hard ride of hundreds of miles. The company owning the stock yards owns also the transportation facilities within the yards, and, as the animals come in, they are given into charge of the company, which become responsible for both the cargo and the freight, attending to all matters of ownership, consignment, and fees. The company remains responsible for the stock until all charges are paid and the stock delivered to the broker or buyer. The live-stock broker has become a necessity; he is the medium of understanding between the buyer and the seller, and by him all difficulties are adjusted. Through him the seller knows exactly what it will cost to have his stock shipped, fed, watered, and sold. As soon as possible after the arrival at the yard, the herds are driven to pens, fed, and watered, and after that the selling begins. Owners, buyers, sellers, agents of the packing

houses, and commission men mingle in the excitement of the market. The examination and weighing of the animals follow the sale. An official statement of the weight is given the seller. The animals are then driven to the slaughterhouse. The worry and exhaustion of the cattle, occasioned by the long ride, have heated them so much that a period, generally of about twenty-four hours, is given to allow their temperature to cool to the normal point. Hogs, however, are not allowed this respite, but are sprinkled and immediately driven to a large solid wheel, with chains fastened at intervals along the rim. With these chains the hog is shackled by one hind leg. The wheel revolves, slowly raising the squealing porker. As he gets near the top, the hog is detached automatically from the wheel, and a hook attached to a sloping rail carries the victim to the butcher. With a swift motion, almost mechanical because of its long practice, the throat is cut lengthways, and the carcass is run along a short distance to allow the blood to drain out, which is drawn off and used largely in the manufacture of fertilizers. After a short time has been allowed for this draining, the carcass is plunged into a bath of scalding water. It is then brought automatically to a table, across which it is dragged through a scraping machine by an endless chain. This machine does the work better than it could be done by hand, leaving the bristles in much better condition. It does its work very thoroughly, its blades being mounted on cylinders coming in contact with every part of the body. To insure perfect results, the body is then gone over by hand scrapers, after which the carcass is thoroughly washed with a hose. Next the head is nearly severed, the gambrels are cut, and the body suspended by them from the rail.

The body is then opened and dressed, the leaf lard is removed, the head is taken off, the tongue removed, and, lastly, the body is split in two. All this is done at the rate of 20 hogs per minute. Thence the two halves go to the chill room, where they remain about twenty-four hours, until after the animal heat has left the body and it is thoroughly chilled. After this the sides are run to the cutting tables. In the cutting, too, many changes have taken place since the early days. Formerly the only cuts were hams, sides, shoulders, and cuts for barreled pork. In this connection Mr. Philip D. Armour said: "To-day (1895) the variety of cuts is bewildering to an outsider. The world to-day is the packer's market, and he has to study the peculiarities and preferences of each country, and even each county. The idiosyncrasies in the cutting and curing of home-killed bacon is reflected to-day in our cuts. Wiltshires, Cumberlands, Staffordshires, Yorkshires, etc., are only a few of such distinguishing styles."¹ A hog dresses about 80 per cent of its live weight, about 20 per cent being offal. Fresh meat comprises about 10 per cent of the dressed hog, and the other 90 per cent is cured.

From the cutting room the various parts intended for curing are sent by chutes to the curing rooms, where some cuts lie for at least sixty days in dry salt, and the shoulders, sides, hams, etc., intended for smoking lie for a like period in vats of sweet pickle. After these pieces intended for smoking have lain in pickle for five to eight weeks (the time required and the strength of the pickle varying according to the size of the cut), they are removed to the soaking tank and soaked for about twenty-four hours, in order that the heavier salting toward the surface of the cut may be brought to a uniformity with the center. From here the hams go to the trimming table, whence they are taken to the smokehouse, where they are smoked for about twenty-four hours. They then go to the storeroom, or the department where the hams and bacon are branded and labeled, and some are covered with canvas.

The manufacture of sausage brings to the packer greater profit for the amount of meat used than any other part of the hog. Sausage is made of trimmings which are the remnants of everything. Material for sausage comes from the ham-trimming department, from the butcher's bench at the market stall, from the killing room, and from the beef houses, particularly where the heads and hoofs are trimmed. The meat is chopped, mixed, and stuffed by machinery. The spices, such as sage, pepper, salt, ginger, and mustard, are mixed with the meat prior to its passage through the chopping machine, in order that it may be more thoroughly mixed. The ginger and mustard are added to counteract the action of the fatty greases on the stomach. From the chopping table the meat goes to a mixing trough to be mixed with large quantities of water necessary to make the mass sufficiently pliable that the casings may be filled with little difficulty. Here potato flour is also added to give consistency to the material. At this point the constituent parts are 40 per cent meat and spice, 40 per cent potato flour, and 20 per cent water. The potato meal neutralizes the taste of the pork, and the spices keep the stomach right.

The intestines, from which the casings are made, are one of the most valuable products of the hog. The labor involved in preparing them for commercial use is much greater than that demanded in the preparation of any other part of the hog. In some packing houses the old plan of doing the work entirely by hand, cleaning the intestines by turning them inside out and scraping with knife blades, still obtains, but in all the larger houses this work is done by a machine of marvelous rapidity, and it does its work more thoroughly than is possible by hand. Stuffing is done by a machine composed of two large cylinders, one a steam cylinder, the other a sausage-stuffing cylinder, and a piston rod directly connected with the piston rod of the large cylinder. The steam cylinder is of such an area that with 80 pounds steam pressure we have 190 pounds of pressure to the square inch in the stuffing cylinder. This causes sufficient pressure to force the sausage from

¹ One Hundred Years of American Commerce, Vol. II, page 386.

the small orifice at the bottom of the cylinder, to which is attached a tube over which the sausage casings are slipped, and the pressure when the cylinder is filled is sufficient to fill the skins at a speed of a mile a minute. From this machine the sausages are delivered at a table at which stand several men who tie them in links. This process done, the sausage is ready for marketing.

Lard is another important product of the hog. The packer divides it into two kinds—leaf lard and steam lard. Leaf lard comes from the surplus fat that accumulates in the hog, incased in a skin somewhat similar to that inclosing the intestines, only of finer fabric. From the hog this leaf is washed and then goes to the rendering kettle. The leaf is cut into strips about three inches wide which is again cut into squares about three inches long. This cutting has to be done with much care, for mangling the leaf is detrimental to the production of good lard. The kettle is generally an open-jacketed one with a space for steam between the two parts of the kettle. A heavy shaft suspended through the kettle horizontally has arms attached which pass close to the bottom. This shaft in revolving keeps the mass in constant motion. This kettle holds about 10 tierces, and is kept constantly full, the steam being turned on in the jacketed space at a pressure of about 15 pounds and a temperature of about 222° F. The water taken on in washing the leaf first arises as vapor, and continues to vaporize as long as any water is left. After a time the surface begins to sink, showing that some of the leaf has melted, and the shaft and stirrers are started and the temperature is raised to about 250° F. Cut leaf is added from time to time to keep the kettle full, so that it is full of lard to the brim when the rendering is completed. After about five hours the cooking is finished, and the steam is turned off. A small amount of salt is thrown into the kettle, and after an hour of settling the lard is drawn off from the bottom through an opening over which there is a fine screen of wire cloth. From here the lard is run to an open tank where it cools to a temperature of 160° F., when it is drawn into tin pails of about 20 quarts each, and from these filled into packages of wood or tin, and placed in a room where a blast of air of a temperature of about 40° to 45° is blown over it. The rapid cooling causes a shrinkage on the surface and gives a crinkled effect that was formerly believed to be an indication of its purity. The color of leaf lard is creamy. Nearly everything to-day enters into leaf lard from leaf to belly trimmings. Much leaf lard is made into neutral oil. This oil is free from animal smell and taste.

Stock for making steam lard comes from all sources and every grade of hog products, from the feet trimmings, or feet themselves, to the skull or head bones. The rendering is done in tight iron cylinders from 30 to 72 inches in diameter and from 6 to 16 feet deep, generally suspended through one floor with a discharge at

the bottom of about 12 inches in diameter, and an inlet opening on the top of about 16 inches in diameter. Both these openings are covered. The pressure of steam used varies. After the rendering is completed and the steam pressure removed, the tank is allowed to settle. The refuse, such as bones and flesh tissue, sinks to the bottom of the tank, and is used in making fertilizers; above appears a layer of water, and above this, in turn, is the lard. The lard is drawn off into large steam jacketed kettles holding 20 to 30 tierces each. These kettles are then heated to above the boiling point of water. This is the refining process, and is continued until the water in the lard ceases to rise as vapor from the kettle. As soon as the water is evaporated the lard settles and is pumped into a large cooler before it is prepared for shipment. The failure to remove all the water in this process of refining is the cause of rancid or spoiled lard.

In the manufacture of fertilizers it is a serious question to reduce the offensiveness of the odor arising from the gases to the smallest possible degree. The odors penetrate every crack and corner, and leave their characteristic taste and smell everywhere. For this reason the building in which the fertilizer operations are conducted is situated at a distance from the other buildings of the plant. The material from which fertilizer is made is derived from various sources, chiefly from the rendering and cooking tanks. Fertilizer is a compound, and contains large amounts of ammonia and nitrates, and its value depends upon the amount of these constituents. Fertilizer material is generally cooked on the top floor of the building, and after being thoroughly cooked it is passed through a drying press. The material is pressed in order to reduce the water and save steam in drying, and to secure any grease possible, which adds nothing to the fertilizing properties. The drying presses are usually square boxes, about 16 inches long, 12 inches wide, and 3 inches deep, and are operated either by hydraulic power or by a screw press. After pressing, a rapid drying is given the material at a temperature of over 260° F., a reel revolving rapidly being necessary to prevent burning. Several different kinds of drying machines are in use. After drying, the fertilizer is put in bags, in which condition it is shipped to the manufacturer of fertilizer compounds.

In killing cattle, a day is generally allowed them to recover their normal temperature after the excitements of their journey. After they have cooled, the cattle are driven up an incline to the top of a 4 or 5 story building, into a long, narrow lane of a width sufficient to allow only two cattle to stand abreast. As the two animals in the lead reach the end of the lane, a partition is lowered behind them. This process is repeated for the next pair, and so on to the end of the lane. As soon as the line is secured, a man wielding a heavy hammer traverses a platform that runs along outside near the top of the lane, and with a swinging blow,

which strikes the animal between and above the eyes, fells the cattle. The side of the lane is then raised, the floor of the lane tilted, and the carcasses are precipitated upon the slaughtering floor. Next the body is shackled by the hind legs, hoisted and hooked to a rail, along which it slides to the butcher, who, with a quick thrust, severs the large vein of the neck. A pan is quickly shoved in to collect the blood, and the floor is arranged so that whatever quantity of the blood may escape the pan is drained into a large tank. Next the carcass is headed, lowered to the floor, and adjusted in such manner that the hide may be removed most easily. In this operation, in the larger establishments, the division of labor is carried to a high degree. Each workman engaged in removing the hide cuts only a certain portion, and the amount done by each is surprisingly small, but this is compensated for in the additional quickness with which the work is accomplished. Next the beef is sent to the chill room, where it is refrigerated about forty-eight hours, when that which is intended for sale as fresh meat is run to the loading platforms, divided into fore and hind quarters, and loaded into refrigerator cars for shipment to all points of the United States and to foreign countries. The killing of sheep differs little from the killing of cattle:

The meat used in canning is generally cow beef, and of an inferior grade. It is cooked in huge kettles and is handled with pitchforks. As soon as cooked, it is pressed into cans, which are capped, soldered, sealed, and inspected by steaming to ascertain if any air holes remain. These holes are closed, and the cans are washed, painted, and labeled, when they are ready for shipment to any climate, since, being airtight, they are proof against climatic changes.

Not the least interesting features of the large packing house are the auxiliary plants that have grown up, such as the tin shop where the cans are made, the box factory where boxes for shipment are manufactured, and the car shops where the refrigerator cars are built and repaired.

MEAT INSPECTION.

The reputation of American meats in the markets of the world depends upon the care and thoroughness with which the meat is inspected. This inspection is conducted by the Bureau of Animal Industry of the Department of Agriculture, and the cost of the work is borne by the Government.

On arrival at the stock yards all animals intended for slaughter are subjected to an ante-mortem examination by a Government inspector. Any animal that is found to be diseased, or not fit for human food, is condemned and marked by having a metal tag, stamped "U. S.—Condemned," placed in its ear. These condemned animals are killed under the supervision of an employee of the Bureau of Animal Industry, whose duty it is to see that the products of such animals are rendered in such manner that they shall not be fit for human food. At the time of slaughter all animals are again examined, and if found to be diseased, the carcass is marked with a yellow condemnation tag, and removed and rendered so that no part of it can be placed on sale for food. Provision is made to insure the proper rendering of the condemned carcasses by requiring the return to the inspector of a numbered stub removed from the tag of condemnation at the time the rendering is done. This insures the proper rendering of the carcasses. Only those carcasses and meats are inspected that are intended for interstate or export trade.

Each article of food made from inspected carcasses must bear a label on which appears the official number by which the establishment is known to the Department of Agriculture, and a statement to the effect that the article has been inspected according to law. A copy of this label is filed with the Department of Agriculture at Washington to serve as a mark of identification that the products to which it has been attached were properly inspected. Each package shipped has stenciled upon it "For export" or "Interstate trade," as the case may be, and, further, the official number of the establishment, the number of pieces or pounds in the package, and the trade-mark of the firm. Upon such packages the official of the Department pastes meat-inspection stamps, which are immediately canceled, certifying to the wholesomeness of the product, and its fitness for food. These stamps must be obliterated as soon as the package is opened.

Live stock intended for export are examined at certain designated stock yards, and again at the ports of export. The Department of Agriculture has also representatives at certain foreign ports.

The importance that meat inspection has attained is shown in the table below. The work began in 1891 and has grown steadily since that time. The following table illustrates the growth:

NUMBER OF ANIMALS INSPECTED AT SLAUGHTER FOR ABATTOIRS HAVING INSPECTION, FISCAL YEARS 1891 TO 1900.

FISCAL YEAR.	Number of abattoirs.	Number of cities.	Cattle.	Calves.	Sheep.	Hogs.	Horses.	Total.
1891	9	6	83,889					83,889
1892	28	12	3,167,009	59,089	588,361			3,808,459
1893	37	16	3,922,079	92,947	870,512			4,885,538
1894	46	17	3,861,594	96,331	1,020,764	7,648,146		12,626,835
1895	55	19	3,701,042	116,093	1,428,601	13,616,539		18,865,276
1896	102	26	3,985,484	256,905	4,629,796	14,250,101		23,122,376
1897	128	33	4,242,216	273,124	5,209,161	16,808,771		26,533,272
1898	135	35	4,418,738	244,134	5,496,904	20,898,199		31,053,171
1899	138	41	4,382,020	246,184	5,608,096	23,836,943	3,332	34,071,675
1900	148	45	4,841,166	315,698	6,119,886	23,836,884	5,569	34,619,188

In 1881 Germany, France, and other continental nations of Europe forbade the importation of American pork, alleging that it was unhealthful, being infected with trichinæ. By these measures the trade was crushed, and for ten years afterwards nearly every market on the Continent was closed to American pork. Notwithstanding considerable opposition to governmental inspection, the work was undertaken in 1892, when 38,152,874 pounds for export were inspected. The amount inspected has constantly increased. The microscopic inspection of pork is performed largely by women. The following extract from the regulations of the Bureau of Animal Industry shows the method of operation:

When the slaughtered hog is passed into the cooling room of said establishment, the inspector in charge, or his assistants, will take from each carcass three samples of muscle—one from the "pillar of the diaphragm," one from the psoas muscle, and the other from the inner aspect of the shoulder, and also from the base of the tongue when that organ is retained for exportation; and said samples will be placed in small tin boxes, and a numbered tag will be placed upon the carcass from which said samples have been taken, and a duplicate of said tag will be placed in the box with said samples. The small boxes will be placed in a large tin box provided with a lock. The boxes containing the samples from the hogs in the cooling room so tagged will be taken to the microscopist for such establishment, who shall thereupon cause a microscopic examination of the contents of each box containing samples to be made, and shall furnish a written report to the inspector, giving

the result of said microscopic examination, together with the numbers of all carcasses affected with trichinæ. The samples of pork microscopically examined shall be classified as follows:

Class A. Samples in which there are no signs of trichinæ, living or dead, calcified cysts, or other bodies or substances having any resemblance to trichinæ or trichinæ cysts.

Class B. Samples in which there are disintegrated trichinæ or trichinæ cysts, calcified trichinæ or trichinæ cysts, or bodies having any resemblance thereto.

Class C. Samples in which there are living or dead trichinæ bodies not disintegrated.

All carcasses coming within Class C are removed from the cooling room and disposed of by tanking, or they may be rendered into edible lard at a temperature of 150° F., or made into cooked meat products if the temperature is raised to the boiling point a sufficient time to cook thoroughly the interior of the pieces. Carcasses belonging to Class B are rejected for shipment to countries requiring inspection and certification. In all this work (the microscopic examination, the cutting up of carcasses, the marking of parts, and the keeping of records) the most careful and painstaking efforts are maintained. The result is that the pork exported to countries which require inspection, is not only absolutely free from trichinæ, but has never been affected by these parasites. The amount of affected pork under Class B and Class C is less than 2 per cent of the whole amount examined microscopically.¹

Table 12 presents the detailed combined statistics for slaughtering, wholesale, not including meat packing; and slaughtering and meat packing, wholesale, as reported at the Twelfth Census.

¹ Yearbook, Department of Agriculture, 1899, page 459 ff.

TABLE 12.—COMBINED SLAUGHTERING AND MEAT

	United States.	California.	Colorado.	Connecticut.	Delaware.	District of Columbia.
1	Number of establishments	921	58	14	12	4
2	Character of organization:					
3	Individual	416	22	3	5	2
4	Firm and limited partnership	286	20	2	4	2
5	Incorporated company	219	16	9	3	
6	Capital:					
7	Total	\$189,198,264	\$3,013,081	\$1,390,518	\$562,564	\$234,420
8	Land	\$12,185,034	\$497,074	\$162,800	\$77,000	\$23,000
9	Buildings	\$34,504,180	\$780,960	\$509,700	\$150,385	\$55,000
10	Machinery, tools, and implements	\$20,139,848	\$501,711	\$104,000	\$65,710	\$41,760
11	Cash and sundries	\$122,419,257	\$2,133,336	\$604,018	\$263,469	\$134,660
12	Proprietors and firm members	1,062	64	7	13	7
13	Salaried officials, clerks, etc.:					
14	Total number	10,227	180	48	87	22
15	Total salaries	\$10,123,247	\$254,567	\$60,896	\$36,662	\$18,610
16	Officers of corporations—					
17	Number	371	17	2	2	
18	Salaries	\$1,064,686	\$40,920	\$23,236	\$5,000	
19	General superintendents, managers, clerks, etc.—					
20	Total number	9,856	163	32	35	22
21	Total salaries	\$9,058,561	\$213,647	\$32,660	\$31,662	\$18,610
22	Men—					
23	Number	8,913	156	31	31	19
24	Salaries	\$8,530,484	\$209,897	\$32,540	\$29,532	\$12,420
25	Women—					
26	Number	943	7	1	4	3
27	Salaries	\$528,077	\$3,750	\$120	\$2,080	\$1,190
28	Wage-earners, including pieceworkers, and total wages:					
29	Greatest number employed at any one time during the year	86,215	1,058	295	400	37
30	Least number employed at any one time during the year	61,035	870	243	370	37
31	Average number	68,534	925	261	380	37
32	Wages	\$33,457,018	\$544,659	\$170,744	\$174,239	\$20,398
33	Men, 16 years and over—					
34	Average number	63,922	915	259	378	36
35	Wages	\$32,239,847	\$538,611	\$170,244	\$173,829	\$20,242
36	Women, 16 years and over—					
37	Average number	2,945	10	2	2	2
38	Wages	\$853,813	\$6,048	\$500	\$410	
39	Children, under 16 years—					
40	Average number	1,667				1
41	Wages	\$363,358				\$156
42	Average number of wage-earners, including pieceworkers, employed during each month:					
43	Men, 16 years and over—					
44	January	64,917	917	270	393	36
45	February	63,735	906	267	393	36
46	March	63,111	919	280	385	36
47	April	61,151	920	272	364	36
48	May	62,240	932	238	360	36
49	June	61,800	900	243	362	36
50	July	62,515	899	241	364	36
51	August	62,872	905	245	364	36
52	September	62,998	912	249	379	36
53	October	65,752	934	252	383	36
54	November	67,393	912	265	383	36
55	December	68,686	927	262	392	36
56	Women, 16 years and over—					
57	January	2,964	9	2	2	2
58	February	2,892	8	2	2	2
59	March	2,768	7	2	2	2
60	April	2,678	7	2	2	2
61	May	2,605	8	2	2	2
62	June	2,431	7	2	2	2
63	July	2,725	8	2	2	2
64	August	2,990	10	2	2	2
65	September	3,177	17	2	2	2
66	October	3,325	19	2	2	2
67	November	3,412	15	2	2	2
68	December	3,373	8	2	2	2
69	Children, under 16 years—					
70	January	1,591				1
71	February	1,595				1
72	March	1,520				1
73	April	1,531				1
74	May	1,563				1
75	June	1,660				1
76	July	1,739				1
77	August	1,774				1
78	September	1,751				1
79	October	1,673				1
80	November	1,814				1
81	December	1,793				1
82	Miscellaneous expenses:					
83	Total	\$24,060,412	\$441,210	\$56,384	\$76,721	\$9,899
84	Rent of works	\$614,430	\$32,482	\$4,115	\$1,240	\$3,120
85	Taxes, not including internal revenue	\$327,450	\$17,082	\$6,925	\$6,747	\$5,690
86	Rent of offices, insurance, interest, and all sundry expenses not hitherto included.	\$22,608,910	\$390,046	\$45,344	\$68,734	\$6,094
87	Contract work	\$11,622	\$1,650			\$1,800
88	Materials used:					
89	Total cost	\$683,583,577	\$13,555,445	\$3,721,610	\$3,143,590	\$442,889
90	Slaughtered—					
91	Beeves, number	5,580,911	174,113	34,934	408	5,105
92	Cost	\$247,365,812	\$6,017,752	\$1,429,817	\$16,240	\$102,500
93	Sheep, number	9,190,490	695,058	65,088	20,707	2,050
94	Cost	\$37,137,542	\$2,197,362	\$227,843	\$74,335	\$4,200
95	Hogs, number	30,654,333	228,675	160,210	254,731	17,300
96	Cost	\$278,736,961	\$1,989,208	\$1,504,397	\$2,543,174	\$229,440
97	Calves, number	899,748	28,531	3,770	11,620	223
98	Cost	\$7,356,560	\$280,958	\$33,440	\$32,792	\$1,636
99	All other animals, cost	\$559,839	\$165,021	\$5,885	\$5,080	
100	Dressed meat, purchased fresh or partly cured, cost	\$54,715,496	\$1,897,969	\$363,870	\$132,000	\$98,300
101	Fuel	\$2,747,606	\$69,305	\$18,013	\$19,410	\$2,061
102	Rent of power and heat	\$30,946	\$3,228	\$375		
103	Mill supplies	\$337,456	\$3,672	\$2,150		
104	All other materials	\$48,373,654	\$416,019	\$43,320	\$169,047	\$11,425
105	Freight	\$6,221,705	\$514,951	\$27,460	\$31,427	\$2,714

TABLE 12.—COMBINED SLAUGHTERING AND MEAT

	United States.	California.	Colorado.	Connecticut.	Delaware.	District of Columbia.
88 Products:						
Total value.....	\$785,562,433	\$15,717,712	\$4,343,983	\$3,663,393	\$521,076	\$2,210,860
Beef—						
Sold fresh, pounds.....	2,920,468,297	93,818,021	20,789,680	224,000	1,750,900	8,128,300
Value.....	\$211,068,934	\$5,972,469	\$1,501,233	\$15,825	\$129,415	\$609,800
Canned, pounds.....	112,449,021	868,382	16,000			
Value.....	\$9,167,531	\$61,450	\$1,440			
Salted or cured, pounds.....	137,589,303	2,512,762	66,900	450,000	37,781	400,030
Value.....	\$9,661,834	\$173,381	\$5,814	\$45,000	\$5,045	\$16,000
Mutton, sold fresh, pounds.....	404,183,601	29,005,967	3,138,745	745,252	156,760	719,180
Value.....	\$32,963,219	\$2,178,984	\$270,729	\$85,899	\$16,375	\$69,278
Veal, sold fresh, pounds.....	85,565,207	3,964,808	417,000	929,650	59,460	454,500
Value.....	\$7,812,714	\$326,705	\$39,940	\$103,008	\$6,901	\$45,515
Pork—						
Sold fresh, pounds.....	1,223,038,988	18,315,565	10,454,600	7,054,510	973,900	6,823,300
Value.....	\$84,019,837	\$1,424,794	\$653,687	\$514,237	\$99,684	\$55,945
Salted, pounds.....	1,375,524,758	2,558,691	9,500,000	4,800,000	522,000	1,093,357
Value.....	\$88,674,016	\$205,574	\$413,580	\$333,500	\$41,700	\$76,512
Hams, pounds.....	787,526,973	11,982,749	4,650,000	3,434,000	782,000	1,227,000
Value.....	\$78,793,012	\$1,304,460	\$400,460	\$815,240	\$78,760	\$125,647
Smoked bacon, sides, and shoulders, pounds.....	985,722,212	14,253,894	3,227,000	11,820,000	601,000	2,486,235
Value.....	\$74,873,847	\$1,368,887	\$230,010	\$887,800	\$42,320	\$214,179
Sausage, fresh or cured, pounds.....	292,164,045	1,404,497	2,535,400	2,651,700	157,000	2,141,500
Value.....	\$21,472,413	\$115,473	\$153,866	\$167,000	\$11,860	\$191,330
All other meat, sold fresh, pounds.....	80,408,211	2,295,977	200,000			200,000
Value.....	\$7,813,078	\$191,283	\$13,600			\$10,000
Refined lard, pounds.....	891,438,417	3,998,612	7,672,000	6,163,334	968,000	1,404,000
Value.....	\$52,620,348	\$314,137	\$417,480	\$390,400	\$70,030	\$108,780
Neutral lard, pounds.....	129,345,282	182,500	6,000	750,000		26,000
Value.....	\$8,588,350	\$16,483	\$480	\$59,000		\$1,820
Oleomargarine oil, gallons.....	19,111,120					
Value.....	\$11,482,542					
Other oils, gallons.....	8,245,569	5,275				
Value.....	\$3,440,358	\$2,699				
Fertilizers, tons.....	168,510	1,570	190	2,918	30	120
Value.....	\$3,300,132	\$37,323	\$2,030	\$80,360	\$450	\$2,160
Hides, number.....	6,281,952	201,444	38,284	12,072	5,333	37,015
Pounds.....	336,527,907	10,221,863	2,128,330	131,106	308,000	688,250
Value.....	\$33,925,911	\$960,324	\$162,397	\$17,015	\$17,466	\$83,977
Wool, pounds.....	13,182,146	117,710	18,200			
Value.....	\$3,335,824	\$23,742	\$1,110			
All other products, value.....	\$47,407,679	\$1,035,549	\$64,916	\$148,609	\$1,020	\$39,277
Custom work, value.....	\$141,304	\$9,100	\$1,211			\$2,620
Weight of animals slaughtered:						
Beeves—						
Gross weight, on hoof, pounds.....	5,913,498,606	183,495,244	36,268,850	347,200	3,072,000	16,067,500
Net weight, dressed, pounds.....	3,225,610,438	95,496,093	19,733,370	224,000	1,536,350	8,725,000
Sheep—						
Gross weight, on hoof, pounds.....	770,975,202	62,196,830	6,356,085	1,242,520	159,500	1,490,000
Net weight, dressed, pounds.....	392,496,033	30,697,588	3,237,502	745,252	80,125	718,250
Hogs—						
Gross weight, on hoof, pounds.....	6,684,658,916	41,417,984	33,534,200	54,947,643	4,697,000	17,417,500
Net weight, dressed, pounds.....	5,209,430,364	32,073,746	31,024,500	46,379,142	3,774,400	14,050,200
Calves—						
Gross weight, on hoof, pounds.....	126,052,830	7,684,361	662,700	1,888,750	36,932	835,900
Net weight, dressed, pounds.....	80,515,202	3,964,767	417,000	948,650	20,732	454,500
Comparison of products:						
Number of establishments reporting for both years.....	727	40	8	11	3	7
Value for census year.....	\$737,183,413	\$12,500,319	\$3,354,897	\$3,649,648	\$383,966	\$2,210,860
Value for preceding business year.....	\$688,263,317	\$12,336,329	\$2,839,500	\$3,257,439	\$365,493	\$2,171,844
Power:						
Number of establishments reporting.....	610	24	14	6	3	7
Total horsepower.....	95,169	1,212	854	360	121	487
Owned—						
Engines—						
Steam, number.....	1,204	27	24	7	4	13
Horsepower.....	83,545	1,098	834	360	121	472
Gas or gasoline, number.....	25	2				
Horsepower.....	435	16				
Water wheels, number.....	1		1			
Horsepower.....	5		5			
Electric motors, number.....	571					1
Horsepower.....	10,161					15
Other power, number.....	4					
Horsepower.....	95					
Rented—						
Electric, horsepower.....	575	90	15			
Other kind, horsepower.....	353	8				
Furnished to other establishments, horsepower.....	211					
Establishments classified by number of persons employed, not including proprietors and firm members:						
Total number of establishments.....	921	53	14	12	4	7
No employees.....	8					
Under 5.....	266	14	2	4	1	2
5 to 20.....	340	31	7	3		
21 to 50.....	167	8	3	1	1	5
51 to 100.....	60	3	1			
101 to 250.....	31	1	1			
251 to 500.....	14	1		2		
501 to 1,000.....	16					
Over 1,000.....	19					

SLAUGHTERING AND MEAT PACKING.

PACKING, BY STATES AND TERRITORIES: 1900—Continued.

Georgia.	Illinois.	Indiana.	Iowa.	Kansas.	Kentucky.	Maine.	Maryland.	Massachu- setts.	Michigan.	Minnesota.	
\$591,227	\$287,922,277	\$48,862,278	\$25,695,044	\$77,411,883	\$5,177,167	\$553,742	\$8,046,859	\$31,688,488	\$5,337,417	\$7,810,555	83
3,726,000	1,042,234,306	219,166,574	80,578,342	451,975,433	8,429,607	1,658,500	8,955,180	17,960,150	16,467,625	26,659,666	89
\$238,380	\$74,821,711	\$16,476,761	\$2,125,028	\$31,030,096	\$614,540	\$112,370	\$724,664	\$1,365,198	\$1,184,398	\$1,682,902	90
5,200	76,296,560	5,343,207	1,627,920	14,034,995	1,341,215	1,800	6,000	6,000	6,000	6,000	91
\$312	\$6,446,283	\$395,116	\$85,466	\$1,341,215	8,967,600	\$180	\$600	\$600	\$600	\$600	92
56,000	67,917,748	1,538,988	1,305,205	8,967,600	601,334	308,620	308,620	1,116,500	17,285	807,116	93
\$4,800	\$5,066,362	\$172,930	\$84,388	\$540,960	\$40,086	\$25,089	\$25,089	\$62,000	\$1,185	\$56,449	94
122,000	148,003,635	15,911,670	1,159,786	24,309,545	440,016	2,543,664	7,026,200	16,207,400	1,925,618	4,686,842	95
\$8,990	\$11,842,741	\$98,094	\$98,094	\$1,894,220	\$36,164	\$219,739	\$774,885	\$1,311,978	\$159,952	\$959,455	96
115,000	17,673,896	1,155,508	457,581	3,869,293	388,102	279,660	2,521,000	5,178,540	674,400	640,910	97
\$9,330	\$1,489,318	\$107,383	\$89,972	\$282,981	\$36,009	\$28,168	\$261,945	\$408,984	\$60,815	\$55,480	98
1,414,000	411,376,731	29,262,285	31,774,211	86,242,488	6,822,730	493,333	12,019,718	44,507,608	12,086,427	17,354,988	99
\$107,800	\$28,774,485	\$1,985,006	\$2,337,221	\$5,069,007	\$523,398	\$38,900	\$923,647	\$3,526,589	\$821,545	\$1,047,107	100
782,000	522,096,362	30,704,461	135,513,117	78,884,690	21,371,238	202,500	8,799,909	57,884,374	12,466,900	23,819,560	101
\$53,740	\$36,179,893	\$1,819,740	\$9,403,836	\$4,814,529	\$1,091,135	\$12,600	\$628,388	\$3,785,017	\$780,964	\$1,362,540	102
\$30,000	228,284,156	42,658,638	39,741,810	57,996,957	10,662,435	220,000	12,830,500	57,134,584	8,388,230	5,920,868	103
\$28,900	\$22,746,703	\$8,552,637	\$3,565,663	\$4,940,298	\$974,201	\$23,200	\$1,316,703	\$4,719,658	\$632,400	\$667,570	104
220,000	185,240,920	117,787,185	30,781,171	188,485,250	10,680,870	140,000	20,184,859	92,227,868	15,069,779	7,713,147	105
\$17,800	\$14,434,760	\$8,222,656	\$2,399,670	\$9,657,119	\$791,864	\$10,400	\$1,527,278	\$8,108,673	\$1,056,797	\$371,386	106
\$47,000	96,530,421	8,532,981	8,917,759	24,936,703	4,316,681	65,000	10,310,052	22,800,805	3,670,757	3,579,898	107
\$42,187	\$7,881,854	\$579,760	\$502,596	\$1,469,400	\$309,149	\$4,450	\$709,038	\$1,674,512	\$212,985	\$275,740	108
\$92,000	57,936,886	5,732,510	6,800	6,489,044	42,684	52,000	52,000	21,086	160,000	2,456,698	109
\$45,840	\$6,159,827	\$373,351	\$390	\$112,267	\$1,779	\$5,021	\$5,021	\$1,265	\$10,000	\$271,694	110
92,000	326,707,241	45,091,290	63,086,918	91,966,141	7,276,846	173,000	6,965,261	68,843,633	2,146,566	8,243,147	111
\$5,840	\$18,699,882	\$2,777,373	\$3,590,506	\$4,970,291	\$401,670	\$11,300	\$456,922	\$4,220,098	\$152,203	\$507,922	112
25,400	45,455,528	8,533,150	7,364,874	24,037,743	1,381,570	5,396,552	5,396,552	1,000,000	138,317	\$294,762	113
\$1,512	\$3,596,474	\$260,829	\$491,049	\$1,255,208	\$90,050	\$80,050	\$881,666	\$60,000	\$9,682	\$9,682	114
175	53,614	8,909	6,926	26,118	1,637	595	5,099	430	157,639	\$76,821	115
\$2,840	\$1,212,619	\$143,011	\$94,279	\$504,080	\$23,376	\$8,690	\$8,690	\$88,310	\$6,245	\$21,305	116
11,081	2,206,337	371,538	\$1,820	900,732	25,905	61,169	61,169	106,492	40,243	59,269	117
438,840	128,702,573	23,550,614	4,278,686	50,421,335	1,233,773	182,900	1,414,620	2,609,300	1,897,918	3,051,528	118
\$28,189	\$13,092,560	\$2,645,005	\$420,183	\$5,550,195	\$114,571	\$15,056	\$113,220	\$237,662	\$165,857	\$294,762	119
8,600	8,389,307	2,000	2,000	2,000	1,000	121,240	5,460	1,450,000	\$442,250	\$442,250	120
\$1,200	\$1,935,373	\$875	\$875	\$875	\$200	\$27,810	\$1,385	\$1,385	\$1,385	\$1,385	121
\$2,817	\$26,116,008	\$2,100,759	\$218,557	\$1,868,672	\$129,025	\$49,519	\$189,823	\$1,575,606	\$81,299	\$558,068	122
\$750	\$7,559	\$250	\$1,325	\$13,578	\$13,578	\$13,578	\$45,450	\$18,988	\$1,615	\$1,615	123
8,788,000	2,179,139,406	409,620,551	31,065,710	974,523,827	18,909,167	2,760,100	18,995,400	32,181,970	41,468,810	54,989,920	124
4,275,050	1,176,649,166	229,939,021	44,422,716	529,936,771	10,137,047	1,658,500	10,351,730	17,778,762	16,623,395	28,207,869	125
210,500	265,267,321	31,625,196	1,242,240	51,608,236	752,827	5,380,200	14,085,600	32,519,320	3,392,700	7,180,082	126
99,700	135,913,174	16,166,213	610,803	25,937,180	386,310	2,581,470	7,024,000	16,286,680	1,923,793	4,576,464	127
4,027,500	1,980,965,755	341,722,941	453,467,689	653,215,874	88,560,586	639,375	85,858,321	431,041,694	70,282,690	91,098,995	128
2,882,730	1,644,636,373	274,352,715	324,005,185	505,648,235	69,597,001	502,800	66,762,723	349,694,967	55,816,600	70,732,130	129
187,000	23,488,788	2,012,100	596,402	6,005,180	669,428	468,460	4,216,840	7,716,310	953,100	908,870	130
103,950	14,968,146	1,227,473	393,354	3,731,492	383,368	279,665	2,520,640	5,187,290	674,600	638,988	131
4	54	85	19	10	22	6	72	19	22	12	136
\$204,449	\$285,427,878	\$43,813,289	\$24,077,217	\$76,372,001	\$5,009,849	\$366,066	\$4,984,298	\$31,163,279	\$4,638,770	\$6,663,616	137
\$205,700	\$261,506,616	\$41,570,488	\$24,902,285	\$72,811,901	\$4,419,179	\$348,187	\$4,855,508	\$34,466,081	\$4,019,306	\$5,843,611	138
4	58	29	19	12	19	3	43	12	12	15	139
127	28,298	4,949	4,219	12,927	526	52	1,663	3,022	688	965	140
6	195	64	47	69	30	3					

MANUFACTURES.

TABLE 12.—COMBINED SLAUGHTERING AND MEAT

	Missouri.	Montana.	Nebraska.	New Jersey.	New York.	North Dakota.
1 Number of establishments.....	37	5	12	41	110	3
2 Character of organization:						
3 Individual.....	18	3	3	21	59	1
4 Firm and limited partnership.....	7	2	2	17	34	1
5 Incorporated company.....	12	2	7	3	17	1
6 Capital:						
7 Total.....	\$7,944,033	\$241,826	\$16,524,895	\$1,588,389	\$15,357,075	\$104,371
8 Land.....	\$395,666	\$7,600	\$827,759	\$185,538	\$1,600,345	\$10,500
9 Buildings.....	\$1,663,341	\$22,700	\$4,064,454	\$297,200	\$3,623,931	\$80,750
10 Machinery, tools, and implements.....	\$1,091,504	\$10,959	\$1,330,495	\$203,021	\$1,658,568	\$11,900
11 Cash and sundries.....	\$4,793,532	\$200,567	\$10,302,187	\$952,685	\$8,474,181	\$51,221
12 Proprietors and firm members.....	33	3	7	60	140	3
13 Salaried officials, clerks, etc.:						
14 Total number.....	242	9	721	100	602	8
15 Total salaries.....	\$253,775	\$12,600	\$684,240	\$94,080	\$584,336	\$3,760
16 Officers of corporations—						
17 Number.....	25	2	8	3	31	1
18 Salaries.....	\$56,880	\$5,000	\$27,816	\$9,500	\$89,298	\$2,400
19 General superintendents, managers, clerks, etc.—						
20 Total number.....	217	7	713	97	571	7
21 Total salaries.....	\$196,895	\$7,600	\$656,424	\$84,580	\$495,038	\$6,360
22 Men—						
23 Number.....	200	7	677	92	461	6
24 Salaries.....	\$189,324	\$7,600	\$632,867	\$82,476	\$449,326	\$5,800
25 Women—						
26 Number.....	17	.....	36	5	110	1
27 Salaries.....	\$7,571	.....	\$23,557	\$2,104	\$45,762	\$500
28 Wage-earners, including pieceworkers, and total wages:						
29 Greatest number employed at any one time during the year.....	4,103	47	7,006	616	3,967	35
30 Least number employed at any one time during the year.....	2,509	32	5,350	525	3,352	33
31 Average number.....	3,102	37	6,090	558	3,099	34
32 Wages.....	\$1,440,742	\$33,693	\$2,990,863	\$331,825	\$1,846,434	\$15,977
33 Men, 16 years and over—						
34 Average number.....	2,977	35	5,602	556	3,009	33
35 Wages.....	\$1,416,467	\$32,493	\$2,862,441	\$331,565	\$1,820,954	\$15,677
36 Women, 16 years and over—						
37 Average number.....	8	2	173	.....	79	1
38 Wages.....	\$2,160	\$1,200	\$57,425	.....	\$23,636	\$300
39 Children, under 16 years—						
40 Average number.....	117	.....	315	2	11	.....
41 Wages.....	\$22,125	.....	\$70,997	\$260	\$1,344	.....
42 Average number of wage-earners, including pieceworkers, employed during each month:						
43 Men, 16 years and over—						
44 January.....	2,738	31	5,119	584	3,048	34
45 February.....	2,753	36	5,107	579	2,993	34
46 March.....	3,585	33	5,242	577	2,964	34
47 April.....	2,755	37	5,305	556	2,943	32
48 May.....	2,612	36	5,618	531	3,463	32
49 June.....	2,681	33	5,858	515	2,849	32
50 July.....	3,173	37	5,889	513	2,867	32
51 August.....	3,301	35	5,782	517	2,857	32
52 September.....	3,090	36	5,740	554	2,913	32
53 October.....	2,944	33	5,987	571	3,024	34
54 November.....	2,922	32	5,883	585	3,091	34
55 December.....	3,169	34	5,695	588	3,107	34
56 Women, 16 years and over—						
57 January.....	7	.....	138	.....	67	1
58 February.....	7	3	139	.....	68	1
59 March.....	7	3	165	.....	69	1
60 April.....	14	3	170	.....	69	1
61 May.....	8	3	146	.....	83	1
62 June.....	10	2	152	.....	92	1
63 July.....	10	2	171	.....	88	1
64 August.....	17	2	156	.....	89	1
65 September.....	16	2	187	.....	90	1
66 October.....	3	2	245	.....	82	1
67 November.....	.....	2	193	.....	83	1
68 December.....	.....	2	215	.....	67	1
69 Children, under 16 years—						
70 January.....	111	.....	279	3	11	.....
71 February.....	117	.....	288	3	11	.....
72 March.....	132	.....	287	3	11	.....
73 April.....	121	.....	316	3	11	.....
74 May.....	109	.....	317	2	11	.....
75 June.....	118	.....	370	2	11	.....
76 July.....	124	.....	322	2	11	.....
77 August.....	125	.....	364	2	11	.....
78 September.....	118	.....	337	2	11	.....
79 October.....	106	.....	305	2	11	.....
80 November.....	116	.....	305	2	11	.....
81 December.....	109	.....	301	3	11	.....
82 Miscellaneous expenses:						
83 Total.....	\$364,267	\$7,798	\$1,591,516	\$164,281	\$1,274,584	\$3,975
84 Rent of works.....	\$12,305	\$5,300	\$18,703	\$41,529	\$114,215	\$720
85 Taxes, not including internal revenue.....	\$15,317	\$388	\$43,985	\$7,055	\$71,444	\$430
86 Rent of offices, insurance, interest, and all sundry expenses not hitherto included.....	\$336,145	\$1,610	\$1,523,873	\$115,697	\$1,086,496	\$7,025
87 Contract work.....	\$500	.....	.....	.....	\$2,379	\$300
88 Materials used:						
89 Total cost.....	\$89,108,137	\$321,070	\$63,043,186	\$12,849,902	\$50,523,186	\$193,175
90 Slaughtered—						
91 Beeves, number.....	846,827	12,395	531,032	29,080	378,833	1,700
92 Cost.....	\$14,963,243	\$572,580	\$24,533,837	\$1,552,980	\$21,492,495	\$65,000
93 Sheep, number.....	252,015	.....	723,520	380,406	1,487,157	900
94 Cost.....	\$1,031,346	\$91,063	\$3,076,671	\$1,585,683	\$5,975,165	\$3,400
95 Hogs, number.....	1,837,953	8,401	2,733,304	931,694	1,701,096	12,500
96 Cost.....	\$19,075,986	\$34,943	\$27,846,114	\$6,408,984	\$12,566,633	\$121,400
97 Calves, number.....	22,825	3,396	8,454	63,037	277,016	400
98 Cost.....	\$103,931	\$50,490	\$121,873	\$570,599	\$2,203,940	\$4,000
99 All other animals, cost.....	\$11,725	\$4,525	\$56,674	\$12,173	\$3,600	.....
100 Dressed meat, purchased fresh or partly cured, cost.....	\$1,848,384	\$25,000	\$4,426,613	\$2,266,059	\$5,395,265	.....
101 Fuel.....	\$159,299	\$2,450	\$355,209	\$24,587	\$154,168	\$675
102 Rent of power and heat.....	860	.....	.....	\$3,395	\$2,002	.....
103 Mill supplies.....	\$20,507	\$100	\$18,222	\$3,432	\$32,374	\$200
104 All other materials.....	\$1,729,859	\$6,820	\$2,423,477	\$136,854	\$1,861,426	\$3,000
105 Freight.....	\$36,797	\$33,149	\$134,486	\$284,656	\$335,118	\$300

SLAUGHTERING AND MEAT PACKING.

PACKING, BY STATES AND TERRITORIES: 1900—Continued.

Ohio.	Oregon.	Pennsylvania.	Rhode Island.	Tennessee.	Texas.	Utah.	Virginia.	Washington.	West Virginia.	Wisconsin.	All other states and territories. ¹	
71	9	111	7	8	12	8	4	18	3	13	14	1
26	2	56	1	2	1	3	1	3	1	3	3	2
28	3	44	4	2	3	5	2	7	1	6	5	3
17	4	11	2	4	8	1	1	8	1	4	6	4
\$5,355,626	\$760,448	\$6,548,577	\$759,850	\$651,740	\$1,232,267	\$117,027	\$159,500	\$1,014,086	\$313,000	\$6,811,616	\$216,071	5
\$296,840	\$189,021	\$764,863	\$16,800	\$45,800	\$63,871	\$26,969	\$34,000	\$50,200	\$22,000	\$269,082	\$15,760	6
\$720,621	\$233,500	\$1,441,202	\$22,400	\$119,589	\$244,329	\$16,000	\$23,000	\$141,400	\$55,000	\$581,652	\$40,603	7
\$504,781	\$115,356	\$728,684	\$35,700	\$129,227	\$222,952	\$15,297	\$22,000	\$131,242	\$33,000	\$426,480	\$57,272	8
\$3,833,384	\$217,571	\$3,613,828	\$684,950	\$357,624	\$711,115	\$58,761	\$80,500	\$691,244	\$203,000	\$2,584,452	\$103,046	9
90	9	158	10	5	6	14	6	18	3	19	12	10
313	41	376	16	15	49	6	19	88	16	123	15	11
\$266,001	\$47,130	\$317,153	\$17,636	\$17,365	\$61,797	\$2,472	\$14,340	\$31,116	\$11,800	\$145,333	\$10,270	12
47	9	9	5	9	10	3	3	3	5	10	4	13
\$71,926	\$16,400	\$19,200	\$3,000	\$12,500	\$20,800	\$4,940	\$6,120	\$6,000	\$6,000	\$35,000	\$4,500	14
266	32	367	11	6	89	6	16	85	11	113	11	15
\$194,075	\$30,730	\$297,953	\$9,636	\$4,865	\$40,997	\$2,472	\$9,400	\$74,996	\$5,800	\$110,333	\$5,770	16
249	30	348	11	6	38	5	16	80	11	106	11	17
\$187,189	\$29,930	\$290,973	\$9,636	\$4,865	\$40,457	\$2,172	\$9,400	\$72,566	\$5,800	\$106,235	\$5,770	18
17	2	19	-----	-----	1	1	-----	5	-----	7	-----	19
\$6,886	\$800	\$6,980	-----	-----	\$540	\$300	-----	\$2,430	-----	\$4,098	-----	20
2,029	219	7,754	221	349	535	52	80	281	92	1,678	224	21
1,613	145	1,530	191	109	345	42	53	214	75	1,125	165	22
1,765	172	1,669	209	156	414	42	65	231	84	1,367	137	23
\$311,398	\$37,821	\$320,190	\$107,104	\$60,945	\$179,505	\$18,653	\$23,334	\$156,531	\$42,646	\$563,208	\$59,426	24
1,717	166	1,646	206	152	394	42	65	229	76	1,865	131	25
\$793,514	\$36,441	\$314,467	\$106,268	\$60,775	\$173,438	\$18,653	\$23,334	\$155,631	\$40,642	\$562,333	\$58,118	26
29	1	13	-----	4	19	-----	-----	2	6	2	-----	27
\$3,656	\$480	\$3,395	-----	\$170	\$5,897	-----	-----	\$900	\$1,620	\$375	-----	28
19	5	10	3	-----	1	-----	-----	-----	2	-----	6	29
\$4,228	\$900	\$1,328	\$336	-----	\$200	-----	-----	-----	\$384	-----	\$1,808	30
1,861	166	1,681	196	197	457	40	80	233	33	1,558	132	31
1,799	166	1,669	198	180	433	39	75	236	73	1,413	123	32
1,717	160	1,657	201	139	473	39	65	241	73	1,345	124	33
1,654	136	1,600	204	118	447	46	65	233	69	1,274	114	34
1,694	136	1,604	206	122	408	46	57	253	77	1,277	108	35
1,649	158	1,573	203	122	349	42	57	229	77	1,311	102	36
1,618	185	1,580	205	137	341	41	53	216	77	1,293	173	37
1,579	185	1,618	209	78	326	42	55	213	77	1,178	176	38
1,647	162	1,653	209	90	352	40	55	220	69	1,182	129	39
1,669	172	1,672	214	115	357	40	60	219	74	1,345	124	40
1,811	191	1,691	210	247	370	38	74	225	84	1,651	120	41
1,901	187	1,755	209	278	366	45	85	223	84	1,660	134	42
29	1	12	-----	-----	22	-----	-----	2	6	1	-----	43
29	1	11	-----	-----	21	-----	-----	2	6	1	-----	44
29	1	12	-----	-----	23	-----	-----	2	6	1	-----	45
29	1	12	-----	-----	19	-----	-----	2	6	2	-----	46
29	1	16	-----	-----	18	-----	-----	2	6	2	-----	47
29	1	17	-----	-----	17	-----	-----	2	6	2	-----	48
29	1	15	-----	-----	17	-----	-----	2	6	2	-----	49
29	1	15	-----	-----	17	-----	-----	2	6	2	-----	50
29	1	17	-----	-----	18	-----	-----	2	6	2	-----	51
29	1	11	-----	8	14	-----	-----	2	6	1	-----	52
24	1	12	-----	23	19	-----	-----	2	6	1	-----	53
29	1	12	-----	26	24	-----	-----	2	6	1	-----	54
24	6	10	3	-----	1	-----	-----	-----	2	-----	7	55
24	5	10	3	-----	-----	-----	-----	-----	2	-----	7	56
20	5	9	3	-----	-----	-----	-----	-----	2	-----	7	57
16	5	10	3	-----	2	-----	-----	-----	2	-----	4	58
16	5	10	3	-----	1	-----	-----	-----	2	-----	4	59
19	5	9	3	-----	1	-----	-----	-----	2	-----	4	60
19	5	10	3	-----	1	-----	-----	-----	2	-----	4	61
16	5	10	3	-----	2	-----	-----	-----	2	-----	5	62
16	5	9	4	-----	2	-----	-----	-----	2	-----	7	63
16	5	10	4	-----	1	-----	-----	-----	2	-----	7	64
24	5	9	4	-----	-----	-----	-----	-----	2	-----	7	65
24	5	10	4	-----	-----	-----	-----	-----	2	-----	7	66
24	5	10	4	-----	-----	-----	-----	-----	2	-----	7	66
\$639,008	\$35,768	\$526,972	\$44,736	\$25,268	\$66,749	\$5,940	\$3,988	\$30,003	\$4,623	\$403,991	\$12,779	67
\$26,900	\$3,026	\$131,365	\$10,373	\$347	\$5,120	\$1,950	\$300	\$10,423	-----	\$21,902	\$1,711	68
\$25,192	\$4,754	\$29,401	\$1,014	\$1,513	\$5,070	\$811	\$1,088	\$4,284	\$1,575	\$10,197	\$1,378	69
\$586,916	\$27,988	\$363,921	\$33,349	\$23,258	\$56,559	\$3,179	\$2,100	\$35,301	\$3,048	\$376,892	\$9,690	70
-----	-----	\$2,285	-----	\$150	-----	-----	-----	-----	-----	-----	-----	71
\$17,927,953	\$1,959,361	\$21,601,310	\$2,246,780	\$1,453,128	\$3,170,536	\$335,353	\$637,730	\$4,252,435	\$1,133,954	\$11,889,524	\$1,188,852	72
98,636	14,451	130,073	1,000	3,938	24,375	6,920	4,800	39,369	4,670	46,499	27,225	73
\$3,629,833	\$549,650	\$6,497,257	\$35,000	\$243,015	\$599,514	\$230,040	\$111,000	\$1,713,155	\$200,200	\$1,751,321	\$701,314	74
70,739	47,819	231,556	-----	4,200	6,649	12,809	6,050	132,756	2,560	36,787	14,912	75
\$224,559	\$153,520	\$371,533	-----	\$12,700	\$18,311	\$48,134	\$21,150	\$459,307	\$3,460	\$140,925	\$44,465	76
1,233,597	21,862	861,321	133,200	115,572	208,270	2,370	37,000	72,149	79,120	947,614	35,728	77
\$11,139,737	\$218,040	\$6,977,465	\$1,459,300	\$1,060,324	\$1,886,067	\$21,673	\$293,200	\$732,325	\$735,010	\$3,830,609	\$336,332	78
31,971	1,661	51,510	400	1,900	7,544	1,166	6,300	7,271	760	21,373	2,047	79
\$247,280	\$12,470	\$446,311	\$2,800	\$10,900	\$60,205	\$10,194	\$36,500	\$75,569	\$4,404	\$140,543	\$16,235	80
\$900	\$10,364	\$37,663	-----	\$50	\$21	-----	-----	\$7,233	-----	\$14,467	\$1,300	81
\$1,143,022	\$294,621	\$5,513,043	\$559,300	\$73,757	\$178,733	\$59,099	\$130,000	\$361,163	\$117,950	\$161,402	\$29,500	82
\$37,709	\$12,639	\$36,301	\$9,325	\$14,145	\$53,858	\$1,090	\$2,210	\$12,625	\$4,200	\$54,225	\$15,290	83
\$621	\$409	\$5,550	-----	-----	\$100	-----	-----	\$276	-----	\$54	-----	84
\$15,135	\$1,259	\$13,225	\$1,420	\$325	\$3,330	\$720	\$220	\$2,295	\$530	\$3,645	\$2,151	85
\$1,132,956	\$3,691	\$504,794	\$90,635	\$32,865	\$355,944	\$14,400	\$23,050	\$39,295	\$13,200	\$607,458	\$13,275	86
\$266,151	\$96,633	\$493,613	\$33,500	\$4,447	\$14,443	\$250	\$15,400	\$293,634	-----	\$334,370	\$18,500	87

¹ Includes establishments distributed as follows: Alabama, 2; Arkansas, 2; New Hampshire, 1; North Carolina, 1; New Mexico, 2; Oklahoma, 2; South Dakota, 1; South Carolina, 1; Wyoming, 2.

TABLE 12.—COMBINED SLAUGHTERING AND MEAT

	Missouri.	Montana.	Nebraska.	New Jersey.	New York.	North Dakota.
88 Products:						
Total value	\$48,040,885	\$984,640	\$71,280,866	\$14,046,217	\$57,481,298	\$256,160
Beef—						
89 Sold fresh, pounds	165,944,814	7,406,667	307,786,549	18,794,870	252,508,996	1,056,000
90 Value	\$11,993,514	\$557,785	\$22,027,020	\$1,510,941	\$20,048,478	\$62,625
91 Canned, pounds	2,220,000		10,156,391		577,980	
92 Value	\$140,000		\$564,854		\$42,480	
93 Salted or cured, pounds	17,978,683		11,945,633	245,600	10,659,190	
94 Value	\$1,076,481		\$773,966	\$32,540	\$796,594	
95 Mutton, sold fresh, pounds	10,238,198	1,142,048	32,991,157	17,021,273	61,858,172	38,000
96 Value	\$782,605	\$100,395	\$2,698,184	\$1,843,451	\$5,163,001	\$9,915
97 Veal, sold fresh, pounds	1,728,989	659,954	1,832,589	5,357,285	25,179,857	51,000
98 Value	\$178,041	\$60,302	\$146,809	\$593,610	\$2,404,942	\$4,500
Pork—						
99 Sold fresh, pounds	106,701,224	1,128,716	84,632,189	76,518,271	107,996,721	880,000
100 Value	\$6,848,627	\$80,891	\$5,618,922	\$5,068,390	\$7,840,461	\$24,000
101 Salted, pounds	93,266,664	50,000	201,807,678	7,776,408	25,933,082	100,000
102 Value	\$4,869,923	\$3,500	\$11,958,021	\$522,538	\$1,689,008	\$9,000
103 Hams, pounds	33,844,251	100,000	66,273,113	15,008,818	44,634,108	400,000
104 Value	\$2,986,608	\$10,000	\$6,321,300	\$1,463,123	\$4,854,499	\$42,500
105 Smoked bacon, sides, and shoulders, pounds	52,892,149	150,000	78,409,619	18,868,525	51,749,929	400,000
106 Value	\$3,810,491	\$13,500	\$5,894,728	\$1,557,289	\$3,830,833	\$39,650
107 Sausage, fresh or cured, pounds	10,525,213	53,000	21,323,639	6,282,944	15,906,168	156,000
108 Value	\$608,389	\$3,000	\$1,483,558	\$462,783	\$1,223,422	\$11,500
109 All other meat, sold fresh, pounds	59,630				615,500	
110 Value	\$5,903				\$61,480	
111 Refined lard, pounds	40,879,889	50,000	79,188,586	10,217,992	28,424,802	135,000
112 Value	\$2,337,329	\$3,000	\$4,889,182	\$624,929	\$1,860,723	\$8,250
113 Neutral lard, pounds	11,425,517		15,612,418	1,460,833	3,097,900	
114 Value	\$610,124		\$986,868	\$87,050	\$183,346	
115 Oleomargarine oil, gallons	1,434,787		2,302,914		1,660,999	
116 Value	\$857,419		\$1,382,115		\$954,004	
117 Other oils, gallons	357,529		419,004		169,215	
118 Value	\$158,736		\$128,998		\$75,875	
119 Fertilizers, tons	18,695		15,414	2,599	5,605	
120 Value	\$347,309		\$251,258	\$61,207	\$104,632	
121 Hides, number	369,652	15,675	528,256	72,773	590,824	2,100
122 Pounds	19,907,122	734,350	31,446,074	2,395,855	26,522,241	127,000
123 Value	\$2,166,640	\$65,216	\$2,927,334	\$205,278	\$2,475,993	\$11,700
124 Wool, pounds				209,000	2,625,676	
125 Value				\$66,700	\$787,269	
126 All other products, value	\$3,268,699	\$31,148	\$2,628,449	\$443,680	\$4,017,429	\$37,210
127 Custom work, value	\$300		\$300	\$2,708	\$19,969	
Weight of animals slaughtered:						
Beeves—						
128 Gross weight, on hoof, pounds	344,967,509	13,491,800	595,799,734	32,958,500	454,610,406	1,965,000
129 Net weight, dressed, pounds	187,003,877	7,424,061	335,239,742	18,794,370	256,806,333	1,055,000
Sheep—						
130 Gross weight, on hoof, pounds	20,128,958	2,111,660	65,439,617	31,580,539	118,315,491	81,000
131 Net weight, dressed, pounds	10,238,772	1,146,361	31,589,511	16,023,060	62,420,947	43,500
Hogs—						
132 Gross weight, on hoof, pounds	424,200,473	1,438,345	688,752,262	137,389,968	293,470,401	3,100,000
133 Net weight, dressed, pounds	341,621,166	1,081,281	521,808,890	105,693,132	282,765,404	2,395,000
Calves—						
134 Gross weight, on hoof, pounds	2,754,732	958,750	2,320,237	6,889,180	36,359,275	63,000
135 Net weight, dressed, pounds	1,635,618	658,981	1,701,349	4,487,817	25,286,369	51,000
Comparison of products:						
136 Number of establishments reporting for both years	28		8	33	94	3
137 Value for census year	\$98,340,655		\$60,590,054	\$12,972,596	\$49,417,761	\$256,160
138 Value for preceding business year	\$93,427,844		\$50,684,334	\$12,917,463	\$45,157,816	\$233,612
Power:						
139 Number of establishments reporting	31	2	9	26	61	2
140 Total horsepower	6,386	55	8,411	940	4,147	26
Owned—						
Engines—						
141 Steam, number						
142 Horsepower	55	2	41	29	107	2
143 Gas or gasoline, number	5,136	55	7,192	783	3,827	26
144 Horsepower					2	
145 Water wheels, number					39	
146 Horsepower						
147 Electric motors, number	181		49		11	
148 Horsepower	1,245		1,219		250	
149 Other power, number						
150 Horsepower						
Rented—						
151 Electric, horsepower	5				80	
152 Other kind, horsepower						
153 Furnished to other establishments, horsepower				129	1	
Establishments classified by number of persons employed, not including proprietors and firm members:					25	
154 Total number of establishments	87	5	12	41	110	3
155 No employees						
156 Under 5	6	1	5	9	24	1
157 5 to 20	17	3		19	49	1
158 21 to 50	6	1	1	10	17	1
159 51 to 100	2			3	18	
160 101 to 250	2		1		1	
161 251 to 500	2				3	
162 501 to 1,000	1		2		3	
163 Over 1,000	1		3			

SLAUGHTERING AND MEAT PACKING.

PACKING, BY STATES AND TERRITORIES: 1900—Continued.

Ohio.	Oregon.	Pennsylvania.	Rhode Island.	Tennessee.	Texas.	Utah.	Virginia.	Washington.	West Virginia.	Wisconsin.	All other states and territories. ¹	
\$20,600,780	\$1,638,480	\$25,238,772	\$2,508,466	\$1,671,218	\$3,904,491	\$453,456	\$748,620	\$4,892,857	\$1,337,578	\$13,649,750	\$1,374,958	88
43,652,450	7,583,840	84,181,747	500,000	3,681,960	10,795,352	3,670,450	1,735,500	21,418,889	2,540,000	24,282,329	10,348,100	89
\$3,116,193	\$652,507	\$7,069,719	\$83,600	\$255,587	\$588,996	\$244,269	\$106,800	\$1,611,064	\$186,700	\$1,622,676	\$734,170	90
1,200,000		42,409								52,186		91
\$78,500		\$4,240								\$5,445		92
4,602,000	502,500	2,515,208		14,400	2,000	144,210	5,000	1,921,250		851,296	8,500	93
\$240,740	\$38,175	\$101,168		\$720	\$300	\$11,409	\$250	\$139,825		\$59,317	\$560	94
2,277,155	2,300,600	9,604,293		217,000	266,414	696,830	303,000	6,293,881	88,500	1,564,703	670,657	95
\$212,592	\$164,780	\$979,094		\$14,000	\$22,040	\$48,594	\$479,529	\$7,965	\$7,965	\$123,923	\$49,966	96
2,464,318	198,410	4,371,144	24,000	217,500	973,512	259,040	418,000	936,150	48,100	1,806,512	234,939	97
\$284,817	\$18,210	\$405,386	\$1,680	\$11,850	\$67,642	\$26,917	\$36,720	\$82,930	\$4,173	\$157,079	\$16,758	98
46,226,099	781,520	45,896,941	10,352,400	2,535,511	5,133,863	499,034	918,000	6,887,071	2,368,500	24,797,944	2,353,600	99
\$3,354,714	\$62,897	\$3,488,370	\$699,370	\$153,931	\$333,958	\$33,835	\$69,520	\$612,120	\$168,195	\$1,463,007	\$181,107	100
23,136,649	1,467,400	12,184,548	7,434,000	7,531,817	5,806,344	34,800	2,783,000	646,400	530,000	78,567,159	460,500	101
\$1,589,237	\$102,322	\$938,910	\$439,660	\$525,719	\$396,894	\$2,821	\$195,810	\$55,440	\$37,100	\$4,837,065	\$37,810	102
\$6,046,139	1,501,564	44,629,801	4,028,350	2,981,400	5,289,601	35,280	1,044,560	6,412,300	5,122,400	25,775,477	755,901	103
\$3,588,830	\$162,564	\$4,207,412	\$419,027	\$230,816	\$481,106	\$4,385	\$101,460	\$714,883	\$511,616	\$2,228,503	\$77,000	104
\$3,168,262	2,004,147	36,610,835	5,637,075	2,813,853	11,849,398	176,500	1,150,000	5,229,400	3,651,600	9,448,637	1,003,055	105
\$4,173,926	\$190,750	\$2,900,348	\$300,105	\$198,096	\$833,340	\$15,259	\$97,000	\$497,665	\$256,812	\$676,487	\$87,100	106
14,307,065	404,891	15,412,150	2,183,700	281,500	2,085,953	154,709	330,000	973,005	427,000	7,630,639	424,450	107
\$1,026,540	\$98,285	\$1,233,816	\$158,043	\$16,243	\$123,939	\$12,805	\$25,000	\$76,451	\$24,370	\$554,324	\$33,260	108
242,080	46,000	1,634,720	374,500	17,000	539,400	32,375		30,000	100,000	200,933	91,000	109
\$21,408	\$5,400	\$128,603	\$26,215	\$300	\$30,550	\$4,775		\$2,552	\$5,000	\$18,467	\$5,688	110
29,535,529	1,018,732	26,805,932	3,936,200	1,804,200	4,334,111	60,504	910,000	1,657,000	1,846,000	19,260,924	570,000	111
\$1,894,541	\$95,752	\$1,733,624	\$245,625	\$103,801	\$282,661	\$5,290	\$59,100	\$155,355	\$110,900	\$1,073,302	\$42,100	112
2,869,300	2,500	5,340		636,900	2,141,216		43,340	25,000		2,690,051	18,333	113
\$210,850	\$150	\$200		\$44,572	\$133,993		\$2,600	\$1,500		\$152,544	\$800	114
76,000		494,372								48,322		115
\$38,000		\$244,637								\$24,048		116
	3,085	16,933			976,840			4,200				117
	\$1,446	\$9,540			\$195,548			\$2,430			22,750	118
4,006	327	8,108	300	380	553		300	3,750	200	\$1,651	\$7,800	119
\$53,646	\$5,615	\$38,099	\$4,500	\$5,785	\$6,424		\$3,000	\$92,400	\$3,000	\$48,324	\$2,050	120
130,595	19,983	181,533	1,400	12,618	31,908		11,100	47,140	5,480	68,472	19,892	121
5,728,737	861,140	8,203,766	65,000	467,400	1,379,101	8,066	284,000	2,510,962	248,400	2,892,705	338,220	122
\$514,759	\$79,301	\$725,637	\$4,550	\$96,303	\$118,067	\$32,790	\$18,412	\$232,968	\$22,632	\$299,995	\$63,427	123
	200,000	33,400						5,000		593		124
	\$40,000	\$7,600						\$700		\$110		125
\$394,987	\$85,376	\$994,814	\$110,486	\$15,495	\$289,108	\$11,307	\$6,238	\$132,955	\$1,215	\$798,423	\$31,101	126
\$1,500		\$10,575						\$2,000		\$150		127
91,545,994	15,089,880	145,774,881	1,000,000	7,808,000	21,258,700	7,081,450	3,760,000	45,111,700	4,670,000	45,006,397	20,415,000	128
49,942,925	3,002,690	32,406,657	500,000	3,696,360	10,670,800	3,793,225	1,790,000	24,240,640	2,540,000	25,130,728	10,867,000	129
4,564,862	4,673,340	18,392,144		420,000	555,995	1,273,290	605,000	13,130,595	164,000	3,141,084	1,948,520	130
2,372,155	2,327,550	9,133,207		217,000	288,554	680,766	303,000	6,374,671	88,500	1,586,895	672,020	131
259,277,309	4,823,560	152,253,593	33,300,000	22,599,650	41,569,304	543,160	6,440,000	14,757,330	17,339,000	218,728,230	6,790,544	132
204,072,350	3,830,992	120,725,044	27,212,000	17,419,040	32,959,805	423,750	5,188,000	12,003,909	13,834,000	175,778,422	5,204,533	133
4,310,650	297,854	6,987,046	48,000	360,000	1,697,621	164,724	330,000	1,303,820	77,300	2,473,520	878,050	134
1,572,916	198,410	4,197,992	24,000	217,500	937,234	116,350	413,000	914,822	48,100	1,844,004	240,125	135
58	7	93	7	5	5		3	12	2	10	0	136
\$19,200,447	\$852,453	\$23,168,503	\$2,503,466	\$1,423,838	\$2,163,097	\$377,133	\$436,620	\$4,049,557	\$1,294,263	\$13,563,520	\$697,998	137
\$17,610,819	\$749,963	\$21,024,890	\$2,313,378	\$1,130,553	\$1,840,478	\$346,712	\$395,380	\$3,321,256	\$1,246,905	\$14,792,474	\$584,293	138
61	7	67	6	4	12	7	2	10	3	11	9	139
3,418	299	4,605	273	560	1,795	69	185	474	376	2,071	619	140
96	9	106	10	5	22	6	5	52	9	27	15	141
3,262	267	4,188	273	550	1,589	54	185	432	329	2,041	619	142
		8			8				2			143
		34			49				27			144
												145
9	2	11		1	7					2	1	146
128	30	198		10	155				20	25		147
												148
28	2	25			2	15		42		5		149
		160										150
												151
												152
												153
71	9	111	7	8	12	8	4	18	3	13	14	154
												155
20		40	1	2	4	3		2	1	2	5	156
27	5	39	3	4	2	4	1	9	1	3	7	157
14	3	22	1	2	1	1	3	6		2	1	158
6		8	2	1	1			1	1	2	1	159
8	1			1	3					2		160
		1								1		161
1										1		162
												163

¹ Includes establishments distributed as follows: Alabama, 2; Arkansas, 2; New Hampshire, 1; North Carolina, 1; New Mexico, 2; Oklahoma, 2; South Dakota, 1; South Carolina, 1; Wyoming, 2.

CHEESE, BUTTER, AND CONDENSED MILK,
FACTORY PRODUCT.

CHEESE, BUTTER, AND CONDENSED MILK, FACTORY PRODUCT.

By HENRY E. ALVORD, *Expert Special Agent.*

One of the most striking features in the history of dairy farming in the United States is the transfer of this productive industry, in large part, from the farm to the factory. The cows and milk continue to be farm property and products, but a constantly increasing share of the labor of converting milk into marketable form is done at creameries, cheese factories, and condenseries. The products of these establishments come into the realm of manufactures.

This change has taken place during the last half century, which covers the period of development of associated and cooperative dairying in America. When the milk produced on two or more farms, or the cream from such milk, is brought together at one place to be condensed, or made into butter or cheese, domestic industry ceases, the place becomes a factory, and its output a manufactured product. The United States census of 1850 noted the existence of 8 cheese factories. The number increased very little until after 1860, but in 1870 there were 1,313 reported, including both cheese factories and butter factories, generally called creameries. The census for 1880 reported 3,932, and that for 1890 gave the number as 4,712. The latter number of establishments represented those only from which reports were received. It is known, however, that a considerable number of such factories, probably 2,500, were then actually in operation from which no returns were obtained for the Eleventh Census. This fact should be borne in mind when comparisons are made between the statistics of 1890 and those of 1900. The returns for 1900 include the statistics of 9,242 butter, cheese, and condensed-milk factories. These central plants have under their control 2,050 skimming or separating stations and 747 other branches.

The statistics presented in the following tables embrace the operations of establishments engaged in the manufacture of cheese, butter, and condensed milk. Table 1 presents a general view of the growth of this form of dairying in the United States as returned at the censuses of 1880 to 1900, inclusive, with the percentages of increase for each decade.

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TABLE 1.—COMPARATIVE SUMMARY, CHEESE, BUTTER, AND CONDENSED MILK, INCLUDING URBAN DAIRY AND FACTORY PRODUCTS, 1880 TO 1900, WITH PER CENT OF INCREASE FOR EACH DECADE.

	DATE OF CENSUS.			PER CENT OF INCREASE.	
	1900	1890	1880	1890 to 1900	1880 to 1890
Number of establishments	9,355	4,712	3,932	98.5	19.8
Capital	\$36,508,015	\$16,624,163	\$9,604,803	119.6	73.1
Salaried officials, clerks, etc., number	2,828	12,820	(²)	21.9	.....
Salaries	\$915,442	1,968,604	(²)	35.5	.....
Wage-earners, average number	12,865	12,601	7,903	2.1	59.4
Total wages	\$6,170,670	\$4,422,101	\$1,546,495	39.5	185.9
Men, 16 years and over	11,694	11,775	6,419	30.7	83.4
Wages	\$5,862,256	\$4,267,169	(²)	37.4	.....
Women, 16 years and over	1,049	725	1,330	44.7	345.5
Wages	\$290,882	\$143,758	(²)	102.3	.....
Children, under 16 years	122	101	154	20.8	334.4
Wages	\$17,532	\$11,174	(²)	56.9	.....
Miscellaneous expenses	\$1,590,766	\$875,182	(⁴)	81.8	.....
Cost of materials used	\$109,151,205	\$51,364,574	\$18,363,579	112.5	179.7
Value of products	\$131,199,277	\$62,686,043	\$25,742,510	109.3	143.5

¹ Includes proprietors and firm members, with their salaries; number only reported in 1900, but not included in this summary.

² Not reported separately.

³ Decrease.

⁴ Not reported.

Table 1 shows that the production of butter, cheese, and condensed milk greatly increased during the last twenty years, the capital having increased from \$9,604,803 in 1880 to \$36,508,015 in 1900, a gain of \$26,903,212, or 280.1 per cent. The products in the same period increased from \$25,742,510 to \$131,199,277, a gain of \$105,456,767, or 409.7 per cent, and the number of establishments increased from 3,932 to 9,355, or 137.9 per cent. (The total of 9,355 is made up of 9,242 regular butter, cheese, and condensed milk factories, and 113 urban establishments reporting the manufacture of butter or cheese or both.)

Tables 2 and 3 show separately the operations of the factories, and of the urban dairy establishments engaged in the manufacture of butter, cheese, and condensed milk.

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TABLE 2.—COMPARATIVE SUMMARY, CHEESE, BUTTER, AND CONDENSED MILK, FACTORY PRODUCT, 1880 TO 1900, WITH PER CENT OF INCREASE FOR EACH DECADE.

	DATE OF CENSUS.			PER CENT OF INCREASE.	
	1900	1890	1880	1890 to 1900	1880 to 1890
Number of establishments	9,242	4,552	3,932	103.0	15.8
Capital	\$36,303,164	\$16,016,573	\$9,604,803	126.7	66.8
Salaried officials, clerks, etc., number	2,818	12,150	(²)	81.1	.....
Salaries	\$911,712	\$867,151	(²)	5.1	.....
Wage-earners, average number	12,799	12,219	7,903	4.7	54.6
Total wages	\$6,145,561	\$4,248,854	\$1,545,495	44.6	174.7
Men, 16 years and over	11,637	11,429	6,419	1.8	78.0
Wages	\$5,838,989	\$4,102,462	(²)	42.3	.....
Women, 16 years and over	1,041	690	1,380	50.9	348.1
Wages	\$289,190	\$135,426	(²)	118.5	.....
Children, under 16 years	121	100	154	21.0	395.1
Wages	\$17,382	\$10,966	(²)	58.5	.....
Miscellaneous expenses	\$1,574,790	\$813,954	(²)	93.5	.....
Cost of materials used	\$103,841,200	\$49,819,301	\$18,363,579	118.5	171.3
Value of products	\$130,783,349	\$60,685,705	\$25,742,516	116.7	135.5

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

² Not reported separately.

³ Decrease.

⁴ Not reported.

TABLE 3.—COMPARATIVE SUMMARY, CHEESE AND BUTTER, URBAN DAIRY PRODUCTS, 1890 and 1900, WITH PER CENT OF DECREASE.

	DATE OF CENSUS.		PER CENT OF DECREASE.
	1900	1890	
Number of establishments	113	160	29.4
Capital	\$204,851	\$607,590	66.8
Salaried officials, clerks, etc., number	10	170	94.1
Salaries	\$3,730	\$101,453	96.3
Wage-earners, average number	66	332	82.7
Total wages	\$25,109	\$173,247	85.5
Men, 16 years and over	57	840	83.5
Wages	\$23,267	\$164,707	85.9
Women, 16 years and over	8	35	77.1
Wages	\$1,692	\$8,332	79.7
Children, under 16 years	1	1	.....
Wages	\$150	\$208	27.9
Miscellaneous expenses	\$15,978	\$61,228	78.9
Cost of materials used	\$310,005	\$1,545,278	79.9
Value of products	\$115,928	\$2,050,338	79.7

¹ Includes proprietors and firm members, with their salaries; number only reported in 1900, but not included in this table. (See Table 12.)

Table 2 shows that from 1890 to 1900 the number of establishments making factory products increased from 4,552 to 9,242, or 103 per cent, with a corresponding increase in capital, wages, and products; but for reasons already stated it would be misleading to accept as correct the actual increase in the industry based upon the returns for 1890.

Table 3 shows that in 1900 there were 113 urban establishments. These were located in 15 different states, as follows: Missouri, 36; New York, 20; Kentucky, 18; California, 8; Illinois, 7; Ohio and Pennsylvania, 5 each; Maryland and Michigan, 4 each; and Connecticut,

Indiana, Massachusetts, Tennessee, West Virginia, and Wisconsin, 1 each. In most cases these are milk-supply companies, the manufacture of butter and cheese being a secondary consideration in order to make use of the variable surplus of unsold milk and cream. In some instances, however, the establishments are evidently creameries or cheese factories which escaped the regular enumerators, and the returns from these are so incomplete as to exclude them from the factory tables. The total products reported by these urban establishments for 1900 were 827,470 pounds of butter and 662,164 pounds of cheese. While these quantities do not appear in Tables 6 and 7, showing the materials and products of factories, they are necessarily included later in giving the total production of different states.

Table 4 shows the distribution of cheese, butter, and condensed-milk factories, classified according to products, by states and territories.

During the earlier years of their operation it was not uncommon for both butter and cheese to be made in these factories at different seasons, or butter and skim cheese at the same time. A more distinct separation has resulted from a healthy sentiment (aided by state laws) to make full-cream cheese, and from a preference on the part of creameries to have no cheese making about the premises. The totals from Table 4, according to their products, are as follows:

Number making butter only	5,275
Number making cheese only	3,299
Number making condensed milk only	38
Number selling cream only	47
Number reporting two or more products	583

Of the last group there are 571 which make both butter and cheese, 11 which make butter and condensed milk, and 1 which makes cheese and condensed milk. Recognizing the dual character of some establishments, it is found that there are altogether 5,857 where butter is made and 3,871 where cheese is made.

Under this classification Iowa has the greatest number of creameries, 824, and Wisconsin the next, 788; then New York, 740; Pennsylvania, 619; Minnesota, 546; and Illinois, 465. No other state has as many as 200. As to cheese factories, the states having the greatest number are these: New York, 1,314; Wisconsin, 1,286; Ohio, 320; Pennsylvania, 140; and Michigan, 136. No other state has more than 90.

As reported at the census of 1890, the 3 states having the greatest number of creameries and cheese factories together were New York (1,337), Wisconsin (966), and Iowa (500). The same states were in the lead in 1900, but Wisconsin and New York changed places; these 2 states divide their establishments similarly, there being in each somewhat more than half as many creameries as cheese factories. Iowa, holding third place, is preeminent in butter-making, with more creameries than any other, and only 85 cheese factories.

TABLE 4.—CHEESE, BUTTER, AND CONDENSED-MILK FACTORIES: NUMBER OF ESTABLISHMENTS IN EACH CLASS, CLASSIFIED ACCORDING TO PRODUCTS, BY STATES AND TERRITORIES, 1900.

STATES AND TERRITORIES.	Total number of establishments.	Butter only produced.	Cheese only produced.	Condensed milk only produced.	Cream for sale the only product.	Two or more products reported.	STATES AND TERRITORIES.	Total number of establishments.	Butter only produced.	Cheese only produced.	Condensed milk only produced.	Cream for sale the only product.	Two or more products reported.
United States ..	9,242	5,275	3,299	88	47	583	Montana	3	3				
Alabama	4	3	1				Nebraska	93	82	5		1	5
Arizona	7	1	1				Nevada	4	2				2
Arkansas	8	7					New Hampshire	53	47	4	1	1	
California	178	143	17	2	1	15	New Jersey	53	47	1	1	4	
Colorado	38	20	9		1	8	New York	1,908	576	1,151	12	4	166
Connecticut	71	62	2			7	North Dakota	21	13	8			
Delaware	22	21	1				Ohio	479	147	221	1	11	99
Georgia	4	4					Oklahoma	5	2	3			
Idaho	19	11	4			4	Oregon	68	89	16		1	12
Illinois	527	393	51	6	5	72	Pennsylvania	749	603	124	3	3	16
Indiana	112	75	26			11	Rhode Island	3	3				
Iowa	907	816	81		2	8	South Dakota	188	122	14			2
Kansas	171	133	30	1		7	Tennessee	12	11	1			
Kentucky	9	7	1			1	Texas	12	9	2			1
Maine	61	44	16	1			Utah	57	21	7			29
Maryland	84	78			6		Vermont	255	180	61	2	2	10
Massachusetts	50	46	1		1	2	Virginia	10	8	2			
Michigan	286	146	130	3	1	6	Washington	60	38	8	1		18
Minnesota	596	538	47		3	8	West Virginia	4	1	2			1
Mississippi	2	2					Wisconsin	2,018	728	1,227	3		60
Missouri	79	48	24	1		6	Wyoming	2	1				1

During the last twenty years creameries have increased in number much faster than cheese factories, and the system has extended into new territory, especially in the Central and Western states. Table 5 shows the growth of the factory industry, as a whole, in states and territories where the number of establishments has doubled during the last decade, thus indicating also something of its geographical extension.

TABLE 5.—NUMBER OF CHEESE, BUTTER, AND CONDENSED-MILK FACTORIES IN STATES AND TERRITORIES, 1890 AND 1900, IN WHICH THE NUMBER DOUBLED DURING THE DECADE.

STATES AND TERRITORIES.	1900	1890	STATES AND TERRITORIES.	1900	1890
Alabama	4		Nevada	4	
Arizona	7		New Hampshire	53	28
Arkansas	8		New Jersey	53	16
California	178	19	North Dakota	21	10
Colorado	38	6	Oklahoma	5	
Delaware	22	5	Oregon	68	12
Georgia	4		Pennsylvania	749	300
Idaho	19	4	South Dakota	188	16
Illinois	527	262	Tennessee	12	4
Indiana	112	52	Texas	12	3
Kentucky	9	1	Utah	57	3
Maryland	84	24	Vermont	255	123
Michigan	286	100	Washington	60	3
Minnesota	596	105	Wisconsin	2,018	966
Montana	3	1	Wyoming	2	1

Of the 28 states and 2 territories named in this table, every one appears to have at least doubled the number of its dairy manufacturing establishments during the decade, and the 4 states and 2 territories in which ten years ago none were reported now have a total of 32. The 3 Pacific states have increased from 34 to 306. The most remarkable growth is in the group of 8 Central and 4 Western states (not all named in the table), which collectively increased from 2,559 to 5,427, a majority of

the total number in the country. And a very notable advance is that from 7 to 49 in 6 Southern states.

Kansas and Nebraska do not appear in Table 5, because the number of their dairy establishments had not doubled in the stated time. This would be misleading but for special explanation, as few states have actually advanced faster in general dairy development during the decade. Kansas increased the value of its creamery products fourfold, and among the large-producing states, this growth was exceeded only by California. Kansas and Nebraska had 101 and 58 establishments, respectively, in 1890, and 171 and 93, respectively, in 1900; but the detailed returns show, in addition, 307 and 284 branch factories and skimming stations in the two states. Also that 474 centrifugal cream separators were in operation in Kansas and 325 in Nebraska. Ten years before these numbers could not have exceeded 110 and 60, respectively. These facts are accounted for by the organization in each of these states, within recent years, of very large creamery companies, which have consolidated or absorbed many creameries which previously had an independent existence. Hence the large number of branches or skimming stations, which in few other states appear so numerous. Vermont is another example of an increase in production apparently out of proportion to new establishments. The latter, as reported, only doubled in the last decade, while their products nearly quadrupled. Consolidation and large companies with branch factories explain this fact also. Vermont reported 184 skimming stations and 382 separators in use in the creameries of that state and their branches.

Table 6 is a comparative summary of capital by geographical groups, 1890 and 1900.

TABLE 6.—COMPARATIVE SUMMARY OF CAPITAL, BY GEOGRAPHICAL GROUPS, 1890 AND 1900.

STATES.	Year.	Total.	Land.	Buildings.	Machinery, tools, and implements.	Cash and sundries
United States...	1900	\$36,303,164	\$1,613,519	\$11,514,198	\$13,827,667	\$9,142,780
	1890	16,016,573	968,333	5,583,257	5,033,102	4,376,881
	Per cent of total.....	100.0	5.0	31.7	38.1	25.2
	Per cent of increase.....	126.7	87.8	106.0	172.0	108.9
New England states	1900	2,570,625	125,021	735,683	819,768	886,153
	1890	882,094	38,882	296,641	302,808	243,763
Middle states.....	1900	10,678,755	528,809	3,607,158	3,864,052	2,678,786
	1890	5,608,929	286,139	2,030,805	1,691,672	1,499,713
Southern states.....	1900	183,897	12,105	46,229	88,716	36,847
	1890	93,057	9,400	31,495	41,525	10,637
Central states.....	1900	17,886,811	797,878	5,708,122	7,051,831	4,328,980
	1890	8,377,929	465,430	2,843,565	2,722,138	2,346,329
Western states.....	1900	3,282,183	116,996	1,062,562	1,332,227	770,398
	1890	922,980	62,912	341,751	284,859	233,458
Pacific states.....	1900	1,684,677	236,850	343,844	663,473	440,510
	1890	221,790	101,365	40,000	38,700	41,725
All other states.....	1900	16,216	860	6,600	7,600	1,156
	1890	10,361	4,205	4,000	1,400	756

¹ Includes establishments distributed as follows: 1900—Mississippi, 2; Wyoming, 2. 1890—Kentucky, 1; Montana, 1; Wyoming, 1.

Table 6 shows that the capital invested in cheese, butter, and condensed-milk factories increased from \$16,016,573 in 1890 to \$36,303,164 in 1900, a gain of \$20,286,591, or 126.7 per cent. Of the several items representing the capital invested in plants, land increased 87.8 per cent; buildings, 106 per cent; while the value of machinery, tools, and implements, the item which perhaps of all others best illustrates the real development of an industry, increased 172 per cent. Capital in the geographical divisions increased during the decade as follows: New England states from \$882,094 to \$2,570,625, an increase of \$1,688,531, or 191.4 per cent; Middle states from \$5,508,329 to \$10,678,755, an increase of \$5,170,426, or 93.9 per cent; Southern states from \$93,057 to \$183,897, an increase of \$90,840, or 97.6 per cent; Central states from \$8,377,962 to \$17,886,811, an increase of \$9,508,849, or 113.5 per cent; Western states from \$922,980 to \$3,282,183, an increase of \$2,359,203, or 255.6 per cent; and the Pacific states from \$221,790 to \$1,684,677, an increase of \$1,462,887, or 659.6 per cent.

Table 7 is a comparative summary of the kinds, quantity, and cost of materials used for 1890 and 1900, with per cent of increase for the decade, and Table 8 presents the quantity and value of the products for 1890 and 1900, with per cent of increase.

TABLE 7.—QUANTITY AND COST OF MATERIALS USED, 1890 AND 1900, WITH PER CENT OF INCREASE.

	1900	1890	Per cent of increase.
Aggregate cost.....	\$108,841,200	\$49,819,801	118.5
Butter:			
Total cost.....	\$73,489,855	\$28,395,954	158.8
Milk—			
Pounds.....	8,514,806,674	1,893,819,242	349.7
Cost.....	\$65,335,287	\$12,355,343	389.2
Cream—			
Pounds.....	203,673,958	433,630,741	157.9
Cost.....	\$8,154,068	\$15,041,611	145.8
Cheese:			
Milk—			
Pounds.....	2,741,898,114	2,684,550,517	2.1
Cost.....	\$21,253,712	\$16,320,690	30.3
Condensed milk:			
Total cost.....	\$7,252,124	\$2,159,856	235.8
Milk—			
Pounds.....	421,375,073	33,617,655	403.9
Cost.....	\$4,662,437	\$1,264,103	268.3
Sugar—			
Pounds.....	50,873,859	13,372,395	280.4
Cost.....	\$2,589,687	\$895,753	189.1
Fuel.....	\$1,703,634	\$526,844	224.3
Rent of power and heat.....	\$17,285	\$7,552	133.9
All other materials.....	\$5,115,090	\$2,407,595	112.6

¹ Decrease.

TABLE 8.—QUANTITY AND VALUE OF PRODUCTS, 1890 AND 1900, WITH PER CENT OF INCREASE.

	1900	1890	Per cent of increase.
Total value.....	\$130,783,349	\$60,635,705	115.7
Butter:			
Pounds.....	420,126,546	181,284,916	131.7
Value.....	\$94,079,754	\$30,675,411	129.3
Cheese:			
Pounds.....	281,972,324	238,035,065	18.5
Value.....	\$26,519,829	\$19,802,951	33.9
Condensed milk:			
Pounds.....	186,921,787	37,926,821	392.3
Value.....	\$11,838,792	\$3,536,927	231.4
All other products:			
Value.....	\$8,294,974	\$570,416	1,351.2

AVERAGE PRODUCT OF FACTORIES.

There is much difference in the size of the creameries in the several states. In New York and Pennsylvania they are small, the average annual product being, respectively, 54,991 and 59,995 pounds of butter. In Illinois and Minnesota the average is 73,237 and 75,411 pounds, and in Wisconsin 78,444 pounds. In Iowa the creameries are larger, with an average annual output of 93,730 pounds. Vermont and Kansas show the influence of a few large establishments in raising the average to 118,176 and 129,975 pounds, respectively. For the entire country the average product of a creamery for a year is 71,731 pounds of butter. Similar differences exist among the cheese factories. The largest are in New York, where the average product is 96,945

pounds a year. In Wisconsin, where there are many small establishments, the average is brought down to 60,458 pounds. In Michigan and Pennsylvania the average is 76,637 and 73,339 pounds, respectively. The annual product of the average cheese factory for the whole country is a little larger than for the average creamery, namely, 72,842 pounds. It must be remembered, however, that this represents only 730,000 pounds of milk used by the average cheese factory in a year, while the average creamery requires over 1,500,000 pounds of milk for its annual product of butter. This does not indicate that twice as many cows are necessary to support a creamery as for a cheese factory, because as a rule the latter is in operation only during the pasturage season, or about half the year, while in most cases the creamery makes butter the entire year. In fact, the average creamery represents, while in operation, the milk from 450 cows, and the average cheese factory 290 cows. In the aggregate, the creameries of the United States appear to use all the milk from about two and a half million cows throughout the year, or an average of 160 pounds of butter per cow; and the cheese factories use the milk from 1,130,000 cows for half the year, representing an average product of 250 pounds of cheese per cow in six months.

ENTIRE DAIRY INDUSTRY OF THE UNITED STATES.

In order to present the dairy industry of the United States as a whole, there are here brought together certain statistics of agriculture and of manufactures. The totals for the census year 1900, thus combined, are as follows:

Cows kept for milk, on farms, number	17, 139, 674
Cows kept for milk, not on farms, number	973, 033
Total number of cows kept for milk	<u>18, 112, 707</u>
Milk produced, on farms, gallons	7, 266, 392, 674
Milk produced, not on farms, gallons ¹	462, 190, 676
Total gallons of milk produced	<u>7, 728, 583, 350</u>
Butter, made on farms, pounds	1, 071, 745, 127
Butter, made in factory creameries, pounds	420, 126, 546
Butter, made in urban dairy establishments, pounds	827, 470
Total pounds of butter made	<u>1, 492, 699, 143</u>
Cheese, made on farms, pounds	16, 372, 330
Cheese, made in factories, pounds	281, 972, 324
Cheese, made in urban dairy establishments, pounds	662, 164
Total pounds of cheese made	<u>299, 006, 818</u>
Condensed milk produced, pounds	<u>186, 921, 787</u>
Value of total butter made, at 18 cents	\$268, 685, 845
Value of total cheese, at 9 cents	26, 910, 614
Value of total condensed milk	11, 888, 792
Value of total cream sold	4, 435, 444
Value of total sundry factory products	1, 261, 359
Value of total milk consumed ¹	<u>277, 645, 100</u>
Aggregate value dairy products of United States	\$590, 827, 154

¹ Estimated.

TOTAL BUTTER AND CHEESE PRODUCTION.

It is interesting to note that while the extension of the creamery system has been such as to raise the product of these establishments during the decade from 15.2 to 28.2 per cent of the total butter product of the United States, with a net increase, as reported, of 131.7 per cent, the quantity of butter made on farms has, nevertheless, increased nearly 50,000,000 pounds, in spite of the fact that it decreased relatively from 81.8 per cent of the total product to 71.9 per cent.

As a rule, the states producing the greatest quantities of butter in factories are also those in which the quantities made on farms are greatest. Ohio is a notable exception. It produced 79,551,299 pounds of butter on farms, which is more than any other state, while its creamery product was comparatively small, being only 8,117,321 pounds. By combining the products of farm and factory, it is found that the 5 states named in Table 8 lead all the others in total butter produced, although in a different order. Iowa stands first, with 139,022,552 pounds; and then follow New York, 115,408,222 pounds; Pennsylvania, 111,358,246 pounds; Wisconsin, 106,552,649 pounds, and Illinois, 86,548,762 pounds. In Iowa and Wisconsin creameries produced more than the farms, but in Pennsylvania, New York, and Illinois the reverse was true. According to the Eleventh Census the 5 states showing the greatest production of butter were Iowa, New York, Pennsylvania, Illinois, and Ohio. Wisconsin held the sixth place. The aggregate production of butter for the whole country reported in the census for 1890 was 1,205,508,384 pounds. For 1900 it was 1,492,699,143 pounds.

Compared with the reports of the census of 1890, the returns for 1900 for cheese show a continued transfer of production from the farm to the factory. The total made on the farm has decreased and the total factory product has increased. The production seems to be concentrating also. The 10 states reported in 1890 as leading in total cheese production were New York, Wisconsin, Ohio, Illinois, Vermont, Iowa, Pennsylvania, Michigan, California, and Minnesota. Of these the first 3 named still stand at the head and in the same order; all show a somewhat increased product during the decade. Pennsylvania and Michigan now come next, both with product more than doubled. These 5 are the only states credited with more than 10,000,000 pounds of cheese each in 1900. California comes next, with a product of 6,926,131 pounds, being an increase; while the remaining 4, although following in the order above named, all show decreases. The cheese factories in these same states in 1900 (including establishments making butter in connection with the manufacture of cheese) numbered as follows: New York, 1,314; Wisconsin, 1,286; Ohio, 320; Pennsylvania, 140; Michigan, 136; California, 32; Illinois, 123; Vermont, 71; Iowa, 89; and Minnesota, 55. No other state had as many as 40. It is further interesting to

note that Wisconsin, Pennsylvania, and California each reports increased quantities of cheese made on the farm, while in all the other states named there has been a falling off in this item. California produced 4,249,588 pounds of farm-made cheese in 1900, and 2,676,543 pounds made in factories; this is the only instance of the kind and the only state reporting as much as 3,000,000 pounds made on farms.

Maine furnishes a good example of the changes in cheese making which have taken place in some sections during the last quarter century. Twenty-five years ago Maine had 60 cheese factories and now has 16. The condition of the latter is a fair average of those of the older cheese-making states. The factories average 243 cows, or not quite 5 cows to each patron; the average of cheese made per cow is 144.8 pounds, the range being from 89 pounds to 180 pounds. Six factories, with 1,600 cows, report an average of 167

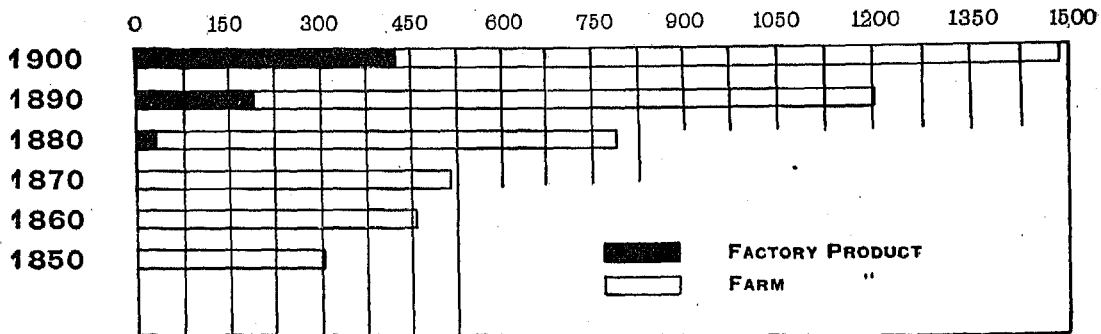
pounds per cow. Of course this difference in product depends largely upon the length of the season during which the factories are in operation.

New York and Wisconsin continue to be the great cheese-producing states of the Union. They are credited for 1900 with totals of 127,795,195 pounds and 77,748,680 pounds, respectively, and together they produced 205,543,875 pounds, or more than two-thirds of all the cheese made in the United States. The aggregate production of cheese in the United States, reported at the census of 1890, was 256,761,883 pounds; of this 18,726,818 pounds, or 7.3 per cent, was made on farms. For 1900 the aggregate was 299,006,818 pounds, of which 16,372,330 pounds, or 5.5 per cent, was made on farms.

A clear idea of the growth of the production of butter and cheese in the United States, decade by decade, together with the relative products of farm and factory, may be obtained from the diagram which follows.

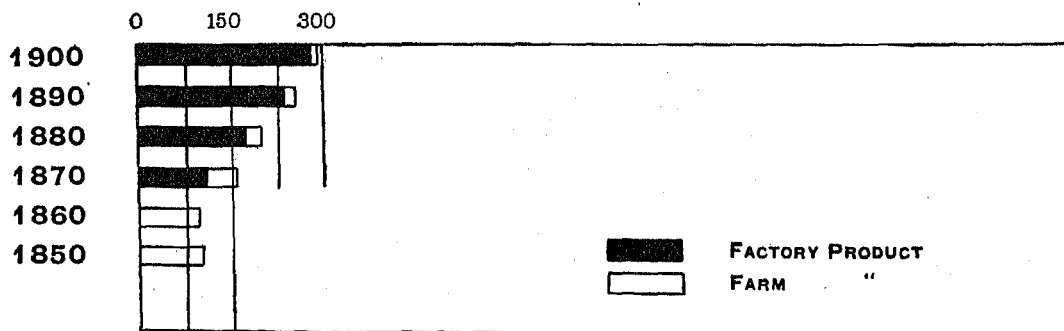
PRODUCTION OF BUTTER

in hundreds of millions of pounds.



PRODUCTION OF CHEESE

in hundreds of millions of pounds.



THE FACTORY OR ASSOCIATED SYSTEM OF DAIRYING.

The statement has been frequently made that the associated system of dairying originated in the United States, and it has been called the "American system." Those who first associated themselves and brought milk together from different farms for making butter and cheese probably never heard of such methods elsewhere, and were originators for their own time and neighborhoods. But in the Jura mountain region of France and Switzerland, cooperative cheese making has been systematically practiced for at least four centuries, and

probably much longer. In the United States, cooperation among dairymen was first applied in making cheese. This plan attracted attention and was recognized as successful in Oneida county, N. Y., about 1852. Very slowly the cheese factory became an established institution; but once fairly started in the heart of the cheese-making district of New York, the system spread rapidly. The "war period," during which the price of cheese more than doubled, lent additional impetus to the movement. A like effect was produced by the increase in cheese exports which occurred about the same time. These exports rose from 13,020,817 pounds in 1850 to

15,515,799 in 1860, and to 53,089,468 in 1865. Ten years later 101,010,853 pounds of cheese were exported. The early growth of the factory system is shown in the following tabular statement:

NUMBER OF CHEESE FACTORIES ESTABLISHED IN THE STATE OF NEW YORK ANNUALLY: 1854-1866.

YEAR.	Facto-ries.	YEAR.	Facto-ries.	YEAR.	Facto-ries.
1854	4	1859	4	1864	210
1855	2	1860	17	1865	52
1856	3	1861	18	1866	46
1857	3	1862	25		
1858	4	1863	111		

Cheese factories were started in Pennsylvania and Ohio soon after they became popular in New York, and later they appeared in other states, East and West.

The system of making butter in quantity from milk or cream collected from numerous farms soon followed the introduction of cheese factories. Such establishments are properly butter factories, but the name of "creamery" has been generally adopted and is not likely to be changed. So far as known, the creamery system of butter making originated in the United States. The first creamery was built in Orange county, N. Y., in the year 1864, and received daily the milk from 375 cows. In Illinois the first cheese factory was started in 1863, and the first creamery in 1867. In Iowa these events took place in 1866 and 1871, respectively.

The early cheese factories and creameries were purely cooperative concerns, and it is in this form that the system has usually extended into new territory, whether for the production of butter or cheese. The cow owners and producers of milk join upon any agreed basis in organizing, building (or renting and refitting), equipping, and managing the factory, and disposing of its products. The farmers interested as joint owners, and all who furnish milk or cream, are called "patrons." The operations are managed by a committee or board of directors chosen by and from the patrons. If the business is large enough to warrant the expense, the immediate supervision is intrusted to a single manager, employed by the board. In a factory of this kind all expenses are deducted from the gross receipts and the remainder divided pro rata among the patrons upon the basis of the raw material contributed. Another plan is for the plant to be owned by a joint-stock company composed largely, if not wholly, of farmers, material being received from any satisfactory producer. In this case interest on the property or capital is usually included in the current expenses; the management is otherwise the same. The proprietary plan is also common, being conducted much like any other factory. The proprietor, firm, or incorporated company buys the milk or cream of producers at prices mutually agreed upon from time to time, and assumes all the expenses, risks, and profits of the business. Another way is for the

factory, however owned, to bear all expenses and charge a fixed price per pound for making and selling the product. The proceeds of sales, less this fixed price, are then divided as on the purely cooperative plan. All of these methods are varied and modified in practice. Settlements are made monthly in almost all cases, and these cash payments to the patrons have a marked effect upon the tone of business in any community where successful factories are operated.

It was impossible to separate these establishments in classes according to all the modifications of ownership and management, but 4 groups were made: Individual, 4,509; firm, 1,340; corporation, 1,628; cooperative, 1,813; total, 9,242. It thus appears that the proprietary plan or private ownership is now greatly in excess of the cooperative system. The tendency has been in this direction for a number of years. In New England, less than twenty years ago, all the creameries were cooperative; now a bare majority remain so in Massachusetts only. In Iowa, where the cooperative plan formerly prevailed, less than one-third still remain of that form. Minnesota creameries were for years nearly all cooperative; about 60 per cent continue to be so. As examples of the other extreme, only 7 factories are cooperative out of 178 in California, only 12 out of 171 in Kansas, and but 377 out of 2,018 in Wisconsin.

Although establishments of this kind are usually successful, there is mismanagement and failure, as in other lines of industry. Many have been started by "promoters," injudiciously located or overcapitalized, and closed after brief careers. Fires, consolidations, and other changes of ownership add to the causes for frequent changes. Of the 9,242 establishments enumerated in 1900, over one-half, or 5,389 were reported as established within the preceding decade, and 828 as started during the census year.

CREAMERIES AND THEIR PRODUCTS.—The creamery system was introduced east of the Hudson River about twenty years ago, upon what was known as the "cream-gathering" plan. This was a popular form of creamery management in some Western states and in parts of the Middle states, from 1876 or 1878 until after 1890. Under this plan the milk was separated by gravity (or "setting") on the producing farms, skimmed there and the cream only went to the creamery, being usually collected daily by agents or gatherers from the factory, hence the name "cream gathering." The dairy centrifuge, or cream separator, made its appearance in America in the year 1879 and has revolutionized dairy and creamery management. The popularity of this machine for mechanical skimming or separation of cream dates from about 1885, and since that time "the separator plan" has been adopted by practically all new factories, and has rapidly replaced the cream-gathering plan in established creameries. The separator, operated by power, has been placed at the creamery, and at its branches or separating stations; and the milk for but-

ter has been hauled daily to these places to be there creamed or separated. This radical change of management accounts for the decrease in cream as a "material" received by the creameries, and partly for the increased quantity of milk so received.

That cream-gathering creameries have not ceased to exist, however, is evident from the quantity of cream still included in the creamery receipts of "materials." There were 203,673,958 pounds reported for 1900; of this 63,308,657 pounds (7,720,568 gallons) were sold by the creameries, leaving 140,365,301 pounds, or enough to make 40,000,000 pounds of butter, being almost 10 per cent of the entire creamery output. Iowa is a good example, although not a strong cream-gathering state. It is known that 10 per cent of all creameries in Iowa are conducted on the cream gathering plan, and 7 per cent in addition combine this plan with that of receiving whole milk to be separated at the creamery.

CREAMERY MATERIALS AND EQUIPMENT.—The large quantity of cream still appearing as raw material at the creameries is indicative of the change in the system. The centrifugal cream separator was introduced and generally adopted in large sizes requiring steam power, and of such capacity that one machine, operated a few hours every morning, could cream the milk from several hundred cows. One powerful separator is therefore the usual equipment of a creamery, and does the work for a whole neighborhood. It has been found, however, that the labor and expense of daily hauling the entire milk product of patrons' farms to the creamery, often several miles distant, is too great a tax upon the industry. A movement toward relief to the patrons and economy in creamery management has been the establishment of neighborhood "skimming stations," equipped only with a separator and power to operate it, as branches of the central plant. From these stations the cream is transported to the parent butter-making factory. Centrifugal separators in use by creameries were first enumerated for the census of 1900, also, for the first time, the branch factories or separating or skimming stations. Separators to the number of 9,701 were returned and 2,719 branch stations of all kinds. While cheese factories sometimes have branches of the parent establishment, they do not have separating or skimming stations; all the latter class of subsidiary establishments, and also a part of the other branch factories, may therefore be taken as belonging to creameries. Hence, if to the 5,567 creameries there be added 2,050 skimming stations and 669 other branches, 8,286 establishments are found having use for separators. About 1,600 creameries, therefore, use two or more separators. The exact number which are still operated without the centrifuge, or upon the old cream-gathering plan, remains undetermined.

The new elements influencing modification in the creamery system are the invention of what is known as

the Babcock fat test for milk and the adoption of the farm separator in sizes for either hand or power. The Babcock test is a chemico-mechanical contrivance, not difficult to operate, by which the percentage of butter fat in either milk or cream may be measured with mathematical accuracy, and the value of the butter-making elements thus fixed, so far as quantity is concerned. Accordingly, the milk may be separated on the producing farm by the most convenient process, and only the cream sent to the creamery, where actual butter value is determined by test and the cream paid for accordingly. Milk delivered at creameries and cheese factories is now generally tested in this way, and paid for on the basis of its fat contents or butter-making value. The butter fat, as measured by this test, is paid for at a fixed price per pound, irrespective of the weight or bulk of serum with which it is mixed in the form of milk or cream. Farm and creamery methods are so much simplified by these improvements that many dairy farmers are procuring private separators. The state dairy commissioner of Iowa reports 904 farm separators owned by patrons of creameries in 1898, 1,762 in 1899, 3,332 in 1900, and 5,231 in 1901. This new form of the "cream-gathering plan" is rapidly extending. Cream again forms a large share of the raw material received at the factories for butter making, and the next census will probably show, instead of a decrease, a very considerable increase in this item.

CREAMERY PRODUCTS.—The quantity of butter made at creameries has been reported under two heads—"packed solid" and "prints or rolls." It appears that of all creamery butter, 328,956,590 pounds, or 78.3 per cent, is packed in solid form, and 91,169,956 pounds, or 21.7 per cent, in prints or rolls. The totals of these two forms in the several states indicate differences in the market requirements and the local customs as to preparing butter for shipment and sale. In the New England states, the numerous cities and large towns easy of access furnish markets where butter can be sold directly to retail dealers or consumers. For this purpose it is prepared in bricks, prints, or balls weighing a half pound or a pound. Vermont excepted, the creameries of these states make twice as much butter into prints as they pack in solid form. In Rhode Island and Connecticut, with consuming markets at their doors, 8 pounds of creamery butter is put into prints to every pound packed. In Vermont, on the contrary, with little local demand and the consequent necessity of shipping away to market, only about one-fourth of the creamery butter is made into prints. In New York the practice has always been to pack butter solidly in firkins, tubs, or boxes; and print butter is rather exceptional in the great market of New York city. In that state, therefore, $4\frac{1}{2}$ pounds of butter are packed to 1 pound put in prints. The Philadelphia market, on the contrary, and Pennsylvania markets in general,

have always been noted for print butter; consequently, it is not surprising to find that the creameries of that state report almost as much made into prints as the quantity solid packed. From Iowa, Wisconsin, and Minnesota butter must be sent long distances to market, and naturally goes mainly in bulk; less than one-eighteenth of the creamery product of those states is made into prints. South Dakota, even more remote from market, packs 99 per cent of its creamery butter in solid form. But upon the Pacific coast local customs favor butter in rolls of 2 pounds weight; accordingly, in the states of California, Oregon, and Washington, three-fourths of all the butter made at creameries is reported as in prints or rolls.

BUTTER PRICES.—Creameries which are able to market butter in the form of prints or rolls generally derive a benefit therefrom. Although extra labor is required to prepare butter in this way, and packages and transportation for it cost rather more, it is a retail form, attractive, brings a higher price, and can be sold more directly to the consumer, saving the commissions of the middlemen. The average price obtained for all butter, as reported by the creameries for the census year 1900, was very nearly 20.1 cents per pound. The average for that packed solid, for the United States, was 19.4 cents, and for the prints or rolls 22.1 cents. The advantage of near-by markets is shown by these average prices for print butter: Connecticut, 24.6 cents per pound; Massachusetts, 23.5 cents; and Pennsylvania, 23.4 cents. For California creamery rolls the average was 22.3 cents. Contrasted with these is the average price for the packed or tub butter of Iowa, Minnesota, and Wisconsin creameries, 19 cents; 18 cents for Nebraska, and 17 cents for Kansas.

RICHNESS OF MILK, OR BUTTER RATIO.—Assuming the substantial accuracy of the returns from creameries of milk and cream received for making butter, and of the butter made from it, interesting computations can be made of the ratio of milk to butter in the country at large and the several states. The results illustrate the difference in the average richness of milk in different localities. The nearest quarter-pound obtained in each calculation is taken as quite accurate enough for purposes of comparison. It is thus found that creameries of the United States require, on the average, $22\frac{1}{2}$ pounds of milk, or its equivalent in cream, to make 1 pound of merchantable butter. New York appears to have the richest milk of any of the leading dairy states, its creameries making a pound of butter from every 21 pounds of milk received. New Hampshire stands second, with a ratio of $21\frac{1}{4}$ to 1, and California third, $21\frac{1}{2}$ to 1. Minnesota, Pennsylvania and Wisconsin are alike, showing 22 pounds as the average. Then Illinois, $22\frac{1}{2}$; Kansas and Vermont, $23\frac{1}{2}$; and Iowa 24, pounds. These 10 states suffice for illustration. The results can not be accepted as absolutely accurate; it is probable

that the average pounds of milk stated for the country at large and for most of the states named, is somewhat below the truth. For the United States the ratio stated would indicate that all milk contributed to creameries has an average of 3.8 per cent of butter fat. For New York the average would have to be 4.1 per cent fat. It is not likely that the average richness of milk is as great as this. Nor is it probable that there is so great a difference between New Hampshire and New York, and Vermont, in this respect. The comparison between Minnesota and Wisconsin, Illinois and Iowa, is believed to be correct. Wisconsin has large holdings of "special-purpose cows," animals giving rich milk, and the same is true of Minnesota to a considerable degree, while in Iowa the "general-purpose cow" is popular, giving milk less in quantity and poorer in butter quality.

If, instead of the above, 23 pounds of milk to a pound of butter is assumed as the average for the United States, this would necessitate milk with an average of 3.7 per cent of butter-fat. No state has dared to fix a legal standard as high as this, and only one has a standard above 3.5 per cent.

CREAM SALES.—The returns of creamery products give evidence that the sale of cream has become a large and profitable branch of the business in some states. The creameries of New York, Illinois, and Pennsylvania made sales of cream, respectively, as follows: 1,492,926 gallons at 53 cents, 1,190,125 gallons at 56 cents, and 686,316 gallons at 58 cents. No other state sold as much as a million gallons, but in these 3 the cream sales equalled 8 per cent of the value of butter sold. A different and notable case is that of the state of Maine; its creameries sold 755,845 gallons of cream at 71 cents a gallon, or \$534,295, and this was considerably more than half as much as the total butter sales of the state. The quantity of cream reported as sold by all the creameries of the United States was 7,720,569 gallons, valued at \$4,435,444, or 57 cents per gallon; the profit of this branch of the business is seen by the fact that, at the average creamery receipts for butter, this quantity of cream, if made into butter, would have realized only \$3,438,754. Ordinarily the gallon of cream thus sold would be the equivalent of a fraction less than 2 pounds of butter.

SKIM MILK.—Of this by-product of the creameries the great amount of 2,253,494,156 pounds is reported as "sold, fed, or returned to patrons." The total value is given at \$2,531,460, or 11.2 cents per 100 pounds. Skim milk is believed to be actually worth twice as much as this to farmers who will use it judiciously as food for young stock. But commercially it is worth less, or about 10 cents per 100 pounds; this is the usual price allowed to patrons who sell it to the creameries for conversion into casein.

DRIED CASEIN.—A comparatively new branch of the dairy industry, which has acquired importance enough

to deserve mention, is the production of commercial casein from the skim milk of creameries. Milk from which all the fat has been extracted by the separator is coagulated by acid, the whey drawn off, the acid washed from the curd, and the curd or casein then dried. The desiccated product has a commercial value of 3 to 5 cents per pound at the creameries where made, depending largely upon subsequent cost of transportation, and is used for making a glue good for paper sizing, as a "binder" for cheap paint, a "filler" for dressing wood and heavy fabrics, and for various other purposes. The statistics of creamery products show 12,298,405 pounds of this material made during the census year 1900, having a value, at the creameries, of \$383,581, or only a little more than 3 cents a pound. The state of New York produced more than half the total quantity, and Pennsylvania and Illinois are the only others in which over one million pounds were made.

CHEESE-FACTORY PRODUCTS.—The management of the cheese factory is in some respects similar to that of the creamery. Patrons deliver the whole milk at the factory daily, while still sweet and sound, and it is made into cheese without delay. Cheese is the only commercial product of the factory, and the only waste product is whey. The latter may be returned to patrons, or fed to swine at the factory, or sold to be used as the material for making sugar-of-milk. For a score of years or more after these factories became numerous they made cheese which, although different in form, size, color, and quality, was nearly all made upon the same general plan, closely resembling that of the English cheddar. Hence a certain uniformity of type was established which became known as the "standard American," or "full-cream factory" cheese, also often called cheddar. During the last ten or twenty years, however, a much greater variety has entered into the factory cheese; this is chiefly the result of imitating certain popular foreign kinds. The Twelfth Census has, for the first time, attempted to classify the factory product. It appears that the 3,871 cheese factories of the United States reported a total production of 281,972,324 pounds of cheese during the census year, as against 238,035,065 pounds in 1890, and that of the former quantity 225,776,105 pounds was of the American standard factory kind, and 56,196,219 pounds, or 20 per cent, of the several other varieties.

In New York 89.2 per cent of the cheese product was of the standard full-cream, cheddar-made variety, and this preponderates in Ohio, Michigan, and Pennsylvania. These are the oldest cheese-making states. In Wisconsin the 77,748,680 pounds was divided as follows: American standard 62.1 per cent and the other kinds 37.9 per cent. In Illinois, however, the standard

is exceeded in quantity by the other varieties—4,324,461 pounds of the former to 4,730,658 pounds of the latter. These "other kinds" comprise various well-known foreign varieties, those made in large quantity being mainly the Swiss gruyère or emmenthaler and the Limburger; there are also some resembling the latter, especially the "brick" cheese. The Neufchâtel and cream cheese, the brie and camembert, are also made in considerable quantities. The value of cheese at the factory is reported as averaging nearly 9.5 cents per pound, being a little more for the standard variety than the average for all other kinds.

WHEY.—The quantity of whey reported as the waste product of cheese factories is 209,067,667 pounds, but this had a value of only \$204,277. It appears that of this only 21.3 per cent was sold and the remainder "used" or returned to the patrons. As milk-sugar is the sole commercial product for which whey is utilized in the United States, it is probable that all reported sold was for that purpose. The quantity of sugar-of-milk manufactured was not ascertained. There are only three or four places in the United States where this article is made, and yet it is produced here in greater quantity than anywhere else in the world.

THE CONDENSED-MILK INDUSTRY.—The condensed-milk industry was started about the same time as the factory system for making butter and cheese. Some method had long been sought for preserving milk, but none was successful until the invention of Gail Borden. After ten years of experimenting, he decided that a semiliquid state was the best form of preservation, and in 1856 settled upon the process which has since popularized the product in every quarter of the globe. The present extensive industry, in Europe as well as America, with its numerous different establishments and many commercial names or brands, is based upon Mr. Borden's methods. This applies to the unsweetened article as well as that preserved with sugar, for "plain condensed milk" was first introduced and put upon the market about the year 1861. It was then mainly in open vessels and intended for early use. Between 1860 and 1870 milk in both forms had become well known, and four or five factories were in operation, each producing about 5,000 1-pound cans per day.

Prior to the Twelfth Census, the statistics of this industry were few. In 1880 the total annual product was reported as 13,033,267 pounds, valued at \$1,547,588, and ten years later the same items were 37,926,821 pounds, and \$3,586,927. For 1890 the total materials reported as used cost \$2,792,086, and included 83,617,655 pounds of milk and 13,372,365 pounds of sugar. There is little doubt that these figures were considerably below the actual facts.

It now appears that in the year 1900 there were 50 establishments for condensing milk, operating in 14 different states, with a business shown by the following aggregates:

MATERIALS.	Quantity (pounds).	Cost.
Milk bought.....	421, 378, 073	\$4, 662, 437
Sugar bought.....	50, 878, 859	2, 589, 687
Cans, labels, etc.....		1, 654, 897
Materials used, aggregate cost.....		8, 907, 021

PRODUCTS.	Quantity (pounds).	Value.
Condensed milk.....	186, 921, 787	\$11, 888, 792
Other and incidental products.....		83, 680
Products, aggregate value.....		11, 922, 472

The two states of New York and Illinois contain more than half of the condenseries reported, and produce over three-fourths of the entire output. Eleven states produced over 1,000,000 pounds of condensed milk each during the census year 1900. Arranged in the order of greatest product, they were (with number of condenseries in each from which statistics were obtained): New York, 16; Illinois, 11; Michigan, 4; California, 2; Wisconsin, 4; Pennsylvania, 3; New Hampshire, 1; Maine, 1; Vermont, 2; Washington, 1, and New Jersey, 1. The number of these establishments, with the position of the state in this list, gives a fair idea of the distribution of the industry. The total product in New York was 75,447,148 pounds, followed closely by Illinois, with 71,257,449. As the latter state has only 11 factories while the former has 16, the size of those in Illinois must be relatively large. Michigan made 18,378,869 pounds of condensed milk, but no other state in the above list made as much as 5,000,000 pounds. Missouri, Indiana, Kansas, and Ohio, with one condensery each, produced from 100,000 to 380,500 pounds.

Of the 50 establishments reported, 38 had condensed milk as their only product; 11 made butter also. The latter class is highly suggestive of a skimmed or partly skimmed article of milk being condensed. Five of these factories are in Illinois and 3 in New York. One factory in New York made both cheese and condensed milk, and 1 in Illinois both of these articles, and butter also.

There are several interesting items in the statistics of this industry. Although a considerable but unknown part of the product is the plain or unsweetened article, the sugar used for the remainder costs more than half as much as all of the milk condensed and preserved. The materials have a total value of \$8,907,021, and that of the finished product is \$11,922,472 for the whole country. But the cost of manufacture includes, besides the materials, the use and wear and tear of the factories, with their expensive machinery and general equipment,

and the wages of many skilled employees. The value of the condensed milk, at the factories, appears to average a little over 6½ cents per pound, in cans. There is a variation between 6 and 7 cents in different states, which is easily accounted for. In some the proportion of unsweetened milk is much greater and the cost and value correspondingly less. The quality of milk and of condensed product is very much better in some cases than in others, and the consequent cost and value are more. Under the general designation of "condensed milk" are included all the preparations of milk from which a large part of the water has been evaporated, including sweetened and unsweetened "condensed milk," "evaporated milk," "condensed cream," and "evaporated cream." These names are rather indiscriminately used, as cream or even enriched milk is seldom condensed or evaporated, while it is unfortunately true, on the other hand, that much poor and skimmed milk is condensed without being so marked or named.

MILK PRICES.—The census returns of the prices to patrons for milk are probably not altogether reliable, although they can not be far from the truth. It appears that for the census year 1900 the average price paid to producers delivering milk to butter factories was 77 cents per 100 pounds, while cheese factories paid an average of 78 cents and condensed-milk factories \$1.11. According to the returns, the prices for milk for making butter ranged from 64 and 65 cents per 100 pounds, in Kansas, South Dakota, Utah, and Wyoming, and 77 cents (the average) in Illinois and Iowa, to 82 cents in New York, 85 in California, 84 in Oregon, 87 in Washington, 90 in Pennsylvania, 93 in New Hampshire, 95 in Massachusetts, and \$1.08 in Connecticut. For cheese making the factories paid an average of 86 cents per 100 pounds for milk in California, 83 cents in New York, 76 in Michigan, 74 in Wisconsin, and 72 in Ohio. Condenseries are reported as paying 96 cents per 100 pounds for milk in Illinois, \$1.14 in California, \$1.15 in Pennsylvania, and \$1.35 in New York.

CONSUMPTION OF DAIRY PRODUCTS IN THE UNITED STATES.

Computation of the per capita consumption of dairy products annually in this country is a simple matter so far as butter and cheese are concerned. To the aggregates made on farms and in factories, including urban establishments, as already given, the imports must be added and the foreign and domestic exports deducted. The average of butter imported per annum for the five years reported nearest to the census year was 47,400 pounds, and the corresponding exports, 25,600,000; but for 1900 these quantities were 44,977 pounds (net) and 18,266,371 pounds. Consequently, there was available for consumption in the census year the net quantity of

1,474,477,749 pounds of butter, which provided a small fraction over 19 pounds for each inhabitant.

Of cheese, the average imports for the same period were 12,400,000 pounds (net) and the exports 46,000,000 pounds. For the year 1900 the exact quantities reported were, respectively, 13,247,714 pounds (net) and 48,419,353 pounds. The quantity available for consumption in the year was, therefore, 263,835,179 pounds, or 3.3 pounds of cheese per capita of the population.

Condensed milk is both exported and imported, but

the records are reported by the Treasury Department in values only, not in quantities. The best course possible is to value all alike at 8 cents per pound. Upon this estimate, for the census year 1900, the imports of this commodity were equivalent to 533,196 pounds (net) and the exports 14,242,525 pounds, making the quantity available for consumption in the United States 173,212,458 pounds, or at the rate of 2.3 pounds per capita per annum. This result is rather surprising, but may be regarded as approximately correct.

TABLE 9.—QUANTITY AND VALUE OF CHEESE, BUTTER, AND CONDENSED MILK, FACTORY PRODUCT, IN THE FIVE STATES OF GREATEST PRODUCTION: 1900.

	NEW YORK.		WISCONSIN.		IOWA.		ILLINOIS.		PENNSYLVANIA.	
	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.
Aggregate:										
1900		\$26,557,888		\$20,120,147		\$15,846,077		\$12,879,299		\$10,299,000
1890		14,385,966		6,960,711		10,545,182		8,004,991		5,319,434
Total for butter factories or creameries										
Butter, total	40,693,846	9,422,865	61,813,502	12,535,528	77,233,264	15,417,779	34,055,312	7,921,321	37,137,161	9,138,863
Solid packed	33,068,820	8,087,210	55,826,290	11,921,914	74,795,240	14,911,539	30,233,587	6,891,033	13,453,287	8,303,912
Prints and rolls	7,625,026	1,335,655	6,987,212	1,207,799	2,438,024	477,323	3,816,725	782,725	23,678,874	5,536,722
Cream sold	11,492,926	784,623	125,132	123,578	191,875	44,776	1,190,125	669,185	1,686,316	396,108
Skimmed milk disposed of	294,465,866	826,726	391,665,003	453,187	477,164,867	449,355	215,740,194	277,093	200,182,662	244,100
Casein, dried	6,223,085	154,272	101,300	2,390	3,800	76	1,784,559	60,132	3,103,281	116,760
Other butter-factory products		70,034		29,459		12,033		23,873		78,003
Total for cheese factories		12,333,800		7,853,394		423,298		643,681		895,288
Cheese, total	127,386,032	12,226,783	77,748,680	7,281,181	4,242,637	424,678	9,055,119	626,984	10,267,443	838,733
Standard factory	113,629,093	10,913,498	48,278,378	4,534,908	3,787,490	369,622	4,324,461	338,723	9,333,008	831,724
Other kinds	13,756,939	1,313,285	29,470,302	2,746,273	475,147	55,056	4,730,658	288,261	934,435	54,009
Whey, sold	10,176,310	8,707	6,410,260	4,706	674,318	198	7,828,516	4,890	91,950	475
Otherwise disposed of	25,246,487	87,314	79,495,694	51,438	4,364,423	3,422	1,754,500	1,236	6,364,328	4,762
Other cheese-factory products		10,996		16,069				10,571		1,318
Total for condensed-milk factories		4,801,223		231,225				4,314,297		255,835
Condensed milk	75,447,148	4,801,223	3,466,516	231,225			71,257,449	4,303,697	2,862,000	255,835
Other condensery products								10,700		

¹ Gallons.

Table 9 shows the location of the greatest activity in the industry, by giving statistics of production in selected states. The 5 leading states, and the only ones which reported for this industry factory products having an aggregate value of over \$10,000,000 during the last census year, are New York, Wisconsin, Iowa, Illinois, and Pennsylvania.

Of the 5 states, Wisconsin shows the greatest development, the value of total production having increased from 1890 to 1900, 189.1 per cent; while Pennsylvania increased 93.4 per cent; New York, 84.6 per cent, Illinois, 60.9 per cent; and Iowa, 50.3 per cent. In each of 13 other states the total value of products for the census year was over \$1,000,000, and in some of these the apparent increase was remarkable. The gain was

well distributed from east to west. In the old dairy regions of New England, Maine gained 330.2 per cent; Vermont, 252.9 per cent, New Hampshire, 196.8 per cent; and Massachusetts, 107.7 per cent; Connecticut increased only 24.1 per cent. In the new dairy territory of the Pacific coast, the increase in California was from \$172,579 to \$3,582,942, and in Washington from \$33,100 to \$1,190,239. In the great central basin the notable examples include new dairy states as well as old ones. Among the newer, Michigan gained 232.4 per cent in value of these products; Minnesota, 186.6 per cent; Kansas, 297.1 per cent; Nebraska, 90.5 per cent; and South Dakota, 1,089 per cent. Ohio, for years a large producer, increased from \$3,001,606 to \$3,808,996, or 26.9 per cent.

TABLE 10.—COMPARATIVE SUMMARY, CHEESE, BUTTER, AND CONDENSED MILK, FACTORY PRODUCT, BY STATES, ARRANGED GEOGRAPHICALLY: 1890 AND 1900.

STATES.	Year.	Number of establishments.	Capital.	SALARIED OFFICIALS, CLERKS, ETC.		WAGE-EARNERS.		Miscellaneous expenses.	Cost of materials used.	Value of products.
				Number.	Salaries.	Average number.	Total wages.			
United States.....	1900 1890	9,242 4,552	\$36,803,164 16,016,573	2,818 1,150	\$911,712 1,887,151	12,799 12,219	\$6,145,561 4,248,854	\$1,574,790 813,954	\$108,841,200 49,819,301	\$130,783,349 60,685,705
New England states.....	1900 1890	493 268	2,570,625 882,094	285 108	103,690 52,417	1,077 640	514,909 263,556	148,420 58,610	9,453,854 3,399,345	11,182,888 4,048,124
Maine.....	1900 1890	61 40	429,510 110,215	39 16	15,646 7,311	162 84	70,283 29,881	23,065 4,598	1,407,050 334,403	1,727,684 401,626
New Hampshire.....	1900 1890	53 28	311,308 71,992	34 15	11,490 10,044	119 51	58,323 24,495	21,229 7,777	1,226,388 420,767	1,467,503 494,466
Vermont.....	1900 1890	255 123	1,222,892 367,353	137 47	37,514 18,569	522 263	236,377 77,403	66,992 14,947	4,885,289 1,387,445	5,656,265 1,602,641
Massachusetts.....	1900 1890	50 29	324,382 118,781	24 7	12,513 3,632	99 84	61,636 48,122	15,240 10,951	1,024,575 484,798	1,198,159 576,742
Rhode Island.....	1900 1890	3 4	7,800 16,983	4 5	1,125 3,736	9 14	3,427 6,810	623 6,910	28,938 71,894	39,569 91,322
Connecticut.....	1900 1890	71 49	274,733 196,770	47 18	24,402 9,125	166 144	84,863 77,842	21,266 13,427	881,614 700,038	1,093,703 881,327
Middle states.....	1900 1890	2,816 1,653	10,678,755 5,503,329	891 773	181,670 260,376	3,636 3,320	1,656,732 938,165	478,445 219,823	32,428,452 17,184,432	38,404,587 20,178,862
New York.....	1900 1890	1,908 1,308	7,084,130 4,002,026	227 614	122,292 196,790	2,439 2,461	1,157,081 640,827	337,303 149,946	22,486,869 12,362,992	26,557,888 14,385,966
New Jersey.....	1900 1890	53 16	242,284 88,959	14 3	4,350 1,330	74 36	36,852 13,862	9,219 3,838	488,105 120,223	610,006 146,394
Pennsylvania.....	1900 1890	749 300	3,033,128 1,322,384	127 138	45,596 55,521	976 766	445,708 267,147	116,195 61,665	8,711,635 4,433,395	10,290,006 5,319,434
Delaware.....	1900 1890	22 5	85,155 19,086	5 4	2,120 1,575	34 15	13,093 5,265	4,577 1,642	184,196 107,542	252,892 124,780
Maryland.....	1900 1890	84 24	234,058 75,875	18 14	7,312 5,100	113 42	33,998 11,064	11,151 2,682	557,647 100,280	693,795 202,238
Southern states.....	1900 1890	68 22	133,897 93,057	13 3	5,986 1,346	81 66	27,298 16,141	6,126 2,106	268,762 185,921	370,846 238,062
West Virginia.....	1900 1890	4 3	5,835 6,905	..... .....	..... .....	2 4	480 630	80 146	10,223 5,242	12,234 6,540
Virginia.....	1900 1890	10 12	15,145 47,575	..... 3	..... 1,346	8 41	2,158 11,687	930 808	39,951 165,226	51,942 202,544
Georgia.....	1900 1890	4	13,497	1	400	4	1,860	360	10,515	14,166
Kentucky.....	1900 1890	9	18,640 .....	..... .....	..... .....	17	5,206	1,261	55,447	77,035
Tennessee.....	1900 1890	12 4	96,175 19,405	6	2,340	20 11	4,193 2,249	1,113 535	49,846 15,176	69,722 18,605
Alabama.....	1900 1890	4	13,670 .....	..... .....	..... .....	4	1,277	175	8,034	12,969
Arkansas.....	1900 1890	3	20,503	3	1,446	5	1,734	374	24,538	32,717
Oklahoma.....	1900 1890	5	12,762 .....	..... .....	..... .....	3	1,520	185	13,749	18,994
Texas.....	1900 1890	12 3	41,670 19,172	3	1,800	18 10	8,870 1,575	1,648 567	51,454 7,277	81,017 10,373
Central states.....	1900 1890	5,004 2,374	17,880,811 8,377,962	1,616 1,150	402,832 492,309	6,220 7,234	3,077,002 2,717,696	684,554 441,803	54,882,800 27,015,318	66,415,204 33,453,212
Ohio.....	1900 1890	479 330	1,041,093 819,720	89 116	19,083 36,281	339 774	189,804 223,348	65,214 41,223	3,054,764 2,481,872	3,808,996 3,001,606
Michigan.....	1900 1890	286 100	1,250,897 481,770	92 71	25,360 28,656	503 353	222,245 111,017	37,001 30,891	3,274,264 946,152	3,918,995 1,179,139
Indiana.....	1900 1890	112 52	287,360 129,414	23 32	6,542 14,327	113 155	56,761 56,420	15,724 5,888	711,059 299,599	929,858 402,556
Illinois.....	1900 1890	527 262	4,465,752 2,180,685	220 196	136,463 129,736	1,433 1,344	696,688 608,218	177,417 106,850	10,199,429 6,582,144	12,879,299 8,004,991
Wisconsin.....	1900 1890	2,018 966	4,917,940 1,833,988	414 444	69,076 140,134	1,780 1,373	893,499 405,227	157,123 75,721	16,623,859 5,376,630	20,120,147 6,960,711

¹ Includes proprietors and firm members, with their salaries; number only reported in 1900, but not included in this table. (See Table 11.)
² No establishments reported.
³ Included in "all other states."

MANUFACTURES.

TABLE 10.—COMPARATIVE SUMMARY, CHEESE, BUTTER, AND CONDENSED MILK, FACTORY PRODUCT, BY STATES ARRANGED GEOGRAPHICALLY: 1890 AND 1900—Continued.

STATES.	Year.	Number of establishments.	Capital.	SALARIED OFFICIALS, CLERKS, ETC.		WAGE-EARNERS.		Miscellaneous expenses.	Cost of materials used.	Value of products.
				Number.	Salaries.	Average number.	Total wages.			
Central states—Continued.										
Minnesota.....	1900	596	\$2,264,956	841	\$50,284	740	\$398,224	\$102,096	\$7,188,711	\$8,479,895
	1890	106	608,184	72	48,917	783	353,701	50,849	2,168,307	2,958,476
Iowa.....	1900	907	3,459,017	413	81,425	1,133	588,653	153,990	18,501,556	15,846,077
	1890	497	2,074,177	190	87,904	2,355	944,895	121,160	8,360,689	10,646,182
Missouri.....	1900	79	199,796	24	4,994	74	31,138	5,989	329,158	431,666
	1890	61	252,024	29	11,294	157	49,870	9,721	299,925	400,651
Western states.....										
	1900	551	3,282,183	366	133,555	1,170	526,414	166,468	7,378,983	8,931,447
	1890	198	922,980	108	56,927	813	277,855	80,148	1,826,247	2,436,190
Montana.....	1900	3	6,823			2	1,101	199	6,022	8,418
	1890									
Idaho.....	1900	19	74,093	8	3,895	14	7,076	1,411	85,140	116,056
	1890	4	25,175	3	775	13	2,025	1,314	11,461	17,806
North Dakota.....	1900	21	51,515	5	1,250	13	7,725	1,231	96,286	122,128
	1890	10	38,490	1	600	25	6,813	2,227	67,528	85,140
South Dakota.....	1900	138	460,932	95	11,786	148	77,401	18,523	1,005,237	1,199,493
	1890	16	38,993	5	1,487	65	13,122	1,552	76,157	100,834
Nebraska.....	1900	93	952,185	66	40,569	333	146,522	38,823	1,854,228	2,253,893
	1890	58	339,165	47	29,241	428	151,126	49,563	868,839	1,183,000
Nevada.....	1900	4	49,766	9	2,570	11	6,428	1,099	127,044	148,301
	1890									
Utah.....	1900	57	269,247	54	15,976	159	63,135	13,788	550,096	713,889
	1890	3	22,800	1	500	11	4,110	345	13,359	18,650
Colorado.....	1900	88	203,947	18	11,415	80	40,323	13,912	471,003	618,281
	1890	6	30,065	10	7,630	10	6,210	2,208	75,226	110,924
Kansas.....	1900	171	1,139,595	97	40,908	395	167,293	71,883	3,062,385	3,652,530
	1890	101	433,792	41	16,694	271	94,449	22,939	713,677	919,787
Arizona.....	1900	7	73,480	14	5,686	15	9,410	6,099	121,592	148,468
	1890									
Pacific states.....										
	1900	306	1,684,677	145	83,604	610	311,596	90,529	4,421,945	5,412,403
	1890	34	221,790	8	3,776	82	34,189	11,061	201,023	272,105
Washington.....	1900	60	304,178	35	27,159	146	80,935	16,516	932,190	1,190,239
	1890	3	9,350	1	75	3	1,050	262	24,475	33,100
Oregon.....	1900	68	223,409	20	8,981	62	27,302	11,852	508,793	639,222
	1890	12	36,290	2	971	30	9,779	3,608	45,265	66,426
California.....	1900	178	1,157,090	90	47,464	402	203,359	62,161	2,980,962	3,582,942
	1890	19	125,650	5	2,730	49	23,360	7,191	131,283	172,579
All other states ^a	1900	4	16,216	2	875	5	1,610	248	11,404	15,379
	1890	3	10,361			4	1,252	403	7,015	9,160

¹ Not included in "all other states."² No establishments reported.³ Includes establishments distributed as follows: 1900—Mississippi, 2; Wyoming, 2. 1890—Kentucky, 1; Montana, 1; Wyoming, 1.

CHEESE, BUTTER, AND MILK, FACTORY PRODUCT.

TABLE 11.—CHEESE, BUTTER, AND CONDENSED MILK, FACTORY PRODUCT, BY STATES AND TERRITORIES: 1900.

	United States.	Alabama.	Arizona.	Arkansas.	California.	Colorado.	Connecticut.	Delaware.
Number of establishments	9,242	4	7	8	178	88	71	22
Character of organization:								
Individual	4,509	2	1	2	80	14	21	13
Firm and limited partnership	1,340	1	2	1	29	11	11	8
Incorporated company	1,628	1	4	5	62	13	16	.....
Miscellaneous	1,765				7		23	1
Capital:								
Total	\$36,303,164	\$13,070	\$73,480	\$26,503	\$1,157,090	\$208,947	\$274,733	\$85,155
Land	\$1,818,519	\$700	\$2,975	\$885	\$196,192	\$12,092	\$13,288	\$11,675
Buildings	\$11,514,198	\$3,600	\$16,125	\$6,229	\$269,832	\$61,625	\$91,513	\$17,690
Machinery, tools, and implements	\$13,827,607	\$7,370	\$25,494	\$16,021	\$160,270	\$72,078	\$76,572	\$37,850
Cash and sundries	\$9,142,780	\$2,000	\$28,886	\$3,368	\$240,796	\$56,152	\$88,360	\$18,030
Proprietors and firm members	6,987	4		5	137	35	49	29
Salaried officials, clerks, etc.:								
Total number	2,818		14	3	90	18	47	5
Total salaries	\$911,712		\$5,686	\$1,446	\$47,464	\$11,415	\$24,402	\$2,120
Officers of corporations—								
Number	1,014				19	6	16	.....
Salaries	\$266,304		\$2,266		\$7,100	\$4,000	\$6,896	.....
General superintendents, managers, clerks, etc.—								
Total number	1,804		6	8	71	12	31	5
Total salaries	\$645,408		\$3,420	\$1,446	\$40,364	\$7,415	\$17,506	\$2,120
Men—								
Number	1,717		4	3	69	11	28	5
Salaries	\$617,072		\$2,700	\$1,446	\$39,634	\$6,990	\$16,456	\$2,120
Women—								
Number	87		2		2	1	3	.....
Salaries	\$28,336		\$720		\$730	\$425	\$1,050	.....
Wage-earners, including pieceworkers, and total wages:								
Greatest number employed at any one time during the year	16,928	5	19	8	477	122	180	98
Least number employed at any one time during the year	13,722	5	12	6	366	82	161	33
Average number	12,799	4	15	5	402	80	166	34
Wages	\$6,145,561	\$1,277	\$9,410	\$1,734	\$203,359	\$40,823	\$84,863	\$13,093
Men, 16 years and over—								
Average number	11,637	3	15	5	352	76	161	34
Wages	\$5,833,939	\$1,217	\$9,410	\$1,734	\$187,848	\$39,143	\$83,793	\$13,093
Women, 16 years and over—								
Average number	1,041	1			50	4	4	.....
Wages	\$289,190	\$60			\$15,511	\$1,180	\$1,020	.....
Children, under 16 years—								
Average number	121						1	.....
Wages	\$17,332						\$50	.....
Average number of wage-earners, including pieceworkers, employed during each month:								
Men, 16 years and over—								
January	8,696	2	12	5	319	69	157	32
February	8,846	2	12	5	323	69	156	32
March	9,733	3	16	5	357	72	155	35
April	12,293	4	15	7	381	73	160	35
May	14,485	4	16	7	405	84	166	38
June	14,226	4	16	7	376	78	170	36
July	13,795	3	16	5	364	77	166	36
August	13,485	3	17	5	358	77	168	36
September	12,536	3	15	4	347	79	164	35
October	11,803	3	15	3	337	100	160	33
November	10,416	3	15	3	338	67	159	31
December	9,079	3	12	4	322	66	167	31
Women, 16 years and over—								
January	942	1			47	5	4	.....
February	980	1			42	5	4	.....
March	1,040	1			42	4	4	.....
April	1,121	1			45	4	4	.....
May	1,297	1			56	4	4	.....
June	1,240	1			55	4	4	.....
July	1,128	1			66	4	4	.....
August	1,072	1			66	5	4	.....
September	992	1			66	5	4	.....
October	920	1			47	4	4	.....
November	874	1			54	4	4	.....
December	868	1			53	4	4	.....
Children, under 16 years—								
January	90						1	.....
February	101						1	.....
March	114						1	.....
April	117						1	.....
May	150						1	.....
June	151						1	.....
July	146						1	.....
August	137						1	.....
September	127						1	.....
October	118						1	.....
November	102						1	.....
December	99						1	.....
Miscellaneous expenses:								
Total	\$1,574,700	\$175	\$6,099	\$374	\$62,161	\$13,912	\$21,266	\$4,577
Rent of works	\$182,607		\$1,200		\$10,879	\$2,194	\$2,508	\$580
Taxes, not including internal revenue	\$173,464	\$108	\$467	\$167	\$5,098	\$1,267	\$1,376	\$367
Rent of offices, interest, insurance, and all sundry expenses not hitherto included	\$1,189,915	\$67	\$2,332	\$187	\$44,764	\$10,133	\$14,320	\$3,640
Contract work	\$28,604		\$1,500	\$20	\$920	\$318	\$3,062	.....
Materials used:								
Total cost	\$108,841,200	\$8,034	\$121,592	\$24,538	\$2,980,962	\$471,003	\$881,614	\$184,196
In making butter—								
Milk bought or received from patrons—								
Pounds	8,514,806,634	663,998	9,380,494	8,479,767	281,686,502	29,569,674	14,020,591	21,676,468
Cost	\$65,835,287	\$6,158	\$77,534	\$22,442	\$2,392,620	\$230,222	\$151,159	\$170,341
Gathered cream—								
Pounds	203,673,958				1,151,300	2,033,425	15,866,688	102,400
Cost	\$8,154,068				\$65,985	\$103,372	\$684,971	\$5,120
Tubs, boxes, color, salt, etc.	\$1,984,894	\$307	\$1,274	\$710	\$35,384	\$6,200	\$12,200	\$2,498

MANUFACTURES.

TABLE 11.—CHEESE, BUTTER, AND CONDENSED MILK, FACTORY PRODUCT, BY STATES AND TERRITORIES: 1900—Continued.

	United States.	Alabama.	Arizona.	Arkansas.	California.	Colorado.	Connecticut.	Delaware.
Materials used—Continued.								
Total cost—Continued.								
In making cheese—								
Milk bought or received from patrons—								
Pounds.....	2,741,898,114	100,000	4,788,520	105,000	24,731,215	13,337,856	2,111,039	150,000
Cost.....	\$21,258,712	\$700	\$97,176	\$735	\$212,192	\$111,297	\$13,243	\$1,650
Boxes, salt, etc.....	\$708,225	\$20	\$604	\$30	\$8,528	\$4,341	\$455	\$30
In making condensed milk—								
Milk—								
Pounds.....	421,378,073				9,869,335			
Cost.....	\$4,662,437				\$112,339			
Sugar—								
Pounds.....	50,873,859				136,100			
Cost.....	\$2,589,637				\$6,900			
Cans, labels, etc.....	\$1,654,897				\$69,081			
Fuel.....	\$1,708,634	\$616	\$4,453	\$550	\$65,187	\$9,800	\$3,442	\$3,352
Rent of power and heat.....	\$17,285				\$423	\$213	\$300	
Mill supplies.....	\$249,556	\$233	\$539	\$36	\$5,267	\$1,523	\$2,191	\$905
Freight.....	\$522,518		\$12	\$15	\$7,106	\$7,027	\$3,653	\$100
Products:								
Total value.....	\$130,738,349	\$12,969	\$148,458	\$32,717	\$3,582,942	\$618,281	\$1,098,703	\$252,392
Creameries—								
Packed solid—								
Pounds.....	328,956,590	15,757	72,974	134,184	2,983,262	536,963	456,626	533,694
Value.....	\$63,961,893	\$3,500	\$15,092	\$24,131	\$534,478	\$112,336	\$105,321	\$116,452
Prints or rolls—								
Pounds.....	91,169,956	1,600	351,109	34,391	10,163,875	1,029,676	3,431,779	436,195
Value.....	\$20,117,861	\$376	\$73,812	\$6,732	\$2,270,154	\$288,269	\$345,879	\$110,982
Cream sold—								
Gallons.....	7,720,569	3,266	15,063		123,575	137,114	136,995	5,703
Value.....	\$4,485,444	\$5,752	\$9,578		\$120,283	\$78,099	\$91,973	\$9,003
Skimmed milk sold, fed, or returned to patrons—								
Pounds.....	2,253,494,156	280,820	4,000,000	309,000	61,422,468	3,374,330	4,796,552	903,500
Value.....	\$2,531,460	\$1,241	\$1,200	\$302	\$47,271	\$9,338	\$14,191	\$2,505
Casein dried, from skimmed milk—								
Pounds.....	12,298,405		16,800		16,800		800	133,600
Value.....	\$383,581		\$1,000		\$239		\$39	\$4,221
All other creamery products.....	\$639,821	\$900	\$10,453		\$17,333	\$15,678	\$6,111	\$12,724
Cheese factories—								
Standard factory (cheddar)—								
Pounds.....	225,776,105	10,000	369,652	12,600	2,424,705	317,409	167,000	15,000
Value.....	\$21,363,477	\$1,200	\$37,005	\$1,008	\$244,510	\$91,715	\$15,760	\$2,400
Other kinds—								
Pounds.....	56,196,219		4,100		251,838	647,848	154,263	
Value.....	\$5,156,352		\$250		\$34,615	\$70,246	\$14,209	
Whey—								
Sold—								
Pounds.....	44,590,752			90,000	34,332			
Value.....	\$28,923			\$44	\$8			
Otherwise used—								
Pounds.....	164,476,915				553,346	4,438,000		
Value.....	\$175,354				\$503	\$200		
All other cheese factory products.....	\$66,711		\$63		\$422	\$4,350		\$500
Condensed milk factories—								
Condensed milk—								
Pounds.....	136,921,787				4,314,666			
Value.....	\$11,888,792				\$261,696			
All other condensed milk factory products.....	\$33,680				\$1,430			
Comparison of products:								
Number of establishments reporting for both years.....								
Value for census year.....	3,281	1	3	3	66	16	45	8
Value for preceding business year.....	\$63,595,564	\$3,394	\$33,916	\$13,457	\$1,643,373	\$348,508	\$350,508	\$111,710
Value for preceding business year.....	\$56,795,604	\$3,394	\$31,465	\$3,053	\$1,291,112	\$317,775	\$303,302	\$67,040
Branches:								
Cream separators.....								
Factories.....	9,701	2	6	6	243	96	31	15
Separating stations.....	669				25	20	4	1
Skimming stations.....	1,039		1		51	13	2	1
Ice-cream plants.....	961				44		1	1
Ice-cream plants.....	78		2				2	
Power:								
Number of establishments reporting.....								
Total horsepower.....	6,924	4	4	7	160	33	69	20
Owned—	88,373	48	101	72	1,932	403	531	254
Engines—								
Steam—								
Number.....	7,868	3	7	7	177	41	70	23
Horsepower.....	84,666	42	101	72	1,707	380	501	246
Gas or gasoline—								
Number.....	187				8			1
Horsepower.....	825				39			8
Water wheels—								
Number.....	110	1			6			
Horsepower.....	1,594	1			31			
Electric motors—								
Number.....	41				1			
Horsepower.....	311				10			
Other power—								
Number.....	30	1			3			
Horsepower.....	344	5			125			
Rented—								
Electric horsepower.....	316				19	23		
Other kinds of horsepower.....	317				1		30	
Furnished to other establishments, horsepower.....	84							
Establishments classified by number of persons employed, not including proprietors and firm members:								
Total number of establishments.....								
No employees.....	9,242	4	7	8	178	33	71	22
Under 5.....	1,320		1	3	24	8	7	3
5 to 20.....	7,462	4	5	5	125	29	44	12
21 to 50.....	401				26	5	20	2
51 to 100.....	35		1		2			
101 to 250.....	11				1			
251 to 500.....	10							
501 to 1,000.....	1							
501 to 1,000.....	2							

CHEESE, BUTTER, AND MILK, FACTORY PRODUCT.

TABLE 11.—CHEESE, BUTTER, AND CONDENSED MILK, FACTORY PRODUCT, BY STATES AND TERRITORIES: 1900—Continued.

	Georgia.	Idaho.	Illinois.	Indiana.	Iowa.	Kansas.	Kentucky.	Maine.
Number of establishments.....	4	19	527	112	907	171	9	61
Character of organization:								
Individual.....	1	5	224	55	328	60	6	22
Firm and limited partnership.....	1	4	96	18	133	23	3	9
Incorporated company.....	2	10	127	17	187	76	.....	25
Miscellaneous.....	.....	.....	80	22	259	12	.....	5
Capital:								
Total.....	\$13,497	\$74,698	\$4,465,752	\$287,360	\$3,459,017	\$1,139,595	\$18,640	\$429,510
Land.....	\$450	\$3,350	\$224,494	\$18,310	\$145,198	\$41,280	\$165	\$16,951
Buildings.....	\$3,100	\$28,415	\$1,394,116	\$88,585	\$1,095,429	\$366,271	\$1,450	\$117,260
Machinery, tools, and implements.....	\$8,910	\$38,246	\$1,559,197	\$131,058	\$1,499,183	\$492,663	\$5,465	\$31,654
Cash and sundries.....	\$1,037	\$9,682	\$1,287,945	\$49,407	\$719,207	\$289,381	\$11,360	\$213,645
Proprietors and firm members.....	3	11	394	92	565	106	14	39
Salaried officials, clerks, etc.:								
Total number.....	1	8	220	23	418	97	.....	39
Total salaries.....	\$400	\$3,395	\$136,463	\$6,542	\$81,425	\$40,908	.....	\$16,646
Officers of corporations—								
Number.....	1	3	58	6	277	45	.....	20
Salaries.....	\$400	\$1,300	\$33,186	\$1,075	\$37,606	\$15,933	.....	\$6,385
General superintendents, managers, clerks, etc.—								
Total number.....	.....	5	162	17	136	52	.....	19
Total salaries.....	.....	\$2,095	\$103,277	\$5,467	\$43,819	\$24,975	.....	\$10,261
Men—								
Number.....	.....	5	154	17	131	46	.....	12
Salaries.....	.....	\$2,095	\$99,967	\$5,467	\$42,859	\$22,975	.....	\$7,417
Women—								
Number.....	.....	.....	8	.....	5	6	.....	7
Salaries.....	.....	.....	\$3,310	.....	\$960	\$2,000	.....	\$2,844
Wage-earners, including pieceworkers, and total wages:								
Greatest number employed at any one time during the year.....	4	22	1,751	142	1,369	468	18	192
Least number employed at any one time during the year.....	4	16	1,400	132	1,195	385	17	154
Average number.....	4	14	1,483	118	1,133	395	17	162
Wages.....	\$1,860	\$7,076	\$696,688	\$56,751	\$588,653	\$167,293	\$5,206	\$70,233
Men, 16 years and over—								
Average number.....	4	14	1,136	105	1,099	386	14	141
Wages.....	\$1,860	\$7,076	\$599,622	\$54,516	\$582,144	\$164,908	\$4,916	\$64,707
Women, 16 years and over—								
Average number.....	.....	.....	318	5	22	7	2	21
Wages.....	.....	.....	\$92,035	\$1,236	\$4,951	\$2,035	\$160	\$5,576
Children, under 16 years—								
Average number.....	.....	.....	29	8	12	2	1	.....
Wages.....	.....	.....	\$5,031	\$969	\$1,558	\$350	\$130	.....
Average number of wage-earners, including pieceworkers, employed during each month:								
Men, 16 years and over—								
January.....	4	16	1,054	95	952	348	14	121
February.....	4	16	1,071	95	978	349	14	122
March.....	4	13	1,107	95	1,027	357	14	126
April.....	4	13	1,181	103	1,151	399	15	143
May.....	4	14	1,270	121	1,256	438	15	157
June.....	4	16	1,232	122	1,233	423	14	163
July.....	4	16	1,211	120	1,190	419	14	165
August.....	4	13	1,187	112	1,163	419	14	161
September.....	4	13	1,132	105	1,133	403	15	150
October.....	4	13	1,093	98	1,064	368	15	137
November.....	4	13	1,048	97	1,026	357	15	126
December.....	4	15	1,046	97	1,013	351	14	122
Women, 16 years and over—								
January.....	.....	.....	323	3	14	8	2	20
February.....	.....	.....	329	3	8	8	2	20
March.....	.....	.....	340	4	22	8	2	19
April.....	.....	.....	345	4	27	8	2	20
May.....	.....	.....	338	7	33	8	2	20
June.....	.....	.....	341	7	31	7	2	22
July.....	.....	.....	330	7	29	6	2	22
August.....	.....	.....	326	6	22	7	2	22
September.....	.....	.....	310	6	19	7	2	20
October.....	.....	.....	281	6	17	6	2	22
November.....	.....	.....	266	4	17	6	2	22
December.....	.....	.....	234	3	15	6	1	21
Children, under 16 years—								
January.....	.....	.....	18	7	8	1	.....	.....
February.....	.....	.....	21	8	11	1	.....	.....
March.....	.....	.....	24	8	14	1	.....	.....
April.....	.....	.....	24	3	15	2	.....	.....
May.....	.....	.....	34	3	19	3	.....	.....
June.....	.....	.....	35	8	19	4	.....	.....
July.....	.....	.....	31	8	18	4	.....	.....
August.....	.....	.....	33	8	13	3	.....	.....
September.....	.....	.....	31	7	7	2	.....	.....
October.....	.....	.....	35	8	8	1	.....	.....
November.....	.....	.....	29	8	7	1	.....	.....
December.....	.....	.....	33	8	7	1	.....	.....
Miscellaneous expenses:								
Total.....	\$360	\$1,411	\$177,417	\$15,724	\$159,990	\$71,383	\$1,261	\$23,065
Rent of works.....	.....	\$48	\$10,986	\$1,085	\$12,089	\$5,569	\$826	\$1,648
Taxes, not including internal revenue.....	\$72	\$599	\$21,981	\$1,668	\$17,039	\$7,456	\$59	\$2,291
Rent of offices, interest, insurance, and all sundry expenses not hitherto included.....	\$288	\$764	\$142,145	\$12,667	\$121,816	\$57,946	\$376	\$15,273
Contract work.....	.....	.....	\$2,305	\$304	\$3,046	\$412	.....	\$3,848

TABLE 11.—CHEESE, BUTTER, AND CONDENSED MILK, FACTORY PRODUCT, BY STATES AND TERRITORIES:
1900—Continued.

	Georgia.	Idaho.	Illinois.	Indiana.	Iowa.	Kansas.	Kentucky.	Maine.
Materials used:								
Total cost	\$10,515	\$85,140	\$10,199,429	\$711,059	\$13,501,556	\$3,062,385	\$55,447	\$1,407,050
In making butter—								
Milk bought or received from patrons—								
Pounds	1,079,040	9,431,718	791,890,812	77,424,878	1,542,368,228	393,132,184	593,485	63,459,704
Cost	\$9,792	\$62,806	\$6,118,253	\$527,849	\$10,900,707	\$2,501,074	\$5,532	\$573,989
Gathered cream—								
Pounds		53,988	4,171,210	1,219,764	45,621,241	5,521,231	919,372	13,761,653
Cost		\$3,131	\$156,172	\$46,784	\$1,559,184	\$181,579	\$45,968	\$620,016
Tubs, boxes, color, salt, etc.	\$185	\$1,374	\$154,937	\$17,189	\$378,105	\$123,401	\$1,163	\$24,397
In making cheese—								
Milk bought or received from patrons—								
Pounds		1,890,938	76,167,122	12,742,929	43,676,392	22,145,872	272,000	5,179,813
Cost		\$12,094	\$393,328	\$92,946	\$312,657	\$155,899	\$2,318	\$41,989
Boxes, salt, etc.		\$519	\$22,436	\$2,829	\$13,205	\$7,149	\$49	\$1,566
In making condensed milk—								
Milk—								
Pounds			170,785,967	712,000		361,600		5,905,000
Cost			\$1,645,363	\$5,350		\$2,892		\$53,965
Sugar—								
Pounds			14,486,574					785,370
Cost			\$787,394					\$89,268
Cans, labels, etc.			\$572,356	\$400		\$25		\$24,180
Fuel	\$551	\$3,300	\$205,416	\$13,744	\$244,332	\$57,768	\$370	\$12,112
Rent of power and heat			\$315	\$97	\$1,230	\$770		\$160
Mill supplies	\$32	\$176	\$60,493	\$1,303	\$35,298	\$5,858	\$42	\$2,630
Freight	\$5	\$640	\$112,966	\$2,068	\$56,788	\$25,920	\$5	\$7,728
Products:								
Total value	\$14,166	\$116,056	\$12,879,299	\$929,858	\$15,846,077	\$3,652,530	\$77,035	\$1,727,684
Creameries—								
Packed solid—								
Pounds	7,560	140,925	30,238,687	3,104,595	74,795,240	15,299,548	15,500	1,434,029
Value	\$1,598	\$30,430	\$6,108,308	\$607,730	\$14,434,216	\$2,650,731	\$3,485	\$307,720
Prints or rolls—								
Pounds	41,400	291,645	3,816,725	448,838	2,438,024	2,896,935	169,163	3,027,370
Value	\$9,552	\$59,699	\$782,725	\$92,220	\$177,323	\$574,587	\$43,014	\$637,275
Cream sold—								
Gallons	2,496	3,206	1,190,125	108,763	91,875	112,212	17,663	755,845
Value	\$1,978	\$1,865	\$669,185	\$58,605	\$44,776	\$53,395	\$9,000	\$534,295
Skimmed milk sold, fed, or returned to patrons—								
Pounds	384,000	2,261,966	215,740,194	15,578,805	477,164,867	106,627,436	1,147,600	8,536,314
Value	\$960	\$3,493	\$277,093	\$21,526	\$449,355	\$81,880	\$7,304	\$21,672
Casein dried, from skimmed milk—								
Pounds			1,784,559	5,760	3,800	20,000		12,500
Value			\$60,132	\$238	\$76	\$460		\$360
All other creamery products	\$78		\$23,373	\$12,409	\$12,033	\$33,504	\$11,372	\$3,482
Cheese factories—								
Standard factory (cheddar)—								
Pounds		150,932	4,324,461	988,985	3,767,490	2,192,516	8,000	553,946
Value		\$13,562	\$333,723	\$100,220	\$369,622	\$219,160	\$800	\$56,609
Other kinds—								
Pounds		43,448	4,730,658	271,133	475,147	230,194	20,000	
Value		\$4,032	\$238,261	\$25,605	\$55,056	\$23,038	\$2,000	
Whey—								
Sold—								
Pounds			7,328,516	263,000	674,313	535,000		120,000
Value			\$4,890	\$444	\$198	\$406		\$30
Otherwise used—								
Pounds		412,695	1,754,500	1,709,880	4,364,428	603,633		45,202
Value		\$1,375	\$1,236	\$715	\$3,422	\$656		\$75
All other cheese, factory products		\$1,600	\$10,571	\$856				
Condensed milk factories—								
Condensed milk—								
Pounds			71,257,449	204,000		144,640		2,373,736
Value			\$4,303,597	\$9,240		\$14,623		\$166,165
All other condensed milk, factory products			\$10,700					
Comparison of products:								
Number of establishments reporting for both years	1	5	171	41	313	62	6	33
Value for census year	\$8,640	\$17,157	\$6,782,241	\$345,054	\$6,424,916	\$3,639,037	\$74,317	\$1,251,743
Value for preceding business year	\$7,640	\$15,257	\$6,504,720	\$321,492	\$5,867,222	\$1,429,546	\$67,215	\$1,227,303
Branches:								
Cream separators	3	18	793	113	1,484	474	8	44
Factories		1	41	5	54	49		3
Separating stations		2	28	18	60	132		1
Skimming stations		1	29	6	116	126	2	4
Ice-cream plants			1			12		1
Power:								
Number of establishments reporting	3	16	492	95	843	152	4	47
Total horsepower	30	140	7,095	1,000	11,853	3,302	37	592
Owned—								
Engines—								
Steam—								
Number	3	16	543	105	913	320	4	49
Horsepower	30	140	6,798	977	11,716	3,200	37	485
Gas or gasoline—								
Number			11	3	18	8		
Horsepower			78	10	89	47		
Water wheels—								
Number						1		2
Horsepower						20		11
Electric motors—								
Number			30			2		1
Horsepower			209			14		6
Other power—								
Number				1		1		
Horsepower				5		20		
Rented—								
Electric, horsepower					48	1		
Other kinds, horsepower			10	8				
Furnished to other establishments, horsepower				15	2			

TABLE 11.—CHEESE, BUTTER, AND CONDENSED MILK, FACTORY PRODUCT BY STATES AND TERRITORIES:
1900—Continued.

	Maryland.	Massachu- setts.	Michigan.	Minnesota.	Missouri.	Montana.	Nebraska.	Nevada.	New Hampshire.
Miscellaneous expenses:									
Total	\$11,151	\$15,240	\$37,001	\$102,096	\$5,989	\$199	\$38,823	\$1,099	\$21,229
Rent of works	\$4,155	\$3,974	\$3,424	\$12,794	\$1,843	\$147	\$4,976		\$1,112
Taxes, not including internal revenue	\$1,072	\$1,916	\$6,367	\$10,214	\$912	\$30	\$4,212	\$279	\$1,980
Rent of offices, interest, insurance, and all sundry expenses not hitherto included	\$5,891	\$8,520	\$27,085	\$75,326	\$3,284	\$22	\$29,533	\$820	\$18,127
Contract work	\$30	\$80	\$125	\$3,762			\$102		\$10
Materials used:									
Total cost	\$557,647	\$1,024,575	\$3,274,264	\$7,188,711	\$329,158	\$6,022	\$1,854,228	\$127,044	\$1,226,388
In making butter—									
Milk bought or received from patrons—									
Pounds	61,470,380	24,096,955	168,778,899	827,582,793	29,425,255	804,395	176,821,039	13,960,646	99,580,500
Cost	\$497,842	\$218,027	\$1,198,949	\$5,941,138	\$198,833	\$5,467	\$1,303,697	\$107,636	\$923,800
Gathered cream—									
Pounds	862,069	15,709,294	2,816,106	14,816,175	569,905		9,941,850		2,149,851
Cost	\$37,800	\$746,985	\$103,464	\$622,232	\$25,040		\$376,326		\$97,863
Tubs, boxes, color, salt, etc	\$5,788	\$20,017	\$39,110	\$232,134	\$7,504	\$221	\$53,346	\$3,421	\$26,865
In making cheese—									
Milk bought or received from patrons—									
Pounds		2,761,420	49,985,822	25,145,631	10,879,869		3,140,000	688,425	1,200,623
Cost		\$19,433	\$760,550	\$176,359	\$75,513		\$21,242	\$4,901	\$9,982
Boxes, salt, etc		\$630	\$26,681	\$6,785	\$2,728		\$890	\$78	\$247
In making condensed milk—									
Milk—									
Pounds		324,000	45,107,250		737,140				6,354,829
Cost		\$4,320	\$447,268		\$5,200				\$63,548
Sugar—									
Pounds			7,599,220		8,000				975,651
Cost			\$379,961		\$440				\$48,732
Cans, labels, etc		\$500	\$245,816		\$5,000				\$29,121
Fuel	\$9,279	\$9,051	\$48,121	\$146,806	\$8,439	\$299	\$45,439	\$3,707	\$12,925
Rent of power and heat	\$270	\$48	\$900	\$1,480	\$108	\$13	\$2,000		\$1,745
Mill supplies	\$1,382	\$1,777	\$4,126	\$15,969	\$1,000	\$18	\$3,106	\$480	\$3,607
Freight	\$5,286	\$3,787	\$19,618	\$45,748	\$1,353	\$17	\$48,183	\$6,821	\$5,813
Products:									
Total value	\$693,795	\$1,198,159	\$3,918,995	\$8,479,896	\$431,936	\$8,418	\$2,253,893	\$148,301	\$1,467,593
Creameries—									
Packed solids—									
Pounds	1,121,807	1,888,570	7,553,059	39,145,380	1,270,604	2,000	10,077,862		2,255,816
Value	\$256,076	\$448,304	\$1,472,672	\$7,320,401	\$240,222	\$400	\$1,864,748		\$484,834
Prints or rolls—									
Pounds	1,419,909	2,703,349	267,653	2,029,089	170,012	32,238	1,648,818	623,402	2,778,454
Value	\$304,087	\$637,199	\$33,199	\$414,944	\$34,898	\$7,553	\$310,852	\$132,916	\$615,212
Cream sold—									
Gallons	167,857	86,849	131,164	370,899	12,829	502	62,158	857	102,695
Value	\$93,201	\$58,461	\$60,032	\$195,102	\$7,601	\$376	\$30,133	\$535	\$33,663
Skimmed milk sold, fed, or returned to patrons—									
Pounds	10,561,974	3,221,968	52,942,908	129,883,119	10,271,866		5,503,184	10,401,275	19,353,469
Value	\$14,196	\$8,690	\$61,703	\$152,559	\$12,883		\$4,801	\$5,562	\$31,205
Casein dried, from skimmed milk—									
Pounds	72,350	152,267		50,000					114,983
Value	\$8,461	\$7,613		\$2,000					\$3,249
All other creamery products	\$22,774	\$6,673	\$11,079	\$148,127	\$9,943	\$84	\$11,999	\$400	\$16,107
Cheese factories—									
Standard factory (cheddar)—									
Pounds		238,542	9,995,766	3,033,693	1,022,751		294,800	80,150	116,741
Value		\$23,539	\$932,776	\$217,647	\$98,163		\$29,450	\$8,888	\$11,851
Other kinds—									
Pounds		12,000	426,816	251,326	50,000		19,800		
Value		\$1,200	\$49,783	\$28,307	\$4,000		\$1,930		
Whey—									
Sold—									
Pounds			12,400,314	18,000					
Value			\$4,603	\$20					
Otherwise used—									
Pounds			9,857,733	1,125,680	448,100				
Value			\$5,910	\$722	\$321				
All other cheese factory products			\$1,421	\$67					
Condensed-milk factories—									
Condensed milk—									
Pounds		108,000	18,378,869		330,500				2,876,157
Value		\$6,480	\$1,202,817		\$23,300				\$201,831
All other condensed-milk factory products									
Comparison of products:									
Number of establishments reporting for both years	38	31	93	193	28		26	2	23
Value for census year	\$324,909	\$939,456	\$2,202,719	\$3,355,053	\$199,485		\$1,131,688	\$104,466	\$602,330
Value for preceding business year	\$282,671	\$915,390	\$2,165,987	\$2,893,052	\$183,056		\$938,532	\$89,381	\$538,070
Branches:									
Cream separators	101	28	242	940	60	4	325	9	74
Factories	10	1	19	25	4		19		3
Separating stations	25		14	45	1		128		15
Skimming stations	12	3	5	21	7		137		3
Ice-cream plants			2						
Power:									
Number of establishments reporting	79	48	217	570	61	3	92	4	47
Total horsepower	800	449	2,371	8,053	639	16	2,263	45	711
Owned—									
Engines—									
Steam—									
Number	88	45	217	594	63	2	218	4	43
Horsepower	757	455	2,324	7,876	639	14	2,126	45	551
Gas or gasoline—									
Number	1		7	2		1	25		
Horsepower	15		17	30		2	122		
Water wheels—									
Number	3	1	1	2					1
Horsepower	18	10	10	29					59
Electric motors—									
Number				2					
Horsepower				28					
Other power—									
Number				3					
Horsepower				23					

CHEESE, BUTTER, AND MILK, FACTORY PRODUCT.

TABLE 11.—CHEESE, BUTTER, AND CONDENSED MILK, FACTORY PRODUCT, BY STATES AND TERRITORIES: 1900—Continued.

	Maryland.	Massachusetts.	Michigan.	Minnesota.	Missouri.	Montana.	Nebraska.	Nevada.	New Hampshire.
Power—Continued.									
Total horsepower—Continued.									
Rented—									
Electric horsepower.....		3	20	14			15		10
Other kinds of horsepower.....	10	1		53					100
Furnished to other establishments, horsepower.....							12		
Establishments classified by number of persons employed, not including proprietors and firm members:									
Total number of establishments.....	84	50	286	596	79	3	93	4	53
No employees.....	11	1	35	80	15		2		4
Under 5.....	71	41	238	552	62	3	78	3	37
5 to 20.....	2	8	11	13	2		11	1	11
21 to 50.....				1					1
51 to 100.....			1				1		
101 to 250.....			1				1		
251 to 500.....									
501 to 1,000.....									
	New Jersey.	New York.	North Dakota.	Ohio.	Oklahoma.	Oregon.	Pennsylvania.	Rhode Island.	South Dakota.
Number of establishments.....	53	1,908	21	479	5	68	749	3	138
Character of organization:									
Individual.....	32	1,274	10	232		40	394		25
Firm and limited partnership.....	9	280	3	97	3	14	153		14
Incorporated company.....	5	195	6	63	2	9	83	2	41
Miscellaneous.....	7	159	2	87		5	119	1	58
Capital:									
Total.....	\$212,284	\$7,084,130	\$51,515	\$1,041,093	\$12,762	\$223,409	\$3,033,128	\$7,800	\$460,982
Land.....	\$18,735	\$359,122	\$1,095	\$55,547	\$1,320	\$10,855	\$126,836	\$400	\$12,192
Buildings.....	\$73,810	\$2,571,475	\$14,750	\$324,312	\$3,900	\$42,257	\$896,453	\$1,850	\$150,143
Machinery, tools, and implements.....	\$97,040	\$2,342,306	\$26,800	\$385,546	\$5,600	\$98,944	\$1,268,416	\$3,350	\$243,290
Cash and sundries.....	\$32,099	\$1,811,227	\$8,870	\$275,688	\$1,942	\$71,853	\$741,423	\$2,200	\$56,207
Proprietors and firm members.....	55	1,772	13	391	5	60	692		44
Salaries of officials, clerks, etc.:									
Total number.....	14	227	5	89		20	127	4	95
Total salaries.....	\$4,350	\$122,292	\$1,250	\$19,088		\$8,981	\$45,596	\$1,125	\$11,786
Officers of corporations—									
Number.....	4	70	1	21		8	40		59
Salaries.....	\$320	\$51,017	\$60	\$5,655		\$4,533	\$10,024		\$6,056
General superintendents, managers, clerks, etc.—									
Total number.....	10	157	4	68		12	87	4	36
Total salaries.....	\$4,030	\$71,275	\$1,190	\$13,433		\$4,448	\$35,572	\$1,125	\$5,730
Men—									
Number.....	9	146	4	66		10	79	3	35
Salaries.....	\$3,910	\$67,746	\$1,190	\$13,273		\$4,185	\$34,016	\$1,085	\$5,250
Women—									
Number.....	1	11		2		2	8	1	1
Salaries.....	\$120	\$3,529		\$160		\$263	\$1,556	\$40	\$480
Wage-earners, including pieceworkers, and total wages:									
Greatest number employed at any one time during the year.....	94	3,669	20	627	5	93	1,294	9	206
Least number employed at any one time during the year.....	84	2,853	19	515	3	82	1,120	9	163
Average number.....	74	2,439	13	389	3	62	976	9	148
Wages.....	\$36,852	\$1,157,081	\$7,725	\$189,804	\$1,520	\$27,302	\$445,708	\$3,427	\$77,401
Men, 16 years and over—									
Average number.....	74	2,085	13	376	3	61	922	9	147
Wages.....	\$36,852	\$1,063,837	\$7,725	\$186,621	\$1,520	\$27,202	\$435,101	\$3,427	\$77,201
Women, 16 years and over—									
Average number.....		345		11		1	35		
Wages.....		\$91,917		\$2,913		\$100	\$8,629		
Children, under 16 years—									
Average number.....		9		2			19		1
Wages.....		\$1,327		\$270			\$1,978		\$200
Average number of wage-earners, including pieceworkers, employed during each month:									
Men, 16 years and over—									
January.....	76	1,119	9	194	3	47	711	9	117
February.....	76	1,165	9	193	3	48	725	9	117
March.....	78	1,481	9	228	3	51	798	9	125
April.....	80	2,354	11	392	3	67	993	9	156
May.....	85	2,940	16	553	5	83	1,154	9	186
June.....	75	2,865	16	546	3	72	1,105	9	183
July.....	73	2,749	18	529	3	71	1,072	9	173
August.....	72	2,646	19	494	3	69	1,042	9	169
September.....	66	2,483	15	471	3	62	987	9	156
October.....	69	2,257	14	398	3	62	921	9	139
November.....	68	1,745	11	298	3	52	820	9	124
December.....	70	1,214	9	211	3	48	735	9	116
Women, 16 years and over—									
January.....		275		4		1	26		
February.....		313		5		1	31		
March.....		340		6		1	32		
April.....		393		12		1	28		
May.....		478		25		1	37		
June.....		494		19		1	37		
July.....		369		17		1	39		
August.....		352		16		1	40		
September.....		329		9		1	43		
October.....		314		6		1	41		
November.....		279		3		1	31		
December.....		266		3		1	29		

TABLE 11.—CHEESE, BUTTER, AND CONDENSED MILK, FACTORY PRODUCT, BY STATES AND TERRITORIES:
1900—Continued.

	New Jersey.	New York.	North Dakota.	Ohio.	Oklahoma.	Oregon.	Pennsylvania.	Rhode Island.	South Dakota.
Average number of wage-earners, including pieceworkers, employed during each month—Continued.									
Children, under 16 years—									
January		4		2			23		1
February		4		2			25		1
March		8		2			26		1
April		8		2			18		1
May		15		2			19		1
June		10		2			20		1
July		11		2			20		1
August		9		2			20		1
September		13		2			16		1
October		11		2			16		1
November		7		2			15		1
December		5		2			15		1
Miscellaneous expenses:									
Total	\$9,219	\$37,303	\$1,281	\$35,214	\$185	\$11,852	\$116,195	\$628	\$18,523
Rent of works	\$1,372	\$31,270	\$55	\$6,865	\$58	\$3,314	\$23,823	\$315	\$583
Taxes, not including internal revenue	\$1,165	\$31,715	\$208	\$5,205	\$97	\$1,118	\$11,868	\$80	\$2,555
Rent of offices, interest, insurance, and all sundry expenses not hitherto included	\$6,632	\$27,752	\$908	\$22,884	\$30	\$7,230	\$79,344	\$233	\$14,856
Contract work	\$50	\$566		\$260		\$190	\$1,155		\$524
Materials used:									
Total cost	\$488,105	\$22,486,869	\$96,236	\$3,054,764	\$13,749	\$508,793	\$8,711,635	\$28,938	\$1,005,237
In making butter—									
Milk bought or received from patrons—									
Pounds	45,776,223	908,604,425	9,622,428	197,557,284	1,322,000	39,173,740	\$24,301,194		136,419,306
Cost	\$420,319	\$7,448,865	\$71,971	\$1,477,372	\$7,752	\$331,085	\$7,386,725		\$887,767
Gathered cream—									
Pounds	40,000	2,496,780		5,700,266		1,200,505	3,587,900	530,112	114,857
Cost	\$1,600	\$107,103		\$154,985		\$60,817	\$151,363	\$28,252	\$13,807
Tubs, boxes, color, salt, etc.	\$6,118	\$186,421	\$4,352	\$37,019	\$232	\$5,124	\$114,126	\$292	\$31,603
In making cheese—									
Milk bought or received from patrons—									
Pounds	1,000,000	1,252,585,286	2,258,736	177,156,588	652,570	11,324,119	96,578,519		4,322,623
Cost	\$7,000	\$10,354,330	\$14,845	\$1,283,449	\$4,722	\$94,201	\$904,631		\$27,627
Boxes, salt, etc.	\$260	\$305,981	\$710	\$41,493	\$178	\$3,104	\$26,180		\$929
In making condensed milk—									
Milk—									
Pounds	8,335,500	148,409,886		300,000			7,075,622		
Cost	\$38,350	\$2,001,794		\$2,100			\$81,129		
Sugar—									
Pounds	20,000	23,811,929		50,000			994,000		
Cost	\$1,000	\$1,217,102		\$2,650			\$49,700		
Cans, labels, etc.	\$300	\$517,893		\$1,500			\$55,716		
Fuel	\$10,640	\$256,402	\$2,639	\$38,120	\$705	\$6,669	\$108,658	\$307	\$33,094
Rent of power and heat		\$417		\$149		\$266	\$814		\$75
Mill supplies	\$1,152	\$36,494	\$1,146	\$4,749	\$125	\$896	\$16,629	\$82	\$3,225
Freight	\$1,366	\$54,077	\$623	\$11,228	\$35	\$6,631	\$25,804	\$5	\$7,107
Products:									
Total value	\$610,006	\$26,557,888	\$122,128	\$3,808,996	\$18,994	\$639,222	\$10,290,006	\$39,569	\$1,199,493
Creameries—									
Packed solid—									
Pounds	587,424	33,068,820	361,224	6,802,419		425,727	13,458,287	6,000	6,110,726
Value	\$128,435	\$6,471,515	\$74,839	\$1,335,512		\$95,733	\$2,767,190	\$1,200	\$1,184,228
Prints or rolls—									
Pounds	738,095	7,625,026	101,964	1,285,212	63,200	1,549,630	23,678,874	142,195	61,831
Value	\$173,606	\$1,615,095	\$20,393	\$304,039	\$10,640	\$344,866	\$5,536,722	\$34,780	\$14,739
Cream sold—									
Gallons	404,917	1,492,926	300	787,331	227	58,750	686,316	9,991	1,596
Value	\$212,570	\$784,623	\$120	\$396,748	\$158	\$10,141	\$396,108	\$2,980	\$1,070
Skimmed milk sold, fed, or returned to patrons—									
Pounds	10,801,835	294,465,866	3,090,033	50,554,932		3,479,764	200,182,662		9,690,340
Value	\$16,482	\$326,726	\$5,285	\$51,453		\$19,056	\$244,100		\$8,670
Casein dried, from skimmed milk—									
Pounds	21,320	6,223,085		73,600			3,103,281		
Value	\$1,091	\$154,272		\$3,632			\$116,760		
All other creamery products	\$16,732	\$70,034	\$90	\$25,955	\$1,000	\$2,790	\$78,008	\$600	\$3,437
Cheese factories—									
Standard factory (cheddar)—									
Pounds	100,000	113,629,093	225,399	14,570,866	26,578	1,106,505	9,333,008		420,779
Value	\$9,000	\$10,913,408	\$21,291	\$1,304,795	\$3,168	\$126,827	\$394,724		\$37,299
Other kinds—									
Pounds		13,756,939		3,585,661	39,800	89,059	934,455		
Value		\$1,313,285		\$350,928	\$4,033	\$9,054	\$54,009		
Whey—									
Sold—									
Pounds		10,176,310		5,276,552		350,000	94,950		
Value		\$8,707		\$3,836		\$335	\$475		
Otherwise used—									
Pounds		25,246,487	590,300	16,814,646		755,891	6,364,328		
Value		\$87,314	\$110	\$8,231		\$420	\$4,762		
All other cheese factory products		\$10,996		\$15,822			\$1,318		
Condensed milk factories—									
Condensed milk—									
Pounds	1,072,000	75,447,148		100,000			2,362,000		
Value	\$62,040	\$4,801,223		\$6,500			\$255,855		
All other condensed milk factory products				\$1,550					
Comparison of products:									
Number of establishments reporting or both years	20	703	2	179	1	33	313	3	55
Value for census year	\$26,252	\$14,557,565	\$32,889	\$1,409,035	\$2,000	\$467,344	\$5,748,044	\$39,569	\$590,576
Value for preceding business year	\$249,535	\$13,994,2	\$25,125	\$1,316,282	\$2,000	\$376,536	\$5,612,391	\$41,609	\$480,710
Branches:									
Cream separators	58	1,081	16	261	3	51	1,033	2	165
Factories	2	159		20		7	50		6
Separating stations	3	114		5		5	169		6
Skimming stations	1	87		31		5	81		19
Ice-cream plants		22					3		

TABLE 11.—CHEESE, BUTTER, AND CONDENSED MILK, FACTORY PRODUCT, BY STATES AND TERRITORIES: 1900—Continued.

	New Jersey.	New York.	North Dakota.	Ohio.	Oklahoma.	Oregon,	Pennsylvania.	Rhode Island.	South Dakota.
Power:									
Number.....	50	1,289	17	286	8	60	692	3	125
Total horsepower.....	607	18,907	191	2,569	82	491	8,868	18	1,579
Owned—									
Engines—									
Steam—									
Number.....	54	1,425	17	807	3	56	823	3	180
Horsepower.....	605	13,052	191	2,553	82	461	8,402	18	1,499
Gas or gasoline—									
Number.....	1	6		1			6		9
Horsepower.....	2	54		4			86		74
Water wheels—									
Number.....		35				1	24		3
Horsepower.....		709				2	286		6
Electric motors—									
Number.....		1					1		
Horsepower.....		2					10		
Other power—									
Number.....		9							
Horsepower.....		82							
Rented—									
Electric horsepower.....						28	85		
Other kinds of horsepower.....		8		12					
Furnished to other establishments, horsepower.....		6				5	44		
Establishments classified by number of persons employed, not including proprietors and firm members:									
Total number of establishments.....	58	1,908	21	479	5	68	749	3	138
No employees.....	9	328	5	96	2	13	88		6
Under 5.....	37	1,514	16	376	3	51	680	1	126
5 to 20.....	7	51		4		4	28	2	5
21 to 50.....		6		3			2		1
51 to 100.....		4					1		
101 to 250.....		3							
251 to 500.....									
501 to 1,000.....		2							
	Tennessee.	Texas.	Utah.	Vermont.	Virginia.	Washington.	West Virginia.	Wisconsin.	All other states. ¹
Number of establishments.....	12	12	57	255	10	60	4	2,018	4
Character of organization:									
Individual.....	8	10	17	96	5	32	2	1,118	1
Firm and limited partnership.....	1		7	23	3	12	1	234	
Incorporated company.....	5	2	31	85	2	10		289	2
Miscellaneous.....	3		2	51		6	1	377	1
Capital:									
Total.....	\$36,175	\$41,670	\$269,247	\$1,222,892	\$15,145	\$304,178	\$5,895	\$4,917,940	\$16,216
Land.....	\$2,455	\$4,970	\$11,351	\$53,712	\$300	\$30,803	\$300	\$220,406	\$360
Buildings.....	\$9,500	\$15,500	\$30,361	\$315,163	\$1,750	\$41,755	\$1,200	\$1,787,497	\$6,600
Machinery, tools, and implements.....	\$19,175	\$16,300	\$113,007	\$494,522	\$7,850	\$104,259	\$2,825	\$1,850,428	\$7,600
Cash and sundries.....	\$5,045	\$5,900	\$64,028	\$350,495	\$4,685	\$127,861	\$1,510	\$1,079,609	\$1,156
Proprietors and firm members:									
Salaried officials, clerks, etc.:									
Total number.....	6	3	54	137		35		414	2
Total salaries.....	\$2,340	\$1,800	\$15,976	\$37,514		\$27,159		\$69,676	\$375
Officers of corporations—									
Number.....	2	1	32	81		6		128	
Salaries.....	\$450	\$300	\$3,230	\$13,277		\$3,660		\$24,393	
General superintendents, managers, clerks, etc.:									
Total number.....	4	2	22	56		29		286	2
Total salaries.....	\$1,890	\$1,500	\$12,746	\$24,237		\$23,499		\$45,283	\$375
Men—									
Number.....	4	2	22	50		28		285	2
Salaries.....	\$1,890	\$1,500	\$12,746	\$22,967		\$22,999		\$45,043	\$375
Women—									
Number.....				6		1		1	
Salaries.....				\$1,270		\$500		\$240	
Wage-earners, including pieceworkers, and total wages:									
Greatest number employed at any one time during the year.....	24	23	194	633	9	200	4	2,491	6
Least number employed at any one time during the year.....	24	20	164	446	8	130	4	2,027	5
Average number.....	20	18	159	522	8	146	2	1,780	5
Wages.....	\$4,193	\$3,870	\$63,135	\$236,377	\$2,158	\$80,935	\$480	\$393,499	\$1,610
Men, 16 years and over—									
Average number.....	14	18	152	509	8	127	1	1,742	5
Wages.....	\$3,755	\$3,870	\$61,963	\$232,894	\$2,158	\$76,115	\$320	\$384,673	\$1,610
Women, 16 years and over—									
Average number.....	3		7	13		16	1	25	
Wages.....	\$258		\$1,172	\$3,483		\$4,495	\$160	\$6,479	
Children, under 16 years—									
Average number.....	3					3		13	
Wages.....	\$180					\$325		\$2,347	
Average number of wage-earners, including pieceworkers, employed during each month:									
Men, 16 years and over—									
January.....	14	20	147	361	5	128		1,021	5
February.....	14	20	148	364	5	132		1,033	5
March.....	18	19	157	406	6	139		1,203	5
April.....	18	20	162	481	7	148		1,795	5
May.....	18	23	173	603	8	160		2,315	5
June.....	14	19	161	650	9	163		2,323	6
July.....	14	19	148	641	9	120		2,262	6
August.....	14	18	146	627	9	119		2,207	6
September.....	14	16	144	603	9	115	3	2,108	6
October.....	12	15	142	542	9	104	3	1,902	5
November.....	12	18	144	446	8	101	2	1,587	5
December.....	12	15	151	380	7	105	2	1,144	6

¹ Includes establishments distributed as follows: Mississippi, 2; Wyoming, 2.

MANUFACTURES.

TABLE 11.—CHEESE, BUTTER, AND CONDENSED MILK, FACTORY PRODUCT, BY STATES AND TERRITORIES:
1900—Continued.

	Tennessee.	Texas.	Utah.	Vermont.	Virginia.	Washington.	West Virginia.	Wisconsin.	All other states. ¹
Average number of wage-earners, including pieceworkers, employed during each month—Continued.									
Women, 16 years and over—									
January.....	2		6	9		28		14	
February.....	2		6	9		26		15	
March.....	2		6	10		29		18	
April.....	3		6	12		27		22	
May.....	3		10	20		28	2	32	
June.....	3		10	20		28	2	38	
July.....	3		9	20		3	2	32	
August.....	3		9	17		3	2	32	
September.....	3		6	14		3		32	
October.....	2		6	10		3		28	
November.....	2		6	9		3		23	
December.....	2		6	8		10		14	
Children, under 16 years—									
January.....	3					2		6	
February.....	3					2		6	
March.....	3					3		6	
April.....	3					3		10	
May.....	3					3		19	
June.....	3					3		20	
July.....	3					3		20	
August.....	3					3		19	
September.....	3					3		19	
October.....	3					3		13	
November.....	3					2		11	
December.....	3					2		7	
Miscellaneous expenses:									
Total.....	\$1,113	\$1,648	\$13,788	\$66,992	\$930	\$16,516	\$80	\$157,123	\$24
Rent of works.....	\$100	\$870	\$3,544	\$1,905	\$243	\$1,615	\$40	\$10,285	
Taxes, not including internal revenue.....	\$144	\$232	\$1,628	\$5,373	\$107	\$1,904	\$15	\$22,022	\$9
Rent of offices, interest, insurance, and all sundry expenses not hitherto included.....	\$869	\$546	\$8,060	\$54,511	\$580	\$9,997	\$25	\$113,310	\$157
Contract work.....			\$556	\$2,203				\$2,506	
Materials used:									
Total cost.....	\$49,846	\$51,454	\$550,096	\$4,885,289	\$39,951	\$932,190	\$10,228	\$16,623,859	\$11,404
In making butter—									
Milk bought or received from patrons—									
Pounds.....	5,621,753	6,804,350	59,373,117	382,646,771	4,511,081	50,075,824	882,000	1,199,209,152	4,528,076
Cost.....	\$46,728	\$12,193	\$387,651	\$3,262,211	\$34,100	\$433,250	\$6,720	\$8,929,413	\$10,508
Gathered cream—									
Pounds.....		58,400	151,780	22,868,877		3,071,243		27,026,227	
Cost.....		\$2,336	\$9,360	\$888,955		\$206,173		\$1,047,375	
Tubs, boxes, color, salt, etc.....	\$829	\$774	\$8,542	\$153,103	\$733	\$11,644	\$203	\$275,272	\$32
In making cheese—									
Milk bought or received from patrons—									
Pounds.....	66,900	582,900	18,549,169	44,691,588	600,000	14,735,570	346,252	765,184,808	10,400
Cost.....	\$447	\$3,966	\$124,701	\$378,071	\$3,600	\$130,636	\$3,121	\$5,073,436	\$65
Boxes, salt, etc.....	\$20	\$213	\$4,534	\$13,516	\$112	\$3,924	\$66	\$202,190	\$16
In making condensed milk—									
Milk—									
Pounds.....				4,940,744		7,200,000		9,368,200	
Cost.....				\$47,967		\$64,800		\$86,052	
Sugar—				769,010				1,283,005	
Pounds.....				\$38,450				\$48,090	
Cost.....				\$22,370				\$50,299	
Cans, labels, etc.....				\$57,687	\$790	\$59,900	\$113	\$257,676	\$137
Fuel.....	\$1,176	\$1,751	\$8,570	\$316		\$11,945		\$50,299	
Rent of power and heat.....			\$816	\$472	\$60	\$964		\$825	
Mill supplies.....	\$132	\$176	\$1,866	\$8,627	\$98	\$1,649	\$5	\$24,607	\$34
Freight.....	\$515	\$45	\$4,556	\$13,360	\$458	\$7,305		\$28,724	\$29
Products:									
Total value.....	\$69,722	\$81,017	\$713,889	\$5,656,265	\$51,942	\$1,100,239	\$12,284	\$20,120,147	\$15,970
Creameries—									
Packed solid—									
Pounds.....	154,071	70,450	392,865	17,866,750	87,700	1,100,070	40,000	55,826,290	73,725
Value.....	\$32,768	\$14,325	\$62,872	\$3,611,065	\$17,536	\$234,775	\$8,000	\$10,714,115	\$14,150
Prints or rolls—									
Pounds.....	53,752	182,264	2,186,349	5,086,631	82,821	2,098,351	1,000	5,987,212	1,300
Value.....	\$11,074	\$42,460	\$437,412	\$1,101,226	\$19,729	\$508,003	\$150	\$1,207,799	\$1,050
Cream sold—									
Gallons.....	37,257	21,665	39,860	215,839	12,623	54,634		251,321	300
Value.....	\$22,028	\$9,063	\$26,505	\$152,209	\$7,317	\$48,977		\$123,678	\$300
Skimmed milk sold, fed, or returned to patrons—									
Pounds.....	2,611,627	900,090	10,300,788	114,219,796	400,000	15,300,851		391,665,003	58,000
Value.....	\$2,420	\$3,300	\$10,939	\$115,663	\$1,000	\$15,896		\$458,187	\$297
Casein dried, from skimmed milk—									
Pounds.....				399,200				101,800	
Value.....				\$22,298				\$2,890	
All other creamery products.....	\$774	\$9,020	\$1,106	\$15,037	\$900	\$1,486		\$29,459	\$6
Cheese factories—									
Standard factory (cheddar)—									
Pounds.....	6,201	58,290	1,874,179	4,063,063	57,000	1,436,127		48,278,378	1,000
Value.....	\$620	\$6,574	\$174,571	\$406,764	\$5,400	\$169,285		\$4,534,908	\$150
Other kinds—									
Pounds.....				645,042		46,000	40,860	29,470,302	
Value.....				\$66,314		\$4,740	\$2,746,273		
Whey—									
Sold—									
Pounds.....			320,200					6,410,260	8,500
Value.....			\$200					\$4,706	\$21
Otherwise used—									
Pounds.....	51,000		1,020,000	8,142,467		72,000		79,495,694	
Value.....	\$40		\$172	\$7,650		\$72		\$51,438	
All other cheese factory products.....		\$75	\$112	\$1,809		\$5	\$50	\$16,069	
Condensed milk factories—									
Condensed milk—									
Pounds.....				1,973,556		1,962,500		3,466,516	
Value.....				\$135,720		\$157,000		\$231,225	
All other condensed milk factory products.....				\$20,000					

¹ Includes establishments distributed as follows: Mississippi, 2; Wyoming, 2.

CHEESE, BUTTER, AND MILK, FACTORY PRODUCT.

TABLE 11.—CHEESE, BUTTER, AND CONDENSED MILK, FACTORY PRODUCT, BY STATES AND TERRITORIES: 1900—Continued.

	Tennessec.	Texas.	Utah.	Vermont.	Virginia.	Washing- ton.	West Virginia.	Wisconsin.	All other states. ¹
Comparison of products:									
Number of establishments reporting for both years	6	4	22	104	4	28	2	580	4
Value for census year	\$31,124	\$25,440	\$365,555	\$2,882,022	\$22,807	\$576,117	\$3,052	\$6,214,917	\$15,979
Value for preceding business year	\$29,150	\$19,031	\$310,020	\$2,531,382	\$21,030	\$493,218	\$2,982	\$5,460,111	\$15,350
Branches:									
Cream separators	13	7	54	382	5	74	1	1,374	2
Factories			2	22		10		113	
Separating stations			6	155		9		97	
Skimming stations	1		8	24		4		181	
Ice-cream plants	1			24				7	
Power:									
Number	9	6	55	209	7	47	1	992	3
Total horsepower	83	84	616	3,039	48	526	12	12,430	26
Owned—									
Engines—									
Steam—									
Number	9	6	58	247	6	51	1	1,109	3
Horsepower	83	64	546	3,217	43	476	12	12,187	26
Gas or gasoline—									
Number		1		1		1		26	
Horsepower		20		4		2		123	
Water wheels—									
Number			4	14		4		7	
Horsepower			60	255		17		79	
Electric motors—									
Number				1				2	
Horsepower				15				17	
Other power—									
Number				7				5	
Horsepower				64				20	
Rented—									
Electric horsepower			10		5	31		4	
Other kinds of horsepower				84					
Furnished to other establishments, horsepower									
Establishments classified by number of persons employed, not including proprietors and firm members:									
Total number of establishments	12	12	57	255	10	60	4	2,018	4
No employees	1	1	6	23	3	15	2	373	
Under 5	10	10	30	200	7	39	2	1,602	4
5 to 20	1	1	20	30		4		39	
21 to 50				1		2		4	
51 to 100									
101 to 250				1					
251 to 500									
501 to 1,000									

¹Includes establishments distributed as follows: Mississippi, 2; Wyoming, 2.

MANUFACTURES.

TABLE 12.—CHEESE AND BUTTER, URBAN DAIRY PRODUCT: 1900.

	United States.	California.	Illinois.	Kentucky.	Maryland.	Michigan.	Missouri.	New York.	Ohio.	Pennsylvania.	All other states. ¹
Number of establishments.....	113	8	7	18	4	4	36	20	5	5	6
Character of organization:											
Individual.....	84	3	6	10	4	3	33	12	2	3	2
Firm and limited partnership.....	16	4	1	2		1		2	3	2	2
Incorporated company.....	13	1	1				3	6			2
Capital:											
Total.....	\$204,851	\$12,798	\$4,414	\$1,022	\$1,800	\$15,900	\$15,435	\$64,161	\$14,080	\$11,682	\$60,559
Land.....	\$29,875			\$175	\$480	\$5,000	\$3,150	\$4,850	\$7,820	\$2,500	\$5,900
Buildings.....	\$42,246	\$500		\$250	\$1,070	\$6,250	\$2,950	\$11,391	\$800	\$4,500	\$14,535
Machinery, tools, and implements.....	\$69,485	\$8,620	\$2,914	\$565	\$195	\$2,150	\$4,735	\$22,695	\$2,925	\$3,150	\$21,536
Cash and sundries.....	\$53,245	\$3,678	\$1,500	\$3,032	\$55	\$2,500	\$4,600	\$25,225	\$2,585	\$1,532	\$18,583
Proprietors and firm members.....	117	12	6	20	4	5	34	16	9	7	4
Salaried officials, clerks, etc.:											
Total number.....	10		1	1				4		2	2
Total salaries.....	\$3,730		\$800	\$75				\$941		\$480	\$1,484
Officers of corporations—											
Number.....	3		1					2			
Salaries.....	\$1,540		\$800					\$740			
General superintendents, managers, clerks, etc.—											
Total number.....	7			1				2		2	2
Total salaries.....	\$2,190			\$75				\$201		\$480	\$1,434
Men—											
Number.....	5							1		2	2
Salaries.....	\$2,011							\$97		\$480	\$1,434
Women—											
Number.....	2			1				1			
Salaries.....	\$179			\$75				\$104			
Wage-earners, including pieceworkers, and total wages:											
Greatest number employed at any one time during the year.....	99	5	6	9		3	15	35	8	4	14
Least number employed at any one time during the year.....	79	5	6	9		3	15	19	8	4	10
Average number.....	66	4	3	9		1	15	14	7	3	10
Wages.....	\$25,109	\$1,809	\$990	\$2,726		\$800	\$4,897	\$7,120	\$2,152	\$991	\$4,124
Men, 16 years and over—											
Average number.....	57	3	3	9		1	13	12	4	3	9
Wages.....	\$23,267	\$1,529	\$990	\$2,726		\$800	\$4,527	\$6,790	\$1,440	\$991	\$3,974
Women, 16 years and over—											
Average number.....	8	1					2	2	3		
Wages.....	\$1,692	\$280					\$370	\$380	\$712		
Children, under 16 years—											
Average number.....	1										1
Wages.....	\$150										\$150
Average number of wage-earners, including pieceworkers employed during each month:											
Men 16 years and over—											
January.....	47	2	2	9			13	19	3	1	7
February.....	48	2	3	9			13	9	3	2	7
March.....	53	4	3	9			13	9	3	2	10
April.....	62	4	4	9		3	13	10	4	3	12
May.....	80	4	6	9		3	13	24	5	4	12
June.....	77	3	4	9		3	13	27	4	4	10
July.....	60	2	2	10		3	13	12	4	4	10
August.....	55	3	2	10		3	13	8	3	4	9
September.....	53	3	1	10		3	13	8	4	4	7
October.....	48	3	1	10			13	8	3	3	7
November.....	47	3	1	10			13	7	3	3	7
December.....	54	3	1	10			13	10	3	3	7
Women 16 years and over—											
January.....	7	1					2	1	3		
February.....	7	1					2	1	3		
March.....	7	1					2	1	3		
April.....	7	1					2	1	3		
May.....	9	1					2	3	3		
June.....	9	1					2	3	3		
July.....	4	1					2	3	3		
August.....	10	1					2	4	3		
September.....	10	1					2	4	3		
October.....	10	1					2	4	3		
November.....	9	1					2	3	3		
December.....	7	1					2	3	3		
Children under 16 years—											
January.....	1										1
February.....	1										1
March.....	1										1
April.....	1										1
May.....	1										1
June.....	1										1
July.....	1										1
August.....	1										1
September.....	1										1
October.....	1										1
November.....	1										1
December.....	1										1
Miscellaneous expenses:											
Total.....	\$15,976	\$1,297	\$974	\$1,992	\$91	\$213	\$3,859	\$4,128	\$894	\$452	\$2,076
Rent of works.....	\$9,056	\$1,076	\$594	\$1,849	\$60	\$110	\$2,272	\$2,343	\$160	\$222	\$370
Taxes, not including internal revenue.....	\$948	\$34	\$30	\$10	\$25	\$92	\$147	\$240	\$124	\$36	\$210
Rent of offices, insurance, interest, and all sundry expenses not hitherto included.....	\$5,722	\$37	\$350	\$133	\$6	\$11	\$1,440	\$1,545	\$610	\$194	\$1,336
Contract work.....	\$250	\$150									\$100
Materials used:											
Total cost.....	\$310,005	\$43,525	\$19,931	\$27,440	\$1,371	\$12,225	\$30,800	\$111,793	\$8,781	\$8,411	\$45,728
In making butter—											
Milk bought or received from patrons—											
Pounds.....	20,104,778	2,333,320	1,880,800	1,481,621	48,600	1,156,800	1,512,800	6,801,317	813,900	522,000	3,603,620
Cost.....	\$197,021	\$21,747	\$17,076	\$17,774	\$486	\$9,807	\$12,704	\$68,583	\$9,989	\$4,800	\$36,450
Gathered cream—											
Pounds.....	1,066,756	309,544	37,000	198,445	15,252	25,584	260,751	18,300	28,760	76,430	96,600
Cost.....	\$58,649	\$20,640	\$1,650	\$9,069	\$355	\$1,248	\$9,859	\$1,074	\$1,470	\$3,057	\$4,727
Tubs, boxes, color, salt, etc.....	\$7,240	\$363	\$146	\$457	\$12	\$170	\$585	\$1,648	\$144	\$250	\$3,465

¹ Includes establishments distributed as follows: Connecticut, 1; Indiana, 1; Massachusetts, 1; Tennessee, 1; West Virginia, 1; Wisconsin, 1.

CHEESE, BUTTER, AND MILK, FACTORY PRODUCT.

TABLE 12.—CHEESE AND BUTTER, URBAN DAIRY PRODUCT: 1900—Continued.

	United States.	California.	Illinois.	Kentucky.	Maryland.	Michigan.	Missouri.	New York.	Ohio.	Pennsylvania.	All other states. ¹
Materials used—Continued.											
Total cost—Continued.											
In making cheese—											
Milk bought or received from patrons—											
Pounds	7,415,499		38,000			25,500	3,670,138	3,681,861			
Cost	\$44,755		\$140			\$255	\$6,983	\$37,377			
Boxes, salt, etc	\$823		\$2			\$7	\$209	\$605			
Fuel	\$3,978	\$423	\$126	\$140	\$16	\$214	\$280	\$1,669	\$155	\$275	\$730
Rent of power and heat	\$342	\$185	\$166				\$85	\$310			\$96
Mill supplies	\$882	\$57	\$25				\$10	\$134	\$23	\$29	\$70
Freight	\$1,315	\$110			\$2	\$490	\$135	\$388			\$190
Products:											
Total value	\$415,928	\$50,681	\$26,494	\$40,877	\$2,120	\$17,964	\$44,276	\$136,835	\$16,745	\$18,959	\$61,027
Butter—											
Packed solid—											
Pounds	334,588	2,000	18,300	25,700	1,820	22,780	20,990	132,620	2,240	17,000	91,188
Value	\$72,360	\$600	\$3,660	\$6,005	\$455	\$4,609	\$4,330	\$27,293	\$448	\$4,250	\$20,704
Prints or rolls—											
Pounds	492,882	163,686	33,100	81,296	2,980	6,000	57,200	66,138	27,450	19,720	35,302
Value	\$123,302	\$41,511	\$8,174	\$20,406	\$670	\$1,200	\$18,852	\$15,537	\$6,860	\$4,470	\$10,622
Cream sold—											
Gallons	164,114	4,535	22,700	5,616		13,500	17,918	54,315	4,850	16,850	23,830
Value	\$112,092	\$5,619	\$11,880	\$3,088		\$9,600	\$8,700	\$42,961	\$3,090	\$8,160	\$18,994
Skimmed milk, sold, fed, or returned to patrons—											
Pounds	5,517,877	351,200	752,000	645,912		1,745,000	591,800	476,285	284,000	14,760	656,920
Value	\$24,008	\$1,158	\$2,605	\$5,223		\$2,125	\$6,924	\$1,585	\$940	\$2,041	\$1,407
Casein dried from skimmed milk—											
Pounds	12,889	310		2,400				9,179	1,000		
Value	\$710	\$81		\$120				\$459	\$100		
All other butter factory products	\$32,222	\$1,712		\$6,035	\$995	\$180	\$3,505	\$5,200	\$5,307	\$38	\$9,800
Cheese—											
Standard factory (cheddar)—											
Pounds	360,450							360,450			
Value	\$36,050							\$36,050			
Other kinds—											
Pounds	301,714		3,300			3,000	246,701	48,713			
Value	\$14,691		\$175			\$300	\$6,376	\$7,750			
Whey—											
Sold—											
Pounds	75,000						75,000				
Value	\$75						\$75				
All other cheese factory products	\$508						\$508				
Equipment:											
Cream separators	36	5	3					11	4	4	9
Branch factories	1										1
Separating stations	2							2			
Comparison of products:											
Establishments reporting for both years	81	4	3	13	2	2	34	12	3	4	4
Value for census year	\$288,615	\$35,052	\$5,390	\$32,823	\$1,050	\$2,734	\$32,962	\$111,474	\$12,117	\$16,344	\$35,669
Value for preceding business year	\$258,227	\$28,802	\$5,110	\$28,742	\$985	\$2,600	\$30,315	\$100,104	\$12,109	\$14,400	\$35,000
Power:											
Number of establishments reporting	45	8	3			4	4	12	4	5	5
Total horsepower	328	46	18			29	20	107	25	23	59
Owned—											
Engines—											
Steam—											
Number	35	4				3	2	12	4	5	5
Horsepower	280	41				27	9	99	26	23	55
Gas or gasoline—											
Number	3					1	1	1			
Horsepower	10					2	5	3			
Electric motors—											
Number	2						1	1			
Horsepower	11						6	5			
Rented—											
Electric, horsepower	27	5	18								4
Establishments classified by number of persons employed, not including proprietors or firm members:											
Total number of establishments	113	8	7	18	4	4	36	20	5	5	6
No employees	47	1	1	10	4	1	26	2		1	1
Under 5	63	7	6	8		3	9	17	5	4	4
5 to 20	3						1	1			1

¹ Includes establishments distributed as follows: Connecticut, 1; Indiana, 1; Massachusetts, 1; Tennessee, 1; West Virginia, 1; Wisconsin, 1.

CANNING AND PRESERVING.

(461)

CANNING AND PRESERVING, FRUITS, VEGETABLES, FISH, AND OYSTERS.

By ARTHUR L. HUNT.

The hermetic sealing of food, usually referred to under the generic title of "canning," is an industry which has grown to be an important factor in the commercial and industrial development of the United States. It has long since passed the experimental stage and has taken its place among the leading industries of the country.

From earliest times man's thoughts have been occupied in devising ways and means to prevent articles of food from deterioration or putrefaction. In their natural state most foods are seasonable only during limited periods of the year, and their consumption is restricted to certain localities. Their preservation in such a manner as to make them palatable during the entire year, in all localities, has been the subject of much research.

Independent experiments by such well-known scientists as Cagnaird de la Tour, Schwann, Helmholtz, Pasteur, Schultz, and others established beyond a doubt that the decomposition of food is due to the presence of a living organism known as "ferment." It was reasoned that anything that would kill this organism or preclude its presence would preserve the article treated. The known processes that will accomplish this result, and at the same time preserve the food, are desiccation, use of antiseptics, refrigeration, and canning. Desiccation, or drying, was undoubtedly the first method used, but food preserved by this means loses much of its natural flavor and becomes tough in texture. The same objections arise in the use of antiseptics. Refrigerated foods, unless great care is exercised in the thawing, are not palatable.

Prior to 1795, drying and the use of salt and sugar were the only methods used to any extent in the preservation of foods. At this time Nicholas Appert, a Frenchman, who had spent most of his life in the preparation and preservation of articles of food, being stimulated in his work by the offer of a reward by the French navy department for a method of preservation of foods for sea service, submitted to his Govern-

ment an exhaustive treatise bearing upon the hermetic sealing of all kinds of food. His method was to inclose fruit in a glass jar, which was then corked, and subjected to the action of boiling water for a time, varying according to the nature of the article treated. A description of his process can be best summed up in his own words, as follows: "It is obvious that this new method of preserving animal and vegetable substances proceeds from the simple principle of applying heat in a due degree to the several substances after having deprived them as much as possible of all contact with the external air. It might, on the first view of the subject, be thought that a substance, either raw or previously acted upon by fire, and afterwards put into hot bottles, might, if a vacuum were made in those bottles and they were completely corked, be preserved equally well with the application of heat in the water bath. This would be an error, for all trials I have made convince me that the absolute privation of the contact of external air (the internal air being rendered of no effect by the action of heat) and the application of heat by means of the water bath, are both indispensable to the complete preservation of alimentary substances." Time has proved his method to be the most satisfactory for preserving food in its natural state. France purchased his process and gave it to manufacturing firms in France and England for the production of the goods. By this means the industry gradually spread over England, Ireland, and France.

In the year 1810 Peter Durant secured a patent from the English Government for the preservation of fruits, vegetables, and fish in hermetically sealed tin and glass cans. He did not claim to be the discoverer of the process, but said that it had been communicated to him by a "foreigner residing abroad." The secret of the process was jealously guarded, but the employees of the different establishments became more or less familiar with its essentials, and in this manner the industry found its way to America.

One of the first men to come to America with a knowl-

edge of the process gained in its actual use was Ezra Daggett, who arrived in New York some time between the years 1815 and 1818. In the year 1819 he and his son-in-law, Thomas Kensett, were engaged in the manufacture of hermetically sealed goods, the principal foods packed being salmon, lobsters, and oysters. In the following year the industry was launched in Boston by William Underwood and Charles Mitchell, emigrants from England, where they had been employed in canning establishments. Their principal business, however, during the early days of their establishment, was the preparation of pickles, sauces, jellies, jams, and mustard; but they also canned damsons, quinces, cranberries, and currants. The industry also owes much to Allen Taylor, an Englishman, and M. Gallagher, an Irishman, both of whom learned their trade at Sligo, Ireland, the latter having in his possession a copy of Appert's treatise on the subject of canning. These men came to America at about the same time as those mentioned above, and were for a time employed in New York. Prior to 1840 the industry was established in Baltimore, and Kensett, Taylor, and Gallagher did much to place it upon a permanent basis.

Glass jars were gradually abandoned, as it was found that they could not withstand the extremes of temperature and were expensive, bulky, and costly in transportation. In 1825, Thomas Kensett secured a patent on the use of tin cans in preserving food, and in the same year began using the patented process in his factory. Tin has been the favorite material for the construction of cans. Their early manufacture was by hand and very crude, the bodies being cut with shears and the side seam made with a plumb joint (that is, meeting, but not overlapping) and then soldered together. Heads were made to set into the body, and were soldered in place in a very crude manner. The construction of the cans was slow and costly, the making of 100 being considered a good day's work. In 1847 Allen Taylor invented the stamp can, which proved a decided improvement over the plumb-joint can just described, and about two years later Henry Evans, jr., of New Jersey, invented the "pendulum" press for making can tops. The latest important improvement in can manufacture was the invention of the key-opening can, which by the genius of a Mr. Zimmerman has been so reduced in cost that it has come into general use.

Can making is now a distinct industry, and not usually carried on, as formerly, in connection with the actual canning of the foods. It is estimated, however, that about 10 per cent of the cans are still made by the canning establishments. For the past fifteen years labor-saving machines have been introduced in can manufacture until now all the parts are made and put together by mechanical devices. The tin cans are made from Bessemer steel plates cut into sheets 14 by 20 inches and weighing about one pound. They are then subjected to an acid to remove all dirt, grease, scales, etc., and coated

with pure tin by the acid process or the palm-oil process, the latter being the safer and better of the two methods. The objection having been urged against the use of tin cans that the natural acids of fruits, vegetables, meats, and fish act upon the tin and solder in such a way as to form metallic salts or metallic compounds that are injurious to the health; the matter was carefully investigated by expert chemists, who reported that the objection is groundless if good tin is used. In the poorer grades of tin injurious substances were found, but in such small quantities that they were of no consequence.

By the Appert process the goods were cooked in open kettles, the highest temperature obtainable by this method being 212° F., or the temperature of boiling water. The process was necessarily slow, but gradually improvements were made in the methods and a higher degree of temperature was obtained by the addition of common salt to the water. This innovation was followed by the use of chloride of calcium, which made possible a temperature of 240° F. The cans, however, under this process become discolored, involving considerable expense in cleaning them to make the goods merchantable. In 1874 Mr. A. K. Shriver, of Baltimore, invented a closed-process kettle to cook the goods by superheating water with steam. About the same time Mr. John Fisher, of the same city, invented a patent-process kettle which secured the same results by the use of dry steam. By these methods, which are used at the present time, any desired temperature can be obtained and the heat regulated to meet requirements.

The canning and preserving of food products is an industry which lies on the border line both between manufacture and agriculture and between manufacture and fishing, and for this reason the several branches of the industry have not always been regarded in census reports as manufacturing. In theory, all industries which expend manufacturing forces upon raw materials, came under the scope of manufacturing. They are distinguished from mining, fishing, and agriculture in that the latter either withdraw raw materials from nature or aid her in their production, but do not themselves make use of raw materials. Therefore, although the preparation of food products from fruits and vegetables and fish was an established industry prior to 1850, no reliable statistics are available previous to 1870. For instance, in the census of 1850, the fishing industry was classed with manufactures and reports were received from 1,407 establishments with products valued at \$10,056,163. Fisheries were again reported in 1860, and returns were received from 1,970 establishments, with a product of \$14,284,405. Presumably the reports from establishments engaged in fish canning for the two periods were included in these statistics, as there was no separate classification for fish canning and preserving. In the census reports of 1850 and 1860 no mention is made of fruit and vegetable canning, but in the latter year the classi-

fiction "provisions" appears and returns were secured from 352 establishments reporting the value of products as \$31,986,433. It is not known just what was included under this caption, but in all probability it contained the statistics for fruit and vegetable canning, if at that time the industry was considered manufacturing. From 1870 the several branches of the food products were differentiated and separate classifications appear for each branch with the exception of oyster canning and preserving. The statistics for the latter in 1870 were probably included under the head of "fish, cured and packed".

In the earlier stages of the industry the canning of fruits and vegetables, fish, and oysters was not only frequently but generally carried on by the same individual, firm, or corporation, and it was impossible to ascertain the amount of capital invested in each branch or to segregate the labor employed and the cost of materials according to the several classifications. The various branches of the industry are still closely correlated and overlap to a certain extent, many establishments being engaged in the canning of fruits and vegetables during the summer months, and in the canning of fish and oysters during the winter months. For this reason the three branches of the industry have been grouped together and the statistics included in this report are presented under the following heads: Fruits and vegetables, fish, and oysters, canning and preserving, as returned by the establishments engaged in these several industries during the census year ending May 31, 1900.

In the tabulation of the reports the office adopted the rule of classifying establishments as engaged in the canning of fruits and vegetables, of fish, or of oysters in accordance with the predominating product. Thus fruits and vegetables may appear under the products of establishments engaged in the canning and preserv-

ing of fish and oysters, or visa versa. Furthermore, some establishments classified under the heads of "food preparations" and "pickles, preserves, and sauces," the statistics for which are not included herein, reported the canning of fruits and vegetables. It has therefore been attempted in subsequent tables to present the total quantities and values of fruits and vegetables, fish, and oysters irrespective of the general classification under which they were reported.

Although the canning industry was established in three great commercial centers in the United States as early as 1825, it did not become of much importance until within the past quarter of a century. The tardy introduction of machinery, the secrecy observed in the method of canning, the skepticism of the public regarding the healthfulness of the articles canned, the general prejudice against canned foods, the cost of production, and the high price of the goods may be given as reasons for the slow growth of this industry. Gradually these obstacles in its progress were overcome, and by 1883 machines were used for practically all operations in canned goods' manufacture, and to-day even the labeling, trimming of labels, and the boxing of goods are done by mechanical devices run by steam or electric power. After the invention of the patent-process kettles, the secret of the process was no longer guarded, and the industry spread over the country with remarkable rapidity, so that at the present time there are canneries in most every fruit and vegetable raising locality in the United States and in states in close proximity to the fish and oyster supply. The several branches of the industry have collectively assumed large proportions.

Table 1 shows the statistics for each of the industries according to the several subdivisions, with the percentages of each to the total.

TABLE 1.—FRUITS AND VEGETABLES, FISH AND OYSTERS, CANNING AND PRESERVING: SUMMARY FOR THE UNITED STATES, 1900.

	Total.	Fruits and vegetables.	Per cent of total.	Fish.	Per cent of total.	Oysters.	Per cent of total.
Number of establishments.....	2,195	1,808	82.4	848	15.8	39	1.8
Capital.....	\$48,497,978	\$27,748,067	57.2	\$19,514,215	40.2	\$1,240,696	2.6
Land.....	\$3,554,980	\$2,702,470	76.0	\$757,510	21.3	\$95,000	2.7
Buildings.....	\$8,670,574	\$4,517,008	52.1	\$3,914,853	45.1	\$238,713	2.8
Machinery, tools, and implements.....	\$10,113,482	\$4,797,719	47.4	\$5,164,046	51.1	\$151,717	1.5
Cash and sundries.....	\$26,158,942	\$15,725,870	60.1	\$9,677,806	37.0	\$755,266	2.9
Salaries officials, clerks, etc., number.....	2,478	1,741	70.8	618	24.9	119	4.8
Salaries.....	\$1,975,067	\$1,277,028	64.7	\$585,160	29.6	\$112,879	5.7
Wage-earners, average number.....	52,581	36,401	69.2	15,410	29.5	2,779	5.3
Total wages.....	\$12,910,399	\$8,050,798	62.3	\$4,229,638	32.8	\$630,016	4.9
Miscellaneous expenses.....	\$3,400,748	\$2,423,673	71.3	\$858,368	26.0	\$93,707	2.7
Cost of materials used.....	\$53,365,055	\$37,524,297	70.3	\$13,282,001	24.8	\$2,608,757	4.9
Value of products.....	\$82,592,196	\$56,668,813	68.6	\$22,258,749	26.9	\$3,670,134	4.5

The totals for the three industries show 2,195 establishments with a capital of \$48,497,978; 52,581 wage-earners; \$12,910,399 paid for wages; \$53,365,055 for materials; and products valued at \$82,592,196.

As indicated by Table 1, the canning and preserving of fruits and vegetables is by far the largest of the

three branches of the industry. There were 1,808 establishments, or 82.4 per cent of the total number, reporting nearly 60 per cent of the total capital, nearly 70 per cent of the total wage-earners, over 60 per cent of the total wages, and nearly 70 per cent of the total value of the products. The canning and preserving of

fish ranked second and reported over 15 per cent of the total number of establishments, 40.2 per cent of the total capital, 25.5 per cent of the total wage-earners, nearly 33 per cent of the total wages, and over 25 per cent of the value of products. The canning and preserving of oysters is a small industry in comparison with the other two branches of the industry. Most of the items enumerated for this branch in Table 1 formed less than 5 per cent of the total for the combined industry.

In this connection it is interesting to note the imports

and exports of fruits and vegetables and fish during the past decade. Table 2 shows the imports of fish and fruits and vegetables, canned or preserved, for each year from 1891 to 1900, inclusive, and Table 3 shows the exports for the same period as reported by the Bureau of Statistics, Treasury Department. Although their classifications are not strictly comparable with those adopted by the Census Office, the figures may nevertheless be studied to advantage in their relation to the statistics given in the other tables of this report.

TABLE 2.—IMPORTS OF FISH, FRUITS, AND VEGETABLES, CANNED OR PRESERVED, FOR EACH YEAR, 1891 TO 1900, INCLUSIVE.

ARTICLES.	1900	1899	1898	1897	1896	1895	1894	1893	1892	1891
Total.....	\$8,023,703	\$6,546,682	\$6,121,294	\$6,010,447	\$6,217,626	\$5,348,145	\$5,666,216	\$6,719,269	\$6,854,557	\$7,570,468
Fish, total.....	5,771,863	4,619,714	4,455,624	4,352,329	4,566,524	3,638,256	4,293,010	4,761,189	4,443,629	5,101,649
Lobsters, canned or uncanned ¹	931,219	730,460	599,577	791,602	788,638	241,778	549,049	589,109	604,052	966,782
Cured or preserved:										
Anchovies and sardines packed in oil or otherwise.....	1,483,768	1,152,981	1,110,674	902,742	970,347	767,857	976,952	1,866,966	1,201,149	1,089,976
Cod, haddock, hake, and pollock, smoked, salted, or pickled.....	543,172	425,414	525,968	451,654	467,059	499,245	509,395	553,118	449,567	527,113
Herring—										
Dried or smoked.....	127,555	87,279	107,840	88,085	74,460	58,597	77,079	56,485	66,466	101,493
Pickled or salted.....	1,355,013	1,077,138	1,053,050	886,647	1,138,693	1,030,669	962,311	1,164,942	1,173,514	922,029
Mackerel, pickled or salted.....	1,276,900	1,105,027	992,822	1,164,424	1,063,476	995,231	1,133,509	967,352	883,473	1,413,875
Salmon, pickled or salted.....	54,236	41,415	65,698	67,175	63,851	44,879	84,715	63,222	60,418	80,312
Fruits, total.....	1,243,479	1,020,644	922,357	605,053	598,928	570,568	526,561	864,166	1,284,828	1,289,137
Prepared or preserved.....	1,243,479	1,020,644	922,357	605,053	598,928	570,568	526,561	864,166	1,284,828	1,289,137
Vegetables, total.....	1,008,421	906,324	743,313	1,053,065	1,052,174	1,139,321	846,645	1,093,904	1,176,100	1,179,682
Pickles and sauces.....	306,223	352,022	243,354	332,243	324,377	321,632	341,135	454,099	421,292	511,163
Prepared or preserved.....	702,198	554,302	499,959	720,822	727,797	817,689	505,510	639,805	754,808	668,519

¹ Includes values of uncanned lobster. Impossible to separate.

TABLE 3.—EXPORTS OF FISH, FRUITS, AND VEGETABLES, CANNED OR PRESERVED, FOR EACH YEAR, 1891 TO 1900, INCLUSIVE.

ARTICLES.	1900	1899	1898	1897	1896	1895	1894	1893	1892	1891
Total.....	\$10,557,857	\$8,501,453	\$7,898,188	\$8,091,629	\$7,530,999	\$5,343,532	\$3,736,271	\$5,822,891	\$6,707,826	\$5,267,497
Fish, total.....	4,019,450	3,913,507	3,557,022	4,369,039	4,153,547	3,313,901	2,800,174	3,587,314	3,113,287	3,593,522
Dried, smoked, or cured:										
Cod, haddock, hake, and pollock.....	404,212	370,150	300,953	396,422	443,236	514,370	704,652	723,475	765,199	800,277
Herring.....	82,407	66,082	74,844	105,770	96,402	97,719	123,882	63,412	82,772	105,260
All other.....	56,684	40,308	48,442	38,571	37,654	61,082	50,966	88,258	85,353	80,844
Pickled:										
Mackerel.....	14,352	12,771	14,830	28,990	15,692	35,725	43,032	33,480	47,108	37,123
All other.....	99,827	61,650	75,403	84,978	104,374	108,178	149,316	147,932	169,643	159,671
Salmon:										
Canned.....	2,693,648	2,906,475	2,564,017	3,215,798	3,084,889	2,266,727	1,026,215	2,279,625	1,738,465	2,096,957
All other, fresh or cured ¹	535,276	351,601	332,023	284,891	107,991	88,789	58,659	49,230	78,680	83,693
Canned fish, other than salmon or shellfish.....	133,244	124,520	140,510	213,669	193,199	141,311	143,402	166,902	146,067	139,392
Fruits, total.....	5,433,577	3,643,347	3,604,970	3,070,158	2,787,141	1,330,099	1,039,992	1,844,126	3,061,660	1,207,451
Apples, dried.....	2,247,851	1,245,733	1,897,725	1,340,159	1,340,507	461,214	168,054	482,085	1,288,102	409,605
Fruits, preserved:										
Canned.....	3,127,278	2,330,715	1,624,741	1,686,723	1,376,281	871,465	660,723	1,137,660	1,558,820	703,880
All other.....	63,448	66,899	82,504	43,276	70,353	47,420	211,215	224,381	214,738	93,996
Vegetables, total.....	1,099,830	944,599	736,190	652,382	590,311	649,532	446,105	391,451	532,879	466,494
Canned.....	603,238	555,691	386,039	408,840	407,506	441,338	255,857	242,284	373,068	256,321
All other, including pickles and sauces ²	496,542	388,908	350,157	243,542	182,805	208,144	190,248	149,167	159,811	180,173

¹ Includes small amounts of fresh fish.

² Includes fresh vegetables other than beans, pease, onions, and potatoes. Impossible to separate values of pickles, etc., from other vegetables.

Table 2 indicates that the imports of fish and fruits and vegetables have slightly increased during the decade. From 1891 to 1895, inclusive, there was a steady decrease each year, but from 1895 to 1900, inclusive,

with the exception of 1896 and 1897, there has been a substantial increase. This is evidently due to the increase in the imports of fish, especially sardines and pickled or salted herring, as there has been a

decrease in the total imports of both fruits and vegetables. It appears that the exports have fluctuated considerably during the decade, but on the whole there has been an increase of over 100 per cent since 1890. The total exports of fish show a gain for the decade of 11.9 per cent, but the gain is solely due to the marked increase in the exports of salmon, whereas the exports in all other fish have decreased. The greatest growth and development in exports has been in the direction of fruits and vegetables, the exports in the former having increased from \$1,207,481 to \$5,438,577, an absolute increase of \$4,231,096, or 350.4 per cent. There has been a most marked increase in the exports of dried apples, and also of canned fruits. The exports of vegetables increased from \$466,494 to \$1,099,830, an increase of \$633,336, or 135.8 per cent. Thus the principal

points brought out by Tables 2 and 3 are the following: The total exports for 1900 were \$10,557,857, or 31.6 per cent larger than the imports; the imports of fish have increased faster than the exports; the imports of fruits and vegetables since 1891 have decreased 3.5 and 14.5 per cent, respectively, while the exports of fruits and vegetables have shown most marked increases.

As stated above, the difference between the classifications used by the Treasury Department and those adopted by the Census Office precludes accurate comparisons, but in a general way the figures are comparable. The value of products, the exports and imports of fruits and vegetables and fish, with the per cent of exports and imports to the value of the domestic product of each, are shown in Table 4.

TABLE 4.—FRUITS AND VEGETABLES AND FISH, CANNING AND PRESERVING: VALUE OF PRODUCTS IMPORTS AND EXPORTS, AND PER CENT OF IMPORTS AND EXPORTS TO PRODUCTS, 1900.

FRUITS AND VEGETABLES.					FISH.				
Value of products.	Value of imports.	Per cent of imports to products.	Value of exports.	Per cent of exports to products.	Value of products.	Value of imports.	Per cent of imports to products.	Value of exports.	Per cent of exports to products.
\$56,668,313	\$2,251,900	4.0	\$6,538,407	11.5	\$22,258,749	\$5,771,863	25.9	\$4,019,450	18.0

Table 4 indicates that the value of imports of fruits and vegetables was but 4 per cent of the value of those canned and preserved in the country, while the value of exports was 11.5 per cent of the total value of the domestic product. The value of imports of fish formed

25.9 per cent of the total value of domestic fish products, and the value of exports formed 18 per cent. The comparatively insignificant percentage of exports of each shows the extent of the home consumption of these varieties of canned goods.

FRUITS AND VEGETABLES, CANNING AND PRESERVING.

Table 5 is a comparative summary of the statistics for the establishments engaged in the canning and preserving of fruits and vegetables as returned at the cen-

suses of 1870 to 1900, inclusive, with the percentages of increase for each decade.

TABLE 5.—FRUITS AND VEGETABLES, CANNING AND PRESERVING: COMPARATIVE SUMMARY, 1870 TO 1900, WITH PER CENT OF INCREASE FOR EACH DECADE.

	DATE OF CENSUS.				PER CENT OF INCREASE.		
	1900	1890	1880	1870	1890 to 1900	1880 to 1890	1870 to 1880
Number of establishments.....	1,808	886	411	97	104.1	115.6	323.7
Capital.....	\$27,743,067	\$15,315,185	\$8,247,488	\$2,385,925	81.1	85.7	253.1
Salaried officials, clerks, etc., number.....	1,741	1,119	(²)	(²)	55.6	.....	.....
Salaries.....	\$1,277,028	\$592,390	(²)	(²)	115.6	.....	.....
Wage-earners, average number.....	36,401	49,762	31,905	5,869	326.8	56.0	443.6
Wages.....	\$8,050,798	\$4,651,317	\$2,679,960	\$771,648	73.1	73.6	247.3
Men, 16 years and over.....	13,542	18,469	10,638	1,658	327.4	75.3	541.6
Wages.....	\$4,122,104	\$2,488,328	(²)	(²)	65.7	.....	.....
Women, 16 years and over.....	19,699	25,714	15,463	3,434	323.4	66.3	350.3
Wages.....	\$3,600,243	\$2,000,346	(²)	(²)	79.9	.....	.....
Children, under 16 years.....	3,160	5,779	5,804	777	343.4	33.9	647
Wages.....	\$328,446	\$162,141	(²)	(²)	102.6	.....	.....
Miscellaneous expenses.....	\$2,423,678	\$1,289,681	(⁴)	(⁴)	87.9	.....	.....
Cost of materials used.....	\$37,527,297	\$18,665,163	\$12,051,293	\$3,094,846	101.1	54.9	289.4
Value of products.....	\$56,668,313	\$23,862,416	\$17,599,576	\$5,423,677	89.8	69.7	224.4

¹Includes proprietors and firm members, with their salaries; number only reported in 1900, but not included in this table. (See Table 14.)
²Not reported separately.
³Decrease.
⁴Not reported.

The canning and preserving of fruits and vegetables had its inception in this country prior to 1850, but the census of 1870 was the first which contained the statistics of the industry. At that time the number of establishments engaged primarily in this industry was 97, and the capital \$2,335,925. They reported 5,869 wage-earners, \$771,643 for wages, \$3,094,846 for materials, and \$5,425,677 as the value of products. The development in this industry during the past thirty years has been most marked, especially during the past decade. The number of establishments from 1890 to 1900 increased 922; the capital, \$12,427,882; and the value of products, \$26,805,897. Notwithstanding these increases, the average capital per establishment has decreased from \$24,082 to \$15,345, a decrease of \$8,737, or 36.3 per cent. This is presumably accounted for by the great number of establishments employing small capital which have become engaged in the industry since 1870. Nevertheless there were in 1900 several establishments employing more capital than the combined capital of the 97 establishments reporting for 1870. The average value of product per establishment has also shown a decrease from \$55,935 to \$31,343; that is, the average value of product in 1900 was only slightly over one-half that reported for 1870. This decrease is primarily due to the great decrease in the cost of production brought about by the introduction of machinery in every detail of the business, both in the making of cans and in the preparation of the product. From 1890 to 1900 every item, with the exception of wage-earners, has shown a substantial increase. The decrease in the average number of wage-earners, was 26.8 per cent. This is only apparent, however, the decrease being due to the difference in the methods employed at the two censuses. The method adopted in the present census gives the average number for the entire year, 12 (the number of calendar months) being used as a divisor to obtain the sum of the average numbers reported for each month. In 1890 the average number was computed for the actual time that the establishments were reported as being in operation. The greatest number employed at any one time during the last census year was 133,106. This number was undoubtedly much larger than at any one time in 1890.

A careful investigation of the schedules for various states discloses the fact that establishments engaged in the canning and preserving of fruits and vegetables employ a large number of wage-earners during four months of the year, and that during the remaining months they employ a relatively small number of operatives, usually before the opening of the canning season, in making cans, and later, after the season, in labeling, packing, and preparing the product for market.

The length of the "canning season" varies considerably in the several states, owing to climatic influences and the character of the goods canned. In the Northern states, for instance, the season is much shorter than

in states with a milder climate, where a greater variety of fruits and vegetables are grown for the market.

In the United States as a whole, the four months which constituted the "busy season" were July, August, September, and October. If this be regarded as the industrial year and if the computation be made according to the method used in 1890, the total average number of wage-earners in 1900 was 81,659. The total average number of wage-earners (men, women, and children) for each month during 1900 is given in the following statement:

AVERAGE NUMBER OF WAGE-EARNERS FOR EACH MONTH: 1900.

July	45,677	November.....	27,718	March.....	7,821
August	97,372	December.....	11,089	April.....	8,620
September.....	116,550	January.....	6,205	May.....	13,246
October.....	67,143	February.....	5,643	June.....	30,430

Thus it will be seen that the number of wage-earners has in reality shown an increase commensurate with the increase in the other items, and the apparent decrease is due solely to the difference in the methods of computation employed at the two censuses.

From 1890 to 1900 the wages increased from \$4,651,317 to \$8,050,793, an increase of \$3,399,476, or 73.1 per cent. This is in accord with the gradual increase in the rate of wages paid employees in this industry. Increased competition has compelled the various factories to adopt modern machinery, necessitating the employment of a higher class of labor. In the infancy of the industry all work was done by hand, and the female labor employed was of the cheapest possible character. The introduction of machinery, however, has resulted in an increase in the number of men employed and a corresponding decrease in the number of women. This has inured to the benefit of the wage-earner by making employment for men at an increased rate of wages, and the females employed are not obliged to do the burdensome work formerly required of them. During the past decade the wages paid children increased from \$162,141 to \$328,446, an increase of \$166,305, or 102.6 per cent. This striking increase is primarily due to the fact that children under 12 years of age are no longer employed, and accordingly the children over this age are able to command higher wages than the younger children formerly employed. Further, the wage rate per day has also materially increased owing to competition for labor of this character.

From 1890 to 1900 the cost of materials increased from \$18,665,163 to \$37,524,297, an increase of \$18,859,134, or 101.1 per cent. As fully 65 per cent of the cost of materials used is for farm products, it demonstrates what a vast advantage this industry is to the farming interests of this country, in that it stimulates the culture of every variety of fruits and vegetables.

The individual form of organization predominates in this industry. Of the total number of establishments, 919, or 50.8 per cent, were conducted by individuals. Of the remaining number, 505, or 27.9 per cent, were operated by firms or limited partnerships; 365, or 20.2 per cent, by incorporated companies; and the remaining 19, or 1.1 per cent, were cooperative or miscellaneous in character.

Table 6 shows, by states and territories arranged geographically, the number of establishments from which returns were received in 1900, with the increase during the decade.

TABLE 6.—FRUITS AND VEGETABLES, CANNING AND PRESERVING: COMPARATIVE SUMMARY, NUMBER OF ACTIVE ESTABLISHMENTS, 1890 AND 1900, AND THE INCREASE DURING THE DECADE, BY STATES AND TERRITORIES ARRANGED GEOGRAPHICALLY.

	1900	1890	Increase.
United States	1,808	886	922
New England states	80	62	18
Maine.....	59	44	15
New Hampshire.....	3	6	13
Vermont.....	3	.....	3
Massachusetts.....	9	10	1
Rhode Island.....	1	1	.....
Connecticut.....	5	1	4
Middle states	945	445	500
New York.....	511	159	352
New Jersey.....	73	34	39
Pennsylvania.....	39	27	12
Delaware.....	51	28	23
Maryland.....	271	197	74
Southern states	204	95	109
West Virginia.....	9	3	6
Virginia.....	88	54	34
North Carolina.....	19	5	14
South Carolina.....	12	2	10
Georgia.....	8	4	4
Florida.....	2	.....	2
Kentucky.....	8	2	6
Tennessee.....	11	4	7
Alabama.....	3	.....	3
Mississippi.....	.....	2	12
Arkansas.....	34	8	26
Louisiana.....	.....	1	11
Texas.....	10	10	.....
Central states	380	196	184
Ohio.....	70	38	32
Michigan.....	98	90	8
Indiana.....	60	11	49
Illinois.....	61	23	38
Wisconsin.....	16	1	15
Minnesota.....	4	3	1
Iowa.....	26	17	9
Missouri.....	45	13	32

¹Decrease.

TABLE 6.—FRUITS AND VEGETABLES, CANNING AND PRESERVING, COMPARATIVE SUMMARY: NUMBER OF ACTIVE ESTABLISHMENTS, 1890 AND 1900, ETC.—Cont'd.

	1900	1890	Increase.
Western states	28	25	3
Idaho.....	2	.....	2
South Dakota.....	.....	1	11
Nebraska.....	5	7	12
Utah.....	8	2	6
Colorado.....	7	8	4
Kansas.....	5	12	17
New Mexico.....	1	.....	1
Pacific states.....	171	68	108
Washington.....	18	.....	18
Oregon.....	17	2	15
California.....	136	61	75

The remarkable increase in the number of establishments from 1890 to 1900 in nearly every state, with the exceptions hereafter noted, shows that the industry is not localized and controlled by a few large establishments, but is well distributed throughout the country.

Table 6 shows that, in general, the states showing the large increases in the number of establishments were those which produce the different varieties of fruits and vegetables in large quantities. It appears that the greatest increase occurred in the Middle states, which group reported 445 establishments in 1890 and 945 in 1900, an increase of 500, or 112.4 per cent. The Central states followed, with an increase of 184, or 93.9 per cent; the Southern states reported an increase of 109, or 114.7 per cent; and the Pacific states followed, with an increase of 108, or 171.4 per cent. There was an increase of but 3 establishments in the Western states.

The greatest absolute increase was shown in New York, which reported an increase of 352. California followed with an increase of 75 and Maryland came third with an increase of 74. The leading 10 states, with the number of establishments reported for 1900, were as follows: New York, 511; Maryland, 271; California, 136; Michigan, 98; Virginia, 88; New Jersey, 73; Ohio, 70; Illinois, 61; Indiana, 60; Maine, 59.

The above table should be considered in connection with Table 7, which is a summary of the totals for the canning and preserving of fruits and vegetables as returned at the censuses of 1890 and 1900.

TABLE 7.—FRUITS AND VEGETABLES, CANNING AND PRESERVING: COMPARATIVE SUMMARY, BY STATES AND TERRITORIES, 1890 AND 1900.

	Year.	United States.	Ala-bama.	Arkan-sas.	California.	Colo-rado.	Conne-cticut.	Delaware.	Georgia.	Illinois.	Indiana.	Iowa.	Kansas.	Ken-tucky.
Number of establishments	1900	1,808	3	34	136	7	5	51	8	61	60	26	5	8
	1890	886	(¹)	8	61	3	(²)	28	4	23	11	17	12	(²)
Capital:														
Total	1900	\$27,743,067	\$7,585	\$33,038	\$4,397,935	\$277,325	\$91,463	\$966,660	\$24,801	\$1,551,977	\$1,205,494	\$1,027,321	\$30,300	\$95,000
	1890	\$15,315,185	(¹)	\$63,580	\$2,622,390	\$158,000	(²)	\$391,038	\$29,217	\$638,371	\$419,253	\$445,258	\$261,433	(²)
Land	1900	\$2,702,470	\$4,110	\$2,580	\$1,132,110	\$28,500	\$2,450	\$31,080	\$1,851	\$72,077	\$104,151	\$37,900	\$4,200	\$6,000
	1890	\$1,338,584	(¹)	\$5,345	\$255,285	\$55,000	(²)	\$16,400	\$1,750	\$20,075	\$24,975	\$24,975	\$13,140	(²)
Buildings.....	1900	\$4,517,008	\$1,125	\$13,123	\$728,891	\$79,500	\$21,232	\$148,338	\$5,700	\$221,647	\$284,009	\$190,900	\$10,702	\$18,150
	1890	\$2,387,232	(¹)	\$16,110	\$278,768	\$16,500	(²)	\$51,650	\$1,200	\$80,931	\$80,600	\$129,230	\$44,117	(²)
Machinery, tools, and implements.	1900	\$4,797,719	\$850	\$7,835	\$554,086	\$62,700	\$29,495	\$141,164	\$5,500	\$369,310	\$225,005	\$311,869	\$8,766	\$34,400
	1890	\$2,480,027	(¹)	\$23,400	\$292,556	\$17,500	(²)	\$73,466	\$3,250	\$110,370	\$65,700	\$133,409	\$93,607	(²)
Cash and sundries....	1900	\$15,725,370	\$1,500	\$9,500	\$1,982,348	\$106,625	\$38,235	\$646,078	\$11,750	\$888,443	\$592,329	\$486,652	\$6,632	\$37,500
	1890	\$9,109,342	(¹)	\$18,675	\$1,796,281	\$89,000	(²)	\$249,522	\$18,017	\$426,995	\$250,837	\$157,644	\$164,509	(²)

¹ None reported in 1890.

² Reported under head of other States in 1890.

MANUFACTURES.

TABLE 7.—FRUITS AND VEGETABLES, CANNING AND PRESERVING: COMPARATIVE SUMMARY BY STATES AND TERRITORIES, 1890 AND 1900—Continued.

	Year.	United States.	Ala-bama.	Arkan-sas.	California.	Colo-rado.	Conne-cticut.	Delaware.	Georgia.	Illinois.	Indiana.	Iowa.	Kansas.	Ken-tucky.
Salaried officials, clerks, etc.:														
Number	1900	1,741	1	2	259	18	7	29	4	99	155	46	11	12
	1890	1,119	(²)	7	122	11	(³)	35	3	24	31	55	18	(³)
Salaries.....	1900	\$1,277,028	\$300	\$350	\$242,388	\$23,700	\$3,260	\$14,278	\$8,650	\$101,515	\$112,174	\$27,305	\$3,254	\$5,810
	1890	\$592,390	(²)	\$1,730	\$81,058	\$14,800	(³)	\$13,482	\$1,737	\$14,497	\$10,705	\$7,573	\$8,700	(³)
Wage-earners, average number.	1900	36,401	16	186	7,486	206	100	1,437	81	1,444	2,002	699	116	231
	1890	49,762	(²)	320	5,670	99	(³)	2,463	49	2,182	1,989	1,581	1,163	(³)
Total wages	1900	\$8,050,798	\$2,380	\$21,942	\$1,957,649	\$62,561	\$24,967	\$220,149	\$10,545	\$392,636	\$386,457	\$184,710	\$17,148	\$36,903
	1890	\$4,651,317	(²)	\$23,904	\$756,797	\$45,930	(³)	\$192,476	\$4,088	\$135,967	\$170,933	\$83,924	\$60,828	(³)
Men, 16 years and over	1900	13,542	9	50	1,819	66	35	527	26	815	824	321	51	89
	1890	18,469	(²)	91	2,131	41	(³)	600	18	825	453	356	194	(³)
Wages	1900	\$4,122,101	\$1,760	\$10,079	\$702,428	\$37,855	\$12,208	\$113,751	\$5,260	\$278,626	\$219,239	\$114,630	\$10,124	\$19,248
	1890	\$2,488,328	(²)	\$10,033	\$377,165	\$30,562	(³)	\$89,510	\$2,402	\$80,781	\$83,247	\$41,609	\$31,500	(³)
Women, 16 years and over.	1900	19,699	4	72	5,252	116	64	750	38	582	1,068	266	51	105
	1890	25,714	(²)	150	3,156	50	(³)	1,416	28	883	1,327	986	600	(³)
Wages	1900	\$3,600,248	\$400	\$10,495	\$1,293,861	\$19,456	\$12,614	\$100,119	\$4,410	\$108,182	\$156,473	\$54,576	\$5,504	\$14,094
	1890	\$2,000,843	(²)	\$10,979	\$357,199	\$14,120	(³)	\$83,201	\$1,614	\$40,972	\$78,581	\$35,076	\$23,500	(³)
Children, under 16 years.	1900	3,160	3	14	415	24	1	160	17	47	110	112	14	37
	1890	5,579	(²)	79	883	8	(³)	447	3	474	209	239	350	(³)
Wages	1900	\$328,446	\$220	\$1,368	\$51,360	\$5,250	\$150	\$12,279	\$875	\$5,828	\$10,745	\$15,505	\$1,408	\$3,561
	1890	\$128,141	(²)	\$2,892	\$22,433	\$2,467	(³)	\$19,705	\$72	\$14,214	\$9,155	\$7,239	\$5,708	(³)
Miscellaneous expenses ..	1900	\$2,423,673	\$135	\$952	\$412,737	\$14,598	\$1,985	\$27,169	\$4,262	\$295,558	\$165,755	\$63,185	\$11,722	\$10,100
	1890	\$1,289,681	(²)	\$7,946	\$351,334	\$7,467	(³)	\$26,519	\$1,417	\$60,005	\$29,811	\$51,943	\$17,614	(³)
Cost of materials used	1900	\$37,524,297	\$3,418	\$50,954	\$9,102,400	\$223,454	\$31,887	\$1,083,142	\$67,192	\$2,447,194	\$1,526,038	\$767,231	\$68,465	\$75,316
	1890	\$18,665,163	(²)	\$54,455	\$3,888,323	\$90,420	(³)	\$432,317	\$12,460	\$768,556	\$581,016	\$294,817	\$147,801	(³)
Value of products	1900	\$56,668,313	\$7,947	\$100,503	\$13,081,829	\$343,394	\$124,280	\$1,570,790	\$120,022	\$3,730,030	\$2,589,908	\$1,859,953	\$113,675	\$192,787
	1890	\$29,862,416	(²)	\$93,101	\$6,211,440	\$207,424	(³)	\$740,090	\$28,770	\$1,106,181	\$885,145	\$521,711	\$292,505	(³)

	Year.	Maine.	Maryland.	Massa-chusetts.	Michigan.	Minne-sota.	Missouri.	Ne-braska.	New Hamp-shire.	New Jer-sey.	New York.	North Caro-lina.	Ohio.
Number of establishments ..	1900	59	271	9	98	4	45	5	8	73	511	19	70
	1890	44	197	10	90	3	13	7	6	34	159	5	38
Capital:													
Total	1900	\$865,825	\$4,459,660	\$48,375	\$898,668	\$43,650	\$345,360	\$123,623	\$21,642	\$1,420,221	\$6,649,059	\$30,340	\$910,670
	1890	\$1,014,980	\$2,739,008	\$182,924	\$420,265	\$28,350	\$419,130	\$211,847	\$18,590	\$957,538	\$2,211,715	\$5,940	\$505,654
Land	1900	\$42,845	\$378,143	\$625	\$91,603	\$1,800	\$22,117	\$6,800	\$150	\$111,805	\$355,910	\$3,035	\$65,490
	1890	\$7,225	\$376,675	\$2,600	\$42,852	\$2,750	\$4,875	\$19,100	\$690	\$106,675	\$223,211	\$200	\$33,505
Buildings	1900	\$132,493	\$430,586	\$900	\$204,315	\$10,000	\$71,255	\$35,000	\$1,600	\$334,279	\$1,025,624	\$4,575	\$150,973
	1890	\$61,210	\$381,900	\$13,150	\$109,506	\$5,100	\$15,550	\$50,927	\$3,960	\$204,750	\$583,262	\$905	\$110,100
Machinery, tools, and implements.	1900	\$230,928	\$633,234	\$19,900	\$146,649	\$11,300	\$128,736	\$41,325	\$9,542	\$250,618	\$906,809	\$7,480	\$200,057
	1890	\$198,514	\$360,311	\$36,008	\$103,863	\$7,700	\$95,600	\$53,303	\$6,800	\$131,279	\$391,163	\$1,150	\$53,075
Cash and sundries.....	1900	\$459,559	\$3,017,697	\$26,956	\$456,101	\$20,550	\$123,252	\$40,498	\$10,850	\$732,519	\$4,360,716	\$15,250	\$494,150
	1890	\$748,081	\$1,620,122	\$131,266	\$164,044	\$12,800	\$303,105	\$88,017	\$7,140	\$514,879	\$1,009,079	\$8,686	\$278,974
Salaried officials, clerks, etc.:													
Number	1900	102	231	9	70	2	71	9	1	63	261	2	103
	1890	46	165	17	83	.....	35	4	3	57	161	2	60
Salaries.....	1900	\$50,854	\$213,080	\$7,600	\$45,279	\$1,600	\$23,007	\$6,400	\$600	\$33,830	\$201,025	\$300	\$58,975
	1890	\$19,538	\$124,878	\$15,170	\$14,424	.....	\$33,291	\$542	\$805	\$36,886	\$82,380	\$110	\$26,271
Wage-earners, average number.	1900	904	7,505	139	1,165	45	650	161	19	1,992	5,518	78	1,608
	1890	2,087	13,048	286	1,831	111	610	600	68	3,608	5,936	87	2,177
Total wages	1900	\$203,509	\$1,379,131	\$39,945	\$240,102	\$8,523	\$116,467	\$21,686	\$5,957	\$422,092	\$1,402,820	\$10,736	\$305,393
	1890	\$196,082	\$1,416,386	\$50,082	\$114,544	\$2,700	\$102,798	\$37,850	\$4,695	\$262,723	\$516,648	\$1,392	\$176,516
Men, 16 years and over ..	1900	487	2,980	57	378	17	170	81	11	818	2,292	29	681
	1890	1,484	4,629	140	724	16	237	299	47	1,326	2,463	15	1,011
Wages	1900	\$144,503	\$744,516	\$21,660	\$121,412	\$6,670	\$49,803	\$13,200	\$4,700	\$232,316	\$811,564	\$6,506	\$158,919
	1890	\$169,650	\$634,986	\$32,920	\$64,625	\$10,000	\$76,250	\$27,076	\$3,655	\$156,938	\$307,502	\$595	\$91,191
Women, 16 years and over	1900	316	3,712	79	565	26	377	50	8	1,088	3,007	41	841
	1890	422	7,141	143	1,053	20	217	181	21	2,189	3,178	49	936
Wages	1900	\$49,385	\$559,310	\$17,760	\$95,054	\$10,590	\$56,883	\$6,000	\$1,257	\$180,952	\$623,168	\$3,805	\$123,825
	1890	\$22,531	\$762,980	\$16,835	\$48,018	\$700	\$21,559	\$8,714	\$1,040	\$103,223	\$201,066	\$619	\$76,219
Children, under 16 years.	1900	101	813	3	222	2	103	30	.....	86	219	8	186
	1890	181	1,278	3	54	75	156	120	.....	93	205	23	228
Wages	1900	\$9,616	\$75,305	\$525	\$23,636	\$263	\$9,781	\$2,486	.....	\$8,824	\$28,088	\$425	\$22,618
	1890	\$3,851	\$28,420	\$277	\$1,901	\$1,000	\$4,989	\$2,060	.....	\$2,562	\$8,075	\$238	\$9,106
Miscellaneous expenses	1900	\$43,119	\$371,108	\$7,392	\$123,514	\$1,452	\$23,399	\$10,325	\$270	\$83,418	\$495,478	\$414	\$73,781
	1890	\$43,067	\$151,496	\$28,106	\$35,884	\$4,132	\$79,721	\$13,960	\$972	\$83,798	\$143,241	\$155	\$36,771
Cost of materials.....	1900	\$762,102	\$8,786,518	\$334,600	\$1,154,698	\$17,929	\$569,651	\$130,573	\$21,111	\$1,401,101	\$5,592,462	\$44,494	\$1,197,269
	1890	\$700,719	\$4,416,352	\$245,130	\$304,464	\$24,650	\$1,107,691	\$120,720	\$6,709	\$1,159,340	\$1,747,798	\$2,997	\$506,809
Value of products	1900	\$1,335,671	\$11,996,245	\$331,545	\$1,760,875	\$49,200	\$869,977	\$210,688	\$29,964	\$2,199,176	\$8,975,321	\$64,440	\$1,941,398
	1890	\$1,192,682	\$7,196,109	\$412,005	\$591,546	\$33,375	\$1,480,469	\$201,549	\$17,165	\$1,843,675	\$2,918,671	\$5,506	\$928,213

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

² None reported in 1890.

³ Reported under head of other states in 1890.

CANNING AND PRESERVING.

TABLE 7.—FRUITS AND VEGETABLES. CANNING AND PRESERVING: COMPARATIVE SUMMARY BY STATES AND TERRITORIES, 1890 AND 1900—Continued.

	Year.	Oregon.	Penn- sylvania.	South Carolina.	Ten- nessee.	Texas.	Utah.	Vermont.	Virginia.	Wash- ington.	West Virginia.	Wisconsin.	All other states.
Number of establishments..	1900	17	39	12	11	10	8	8	88	18	9	16	16
	1890	(2)	27	(2)	4	10	(2)	(3)	54	(3)	3	(2)	16
Capital:													
Total	1900	\$121,355	\$520,206	\$23,862	\$95,824	\$58,852	\$804,258	\$68,528	\$218,533	\$78,627	\$95,260	\$650,115	\$37,055
	1890	(2)	\$736,604	(2)	\$16,910	\$85,347	(2)	(2)	\$416,476	(2)	\$16,511	(2)	\$293,361
Land	1900	\$16,030	\$38,216	\$1,525	\$880	\$1,575	\$33,645	.....	\$22,500	\$1,894	\$11,670	\$58,108	\$9,000
	1890	(2)	\$35,465	(2)	\$200	\$9,890	(2)	(2)	\$26,785	(2)	\$250	(2)	\$31,700
Buildings	1900	\$29,945	\$77,355	\$2,075	\$5,880	\$14,310	\$66,173	\$13,500	\$32,260	\$11,000	\$22,390	\$112,458	\$4,760
	1890	(2)	\$30,676	(2)	\$600	\$19,880	(2)	(2)	\$47,150	(2)	\$2,000	(2)	\$42,500
Machinery, tools, and implements.	1900	\$26,650	\$101,658	\$6,718	\$9,825	\$23,100	\$57,707	\$20,316	\$47,790	\$10,177	\$28,230	\$120,634	\$6,855
	1890	(2)	\$83,670	(2)	\$7,100	\$30,100	(2)	(2)	\$60,550	(2)	\$2,961	(2)	\$62,062
Cash and sundries	1900	\$48,730	\$302,977	\$13,544	\$19,239	\$14,867	\$146,733	\$34,712	\$115,983	\$56,056	\$32,970	\$358,925	\$15,850
	1890	(2)	\$586,793	(2)	\$9,010	\$26,477	(2)	(2)	\$281,991	(2)	\$11,300	(2)	\$162,099
Salaried officials, clerks, etc.: Number.	1900	9	35	6	16	5	20	4	25	4	4	42	1
	1890	(2)	88	(2)	4	12	(2)	(2)	59	(2)	1	(2)	16
Salaries.....	1900	\$10,350	\$25,309	\$1,080	\$2,043	\$3,490	\$8,068	\$4,100	\$3,477	\$4,250	\$1,475	\$32,732	\$200
	1890	(2)	\$56,453	(2)	\$1,257	\$2,215	(2)	(2)	\$17,561	(2)	\$500	(2)	\$6,267
Wage-earners, average num- ber.	1900	129	468	64	116	111	141	111	637	44	128	676	88
	1890	(2)	830	(2)	111	703	(2)	(2)	1,470	(2)	57	(2)	896
Total wages	1900	\$18,070	\$123,179	\$7,410	\$15,216	\$26,828	\$37,565	\$21,762	\$77,676	\$12,484	\$18,108	\$117,090	\$10,097
	1890	(2)	\$88,446	(2)	\$3,288	\$32,660	(2)	(2)	\$89,616	(2)	\$4,621	(2)	\$75,583
Men, 16 years and over..	1900	82	211	15	24	22	62	64	196	15	55	303	10
	1890	(2)	326	(2)	26	248	(2)	(2)	512	(2)	18	(2)	289
Wages.....	1900	\$8,995	\$81,845	\$2,625	\$4,992	\$9,157	\$26,037	\$15,140	\$33,915	\$5,839	\$7,858	\$30,160	\$5,064
	1890	(2)	\$69,275	(2)	\$1,850	\$16,324	(2)	(2)	\$42,488	(2)	\$3,146	(2)	\$42,049
Women, 16 years and over	1900	60	206	27	56	63	73	45	312	24	59	271	25
	1890	(2)	243	(2)	55	249	(2)	(2)	640	(2)	22	(2)	348
Wages.....	1900	\$6,075	\$35,833	\$2,835	\$6,539	\$14,832	\$10,172	\$6,362	\$33,577	\$5,675	\$4,220	\$30,235	\$4,655
	1890	(2)	\$15,813	(2)	\$1,155	\$10,714	(2)	(2)	\$41,342	(2)	\$1,109	(2)	\$31,909
Children, under 16 years.	1900	37	51	22	36	26	6	2	129	5	14	102	3
	1890	(2)	261	(2)	30	206	(2)	(2)	318	(2)	17	(2)	49
Wages.....	1900	\$3,000	\$6,001	\$1,950	\$3,685	\$2,339	\$1,356	\$260	\$10,084	\$970	\$1,030	\$6,695	\$378
	1890	(2)	\$3,358	(2)	\$278	\$5,622	(2)	(2)	\$5,686	(2)	\$367	(2)	\$1,625
Miscellaneous expenses	1900	\$4,543	\$58,788	\$503	\$207	\$1,245	\$6,024	\$3,390	\$7,289	\$2,677	\$2,983	\$91,887	\$2,309
	1890	(2)	\$46,264	(2)	\$1,332	\$6,559	(2)	(2)	\$45,482	(2)	\$3,098	(2)	\$11,537
Cost of materials	1900	\$79,290	\$499,353	\$15,160	\$37,598	\$85,275	\$211,279	\$83,361	\$342,689	\$24,781	\$39,825	\$543,496	\$18,399
	1890	(2)	\$615,294	(2)	\$19,307	\$59,650	(2)	(2)	\$1,131,868	(2)	\$20,362	(2)	\$204,633
Value of products	1900	\$141,498	\$801,250	\$28,565	\$72,007	\$151,104	\$300,349	\$166,184	\$535,900	\$63,141	\$66,886	\$1,007,765	\$34,041
	1890	(2)	\$931,008	(2)	\$29,030	\$141,737	(2)	(2)	\$1,403,216	(2)	\$36,750	(2)	\$403,293

¹ Includes establishments distributed as follows: Florida, 2; Idaho, 2; New Mexico, 1; Rhode Island, 1.

² Reported under head of other states in 1890.

³ None reported in 1890.

⁴ Includes establishments distributed as follows: Connecticut, 1; Kentucky, 2; Louisiana, 1; Mississippi, 2; Oregon, 2; Rhode Island, 1; South Carolina, 2; South Dakota, 1; Utah, 2; Wisconsin, 1.

Table 7 gives the totals for the principal items of the industry for the two periods and indicates the marked growth and expansion which has occurred during the decade in each state. In 1890 the canning and preserving of fruits and vegetables was reported by 886 establishments located in 36 states and territories, and in 1900 the number had increased to 1,808, distributed among 39 states and territories. In order to avoid disclosing the operations of individual establishments, states having less than 3 establishments were grouped under "all other states." Nearly every state and territory has shown a most gratifying increase in the number of establishments, capital, and value of products. The exceptions are as follows: Kansas reported a decrease in all three items; Massachusetts, a decrease of 1 establishment, but a notable increase in capital and value of products; Maine, Missouri, Pennsylvania, and Virginia, a decrease in capital, but an increase in the other two items; Nebraska, a decrease in establishments and in

capital, but an increase in value of products; Texas, the same number of establishments, but an increase in the other two items.

Climatic conditions largely regulate the locality where each particular fruit or vegetable is canned. In general each state puts up the varieties of fruits and vegetables which are grown extensively therein. The leading 10 states, ranked according to the value of products for the census year, were as follows: California, \$13,081,829; Maryland, \$11,996,245; New York, \$8,975,321; Illinois, \$3,730,030; Indiana, \$2,589,908; New Jersey, \$2,199,176; Ohio, \$1,941,398; Delaware, \$1,570,790; Iowa, \$1,359,958, and Maine, \$1,335,671. The total value of products of these 10 states was \$48,780,326, or 86.1 per cent of the total value of products for the industry. The number of establishments reported by these 10 states was 1,318, or 72.9 per cent of the total number, and the capital was \$23,463,822, as compared with \$27,743,067 for the entire country, or

84.6 per cent of the total capital reported. Alabama, Vermont, and Washington have become engaged in the industry during the decade.

The summary of establishments engaged in the canning and preserving of fruits and vegetables, classified according to the number of employees (not including

proprietors and firm members), is shown in Table 8. In this connection, attention is here directed to the fact that the data contained in this table were computed from the greatest number employed at any one time during the year. This should be taken into consideration in making deductions.

TABLE 8.—FRUITS AND VEGETABLES, CANNING AND PRESERVING: ESTABLISHMENTS CLASSIFIED BY NUMBER OF EMPLOYEES (NOT INCLUDING PROPRIETORS AND FIRM MEMBERS), BY STATES AND TERRITORIES ARRANGED GEOGRAPHICALLY, 1900.

STATES AND TERRITORIES.	Total number of establishments.	NUMBER OF ESTABLISHMENTS REPORTING—								
		No employ-ees.	Under 5.	5 to 20.	21 to 50.	51 to 100.	101 to 250.	251 to 500.	501 to 1,000.	Over 1,000.
United States.....	1,808	8	154	521	424	308	282	76	31	4
New England states.....	80	1	1	16	12	31	17		2	
Maine.....	59	1	1	8	10	25	12		2	
New Hampshire.....	3			2	1	1				
Vermont.....	3						3			
Massachusetts.....	9			6	1	1	1			
Rhode Island.....	1				1					
Connecticut.....	5					4	1			
Middle states.....	945	1	124	290	225	134	130	32	7	2
New York.....	511		118	241	72	27	37	18	2	1
New Jersey.....	73			9	5	22	33	4		
Pennsylvania.....	39		3	11	15	6	4			
Delaware.....	51				11	15	21	3		
Maryland.....	271	1	2	29	122	64	35	12	5	1
Southern states.....	204	3	4	79	76	33	7	2		
West Virginia.....	9		1		6	1	1			
Virginia.....	88			23	44	19	2			
North Carolina.....	19	2	1	12	1	3				
South Carolina.....	12	1	1	8	1	1				
Georgia.....	8		1	3	2	1		1		
Florida.....	2			2						
Kentucky.....	8				4	1	2	1		
Tennessee.....	11			2	5	4				
Alabama.....	3			1	2	4				
Arkansas.....	34			1	8					
Texas.....	10			3	3	3		1		
Central states.....	380	1	3	84	84	32	102	18	4	2
Ohio.....	70			12	18	23	14	1	2	
Michigan.....	98			55	25	7	9	1	1	
Indiana.....	60			7	8	13	25	5		
Illinois.....	61	1	2	8	18	14	13	5		2
Wisconsin.....	16				1	3	9	2	1	
Minnesota.....	4				1	2	1			
Iowa.....	26			1	2	5	14	4		
Missouri.....	45		1	1	11	15	17			
Western states.....	28		1	3	6	6	11	1		
Idaho.....	2		1	1						
Nebraska.....	5			1			4			
Utah.....	8				2	3	2	1		
Colorado.....	7			1	4		2			
Kansas.....	5					2	3			
New Mexico.....	1					1				
Pacific states.....	171	2	21	49	21	22	15	28	18	
Washington.....	18		6	10	2					
Oregon.....	17		4	7	3	1	1	1		
California.....	136	2	11	32	16	21	14	22	18	

Table 8 indicates that the largest number of establishments reported from 5 to 20 employees. Four establishments, 2 in Indiana and 1 each in Maryland and New York, employed over 1,000, and 31 establishments, 18 of which were located in California, gave employment to from 501 to 1,000. Maryland, New York and California, in the order named, reported the largest number of establishments employing more than 50. The largest number of establishments in

Maryland were reported for the class "21 to 50," and the largest number in New York and California from "5 to 20."

According to Table 8 it appears that the Middle states gave employment to the greatest number, while the Central states ranked second, and the Pacific states third. There were 8 small establishments reporting no employees, presumably all the work being done by the owner.

Table 9 presents a comparative summary of the statistics of capital for 1890 and 1900, with the percentages of the total and the increase for the several items.

TABLE 9.—FRUITS AND VEGETABLES, CANNING AND PRESERVING: STATISTICS OF CAPITAL, 1890 AND 1900.

	1900		1890		Per cent of increase.
	Amount.	Per cent of total.	Amount.	Per cent of total.	
Total.....	\$27,743,067	100.0	\$15,315,185	100.0	81.15
Land.....	2,702,470	9.7	1,338,584	8.7	101.9
Buildings.....	4,517,008	16.3	2,387,232	15.6	89.2
Machinery, tools, and implements.....	4,797,719	17.3	2,480,027	16.2	93.5
Cash and sundries.....	15,725,870	56.7	9,109,342	59.5	72.6

Every item of capital showed a decided increase and relatively constituted nearly the same percentage of the total for both years. The item cash and sundries, including cash on hand, bills receivable, unsettled ledger accounts, raw materials, stock in process of manufacture, finished products on hand, and other sundries, formed the principal item of capital in both years. This is accounted for by the fact that the industry has a tendency to be suburban, as is indicated by the small per cent of the value of land to the total value. In consequence of this expensive buildings are unnecessary. Further, intricate machinery and mechanical appliances are not required in the preparation of the product. For these reasons comment upon the remaining items of capital is not called for.

As the several items of miscellaneous expenses for 1890 can not be shown separately, the usual detailed comparison with the figures reported for 1900 is impossible. The expenses of this nature in this industry do not call for special comment, but the several subdivisions for 1900 are shown in Table 14.

The cost of materials used, with the proportion each formed of the total for 1900, is given in Table 10.

TABLE 10.—FRUITS AND VEGETABLES, CANNING AND PRESERVING: COST OF MATERIALS USED, 1900.

	Amount.	Per cent of total.
Total.....	\$37,524,297	100.0
Principal materials.....	36,428,791	97.1
Fuel.....	480,858	1.3
Rent of power and heat.....	10,388	(²)
Freight.....	604,260	1.6

¹Includes mill supplies and all other materials, which are shown separately in Table 14.
²Less than one-tenth of 1 per cent.

Of the total cost the amount reported for principal materials formed 97.1 per cent. The principal materials are made up of those purchased in the raw state and those purchased in partially manufactured form, the latter comprising those materials upon which some manufacturing force has been expended. Included in

this item are mill supplies and all other materials, such as cans, solder, etc., which were required in the preparation of the product for the market. That the cost of fuel formed only 1.3 per cent of the total cost of materials is but natural in this industry.

Table 11 shows the value of products, by states, for 1900.

TABLE 11.—FRUITS AND VEGETABLES, CANNING AND PRESERVING: VALUE OF PRODUCTS, BY STATES AND TERRITORIES, ARRANGED GEOGRAPHICALLY, 1900.

	VALUE.		
	Total product.	Fruits and vegetables.	All other products.
United States.....	\$56,668,313	\$44,460,665	\$12,207,648
New England states.....	2,194,644	1,511,416	683,228
Maine.....	1,335,671	1,129,415	206,256
New Hampshire.....	29,964	28,988	976
Vermont.....	166,184	166,184	—
Massachusetts.....	531,615	58,259	473,356
Other states ¹	131,280	128,570	2,710
Middle states.....	25,542,782	18,808,605	6,734,177
New York.....	8,975,321	7,032,750	1,942,571
New Jersey.....	2,199,176	1,965,502	233,674
Pennsylvania.....	801,250	684,293	116,957
Delaware.....	1,570,790	1,542,401	28,389
Maryland.....	11,996,245	7,683,659	4,312,586
Southern states.....	1,844,342	1,280,784	563,558
West Virginia.....	66,886	54,694	12,192
Virginia.....	535,900	533,542	2,358
North Carolina.....	64,440	60,590	3,850
South Carolina.....	28,565	11,715	16,850
Georgia.....	120,022	119,397	625
Kentucky.....	192,787	192,787	—
Tennessee.....	72,007	71,116	891
Arkansas.....	100,503	95,861	4,642
Texas.....	151,104	131,954	19,150
Other states ²	12,128	9,128	3,000
Central states.....	13,809,111	9,638,385	4,170,726
Ohio.....	1,941,398	1,856,900	84,498
Michigan.....	1,760,375	1,720,572	39,803
Indiana.....	2,689,908	2,196,030	493,878
Illinois.....	3,730,030	1,942,938	1,787,092
Wisconsin.....	1,007,765	973,954	33,811
Minnesota.....	49,200	49,200	—
Iowa.....	1,359,958	1,330,807	29,151
Missouri.....	869,977	667,934	202,043
Western states.....	990,966	882,903	108,063
Nebraska.....	210,688	207,286	3,402
Utah.....	300,349	294,769	5,580
Colorado.....	343,394	250,333	93,061
Kansas.....	113,675	113,675	—
Other states ³	22,860	16,340	6,520
Pacific states.....	13,288,468	12,338,572	949,896
Washington.....	63,141	14,645	48,496
Oregon.....	141,498	140,311	1,187
California.....	13,083,829	12,183,616	899,213

¹Includes establishments distributed as follows: Rhode Island, 1; Connecticut, 5.
²Includes establishments distributed as follows: Florida, 2; Alabama, 3.
³Includes establishments distributed as follows: Idaho, 2; New Mexico, 1.

Table 11 shows that of the total value of products, \$44,460,665, or 78.5 per cent, was reported as the value of canned and preserved fruits and vegetables, and \$12,207,648, or 21.5 per cent, was returned as the value of "all other products." This latter item includes such articles as pineapples, figs, jams, jellies, condiments, catsup, apple butter, soups, and numerous other varieties of canned or preserved food not included in the above, the quantities and values of which it was impossible to show

separately. It will be noticed that in Massachusetts, Michigan, South Carolina, and Washington the value of other products exceeded the value of fruits and vegetables, and in Maryland and Illinois the value of other products formed a goodly proportion of the value of the total product—nearly equal to that of the fruits and vegetables.

The tables which have thus far been shown give an incomplete statistical photograph of the fruit and vegetable canning and preserving industry for the reason

given above, that establishments were classified according to the predominating product, and in many instances the canning and preserving of fruits and vegetables is carried on in connection with some other branch of the canning industry, and the totals have not been included in the above tables. It is possible, however, to show the quantity and value of the principal varieties of fruits and vegetables canned and preserved during the census year as reported by establishments of any character. This is done in Table 12.

TABLE 12.—FRUITS AND VEGETABLES, CANNING AND PRESERVING: BY STATES AND TERRITORIES, 1900.

	United States.	NEW ENGLAND STATES.					
		Total.	Maine.	New Hampshire.	Vermont.	Massachusetts.	All other states. ¹
Canning and preserving:							
Aggregate value.....	\$45,379,548	\$1,520,722	\$1,187,765	\$28,988	\$166,184	\$58,259	\$129,526
Canned vegetables—							
Total pounds.....	1,172,467,073	49,700,288	36,024,288	744,144	5,745,120	3,246,864	3,939,792
Total value.....	\$29,368,158	\$1,452,780	\$1,107,286	\$18,603	\$164,584	\$57,504	\$104,758
Tomatoes—							
Pounds.....	641,219,993	5,093,640	299,304			953,424	3,840,912
Value.....	\$13,926,749	\$128,962	\$5,405			\$21,638	\$101,919
Corn—							
Pounds.....	305,566,439	40,932,512	34,330,112	652,512	5,649,120	206,688	94,080
Value.....	\$8,230,975	\$1,233,843	\$1,046,316	\$16,313	\$162,084	\$6,466	\$2,664
Pease—							
Pounds.....	131,436,061	140,352	98,400			41,952	
Value.....	\$4,679,426	\$4,325	\$3,325			\$1,000	
Beans—							
Pounds.....	75,729,160	2,366,312	720,712		96,000	2,044,800	4,800
Value.....	\$2,124,808	\$65,056	\$33,985		\$2,500	\$28,400	\$170
Pumpkins—							
Pounds.....	9,988,416	294,336	294,336				
Value.....	\$203,260	\$7,185	\$7,185				
Sweet potatoes—							
Pounds.....	6,205,488						
Value.....	\$127,667						
Gumbo or okra—							
Pounds.....	524,924						
Value.....	\$20,531						
Succotash—							
Pounds.....	1,796,592	373,056	281,424		91,632		
Value.....	\$54,742	\$13,360	\$11,070		\$2,290		
Canned fruits—							
Total pounds.....	302,127,819	2,393,208	1,211,256	213,120	57,600	9,408	901,824
Total value.....	\$11,539,885	\$64,267	\$30,479	\$6,660	\$1,600	\$755	\$24,773
Pears—							
Pounds.....	49,906,216	8,160				2,160	6,000
Value.....	\$2,233,166	\$907				\$157	\$750
Peaches—							
Pounds.....	107,609,194	4,080				1,680	2,400
Value.....	\$4,414,277	\$490				\$140	\$350
Apples—							
Pounds.....	48,104,074	2,355,240	1,211,256	213,120	57,600	1,920	371,344
Value.....	\$1,160,728	\$61,446	\$30,479	\$6,660	\$1,600	\$40	\$22,667
Blackberries—							
Pounds.....	9,957,160	480					480
Value.....	\$319,323	\$50					\$50
Strawberries—							
Pounds.....	11,756,300	21,888				288	21,600
Value.....	\$470,379	\$974				\$18	\$956
Raspberries—							
Pounds.....	8,826,137	3,360				3,360	
Value.....	\$355,603	\$400				\$400	
Apricots—							
Pounds.....	38,525,300						
Value.....	\$1,591,567						
Cherries—							
Pounds.....	5,549,368						
Value.....	\$310,114						
Plums—							
Pounds.....	21,894,070						
Value.....	\$736,728						
Dried fruits—							
Total pounds.....	31,314,406	53,750		53,750			
Total value.....	\$4,421,505	\$3,725		\$3,725			
Apples—							
Pounds.....	33,337,309	53,750		53,750			
Value.....	\$1,913,142	\$3,725		\$3,725			
Apricots—							
Pounds.....	5,465,217						
Value.....	\$455,394						
Pears—							
Pounds.....	701,506						
Value.....	\$49,279						
Peaches—							
Pounds.....	5,662,390						
Value.....	\$312,495						
Prunes—							
Pounds.....	25,413,763						
Value.....	\$970,927						
Raisins—							
Pounds.....	10,734,221						
Value.....	\$720,268						

¹ Includes establishments distributed as follows: Connecticut, 5; Rhode Island, 1.

TABLE 12.—FRUITS AND VEGETABLES, CANNING AND PRESERVING: BY STATES AND TERRITORIES, 1900—Continued.

	Total.	SOUTHERN STATES.										
		West Virginia.	Virginia.	North Carolina.	South Carolina.	Georgia.	Kentucky.	Tennessee.	Alabama.	Arkansas.	Texas.	All other states. ¹
Canning and preserving:												
Aggregate value.....	\$1,301,231	\$54,694	\$533,542	\$60,590	\$11,715	\$124,563	\$192,787	\$71,116	\$7,947	\$95,861	\$131,954	\$16,462
Canned vegetables—												
Total pounds.....	45,948,227	1,882,152	27,332,771	1,797,840	401,064	488,616	7,979,688	2,682,480	227,880	576,000	2,211,312	368,424
Total value.....	\$931,528	\$36,355	\$499,355	\$49,709	\$8,785	\$12,663	\$180,187	\$51,216	\$4,248	\$15,000	\$57,713	\$16,297
Tomatoes—												
Pounds.....	40,148,904	1,805,640	26,434,344	893,160	369,696	359,544	5,157,864	2,617,200	227,880	576,000	1,662,576	45,000
Value.....	\$759,734	\$34,133	\$474,305	\$19,292	\$8,090	\$7,814	\$106,227	\$49,996	\$4,248	\$15,000	\$39,629	\$1,000
Corn—												
Pounds.....	2,555,811	20,832	520,467	57,120	.....	14,016	1,584,000	.....	.....	.....	359,376	.....
Value.....	\$67,169	\$648	\$13,160	\$1,485	.....	\$526	\$30,600	.....	.....	.....	\$10,750	.....
Peas—												
Pounds.....	1,535,472	.....	136,800	528,000	.....	66,672	768,000	.....	.....	.....	36,000	.....
Value.....	\$61,658	.....	\$6,080	\$22,000	.....	\$2,778	\$29,000	.....	.....	.....	\$1,800	.....
Beans—												
Pounds.....	1,274,312	55,680	205,160	319,560	31,368	45,504	397,824	65,280	.....	.....	153,360	576
Value.....	\$85,587	\$1,574	\$5,195	\$6,932	\$895	\$1,461	\$12,960	\$1,220	.....	.....	\$5,534	\$16
Pumpkins—												
Pounds.....	72,000	.....	.....	.....	.....	.....	72,000	.....	.....	.....	.....	.....
Value.....	\$1,400	.....	.....	.....	.....	.....	\$1,400	.....	.....	.....	.....	.....
Gumbo or okra—												
Pounds.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Value.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sweet potatoes—												
Pounds.....	861,728	.....	36,000	.....	.....	2,880	.....	.....	.....	.....	.....	322,848
Value.....	\$15,980	.....	\$615	.....	.....	\$84	.....	.....	.....	.....	.....	\$16,281
Succotash—												
Pounds.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Value.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Canned fruits—												
Total pounds.....	9,872,344	639,240	1,524,792	475,536	139,248	4,155,664	288,000	621,600	168,360	.....	1,855,440	4,464
Total value.....	\$279,357	\$18,339	\$30,752	\$10,881	\$2,930	\$111,900	\$7,200	\$19,250	\$3,609	.....	\$74,241	\$165
Pears—												
Pounds.....	1,041,552	.....	108,000	.....	1,152	724,800	.....	96,000	.....	.....	111,600	.....
Value.....	\$29,021	.....	\$1,650	.....	\$25	\$20,200	.....	\$3,500	.....	.....	\$3,646	.....
Peaches—												
Pounds.....	6,027,912	24,120	849,440	928,536	83,952	3,012,000	288,000	252,000	136,720	.....	1,549,680	4,464
Value.....	\$181,916	\$500	\$7,300	\$7,996	\$1,655	\$83,475	\$7,200	\$10,000	\$2,850	.....	\$60,775	\$165
Apples—												
Pounds.....	2,068,176	613,584	657,816	28,440	50,976	369,600	.....	273,600	.....	.....	74,160	.....
Value.....	\$46,250	\$17,775	\$11,663	\$692	\$1,150	\$7,200	.....	\$5,750	.....	.....	\$2,020	.....
Blackberries—												
Pounds.....	525,904	1,536	284,736	118,560	3,168	1,264	.....	.....	32,640	.....	84,000	.....
Value.....	\$15,500	\$64	\$7,019	\$2,193	\$100	\$25	.....	.....	\$849	.....	\$5,250	.....
Strawberries—												
Pounds.....	36,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	36,000	.....
Value.....	\$2,550	.....	.....	.....	.....	.....	.....	.....	.....	.....	\$2,550	.....
Raspberries—												
Pounds.....	48,000	.....	.....	.....	.....	48,000	.....	.....	.....	.....	.....	.....
Value.....	\$1,000	.....	.....	.....	.....	\$1,000	.....	.....	.....	.....	.....	.....
Apricots—												
Pounds.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Value.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cherries—												
Pounds.....	124,800	.....	124,800	.....	.....	.....	.....	.....	.....	.....	.....	.....
Value.....	\$3,120	.....	\$3,120	.....	.....	.....	.....	.....	.....	.....	.....	.....
Plums—												
Pounds.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Value.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dried fruits—												
Total pounds.....	1,558,000	.....	53,000	.....	.....	.....	90,000	13,000	.....	1,402,000	.....	.....
Total value.....	\$90,346	.....	\$3,435	.....	.....	.....	\$5,400	\$650	.....	\$80,861	.....	.....
Apples—												
Pounds.....	1,558,000	.....	53,000	.....	.....	.....	90,000	13,000	.....	1,402,000	.....	.....
Value.....	\$90,346	.....	\$3,435	.....	.....	.....	\$5,400	\$650	.....	\$80,861	.....	.....
Apricots—												
Pounds.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Value.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pears—												
Pounds.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Value.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Peaches—												
Pounds.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Value.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Prunes—												
Pounds.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Value.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Raisins—												
Pounds.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Value.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

¹Includes establishments distributed as follows: Florida, 2; Louisiana, 1; Mississippi, 1.

TABLE 12.—FRUITS AND VEGETABLES, CANNING AND PRESERVING: BY STATES AND TERRITORIES, 1900—Continued.

	WESTERN STATES.						PACIFIC STATES.			
	Total.	Nebraska.	Utah.	Colorado.	Kansas.	All other states, ¹	Total.	Washing- ton.	Oregon.	California.
Canning and preserving:										
Aggregate value.....	\$882,903	\$207,286	\$294,769	\$250,833	\$113,675	\$16,340	\$12,408,385	\$14,645	\$140,311	\$12,253,429
Canned vegetables—										
Total pounds.....	32,667,480	7,429,488	12,552,336	7,092,216	5,089,440	504,000	62,877,760		324,000	62,553,760
Total value.....	\$837,352	\$193,286	\$271,488	\$247,083	\$110,825	\$14,700	\$2,292,293		\$14,300	\$2,277,993
Tomatoes—										
Pounds.....	20,814,024	1,512,000	12,300,048	3,393,336	3,104,640	504,000	57,428,176		110,400	57,317,776
Value.....	\$166,948	\$31,800	\$263,363	\$94,105	\$62,980	\$14,700	\$2,075,105		\$2,700	\$2,072,405
Corn—										
Pounds.....	7,773,600	5,740,800		720,000	1,312,800		14,400		14,400	
Value.....	\$220,202	\$157,890		\$27,000	\$35,312		\$405		\$405	
Peas—										
Pounds.....	1,560,000			1,440,000	120,000		3,634,080		141,600	3,492,480
Value.....	\$82,000			\$78,000	\$4,000		\$154,617		\$8,630	\$145,987
Beans—										
Pounds.....	1,271,088	162,288		1,060,800	48,000		1,716,048		57,600	1,658,448
Value.....	\$40,656	\$9,396		\$36,100	\$1,100		\$59,910		\$2,565	\$57,345
Pumpkins—										
Pounds.....	1,248,768	14,400	252,288	478,080	504,000		74,400			74,400
Value.....	\$27,576	\$200	\$8,125	\$11,818	\$7,433		\$1,860			\$1,860
Sweet potatoes—										
Pounds.....							10,656			10,656
Value.....							\$396			\$396
Gumbo or okra—										
Pounds.....										
Value.....										
Succotash—										
Pounds.....										
Value.....										
Canned fruits—										
Total pounds.....	1,311,408	451,200	631,243	108,000	120,960		164,776,142		2,585,760	162,190,382
Total value.....	\$43,781	\$13,900	\$23,281	\$3,750	\$2,850		\$7,512,466		\$106,550	\$7,405,916
Pears—										
Pounds.....	182,880		182,880				32,859,528		530,400	32,329,128
Value.....	\$6,994		\$6,994				\$1,645,919		\$22,000	\$1,623,919
Peaches—										
Pounds.....	91,488		91,488				65,709,480		72,000	65,637,480
Value.....	\$3,362		\$3,362				\$3,144,682		\$2,550	\$3,142,132
Apples—										
Pounds.....	892,800	451,200	212,640	108,000	120,960		2,225,866		405,600	1,820,266
Value.....	\$26,037	\$13,900	\$5,537	\$3,750	\$2,850		\$85,227		\$13,800	\$71,427
Blackberries—										
Pounds.....	20,880		20,880				2,884,080		422,400	2,461,680
Value.....	\$1,087		\$1,087				\$121,705		\$15,000	\$106,705
Strawberries—										
Pounds.....	4,800		4,800				1,386,744		168,000	1,218,744
Value.....	\$250		\$250				\$79,772		\$9,500	\$70,272
Raspberries—										
Pounds.....	6,144		6,144				647,472		124,800	522,672
Value.....	\$820		\$820				\$48,356		\$6,600	\$41,756
Apricots—										
Pounds.....	3,360		3,360				38,519,540			38,519,540
Value.....	\$175		\$175				\$1,591,242			\$1,591,242
Cherries—										
Pounds.....	7,920		7,920				3,089,336		690,360	2,398,976
Value.....	\$412		\$412				\$186,113		\$30,300	\$155,813
Plums—										
Pounds.....	101,136		101,136				17,474,096		163,200	17,310,896
Value.....	\$5,144		\$5,144				\$609,450		\$6,800	\$602,650
Dried fruits—										
Total pounds.....	66,934	6,600				60,334	50,021,233	286,000	897,350	49,837,883
Total value.....	\$1,740	\$100				\$1,640	\$2,603,626	\$14,645	\$19,461	\$2,599,526
Apples—										
Pounds.....	6,600	6,600					3,124,470		37,250	3,087,220
Value.....	\$100	\$100					\$158,003		\$2,110	\$155,893
Apricots—										
Pounds.....							5,310,217			5,310,217
Value.....							\$442,544			\$442,544
Pears—										
Pounds.....							601,506			601,506
Value.....							\$42,279			\$42,279
Peaches—										
Pounds.....							5,502,390			5,502,390
Value.....							\$301,495			\$301,495
Prunes—										
Pounds.....	60,334					60,334	24,748,429	286,000	800,100	24,102,329
Value.....	\$1,640					\$1,640	\$939,037	\$14,645	\$17,351	\$957,011
Raisins—										
Pounds.....							10,734,221			10,734,221
Value.....							\$720,268			\$720,268

¹Includes establishments distributed as follows: Idaho, 2; New Mexico, 1.

Table 12 shows the quantity and value of fruits and vegetables prepared by fruit and vegetable canning factories as such, and also the quantity and value reported as a subsidiary product in establishments engaged primarily in the canning and preserving of fish and oysters. The values reported do not include the amounts returned for all other products, and therefore,

the totals given in Table 12 do not agree with the total products elsewhere given in this report, or with those of the general report, on this industry as presented in Manufactures, Parts I and II. Further, many establishments classified under "food preparations" and "pickles, preserves, and sauces" are engaged in the canning and preserving of fruits and vegetables, and it

was impossible to ascertain the total quantity and value of fruits and vegetables canned by such establishments. It will be observed that the quantity and value of some varieties of fruits and vegetables do not appear in Table 12. This is due to the fact that it was impossible to secure the quantity and value of each, as they were not separately reported. They are therefore, as heretofore explained, included under "all other products" in Table 11. Nevertheless, the totals given in Table 12 may be taken as fairly representing the quantities and value of fruits and vegetables canned during the census year.

Table 12 shows that the value of canned and preserved fruits and vegetables was \$45,379,548. The total number of pounds of canned vegetables was 1,172,467,073, valued at \$29,368,158; canned fruit, 302,127,819 pounds, valued at \$11,589,885; and dried fruit, 81,314,406 pounds, valued at \$4,421,505. It appears that the Middle states led in this industry and reported \$19,550,313 as the value of canned and preserved fruits and vegetables, or 43.1 per cent of the total value. The Pacific states ranked second, with \$12,408,385 as the value of products, or 27.3 per cent of the total value. The Central states ranked third, with a product of \$9,715,994, or 21.4 per cent of the total value. The New England, Southern, and Western states followed in the order named.

In the total number of pounds of canned vegetables Maryland easily led, reporting 307,247,293 pounds, or 26.2 per cent of the total number. The other 4 leading states in the order named, with the number of pounds reported by each, were: New York, 135,432,524; Indiana, 91,566,684; Illinois, 80,214,384; and California, 62,553,760. The total number of pounds of canned and preserved vegetables reported by these 5 states

was 677,014,645, or over 50 per cent of the total number of pounds reported for the entire country.

In the canning of the different varieties of fruits California ranked first with 162,190,382 pounds, or 53.7 per cent of the total. The other 5 leading states, ranked according to the number of pounds, were: Maryland, 56,432,556; New York, 41,241,240; Michigan, 9,603,980; Delaware, 5,486,704, and New Jersey, 3,224,512. The total number of pounds of canned fruits returned by these 6 states was 278,179,375, or 92.1 per cent of the entire number of pounds reported for the country.

Naturally climatic and other physiographic conditions cause a tendency to sectionalism in this industry. The states which stood preeminent in the several varieties of canned and preserved foods as shown by Table 12, in the order of their importance, were as follows: tomatoes, Maryland, New Jersey, Indiana, California, Delaware, and Ohio; corn, New York, Illinois, Iowa, Maryland, and Maine; pease, New York, Maryland, Wisconsin, Indiana, and Delaware; beans, Maryland, New York, Illinois, Ohio, and Indiana; pumpkins, New York, Indiana, and Illinois; pears, California, New York, and Delaware; peaches, California, Maryland, Michigan, and Delaware; apples, New York, Maryland, Michigan, California, Maine, and Ohio; small fruits, as blackberries, strawberries, and raspberries, California, Maryland, and New York.

The drying of fruit seems to be confined principally to California and New York, those 2 states reporting 70,880,780 pounds, or 87.2 per cent of the total number reported.

The principal details of the statistics for the canning and preserving of fruits and vegetables as carried on in cities of over 20,000 population are shown in Table 13.

TABLE 13.—FRUITS AND VEGETABLES, CANNING AND PRESERVING: STATISTICS OF CITIES OF 20,000 POPULATION OR OVER, 1900.

CITIES.	Rank by value of products.	Number of establishments.	Capital.	SALARIED OFFICIALS, CLERKS, ETC.		WAGE-EARNERS.		Miscellaneous expenses.	Cost of materials used.	Value of products.
				Number.	Salaries.	Average number.	Wages.			
Total		107	\$9,529,513	3508	\$611,554	10,189	\$2,569,859	\$1,170,469	\$15,422,289	\$21,788,123
Baltimore, Md.....	1	23	2,862,467	148	172,326	4,360	905,397	309,985	6,482,415	8,477,178
San Francisco, Cal.....	2	10	856,900	51	70,656	1,538	438,107	102,137	2,131,175	2,992,802
Chicago, Ill.....	3	6	866,100	36	56,661	311	105,972	181,907	1,236,981	1,766,129
New York, N. Y.....	4	6	1,732,932	27	46,880	379	118,693	31,448	545,957	880,865
Indianapolis, Ind.....	5	3	241,260	70	69,520	800	65,331	56,300	435,556	724,968
Boston, Mass.....	6	4	32,700	8	7,100	110	31,796	6,925	350,329	466,110
Los Angeles, Cal.....	7	3	148,000	5	6,600	322	76,500	14,706	297,623	423,000
Portland, Me.....	8	3	122,935	3	3,681	55	20,544	6,850	72,996	128,219
All other cities ¹		49	3,166,219	160	178,130	2,814	812,519	400,141	3,919,257	5,928,852

¹ Includes establishments distributed as follows: Atlanta, Ga., 1; Auburn, N. Y., 1; Austin, Tex., 1; Birmingham, Ala., 1; Buffalo, N. Y., 1; Burlington, Iowa, 1; Canton, Ohio, 2; Cedar Rapids, Iowa, 1; Cincinnati, Ohio, 1; Columbus, Ohio, 1; Dayton, Ohio, 1; Denver, Colo., 1; Detroit, Mich., 1; Elgin, Ill., 1; Evansville, Ind., 1; Grand Rapids, Mich., 1; Hamilton, Ohio, 1; Jersey City, N. J., 1; Kalamazoo, Mich., 1; Leavenworth, Kans., 1; Muncie, Ind., 1; Oakland, Cal., 1; Oshkosh, Wis., 1; Peoria, Ill., 1; Philadelphia, Pa., 1; Pittsburg, Pa., 1; Portland, Oreg., 2; Providence, R. I., 1; Pueblo, Colo., 1; Quincy, Ill., 1; Rochester, N. Y., 1; Rockford, Ill., 1; Sacramento, Cal., 1; St. Joseph, Mo., 2; St. Louis, Mo., 1; St. Paul, Minn., 1; San Jose, Cal., 2; Seattle, Wash., 2; Syracuse, N. Y., 1; Topeka, Kans., 1; West Hoboken, N. J., 1; Zanesville, Ohio, 1.

Table 13 indicates that of the total value of products, \$21,788,123, or 38.4 per cent, was reported for the cities named, and of this amount, \$8,477,178, or 15 per cent of the total for the United States, was returned for Baltimore, which, since the inception of the industry, has always been the principal city in the

fruit and vegetable canning and preserving industry. On the whole, the industry can hardly be said to be carried on chiefly in cities, as there seems to be a natural inclination toward the rural districts nearest the source of supply of the different varieties of fruits and vegetables.

HISTORICAL AND DESCRIPTIVE.

Fruits and vegetables were the first goods canned successfully, the early processes being especially applicable to this class of goods, as they require a less degree of heat to preserve them than do fish and oysters. The method first used was to fill glass bottles to the necks with fruits, which in some cases were partly worked, and then loosely cork the bottle and place in tepid water. The temperature was then gradually increased to from 170° to 190° F. and maintained at that point for a period of from thirty to sixty minutes, when the bottles were sealed and cooled in a bath. This method was improved upon by Pierre Atoine Angilbert in the year 1823 in the following manner: The fruit having been placed in a tin can containing water, a lid with an aperture was fastened on and heat was applied. After the liquid had boiled a while the aperture was closed with a drop of solder. This method does not differ materially from that in use in American canneries at the present time.

Although fruits and vegetables were among the first articles canned in the United States, the industry was largely confined, during the period between 1820 and 1845, to the cities where fish and oyster canning was carried on. Little information is available regarding the canning of fruits and vegetables during this time, and it is to be presumed that it was not very extensive. Tomatoes and corn, the two vegetables which are most extensively canned to-day, were not put up during the period mentioned.

The art of hermetically sealing tomatoes in tin cans was first used by Harrison W. Crosby when he was acting as steward of Lafayette College, Easton, Pa., in 1847. The first methods used in putting up this article were crude and imperfect, but labor-saving machinery and economical methods have wrought great changes from time to time in this branch of the industry.

The canning of corn was begun simultaneously in 1839 by two canneries in Baltimore, Md., and Portland, Me., the latter being under the management of Mr. Isaac Winslow. Little information is available concerning the progress of the canning of this article in Baltimore, but the history of its progress in Maine appears to be more complete. Mr. Winslow met with little success until 1852, in which year he applied for a patent, which, however, was not granted until 1862. His method was substantially as follows:¹ The kernels of a superior quality of fresh green corn were removed from the cob by a knife and placed in hermetically sealed tin cans, which were then subjected to steam or boiling heat for about one and one-half hours, when the cans

¹ Origin and Progress of the Canning Industry in Maine, F. O. Conant.

were punctured and again sealed and boiled for two and one-half hours longer. A much greater degree of success followed the invention of steam retorts in 1874, by which a higher degree of temperature could be secured. The first cooking under the old system was done away with by the introduction of "cookers," which are steam retorts used to cook the corn before placing it in the cans. This method is in use at the present time.

Prior to 1846, canneries were in operation in New York, Boston, and Baltimore, and in Portland and Eastport, Me., and in Newark, N. J., the canneries in the latter place having prepared the fruits and vegetables for Dr. Kane's Arctic Expedition. After 1850 canneries began to develop rapidly under the stimulus of an increasing demand for the goods. By 1866 factories were in operation in most fruit and vegetable raising sections of the country. Canneries were established in the Middle West at Circleville, Ohio, in 1873, and at Indianapolis, Ind., a few years previously. The rapid development of fruit and vegetable culture in California and elsewhere on the Pacific coast led to the introduction of canning establishments as early as 1856.² At present this section takes the lead in the canning and preserving of small fruits. The fruits most extensively canned on the Pacific coast are plums, apricots, pears, peaches, and cherries, and the leading vegetables are tomatoes, asparagus, and pease.

Baltimore has been aptly called the "cradle of the canning industry." The state of Maryland not only leads in oyster canning, but is also among the first in the canning of tomatoes, corn, peaches, peas, lima beans, apples, pears, and pineapples.

Maine, in addition to being the leading state in sardine canning, is one of the leading corn-canning states, while New York leads in canning corn, apples, and pears, and also puts up peas and beans in large quantities. As stated elsewhere, climatic conditions largely determine the locality in which each variety of fruits or vegetables is canned.

The canning of fruits and vegetables has increased with greater rapidity during the past thirty years than have the other branches of the canning industry included in this report. This is in a measure due to the fact that it differs from oyster and fish canning in that it is not confined to as narrow limits as these latter, but may be carried on in the numerous fruit and vegetable raising sections of the country.

Table 14 shows the detailed statistics for the industry by states and territories as returned for 1900.

² San Francisco Trade Journal, December 20, 1901.

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TABLE 14.—FRUITS AND VEGETABLES, CANNING AND

	United States.	Alabama.	Arkansas.	California.	Colorado.	Connecticut.
1 Number of establishments	1,808	3	34	136	7	5
2 Character of organization:						
3 Individual	919	3	18	52	2	.....
4 Firm and limited partnership	505	.....	14	27	.....	1
5 Incorporated companies	365	.....	2	50	5	1
6 Miscellaneous	19	.....	.....	7	.....	.....
7 Capital:						
8 Total	\$27,743,067	\$7,585	\$33,088	\$4,397,985	\$277,325	\$91,463
9 Land	\$2,702,470	\$4,110	\$2,680	\$1,192,110	\$28,500	\$2,450
10 Buildings	\$4,517,008	\$1,125	\$13,123	\$728,891	\$79,500	\$21,232
11 Machinery, tools, and implements	\$4,797,719	\$850	\$7,835	\$554,086	\$62,700	\$29,490
12 Cash and sundries	\$15,725,870	\$1,500	\$9,500	\$1,982,848	\$106,025	\$38,285
13 Proprietors and firm members	2,060	3	44	128	2	2
14 Salaried officials, clerks, etc.:						
15 Total number	1,741	1	2	259	18	7
16 Total salaries	\$1,277,028	\$300	\$350	\$242,888	\$23,700	\$3,260
17 Officers of corporations—						
18 Number	338	.....	1	39	8	4
19 Salaries	\$350,301	.....	\$300	\$58,675	\$13,150	\$1,610
20 General superintendents, managers, clerks, etc.—						
21 Total number	1,403	1	1	220	10	3
22 Total salaries	\$926,727	\$300	\$50	\$188,713	\$10,550	\$1,650
23 Men—						
24 Number	1,258	1	1	182	10	3
25 Salaries	\$381,789	\$300	\$50	\$172,163	\$10,550	\$1,650
26 Women—						
27 Number	150	.....	.....	38	.....	.....
28 Salaries	\$44,988	.....	.....	\$11,550	.....	.....
29 Wage-earners, including pieceworkers, and total wages:						
30 Greatest number employed at any one time during the year	133,106	84	601	24,935	613	429
31 Least number employed at any one time during the year	45,106	45	504	5,952	266	61
32 Average number	36,401	16	136	7,486	208	100
33 Wages	\$8,050,793	\$2,380	\$21,942	\$1,987,649	\$62,661	\$24,967
34 Men, 16 years and over—						
35 Average number	13,542	9	50	1,810	66	35
36 Wages	\$4,122,104	\$1,760	\$10,079	\$702,428	\$37,855	\$12,203
37 Women, 16 years and over—						
38 Average number	19,699	4	72	5,252	116	64
39 Wages	\$3,600,243	\$400	\$10,495	\$1,283,861	\$19,456	\$12,614
40 Children, under 16 years—						
41 Average number	3,160	3	14	415	24	1
42 Wages	\$328,446	\$220	\$1,368	\$51,360	\$5,250	\$150
43 Average number of wage-earners, including pieceworkers, employed during each month:						
44 Men, 16 years and over—						
45 January	8,384	.....	.....	326	24	2
46 February	8,348	.....	.....	285	26	2
47 March	4,350	.....	.....	419	26	1
48 April	5,242	.....	.....	385	26	2
49 May	6,464	.....	.....	1,188	26	3
50 June	11,474	18	.....	2,048	101	3
51 July	14,182	29	37	3,252	101	5
52 August	31,958	38	160	4,217	108	90
53 September	41,108	25	208	4,125	159	141
54 October	23,714	.....	154	2,938	119	94
55 November	11,934	.....	44	1,498	49	67
56 December	5,346	.....	.....	641	32	16
57 Women, 16 years and over—						
58 January	2,451	.....	.....	177	28	.....
59 February	1,958	.....	.....	106	28	.....
60 March	2,536	.....	.....	106	28	.....
61 April	2,885	.....	.....	423	28	.....
62 May	5,981	.....	.....	1,473	28	.....
63 June	16,589	6	.....	6,227	128	.....
64 July	26,895	16	51	13,496	128	.....
65 August	54,533	21	246	16,157	140	175
66 September	64,111	6	280	14,947	385	270
67 October	38,667	1	224	7,788	97	185
68 November	14,625	1	59	1,595	86	86
69 December	5,217	.....	.....	524	37	38
70 Children, under 16 years—						
71 January	370	.....	.....	.....	1	.....
72 February	337	.....	.....	.....	1	.....
73 March	435	.....	.....	.....	1	.....
74 April	493	.....	.....	.....	1	.....
75 May	801	5	.....	6	1	.....
76 June	2,367	5	.....	22	1	.....
77 July	4,560	8	.....	295	51	3
78 August	10,831	12	57	1,257	51	1
79 September	11,331	10	56	1,649	50	.....
80 October	4,762	.....	46	1,281	69	3
81 November	1,169	.....	.....	406	44	3
82 December	476	.....	.....	55	14	.....
83 Miscellaneous expenses:						
84 Total	\$2,423,673	\$135	\$952	\$412,787	\$14,598	\$1,985
85 Rent of works	\$164,169	.....	335	\$26,708	\$530	.....
86 Taxes, not including internal revenue	\$10,139	.....	\$213	\$18,311	\$1,694	\$200
87 Rent of offices, interest, insurance, and all sundry expenses not hitherto included	\$2,112,800	\$60	\$704	\$360,412	\$12,374	\$1,785
88 Contract work	\$36,565	\$30	.....	\$1,306	.....	.....
89 Materials used:						
90 Aggregate cost	\$37,524,297	\$3,418	\$50,954	\$9,102,400	\$223,454	\$31,887
91 Principal materials—						
92 Total cost	\$20,704,733	\$1,050	\$43,633	\$5,449,382	\$117,954	\$29,330
93 Purchased in raw state	\$16,429,113	\$1,050	\$43,333	\$3,797,656	\$115,200	\$29,330
94 Purchased in partially manufactured form	\$4,275,670	.....	.....	\$1,651,726	\$2,754	.....
95 Fuel	\$480,858	\$120	\$4,306	\$96,108	\$3,761	\$1,168
96 Rent of power and heat	\$10,338	.....	.....	.....	.....	.....
97 Mill supplies	\$96,651	\$50	.....	\$610	.....	.....
98 All other materials	\$15,627,357	.....	.....	\$5,159	\$692	\$300
99 Freight	\$604,260	\$2,185	\$2,512	\$3,425,006	\$100,800	\$48,689
100 Total .....	.....	\$10	\$503	\$126,110	\$97	\$2,450

TABLE 14.—FRUITS AND VEGETABLES, CANNING AND

	United States.	Alabama.	Arkansas.	California.	Colorado.	Connecticut.
82	Products:					
	Aggregate value	\$56,688,313	\$7,947	\$100,503	\$13,081,829	\$343,394
83	Canned vegetables—					
84	Total pounds	1,142,327,265	227,880	576,000	62,428,288	7,092,216
	Total value	\$28,734,598	\$4,248	\$15,000	\$2,274,037	\$247,083
85	Tomatoes—					
86	Pounds	626,438,753	227,880	576,000	57,208,720	3,393,336
	Value	\$13,666,500	\$4,248	\$15,000	\$2,068,997	\$94,105
87	Corn—					
88	Pounds	304,175,223				720,000
	Value	\$8,191,383				\$27,000
89	Pease—					
90	Pounds	122,098,669			3,492,480	1,440,000
	Value	\$4,455,673			\$145,987	\$78,000
91	Beans—					
92	Pounds	71,688,808			1,642,082	1,060,800
	Value	\$2,025,123			\$56,797	\$36,160
93	Pumpkins—					
94	Pounds	9,941,616			74,400	478,080
	Value	\$202,404			\$1,860	\$11,818
95	Sweet potatoes—					
96	Pounds	6,013,896			10,656	
	Value	\$124,245			\$396	
97	Succotash—					
98	Pounds	1,768,224				
	Value	\$53,960				
99	Okra—					
100	Pounds	202,076				
	Value	\$5,250				
101	Canned fruits—					
102	Total pounds	293,637,273	168,360		160,921,862	108,000
	Total value	\$11,311,062	\$3,639		\$7,340,059	\$3,750
103	Peaches—					
104	Pounds	104,353,640	135,720		65,064,696	
	Value	\$4,233,165	\$2,850		\$3,103,775	
105	Pears—					
106	Pounds	48,418,936			31,692,672	
	Value	\$2,188,201			\$1,610,900	
107	Apricots—					
108	Pounds	38,278,628			38,272,868	
	Value	\$1,583,252			\$1,582,927	
109	Apples—					
110	Pounds	46,494,898			1,820,266	108,000
	Value	\$1,126,119			\$71,427	\$3,750
111	Plums—					
112	Pounds	21,781,462			17,198,288	887,744
	Value	\$730,562			\$596,484	\$22,217
113	Strawberries—					
114	Pounds	11,050,628			1,218,744	
	Value	\$446,679			\$70,272	
115	Raspberries—					
116	Pounds	8,542,889			522,672	
	Value	\$344,598			\$41,756	
117	Cherries—					
118	Pounds	5,489,608			2,309,976	
	Value	\$307,788			\$155,813	
119	Blackberries—					
120	Pounds	9,217,584	32,640		2,461,680	
	Value	\$301,698	\$849		\$106,705	
121	Dried fruits—					
122	Total pounds	81,189,406		1,402,000	49,337,883	
	Total value	\$4,415,005		\$80,861	\$2,569,520	
223	Apples—					
124	Pounds	33,212,309		1,402,000	3,087,220	
	Value	\$1,906,642		\$80,861	\$155,893	
125	Prunes—					
126	Pounds	25,418,763			24,102,329	
	Value	\$970,927			\$907,041	
127	Raisins—					
128	Pounds	10,734,221			10,734,221	
	Value	\$720,268			\$720,268	
129	Apricots—					
130	Pounds	5,465,217			5,310,217	
	Value	\$455,394			\$442,544	
131	Peaches—					
132	Pounds	5,662,390			5,502,390	
	Value	\$312,495			\$301,495	
133	Pears—					
134	Pounds	701,506			601,506	
135	Value	\$49,279			\$42,279	
	Value of all other products	\$12,207,648		\$4,642	\$898,213	\$92,561
136	Comparison of products:					
137	Number of establishments reporting for both years	1,036	1	6	73	6
138	Value for census year	\$39,974,339	\$1,800	\$13,320	\$5,879,608	\$335,719
	Value for preceding business year	\$33,286,939	\$1,800	\$16,250	\$4,639,734	\$315,845
139	Power:					
140	Number of establishments reporting	822	1	1	33	5
	Total horsepower	27,172	15	40	953	161
	Owned—					
	Engines—					
141	Steam—					
142	Number	1,030	1	1	35	6
	Horsepower	25,336	15	40	838	208
143	Gas or gasoline—					
144	Number	46			5	
	Horsepower	405			48	
145	Water wheels—					
146	Number	9				
	Horsepower	132				
147	Electric motors—					
148	Number	14			4	
	Horsepower	266			35	
149	Other power—					
150	Number	4				1
	Horsepower	110				40
	Rented—					
151	Total horsepower	923			32	5
152	Electric horsepower	244			17	5
153	All other horsepower	679			15	
154	Furnished to other establishments, horsepower	17				

CANNING AND PRESERVING.

PRESERVING: BY STATES AND TERRITORIES, 1900—Continued.

Delaware.	Georgia.	Illinois.	Indiana.	Iowa.	Kansas.	Kentucky.	Maine.	Maryland.	Massachusetts.	Michigan.	Minnesota.	
\$1,670,790	\$120,022	\$3,780,080	\$2,589,908	\$1,359,958	\$113,675	\$192,787	\$1,335,671	\$11,996,245	\$581,545	\$1,760,875	\$49,200	82
64,309,512	313,320	79,182,384	91,566,684	53,612,790	5,089,440	7,979,688	85,784,688	279,588,801	3,246,864	8,059,968	2,101,992	83
\$1,414,308	\$7,522	\$1,774,913	\$2,169,003	\$1,322,622	\$110,825	\$180,187	\$1,093,936	\$6,260,691	\$57,504	\$198,755	\$40,200	84
54,996,168	272,280	13,461,120	63,272,984	6,124,680	3,104,640	5,157,864	299,304	187,160,705	953,424	5,359,968	358,776	85
\$1,121,546	\$6,163	\$253,507	\$1,286,027	\$125,796	\$62,980	\$106,227	\$5,405	\$3,059,137	\$21,638	\$102,755	\$7,140	86
2,555,520	.....	50,985,408	9,943,440	45,394,222	1,312,800	1,584,000	34,100,112	40,750,032	206,688	.....	1,649,616	87
\$65,950	.....	\$1,189,700	\$270,265	\$1,146,075	\$35,312	\$30,600	\$1,038,316	\$1,070,096	\$6,466	.....	\$40,500	88
4,849,824	.....	1,965,840	10,039,380	1,080,000	120,000	768,000	98,400	27,150,792	41,952	2,640,000	.....	89
\$176,578	.....	\$60,500	\$810,172	\$32,250	\$4,000	\$29,000	\$3,325	\$957,436	\$1,000	\$92,000	.....	90
1,836,000	38,160	11,656,376	6,533,584	71,088	48,000	397,824	711,112	19,443,408	2,044,800	60,000	.....	91
\$49,244	\$1,275	\$251,483	\$270,670	\$1,851	\$1,100	\$12,960	\$33,635	\$470,314	\$28,400	\$4,000	.....	92
72,000	.....	1,113,640	1,746,336	849,824	504,000	72,000	294,386	346,320	.....	.....	98,600	93
\$990	.....	\$14,723	\$31,489	\$14,229	\$7,433	\$1,400	\$7,185	\$6,315	.....	.....	\$1,500	94
.....	.....	.....	.....	.....	.....	.....	.....	4,274,088	.....	.....	.....	95
.....	.....	.....	.....	.....	.....	.....	.....	\$85,020	.....	.....	.....	96
.....	.....	.....	30,960	92,976	.....	.....	281,424	383,616	.....	.....	.....	97
.....	.....	.....	\$480	\$2,421	.....	.....	\$11,070	\$10,243	.....	.....	.....	98
.....	2,880	.....	.....	.....	.....	.....	.....	79,340	.....	.....	.....	99
.....	\$84	.....	.....	.....	.....	.....	.....	\$2,130	.....	.....	.....	100
5,486,704	4,154,400	796,920	1,180,040	257,280	120,960	288,000	1,211,256	50,484,850	9,408	8,352,524	.....	101
\$128,093	\$111,875	\$23,775	\$21,397	\$7,060	\$2,850	\$7,200	\$30,479	\$1,422,968	\$755	\$278,582	.....	102
1,791,240	3,012,000	100,560	.....	.....	.....	288,000	.....	26,070,248	1,680	2,572,944	.....	103
\$41,282	\$33,475	\$2,300	.....	.....	.....	\$7,200	.....	\$758,919	\$140	\$102,640	.....	104
2,621,461	724,800	4,320	10,008	.....	.....	.....	.....	5,798,904	2,160	243,840	.....	105
\$62,361	\$20,200	\$200	\$255	.....	.....	.....	.....	\$151,012	\$157	\$12,636	.....	106
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	107
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	108
162,000	369,600	295,680	1,072,800	257,280	120,960	.....	1,211,256	6,186,720	1,920	2,975,136	.....	109
\$3,065	\$7,200	\$6,675	\$20,132	\$7,060	\$2,850	.....	\$30,479	\$137,884	\$40	\$66,260	.....	110
.....	.....	.....	1,800	.....	.....	.....	.....	20,830	.....	897,808	.....	111
.....	.....	.....	\$50	.....	.....	.....	.....	\$434	.....	\$26,771	.....	112
54,000	.....	76,440	.....	.....	.....	.....	.....	5,614,684	288	399,048	.....	113
\$1,925	.....	\$3,200	.....	.....	.....	.....	.....	\$178,008	\$13	\$20,068	.....	114
30,000	48,000	143,320	28,008	.....	.....	.....	.....	2,131,704	3,360	873,400	.....	115
\$1,500	\$1,000	\$5,400	\$622	.....	.....	.....	.....	\$71,190	\$400	\$34,083	.....	116
.....	.....	.....	.....	.....	.....	.....	.....	1,201,584	.....	68,016	.....	117
.....	.....	.....	.....	.....	.....	.....	.....	\$42,096	.....	\$4,166	.....	118
828,000	.....	171,600	17,424	.....	.....	.....	.....	3,460,176	.....	322,272	.....	119
\$17,960	.....	\$6,000	\$383	.....	.....	.....	.....	\$88,425	.....	\$12,003	.....	120
.....	.....	2,444,149	101,000	26,100	.....	90,000	.....	.....	.....	4,418,453	.....	121
.....	.....	\$144,250	\$5,080	\$1,125	.....	\$5,400	.....	.....	.....	\$243,285	.....	122
.....	.....	1,424,149	101,000	26,100	.....	90,000	.....	.....	.....	4,418,453	.....	123
.....	.....	\$33,150	\$5,080	\$1,125	.....	\$5,400	.....	.....	.....	\$243,285	.....	124
.....	.....	605,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	125
.....	.....	\$30,250	.....	.....	.....	.....	.....	.....	.....	.....	.....	126
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	127
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	128
.....	.....	155,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	129
.....	.....	\$12,850	.....	.....	.....	.....	.....	.....	.....	.....	.....	130
.....	.....	160,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	131
.....	.....	\$11,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	132
.....	.....	100,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	133
.....	.....	\$7,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	134
228,389	\$625	\$1,787,092	\$393,823	\$29,151	.....	.....	\$206,256	\$4,312,586	\$473,283	\$1,040,303	.....	135
37	4	35	37	19	5	5	46	120	7	62	2	136
\$1,190,807	\$65,582	\$2,996,422	\$2,258,826	\$1,187,773	\$113,675	\$108,237	\$1,146,309	\$9,899,920	\$505,945	\$1,544,118	\$39,880	137
\$1,010,585	\$11,000	\$2,525,423	\$1,941,254	\$1,003,620	\$75,121	\$35,325	\$1,082,747	\$3,043,981	\$343,975	\$1,156,638	\$34,000	138
48	5	80	42	23	5	6	48	117	7	25	4	139
1,736	93	1,082	1,899	1,428	178	193	681	4,551	96	750	60	140
69	5	33	48	33	6	8	47	175	8	29	4	141
1,470	93	881	1,818	1,422	178	193	673	4,257	96	713	60	142
3	.....	2	3	1	.....	.....	.....	6	.....	2	.....	143
6	.....	4	81	6	.....	.....	.....	24	.....	7	.....	144
.....	.....	.....	.....	.....	.....	.....	.....	3	.....	1	.....	145
.....	.....	.....	.....	.....	.....	.....	.....	30	.....	22	.....	146
.....	.....	.....	.....	.....	.....	.....	.....	4	.....	1	.....	147
.....	.....	.....	.....	.....	.....	.....	.....	160	.....	8	.....	148
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	149
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	150
260	.....	197	.....	.....	.....	.....	8	80	.....	.....	.....	151
.....	.....	197	.....	.....	.....	.....	5	.....	.....	.....	.....	152
.....	.....	.....	.....	.....	.....	.....	8	.....	.....	.....	.....	153
.....	.....	.....	.....	.....	.....	.....	.....	80	.....	.....	.....	154
.....	.....	.....	.....	.....	.....	.....	.....	.....	15	.....	.....	155

TABLE 14.—FRUITS AND VEGETABLES, CANNING AND

		United States.	Alabama.	Arkansas.	California.	Colorado.	Connecticut.
Establishments classified by number of persons employed, not including proprietors and firm members:							
155	Total number of establishments	1,808	3	34	136	7	5
156	No employees	8			2		
157	Under 5	154			11		
158	5 to 20	521	1	25	32	1	
159	21 to 50	424	2	8	16	4	
160	51 to 100	308			21		4
161	101 to 250	282		1	14	2	1
162	251 to 500	76			22		
163	501 to 1,000	31			18		
164	Over 1,000	4					
		Missouri.	Nebraska.	New Hamp- shire.	New Jersey.	New York.	North Caro- lina.
1	Number of establishments	45	5	3	78	511	19
Character of organization:							
2	Individual	8		1	30	384	9
3	Firm and limited partnership	9	2	2	27	124	5
4	Incorporated companies	27	3		12	60	5
5	Miscellaneous	1			4	3	
Capital:							
6	Total	\$345,360	\$123,623	\$21,642	\$1,429,221	\$6,649,059	\$30,340
7	Land	\$22,117	\$6,800	\$150	\$111,805	\$355,910	\$3,035
8	Buildings	\$71,255	\$35,000	\$1,600	\$334,279	\$1,025,624	\$4,575
9	Machinery, tools, and implements	\$128,736	\$41,325	\$9,542	\$250,618	\$906,809	\$7,480
10	Cash and sundries	\$123,252	\$40,498	\$10,350	\$732,519	\$4,360,716	\$15,250
11	Proprietors and firm members	33	6	6	90	589	20
Salaried officials, clerks, etc:							
12	Total number	74	9	1	63	261	2
13	Total salaries	\$23,007	\$6,400	\$600	\$33,830	\$201,025	\$300
Officers of corporations—							
14	Number	29			14	45	
15	Salaries	\$8,702			\$10,525	\$71,645	
General superintendents, managers, clerks, etc.—							
16	Total number	45	9	1	49	216	2
17	Total salaries	\$14,305	\$6,400	\$600	\$23,305	\$123,380	\$300
Men—							
18	Number	41	9	1	46	101	2
19	Salaries	\$13,970	\$6,400	\$600	\$22,760	\$118,461	\$300
Women—							
20	Number	4			3	25	
21	Salaries	\$385			\$545	\$10,919	
Wage-earners, including pieceworkers, and total wages:							
22	Greatest number employed at any one time during the year	3,598	733	91	8,355	16,421	372
23	Least number employed at any one time during the year	1,790	136	36	1,874	854	193
24	Average number	650	161	19	1,992	5,518	78
25	Wages	\$116,467	\$21,686	\$5,957	\$422,092	\$1,462,820	\$10,730
Men, 16 years and over—							
26	Average number	170	81	11	818	2,292	29
27	Wages	\$49,803	\$13,200	\$4,700	\$232,316	\$811,564	\$6,506
Women, 16 years and over—							
28	Average number	377	50	8	1,088	3,007	41
29	Wages	\$56,883	\$6,000	\$1,257	\$180,952	\$623,168	\$3,806
Children, under 16 years—							
30	Average number	103	30		86	219	8
31	Wages	\$9,781	\$2,486		\$8,824	\$23,088	\$425
Average number of wage-earners, including pieceworkers, employed dur- ing each month:							
Men, 16 years and over—							
32	January	21	10	3	193	428	3
33	February	20	5	3	253	446	5
34	March	20	10	3	269	476	16
35	April	21	13	3	282	529	17
36	May	34	23	3	315	692	59
37	June	35	28	3	685	2,141	46
38	July	55	40	3	687	2,494	59
39	August	679	340	3	1,651	3,008	30
40	September	631	331	48	2,765	6,585	33
41	October	368	100	25	1,755	5,472	17
42	November	129	41	27	688	3,864	4
43	December	22	25	12	257	1,377	4
Women, 16 years and over—							
44	January	8		5	19	480	3
45	February	9		5	18	407	3
46	March	6		5	25	435	
47	April	8		5	19	496	4
48	May	9	20	5	78	712	60
49	June	97	25	5	488	2,447	90
50	July	69	28	8	385	3,376	111
51	August	1,670	195		3,093	4,437	138
52	September	1,592	197	19	4,537	8,890	59
53	October	783	116	19	3,038	7,044	12
54	November	178	16	20	1,155	5,333	3
55	December	11	7	5	152	2,030	
Children, under 16 years—							
56	January	1			2	19	
57	February	1			3	21	
58	March	1			3	23	
59	April	1			4	24	
60	May	1	10		4	34	10
61	June	1	35		46	188	10
62	July	80	42		44	410	30
63	August	473	165		136	409	33
64	September	459	85		404	946	15
65	October	186	20		244	290	2
66	November	31			81	133	
67	December	1			14	78	

TABLE 14.—FRUITS AND VEGETABLES, CANNING AND

	Missouri.	Nebraska.	New Hamp- shire.	New Jersey.	New York.	North Caro- lina.
Miscellaneous expenses:						
68 Total	\$23,399	\$10,325	\$270	\$83,418	\$495,478	\$414
69 Rent of works	\$2,630		\$250	\$1,440	\$15,910	\$75
70 Taxes, not including internal revenue	\$1,526	\$500	\$20	\$6,493	\$17,503	\$146
71 Rent of offices, interest, insurance, and all sundry expenses not hitherto included.	\$17,881	\$9,825		\$75,485	\$461,302	\$193
72 Contract work	\$1,412				\$763	
Materials used:						
73 Aggregate cost	\$559,651	\$180,578	\$21,111	\$1,401,101	\$5,592,462	\$44,494
Principal materials—						
74 Total cost	\$361,489	\$48,789	\$19,014	\$649,720	\$8,352,396	\$21,985
75 Purchased in raw state	\$130,789	\$30,320	\$11,802	\$606,206	\$2,986,579	\$20,181
76 Purchased in partially manufactured form	\$230,700	\$18,469	\$7,212	\$43,514	\$365,817	\$1,804
77 Fuel	\$7,117	\$1,965	\$1,187	\$17,380	\$138,468	\$797
78 Rent of power and heat	\$12			\$50	\$1,906	\$282
79 Mill supplies	\$1,624	\$1,177		\$5,715	\$22,854	\$190
80 All other materials	\$185,279	\$77,649	\$921	\$686,228	\$1,989,626	\$20,462
81 Freight	\$4,180	\$993	\$9	\$42,008	\$87,212	\$778
Products:						
82 Aggregate value	\$869,977	\$210,688	\$20,964	\$2,199,176	\$8,975,321	\$64,440
Canned vegetables—						
83 Total pounds	26,628,096	7,429,488	744,144	84,423,137	135,482,524	1,797,840
84 Total value	\$535,307	\$193,286	\$18,603	\$1,858,489	\$4,410,251	\$49,709
Tomatoes—						
85 Pounds	23,274,696	1,512,000		77,764,232	18,382,340	893,160
86 Value	\$460,264	\$31,800		\$1,668,855	\$483,112	\$19,232
Corn—						
87 Pounds	2,472,000	5,740,800	652,512		64,384,896	57,120
88 Value	\$60,050	\$157,890	\$16,313		\$1,925,496	\$1,485
Peas—						
89 Pounds				3,840,273	36,078,696	528,000
90 Value				\$96,255	\$1,478,912	\$22,000
Beans—						
91 Pounds		162,288		1,596,960	13,196,752	319,560
92 Value		\$3,396		\$64,768	\$448,314	\$6,982
Pumpkins—						
93 Pounds	881,400	14,400		182,520	1,788,368	
94 Value	\$14,993	\$200		\$8,002	\$35,370	
Sweet potatoes—						
95 Pounds				1,009,152	720,000	
96 Value				\$28,829	\$15,000	
Succotash—						
97 Pounds			91,632		887,616	
98 Value			\$2,290		\$27,506	
Okra—						
99 Pounds				30,000	53,856	
100 Value				\$880	\$1,541	
Canned fruit—						
101 Total pounds	1,433,352	451,200	213,120	3,224,512	41,241,240	475,536
102 Total value	\$27,827	\$18,900	\$6,660	\$107,013	\$1,347,390	\$10,881
Peaches—						
103 Pounds				62,400	2,096,112	328,536
104 Value				\$2,500	\$72,591	\$7,996
Pears—						
105 Pounds				1,760,496	4,178,592	
106 Value				\$63,356	\$226,082	
Apricots—						
107 Pounds					2,400	
108 Value					\$150	
Apples—						
109 Pounds	1,433,352	451,200	213,120	1,137,528	23,088,792	23,440
110 Value	\$27,827	\$18,900	\$6,660	\$26,945	\$560,048	\$692
Plums—						
111 Pounds					3,398,400	
112 Value					\$94,879	
Strawberries—						
113 Pounds				106,504	2,963,728	
114 Value				\$8,554	\$141,049	
Raspberries—						
115 Pounds				188,768	4,191,776	
116 Value				\$4,785	\$163,494	
Cherries—						
117 Pounds					1,017,952	
118 Value					\$71,881	
Blackberries—						
119 Pounds				18,816	313,488	118,560
120 Value				\$873	\$17,216	\$2,198
Dried fruits—						
121 Total pounds	116,900	6,600	53,750		21,542,897	
122 Total value	\$4,800	\$100	\$3,725		\$1,275,109	
Apples—						
123 Pounds	116,900	6,600	53,750		21,542,897	
124 Value	\$4,800	\$100	\$3,725		\$1,275,109	
Prunes—						
125 Pounds						
126 Value						
Raisins—						
127 Pounds						
128 Value						
Apricots—						
129 Pounds						
130 Value						
Peaches—						
131 Pounds						
132 Value						
Pears—						
133 Pounds						
134 Value						
135 Value of all other products	\$302,043	\$3,402	\$976	\$233,674	\$1,942,571	\$3,860
Comparison of products:						
136 Number of establishments reporting for both years	19	3	2	52	290	10
137 Value for census year	\$590,203	\$189,160	\$26,664	\$1,770,752	\$6,118,082	\$14,908
138 Value for preceding business year	\$584,749	\$117,000	\$23,314	\$1,611,680	\$5,443,779	\$9,376

CANNING AND PRESERVING.

PRESERVING: BY STATES AND TERRITORIES, 1900—Continued.

Ohio.	Oregon.	Pennsylvania.	South Carolina.	Tennessee.	Texas.	Utah.	Vermont.	Virginia.	Washington.	West Virginia.	Wisconsin.	All other states. ¹	
\$78,781	\$4,543	\$58,788	\$503	\$207	\$1,245	\$6,024	\$3,390	\$7,289	\$2,877	\$2,983	\$91,887	\$2,309	68
\$4,894	\$810	\$3,527		\$2	\$440	\$58	\$450	\$1,173	\$1,130	\$50	\$14,050	\$1,600	69
\$5,486	\$818	\$1,409	\$185	\$83	\$124	\$488	\$210	\$302	\$302	\$157	\$2,324	\$23	70
\$63,461	\$3,915	\$53,700	\$313	\$122	\$681	\$5,478	\$2,730	\$5,203	\$1,245	\$2,776	\$48,513	\$386	71
		\$152									\$27,000		72
\$1,197,269	\$79,290	\$499,353	\$15,169	\$37,598	\$85,275	\$211,279	\$33,361	\$342,689	\$24,781	\$39,328	\$543,496	\$13,399	73
\$502,614	\$40,242	\$277,840	\$5,923	\$13,559	\$42,678	\$31,485	\$58,756	\$134,118	\$15,622	\$12,526	\$239,441	\$4,807	74
\$431,413	\$33,481	\$193,581	\$5,433	\$13,559	\$38,614	\$73,271	\$36,465	\$116,519	\$13,822	\$12,526	\$225,489	\$4,307	75
\$71,201	\$6,761	\$84,259	\$490		\$4,064	\$3,214	\$17,291	\$17,599	\$1,800		\$13,952	\$500	76
\$13,318	\$1,888	\$6,965	\$290	\$636	\$1,007	\$4,027	\$1,200	\$5,162	\$1,464	\$1,417	\$15,645	\$480	77
\$670	\$125	\$50						\$25					78
\$8,029	\$206	\$1,513	\$30	\$162	\$110		\$240	\$1,222	\$55		\$9,157	\$15	79
\$655,596	\$36,099	\$207,082	\$8,393	\$22,716	\$41,255	\$124,392	\$27,358	\$194,116	\$6,950	\$22,519	\$239,434	\$7,797	80
\$21,442	\$730	\$5,993	\$523	\$225	\$225	\$384	\$307	\$8,046	\$600	\$2,934	\$39,319	\$300	81
\$1,941,398	\$141,498	\$301,250	\$23,565	\$72,007	\$151,104	\$300,349	\$166,184	\$535,900	\$63,141	\$66,886	\$1,007,765	\$34,041	82
76,362,754	\$24,000	20,390,240	401,044	2,682,480	2,211,312	12,552,336	5,745,120	27,332,771	1,882,152	80,333,424	638,776	\$19,421	83
\$1,769,432	\$14,300	\$516,468	\$8,785	\$51,216	\$57,713	\$271,488	\$164,584	\$499,355		\$36,355	\$978,954		84
40,968,068	110,400	9,549,896	369,696	2,617,200	1,062,576	12,300,048		26,484,344	1,805,640	2,526,696	606,600	\$17,075	85
\$814,044	\$2,700	\$201,304	\$8,090	\$49,996	\$39,629	\$263,363		\$474,305	\$34,133	\$52,383	\$17,075		86
24,354,854	14,400	7,063,008			\$59,376		5,649,120	520,467	20,832	3,589,920	76,800		87
\$642,161	\$405	\$187,834			\$10,750		\$162,034	\$13,160	\$648	\$90,163	\$2,160		88
2,127,792	141,600	1,993,632		36,000				136,800			23,534,208		89
\$76,564	\$8,630	\$32,776		\$1,800				\$6,080			\$307,408		90
7,937,776	57,600	1,596,864	31,363	65,230	153,360		96,000	205,160		55,680	615,600	5,376	91
\$199,615	\$2,565	\$41,740	\$695	\$1,220	\$5,534		\$2,500	\$5,195		\$1,574	\$23,000	\$186	92
924,264		186,840									72,000		93
\$37,048		\$2,814						252,288			\$1,000		94
								\$3,125					95
													96
													97
													98
													99
								36,000					100
								\$615					101
2,691,821	2,585,760	1,476,312	130,243	621,600	1,855,440	631,245	57,600	1,524,792		639,240	16,944		102
\$74,253	\$106,650	\$39,721	\$2,980	\$19,250	\$74,241	\$23,281	\$1,600	\$30,752		\$16,339	\$1,765		103
399,960	72,000		33,952	252,000	1,549,680	91,488		349,440		24,120	6,864		104
\$10,940	\$2,550		\$1,655	\$10,000	\$60,775	\$3,362		\$7,300		\$500	\$515		105
648	530,400	45,000	1,152	96,000	111,600	182,880		108,000			6,000		106
\$27	\$22,000	\$2,450	\$25	\$3,500	\$3,046	\$6,994		\$1,650			\$750		107
						3,360							108
						\$175							109
1,171,416	405,600	1,172,112	50,976	273,600	74,160	212,640	57,600	657,816		613,534	3,600		110
\$27,892	\$13,300	\$22,371	\$1,150	\$5,750	\$2,020	\$5,537	\$1,600	\$11,663		\$17,775	\$450		111
	163,200					101,136							112
	\$6,800					\$5,144							113
340,992	168,000	86,400				4,300							114
\$11,246	\$9,500	\$5,040				\$2,550							115
171,077	124,800	124,800				6,144							116
\$6,348	\$6,600	\$7,100				\$320							117
	699,360					7,920		124,800					118
	\$30,300					\$412		\$3,120					119
607,728	422,400	48,000	3,163		84,000	20,880		234,736		1,536	480		120
\$17,801	\$15,000	\$2,760	\$100		\$5,250	\$1,037		\$7,019		\$64	\$50		121
269,500	397,350	570,490		13,000				58,000	236,000		60,334		122
\$13,215	\$19,461	\$28,104		\$650				\$3,435	\$14,645		\$1,640		123
269,500	37,250	570,490		13,000				53,000					124
\$13,215	\$2,110	\$28,104		\$650				\$3,435					125
	360,100								236,000		60,334		126
	\$17,351								\$14,645		\$1,640		127
													128
													129
													130
													131
													132
													133
													134
\$34,498	\$1,187	\$216,957	\$16,850	\$391	\$19,160	\$5,580		\$2,358	\$48,496	\$12,192	\$33,811	\$11,215	135
41	9	26	7	5	4	5	3	54	13	7	11	6	136
\$1,505,991	\$32,103	\$612,265	\$5,800	\$33,071	\$38,904	\$175,530	\$166,184	\$329,471	\$40,336	\$29,929	\$776,234	\$34,041	137
\$1,289,317	\$103,130	\$566,390	\$5,299	\$29,575	\$75,375	\$162,204	\$115,133	\$305,421	\$51,855	\$27,300	\$559,168	\$30,590	138

¹ Includes establishments distributed as follows: Florida, 2; Idaho, 2; New Mexico, 1; Rhode Island, 1.

TABLE 14.—FRUITS AND VEGETABLES, CANNING AND

	Missouri.	Nebraska.	New Hamp- shire.	New Jersey.	New York.	North Caro- lina.
139	Power:					
140	Number of establishments reporting..... 30					
	Total horsepower..... 613					
	Owned—					
	Engines—					
	Steam—					
141	Number..... 31					
142	Horsepower..... 613					
	Gas or gasoline—					
143	Number.....					
144	Horsepower.....					
	Water wheels—					
145	Number.....					
146	Horsepower.....					
	Electric motors—					
147	Number.....					
148	Horsepower.....					
	Other power—					
149	Number.....					
150	Horsepower.....					
	Rented—					
151	Total horsepower.....					
152	Electric horsepower.....					
153	All other horsepower.....					
154	Furnished to other establishments, horsepower.....					
	Establishments classified by number of persons employed, not including proprietors and firm members:					
155	Total number of establishments..... 45					
156	No employees.....					
157	Under 5..... 1					
158	5 to 20..... 1					
159	21 to 50..... 11					
160	51 to 100..... 15					
161	101 to 250..... 17					
162	251 to 500.....					
163	501 to 1,000.....					
164	Over 1,000.....					

CANNING AND PRESERVING.

PRESERVING: BY STATES AND TERRITORIES, 1900—Continued.

Ohio.	Oregon,	Pennsylva- nia.	South Carolina.	Tennessee.	Texas.	Utah.	Vermont.	Virginia.	Washing- ton.	West Vir- ginia.	Wisconsin.	All other states. ¹	
49	5	24	3	5	4	8	3	68	3	2	15	2	139
1,178	108	950	45	75	90	310	47	1,329	25	150	814	44	140
49	6	32	3	5	4	8	3	61	2	8	21	3	141
1,075	108	940	45	75	90	310	47	1,202	28	150	814	42	142
2		1						7				1	143
30		10						67				2	144
													145
													146
1													147
8													148
1								2					149
40								30					150
25								30	2				151
25								30	2				152
		2											153
													154
70	17	89	12	11	10	8	3	88	18	9	16	6	155
			1										156
	4	8	1						6	1			157
12	7	11	8	2	3			28	10				158
18	3	15	1	5	3	2		44	2	6	1		159
23	1	6	1	4	3	3		19		1	3		160
14	1	4			1	2	3	2		1	9		161
1	1					1					2		162
2											1		163
													164

¹ Includes establishments distributed as follows: Florida, 2; Idaho, 2; New Mexico, 1; Rhode Island, 1.

FISH, CANNING AND PRESERVING.

Table 15 is a comparative summary of the statistics for the establishments engaged in the canning and preserving of fish, as returned at the censuses of 1890 and 1900, with the percentages of increase for the decade.

TABLE 15.—FISH, CANNING AND PRESERVING: COMPARATIVE SUMMARY, 1890 AND 1900, WITH PER CENT OF INCREASE FOR THE DECADE.

	DATE OF CENSUS.		Per cent of increase.
	1900	1890	
Number of establishments	348	110	216.4
Capital	\$19,514,215	\$3,186,975	512.3
Salaried officials, clerks, etc., number	618	182	239.6
Salaries	\$585,160	\$120,253	386.6
Wage-earners, average number	13,410	5,020	167.1
Total wages	\$4,229,638	\$1,128,143	274.9
Men, 16 years and over	9,781	3,787	157.0
Wages	\$3,783,506	\$986,689	278.4
Women, 16 years and over	2,533	841	201.2
Wages	\$369,781	\$121,059	205.5
Children, under 16 years	1,146	392	192.4
Wages	\$126,351	\$20,395	519.5
Miscellaneous expenses	\$883,363	\$280,660	214.7
Cost of materials used	\$13,232,001	\$4,710,709	180.9
Value of products	\$22,258,749	\$6,972,268	219.2

¹ Includes proprietors and firm members, with their salaries; number only reported in 1900, but not included in this table. (See Table 24.)

The canning and preserving of fish existed as an industry as early as 1850, but it was usually carried on in connection with the canning and preserving of fruits and vegetables and oysters, and statistics for the industry do not appear separately until the census of 1890. At that time the number of establishments reporting canned fish as the principal product had grown to 110, with a capital of \$3,186,975, giving employment to 5,020 wage-earners, and paying for wages \$1,128,143; for materials, \$4,710,709. They reported \$6,972,268 as the value of products. From 1890 to 1900 the increase in every item was most marked. The increase in the number of establishments was 238, or more than the total number reported for 1890. The capital showed a most notable increase of \$16,327,240—that is, the capital in 1900 was more than six times that given for 1890. The average capital per establishment increased from \$28,972 to \$56,075—that is, the average capital in 1900 was nearly twice that reported in 1890. These figures indicate the internal growth and development of these establishments since 1890, as well as the expansion of the industry by the construction of new plants. In this last particular, the fish-canning industry differs from the other two industries included in this report. The total number of wage-earners increased 8,390—that is, there were nearly two and one-half times as many wage-earners in 1900 as in 1890. The wages have shown a comparatively larger increase. The relative proportion of wages and cost of materials to the value of products was about the same for the two periods.

In this branch of the canning industry, also, the individual form of organization appears to predominate. Of the total number of establishments 134, or 38.5 per cent, were conducted by individuals; 112, or 32.2 per cent, were operated by incorporated companies, and 102, or 29.3 per cent, by firms and limited partnerships.

Table 16 shows by states and territories, arranged geographically, the number of establishments from which returns were received in 1900, with the increase during the decade.

TABLE 16.—FISH, CANNING AND PRESERVING, COMPARATIVE SUMMARY: NUMBER OF ACTIVE ESTABLISHMENTS, 1890 AND 1900, AND THE INCREASE DURING THE DECADE, BY STATES AND TERRITORIES ARRANGED GEOGRAPHICALLY.

	1900	1890	Increase.
United States	948	110	234
New England states	179	64	115
Maine	117	35	82
New Hampshire	1	2	1
Massachusetts	61	29	32
Middle states	18	12	6
New York	9	2	7
New Jersey	1	2	11
Pennsylvania	1	5	14
Delaware	3	3	3
Maryland	3	3	3
District of Columbia	1	3	12
Southern states	18	1	17
Virginia	5	1	4
North Carolina	1	1	1
South Carolina	1	1	1
Mississippi	4	4	4
Louisiana	6	6	6
Texas	1	1	1
Central states	18	8	10
Ohio	3	5	12
Michigan	4	1	3
Illinois	4	4	4
Wisconsin	6	6	6
Minnesota	1	2	12
Missouri	1	1	1
Pacific states	79	25	54
Washington	36	7	29
Oregon	24	15	9
California	19	3	16
Outlying districts	36	(²)	36
Alaska	36	(²)	36

¹ Decrease.

² No statistics available for 1890.

Table 16 shows that the greatest development occurred in the New England states, where 64 establishments were reported in 1890 and 179 in 1900, an increase of 115, or 179.7 per cent. Of these states, Maine reported an increase of 234.3 per cent and Massachusetts 110.3 per cent.

The above table should be considered in connection with Table 17, which is a summary of the totals for the canning and preserving of fish as returned at the censuses of 1890 and 1900.

CANNING AND PRESERVING.

TABLE 17.—FISH, CANNING AND PRESERVING: COMPARATIVE SUMMARY, BY STATES AND TERRITORIES, 1890 AND 1900.

	Year.	United States.	Alaska. ¹	California.	Delaware. ¹	District of Columbia. ²	Illinois. ¹	Louisiana. ¹	Maine. ¹	Maryland. ¹	Massachusetts.
Number of establishments.....	1900	348	86	19	3		4	6	117	3	61
	1890	110		3		3			35		29
Capital:											
Total.....	1900	\$19,514,215	\$3,208,228	\$691,285	\$1,985		\$2,655	\$186,689	\$3,481,056	\$65,600	\$1,784,227
	1890	\$3,186,975		\$47,070		\$5,580			\$527,420		\$741,301
Land.....	1900	\$757,510	\$78,135	\$51,000	\$400		\$475	\$10,150	\$187,855	\$7,500	\$194,567
	1890	\$466,970		\$3,250		\$1,700			\$23,550		\$34,675
Buildings.....	1900	\$3,914,853	\$971,094	\$70,100	\$500		\$750	\$35,121	\$740,315	\$8,900	\$206,559
	1890	\$407,340		\$4,250		\$800			\$110,300		\$60,500
Machinery, tools, and implements.....	1900	\$5,104,046	\$1,849,264	\$69,235	\$185		\$380	\$33,538	\$2,045,117	\$7,400	\$256,563
	1890	\$437,420		\$4,600		\$230			\$85,235		\$27,755
Cash and sundries.....	1900	\$9,677,806	\$309,735	\$500,950	\$350		\$1,100	\$107,880	\$5,558,269	\$41,800	\$1,076,543
	1890	\$1,765,245		\$34,970		\$2,800			\$308,335		\$618,471
Salaried officials, clerks, etc., number.....	1900	618	64	33				8	177	6	122
	1890	182		5		3			49		29
Salaries.....	1900	\$585,160	\$106,430	\$49,710				\$9,500	\$139,497	\$2,380	\$103,131
	1890	\$120,253		\$2,315		\$1,600			\$23,837		\$25,794
Wage-earners, average number.....	1900	13,410	2,092	376			5	236	5,567	442	1,323
	1890	5,020		74		5			2,342		603
Total wages.....	1900	\$4,229,633	\$1,242,642	\$158,888			\$2,642	\$44,710	\$1,184,856	\$63,500	\$475,123
	1890	\$1,123,143		\$12,439		\$1,546			\$447,800		\$236,318
Men, 16 years and over.....	1900	9,731	2,091	279			5	45	2,895	207	1,194
	1890	3,787		58		5			1,951		448
Wages.....	1900	\$3,733,506	\$1,242,237	\$136,422			\$2,642	\$22,460	\$333,157	\$38,900	\$449,781
	1890	\$983,689		\$10,779		\$1,546			\$349,180		\$204,250
Women, 16 years and over.....	1900	2,533	1	73				161	1,746	179	134
	1890	841		16					635		155
Wages.....	1900	\$369,781	\$405	\$19,680				\$21,260	\$245,302	\$22,600	\$25,342
	1890	\$121,059		\$1,660					\$30,951		\$32,068
Children, under 16 years.....	1900	1,146		24				30	926	56	
	1890	392							356		
Wages.....	1900	\$126,351		\$2,786				\$1,000	\$106,391	\$4,000	
	1890	\$20,395							\$17,675		
Miscellaneous expenses.....	1900	\$383,363	\$150,854	\$23,370	\$39		\$526	\$6,408	\$97,859	\$11,020	\$118,058
	1890	\$280,660		\$1,966		\$391			\$94,712		\$36,917
Cost of materials used.....	1900	\$13,232,001	\$1,587,883	\$449,718	\$6,238		\$3,195	\$67,583	\$2,573,636	\$154,605	\$3,471,112
	1890	\$4,710,709		\$20,475		\$7,006			\$900,674		\$2,031,863
Value of products.....	1900	\$22,253,749	\$3,321,136	\$366,432	\$8,473		\$3,900	\$144,379	\$4,779,733	\$248,100	\$4,619,362
	1890	\$6,972,263		\$44,120		\$11,302			\$1,660,331		\$2,537,038

	Year.	Michi- gan. ⁴	Missis- sippi. ¹	New York. ⁴	Ohio.	Oregon.	Pennsyl- vania. ²	Virginia. ⁴	Washing- ton.	Wiscon- sin. ¹	All other states.
Number of establishments.....	1900	4	4	9	3	24		5	36	6	68
	1890				5	15			7		98
Capital:											
Total.....	1900	\$6,800	\$122,580	\$100,564	\$56,063	\$2,558,642		\$10,325	\$2,222,726	\$4,590	\$65,245
	1890				\$18,404	\$1,365,800	\$37,250		\$920,790		\$123,410
Land.....	1900	\$700	\$4,362	\$17,021	\$200	\$127,522		\$200	\$118,268	\$1,125	\$13,520
	1890				\$300	\$372,000	\$3,800		\$14,945		\$12,350
Buildings.....	1900	\$1,850	\$9,003	\$25,563	\$1,025	\$1,539,129		\$2,700	\$284,804	\$1,150	\$16,300
	1890				\$1,125	\$220,000	\$11,000		\$53,615		\$5,750
Machinery, tools, and implements.....	1900	\$250	\$12,628	\$10,005	\$42,943	\$363,795		\$1,825	\$457,473	\$815	\$12,675
	1890				\$3,000	\$275,050	\$5,300		\$46,300		\$39,450
Cash and sundries.....	1900	\$4,000	\$96,587	\$47,985	\$11,900	\$523,196		\$5,600	\$1,362,161	\$1,500	\$22,750
	1890				\$18,979	\$408,750	\$17,150		\$205,430		\$65,300
Salaried officials, clerks, etc., number.....	1900		9	7	5	58		6	116		7
	1890				6	51			15		16
Salaries.....	1900		\$7,600	\$6,520	\$4,160	\$56,125		\$550	\$93,117		\$5,940
	1890				\$3,910	\$29,362	\$5,570		\$6,655		\$18,710
Wage-earners, average number.....	1900	19	231	66	51	636		18	2,190	8	150
	1890				17	1,473			316		103
Total wages.....	1900	\$7,961	\$41,028	\$20,842	\$21,600	\$219,744		\$4,545	\$711,214	\$1,010	\$29,339
	1890				\$5,280	\$300,324	\$12,520		\$65,320		\$47,590
Men, 16 years and over.....	1900	18	71	39	51	620		11	2,086	2	117
	1890				6	1,467			306		124
Wages.....	1900	\$7,888	\$20,353	\$18,424	\$21,000	\$217,750		\$2,995	\$693,480	\$720	\$26,709
	1890				\$3,500	\$300,624	\$12,520		\$62,320		\$41,470

¹ None reported in 1890.

² Reported under head of other states in 1900.

³ Includes proprietors and firm members, with their salaries, number only reported in 1900, but not included in this table. (See Table 24.)

⁴ Includes establishments distributed as follows: District of Columbia, 1; Missouri, 1; New Hampshire, 1; New Jersey, 1; North Carolina, 1; Pennsylvania, 1; South Carolina, 1; Texas, 1.

⁵ Includes establishments distributed as follows: Michigan, 1; Minnesota, 2; New Jersey, 2; New York, 2; Virginia, 1.

TABLE 17.—FISH, CANNING AND PRESERVING: COMPARATIVE SUMMARY, BY STATES AND TERRITORIES, 1890 AND 1900—Continued.

	Year.	Michi- gan. ³	Missis- sippi. ¹	New York. ³	Ohio.	Oregon.	Pennsyl- vania. ²	Virginia. ³	Washing- ton.	Wiscon- sin. ¹	All other states.
Women, 16 years and over	1900 1890	.....	98	27	..... 3	11	.....	6	78	.....	24 32
Wages	1900 1890	.....	\$14,125	\$2,418	..... \$680	\$1,494	.....	\$1,325	\$13,780	.....	\$2,100 \$5,700
Children under 16 years.....	1900 1890	1	62	.....	..... 8	5 6	.....	1	31 10	1	9 12
Wages	1900 1890	\$75	\$6,550	.....	..... \$1,100	\$500 \$200	.....	\$225	\$4,004 \$1,000	\$290	\$530 \$420
Miscellaneous expenses	1900 1890	\$1,318	\$17,997	\$11,741	\$2,610 \$1,364	\$147,858 \$92,972	..... \$5,175	\$496	\$285,353 \$33,801	\$1,005	\$6,801 \$13,422
Cost of materials used.....	1900 1890	\$52,949	\$190,441	\$134,211	\$70,406 \$21,388	\$1,182,218 \$1,066,127	.....	\$13,239	\$3,086,865 \$346,532	\$28,142	\$154,560 \$224,759
Value of products	1900 1890	\$65,077	\$337,939	\$197,869	\$251,040 \$42,759	\$1,788,809 \$1,643,324	..... \$126,370	\$24,700	\$4,831,038 \$525,000	\$35,792	\$224,970 \$381,424

¹ None reported in 1890.² Reported under head of other states in 1900.³ Reported under head of other states in 1890.

Table 17 is interesting in that it shows concisely the status of the industry in each state in 1890 and 1900, and hence the growth and development in each state since 1890. In that year the canning and preserving of fish was carried on in 13 states by 110 establishments, and in 1900 the number had increased to 348, distributed among 24 states and territories. In order to avoid disclosing the operations of individual establishments, states having less than three establishments were grouped under the heading "all other states." Nearly every state and territory showed a marked increase in the number of establishments, capital, and value of products, with the exceptions of the District of Columbia, Ohio, and Pennsylvania. The former reported 3 establishments in 1890, the latter 5, but in 1900 no establishments were returned by either. Ohio, although reporting a decrease in the number of establishments since 1890, showed a notable increase in both the capital and the value of products. There is in this industry, as in the canning and preserving of fruits and vegetables, a tendency to centralize in points nearest the sources of the supply of material, and the states and territories located nearest the fish supply led in the number of establishments, capital, and value of products both in 1890 and in 1900, and have also shown

the most marked increase and development during the decade. These states and territories, ranked according to the value of products for the census year, were as follows: Washington, \$4,831,038; Maine, \$4,779,733; Massachusetts, \$4,619,362; Alaska, \$3,821,136; Oregon, \$1,788,809; California, \$866,432. The total value of products of these 5 states was \$20,706,510, or over 90 per cent of the total value of products of the industry. The number of establishments reported by these states and territories was 293, or 84.2 per cent of the total number, and the capital was returned as \$18,891,164, as compared with \$19,514,215 for the entire country—that is, the capital for these states and territories formed 96.8 per cent of the total capital. Of the remaining states, Louisiana and Mississippi have become engaged in the industry since 1890 and showed most gratifying returns.

The summary of establishments engaged in the canning and preserving of fish, classified according to the number of employees (not including proprietors and firm members), is shown in Table 18. In this connection, attention is here directed to the fact that the data contained in this table were computed from the greatest number employed at any one time during the year. This should be taken into consideration in making deductions.

TABLE 18.—FISH, CANNING AND PRESERVING: ESTABLISHMENTS CLASSIFIED BY NUMBER OF EMPLOYEES (NOT INCLUDING PROPRIETORS AND FIRM MEMBERS), BY STATES AND TERRITORIES ARRANGED GEOGRAPHICALLY, 1900.

STATES.	Total number of estab- lish- ments.	NUMBER OF ESTABLISHMENTS REPORTING—							
		No em- ployees.	Under 5.	5 to 20.	21 to 50.	51 to 100.	101 to 250.	251 to 500.	501 to 1,000.
United States	348	20	43	103	69	36	60	11	6
New England states	179	3	26	69	40	17	17	3	4
Maine	117	2	15	44	27	10	12	3	4
New Hampshire.....	1	1							
Massachusetts.....	61		11	25	13	7	5		

TABLE 18.—FISH, CANNING AND PRESERVING: ESTABLISHMENTS CLASSIFIED BY NUMBER OF EMPLOYEES (NOT INCLUDING PROPRIETORS AND FIRM MEMBERS), BY STATES AND TERRITORIES ARRANGED GEOGRAPHICALLY, 1900—Continued.

STATES.	Total number of establishments.	NUMBER OF ESTABLISHMENTS REPORTING—							
		No employees.	Under 5.	5 to 20.	21 to 50.	51 to 100.	101 to 250.	251 to 500.	501 to 1,000.
Middle states.....	18	4	4	7		1	1	1	
New York.....	9		4	4		1			
New Jersey.....	1		1	1					
Pennsylvania.....	1	1							
Delaware.....	3	3							
Maryland.....	3			1			1	1	
District of Columbia.....	1			1					
Southern states.....	18		1	6	3	1	7		
Virginia.....	5			3	2				
North Carolina.....	1						1		
South Carolina.....	1				1				
Mississippi.....	4			1			3		
Louisiana.....	6		1	2			3		
Texas.....	1					1			
Central states.....	18	7	6	3	1		1		
Ohio.....	3	2					1		
Michigan.....	4		1	2	1				
Illinois.....	4	1	3						
Wisconsin.....	6	4	2						
Missouri.....	1			1					
Pacific states.....	79	6	6	12	23	13	15	2	2
Washington.....	36		2	6	11	6	8	1	2
Oregon.....	24		1	3	10	5	4	1	
California.....	19	6	3	3	2	2	3		
Outlying districts.....	36			6	2	4	19	5	
Alaska.....	36			6	2	4	19	5	

Table 18 shows that the largest number of establishments employed from 5 to 20, and 6 establishments, 4 of which were located in Maine and 2 in Washington, gave employment to over 500. Maine, with her sardine factories, and Washington and Alaska, with their salmon canneries, reported the largest number of establishments, with the greatest number of employees. The largest number of establishments in Maine was reported for the group from 5 to 20, for Massachusetts the same, for Washington 21 to 50, and for Alaska 101 to 250. It appears that the establishments located in the New England states employed the greatest number, while the Pacific states ranked second and Alaska third. In 20 small establishments no employees were reported, presumably all the work being done by the owners.

Table 19 presents a comparative summary of the statistics of capital for 1890 and 1900, with the percentages of the total and the increase for the several items.

TABLE 19.—FISH, CANNING AND PRESERVING: STATISTICS OF CAPITAL, 1890 AND 1900.

	1900		1890		Percent of increase.
	Amount.	Per cent of total.	Amount.	Per cent of total.	
Total.....	\$19,514, 215	100.0	\$3,186, 975	100.0	512.3
Land.....	757, 510	3.9	466, 970	14.6	62.2
Buildings.....	3, 914, 853	20.1	467, 940	14.7	737.7
Machinery, tools, and implements.....	5, 164, 046	26.4	487, 420	15.3	959.5
Cash and sundries.....	9, 677, 806	49.6	1, 765, 245	55.4	448.2

Every item of capital except the value of land showed a most notable increase, and even the value of land showed an increase of 62.2 per cent. The item, cash and sundries, including cash on hand, bills receivable, unsettled ledger accounts, raw materials, stock in process of manufacture, finished products on hand, and other sundries, formed the principal item of capital in both years, but constituted a relatively larger per cent of the total in 1890 than in 1900. This follows from the nature of the industry, which does not necessitate the use of intricate machinery and mechanical appurtenances or costly structures for housing the same. The value of machinery, tools, and implements formed the second largest item in both years, and not only exhibited the most striking increase of all of the items of capital, but constituted a relatively larger per cent of the total than in 1890. This is a noteworthy fact and is significant of the increasing use of machinery especially adapted for the different processes employed in the canning and preserving of fish. The value of land, although showing an increase, formed a much smaller per cent of the total than in 1890.

As the several items of miscellaneous expenses for 1890 can not be shown separately, a detailed comparison with those reported for 1900 can not be made. The expenses of this nature in this industry do not call for special comment, but the several subdivisions for 1900 are shown in Table 24.

The cost of materials used, with the proportion each formed of the total, for 1900, is given in Table 20.

As shown in Table 20 the total cost of materials for 1900 was \$13,232,001, of which the amount reported for principal materials formed 97.1 per cent. The

materials purchased in the raw state, including the several varieties of fish, and also the cost of fruits and vegetables, which were canned in connection with the fish industry, amounted to \$6,512,438, or 49.2 per cent of the total cost. The amount reported as the cost of materials purchased in partially manufactured form was \$6,343,635, or 47.9 per cent of the total. This item includes the cost of cans, solder, boxes, etc., and such other materials reported under "all other materials" as were required in the preparation of the product. It also includes mill supplies which, together with all other materials, are shown separately in Table 24. The amount paid for fuel and rent of power and heat was insignificant. The cost of freight should only be considered in connection with the cost of the principal materials, as many establishments buy their materials delivered, and it was impossible in every instance to segregate the amount chargeable to freight.

TABLE 20.—FISH, CANNING AND PRESERVING: COST OF MATERIALS USED, 1900.

	Amount.	Per cent of total.
Total	\$13,232,001	100.00
Principal materials ¹	12,856,073	97.1
Fuel.....	175,385	1.3
Rent of power and heat.....	6,865	.1
Freight.....	193,628	1.5

¹Includes mill supplies and all other materials, which are shown separately in Table 24.

Table 21 shows the value of products, by states, for 1900.

TABLE 21.—FISH, CANNING AND PRESERVING: VALUE OF PRODUCTS, BY STATES AND TERRITORIES, ARRANGED GEOGRAPHICALLY, 1900.

STATES AND TERRITORIES.	VALUE.		
	Total products.	Fish.	All other products.
United States	\$22,258,749	\$20,808,709	\$1,445,040
New England states	9,400,565	9,147,420	253,145
Maine.....	4,779,733	4,753,071	26,662
All other states ¹	4,620,832	4,394,349	226,483
Middle states	484,842	446,365	38,477
New York.....	197,869	175,392	22,477
Delaware.....	8,473	8,473	.....
Maryland.....	248,100	232,100	16,000
All other states ²	30,400	30,400	.....

¹Includes establishments distributed as follows: New Hampshire, 1; Massachusetts, 61.

²Includes establishments distributed as follows: New Jersey, 1; Pennsylvania, 1; District of Columbia, 1.

TABLE 21.—FISH, CANNING AND PRESERVING: VALUE OF PRODUCTS, BY STATES AND TERRITORIES, ARRANGED GEOGRAPHICALLY, 1900—Continued.

STATES AND TERRITORIES.	VALUE.		
	Total products.	Fish.	All other products.
Southern states	\$550,118	\$380,972	\$169,146
Virginia.....	24,700	24,700	.....
Mississippi.....	337,939	211,001	126,938
Louisiana.....	144,379	108,121	36,258
All other states ¹	43,100	37,150	6,950
Central states	510,809	188,144	322,665
Ohio.....	251,040	79,140	171,900
Michigan.....	65,077	64,877	200
Wisconsin.....	35,792	35,227	565
All other states ²	158,900	8,900	150,000
Pacific states.....	7,486,279	6,824,672	661,607
Washington.....	4,831,038	4,281,962	549,076
Oregon.....	1,788,809	1,746,073	42,736
California.....	866,432	796,637	69,795
Outlying districts	3,821,136	3,821,136	.....
Alaska.....	3,821,136	3,821,136	.....

¹Includes establishments distributed as follows: North Carolina, 1; South Carolina, 1; Texas, 1.

²Includes establishments distributed as follows: Illinois, 4; Missouri, 1.

Table 21 is designed to show the relative proportion of the value of all other products canned to the value of preserved fish. Of the total value of products, \$20,808,659, or 93.5 per cent, was given as the value of canned and preserved fish, and \$1,445,090, or 6.5 per cent, as the value of "all other products." The latter item includes the value of fresh fish handled in bulk by establishments engaged in the canning and preserving of fish, and as it was impracticable to separate the amounts directly chargeable to this branch of the industry, the totals were included under "all other products." It will be noticed that in some states this item reaches goodly proportions while in others it is insignificant.

The tables which have thus far been shown give an incomplete showing of the fish canning and preserving industry for the reason that, as has been explained, establishments are classified according to the predominating product, and in many instances the canning and preserving of fish is carried on in connection with some other branch of the canning industry, and the totals have not been included in the above tables. It is possible, however, to show the total quantity and value of fish canned and preserved during the census year as reported by establishments of any character. This is done in Table 22.

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TABLE 22.—FISH, CANNING AND PRESERVING: QUANTITY AND VALUE OF PRODUCTS

	UNITED STATES.	NEW ENGLAND STATES.			MIDDLE STATES.				
		Total.	Maine.	All other states. ¹	Total.	New York.	Delaware.	Maryland.	All other states. ²
1 Aggregate value	\$20,856,067	\$9,179,616	\$4,756,271	\$4,423,345	\$446,365	\$175,392	\$8,478	\$282,100	\$30,499
2 Canned fish—									
3 Total pounds	172,856,178	50,854,524	48,451,808	2,402,716	2,817,467	166,896		2,650,571	
4 Total value	\$14,639,127	\$4,584,849	\$4,812,384	\$272,465	\$255,125	\$28,025		\$282,100	
5 Salmon—									
6 Pounds	114,645,144	314,310	303,750	10,560					
7 Value	\$9,287,162	\$17,180	\$16,200	\$980					
8 Sardines—									
9 Pounds	44,951,244	44,562,536	44,420,236	142,300					
10 Value	\$4,212,351	\$4,183,491	\$4,049,784	\$83,707					
11 Clams—									
12 Pounds	4,456,718	3,216,670	3,136,270	80,400	566,896	166,896		400,000	
13 Value	\$345,774	\$216,254	\$210,401	\$5,853	\$63,025	\$23,025		\$40,000	
14 Oysters—									
15 Pounds	4,104,818				1,920,000			1,920,000	
16 Value	\$266,018				\$100,000			\$100,000	
17 Mackerel—									
18 Pounds	2,155,820	2,155,820	34,464	2,121,356					
19 Value	\$180,213	\$180,213	\$2,488	\$177,725					
20 Shrimps—									
21 Pounds	1,126,139	7,200		7,200					
22 Value	\$147,862	\$800		\$800					
23 Crabs—									
24 Pounds	656,055				330,571			330,571	
25 Value	\$142,480				\$92,100			\$92,100	
26 Other varieties—									
27 Pounds	760,240	597,988	557,088	40,900					
28 Value	\$57,317	\$36,911	\$33,511	\$3,400					
29 Smoked fish—									
30 Total pounds	21,723,426	18,377,788	6,765,196	6,612,592	2,688,250	2,309,600	138,550		229,100
31 Total value	\$986,003	\$491,812	\$150,310	\$341,502	\$129,095	\$101,082	\$6,833		\$21,180
32 Herring—									
33 Pounds	18,147,789	9,919,714	6,422,476	3,497,238	1,937,050	1,694,000	135,550		107,500
34 Value	\$353,252	\$255,001	\$186,310	\$118,691	\$28,088	\$17,040	\$6,133		\$4,910
35 Halibut—									
36 Pounds	3,621,462	1,862,462		1,862,462	2,000				2,000
37 Value	\$271,032	\$156,432		\$166,432	200				\$200
38 Salmon—									
39 Pounds	1,975,647	25,392		25,392	116,500	97,000			19,500
40 Value	\$136,331	\$4,059		\$4,059	\$17,800	\$13,900			\$3,900
41 Sturgeon—									
42 Pounds	514,900				480,800	464,000			26,800
43 Value	\$77,879				\$72,770	\$66,110			\$6,660
44 Finnan haddie—									
45 Pounds	1,360,500	1,307,500	80,000	1,227,500	53,000		1,000		52,000
46 Value	\$75,360	\$71,120	\$8,800	\$62,320	\$4,240		\$600		\$3,640
47 Other varieties—									
48 Pounds	1,103,128	262,720	262,720		78,900	64,600	2,000		12,300
49 Value	\$72,149	\$5,200	\$5,200		\$6,002	4,082	\$100		\$1,820
50 Salted fish—									
51 Total pounds	125,689,131	99,169,822	17,845,321	81,324,501	1,375,614	1,167,814	31,800		176,000
52 Total value	\$5,260,927	\$4,102,955	\$293,577	\$3,809,378	\$62,145	\$51,285	\$1,640		\$9,220
53 Mackerel—									
54 Pounds	10,458,313	10,262,099		10,262,099	146,214	111,214			35,000
55 Value	\$662,008	\$644,523		\$644,523	\$10,485	\$7,785			\$2,700
56 Herring—									
57 Pounds	15,933,426	10,696,995	3,549,045	7,147,950	1,106,600	1,046,600			60,000
58 Value	\$394,020	\$238,176	\$73,029	\$165,147	\$44,300	\$42,500			\$1,800
59 Cod—									
60 Pounds	65,418,710	57,036,427	8,535,000	48,501,427	52,000				52,000
61 Value	\$3,108,545	\$2,625,006	\$80,464	\$2,544,552	\$3,120				\$3,120
62 Haddock—									
63 Pounds	6,927,919	6,844,919	681,050	6,163,869					
64 Value	\$197,360	\$195,520	\$12,552	\$182,868					
65 Other varieties—									
66 Pounds	26,930,763	14,329,832	5,080,226	9,249,156	70,800	10,000	31,800		29,000
67 Value	\$898,994	\$399,730	\$127,442	\$272,288	\$4,240	\$1,000	\$1,640		\$1,600

¹Includes establishments distributed as follows: Massachusetts, 61; New Hampshire, 1.²Includes establishments distributed as follows: New Jersey, 1; District of Columbia, 1; Pennsylvania, 1.

CANNING AND PRESERVING.

BY STATES AND TERRITORIES ARRANGED GEOGRAPHICALLY, 1900.

SOUTHERN STATES.					CENTRAL STATES.					PACIFIC STATES.				OUTLYING DISTRICT.	
Total.	Virginia.	Mississippi.	Louisiana.	All other states. ¹	Total.	Ohio.	Michigan.	Illinois.	Wisconsin.	Total.	Washington.	Oregon.	California.	Alaska.	
\$426,124	\$69,902	\$211,001	\$108,121	\$87,100	\$188,144	\$79,140	\$64,877	\$8,900	\$35,227	\$6,824,672	\$4,281,962	\$1,746,073	\$796,637	\$3,821,136	1
8,688,647 \$389,514	344,448 \$60,202	2,375,190 \$211,001	616,417 \$91,211	302,592 \$87,100						68,588,988 \$5,800,901	48,195,262 \$3,762,169	16,469,602 \$1,697,064	3,869,124 \$841,668	52,011,552 \$3,608,738	2 3
										62,888,482 \$5,662,144	42,969,114 \$3,745,957	15,915,852 \$1,655,829	3,454,016 \$200,858	51,992,852 \$3,607,838	4 5
										388,708 \$78,860			388,708 \$78,860		6 7
213,600 \$28,600	36,000 \$5,000			177,600 \$28,600						440,852 \$86,995	221,952 \$15,045	192,000 \$20,000	26,400 \$1,950	19,200 \$900	8 9
1,822,568 \$144,288		1,822,568 \$144,288								362,250 \$21,785		362,250 \$21,785			10 11
															12 13
1,118,939 \$147,012		589,782 \$62,707	514,165 \$79,805	64,992 \$4,500											14 15
321,288 \$49,213	308,448 \$45,202	12,840 \$4,011								4,196 \$1,167	4,196 \$1,167				16 17
162,252 \$20,406			102,252 \$11,406	60,000 \$9,000											18 19
					1,501,588 \$120,104	146,500 \$13,100	334,169 \$64,877	52,019 \$6,900	468,900 \$35,227	4,175,800 \$244,992	3,700,800 \$225,992	250,000 \$10,000	225,000 \$9,000		20 21
					697,425 \$52,668	100,000 \$7,000	597,425 \$45,668			593,600 \$17,500	593,600 \$17,500				22 23
										1,757,000 \$114,400	1,757,000 \$114,400				24 25
					11,855 \$1,700			11,855 \$1,700		1,822,400 \$112,772	1,847,400 \$93,772	250,000 \$10,000	225,000 \$9,000		26 27
					31,300 \$4,789	22,500 \$3,500	1,300 \$169	7,500 \$1,120		2,800 \$320	2,800 \$320				28 29
															30 31
					761,508 \$60,947	24,000 \$2,600	235,444 \$19,040	33,164 \$4,080	468,900 \$35,227						32 33
1,405,200 \$36,610	1,310,000 \$19,700		95,200 \$16,910		2,246,571 \$68,040	2,218,000 \$66,040		28,571 \$2,000		15,782,824 \$778,779	8,303,160 \$293,801	335,328 \$39,009	7,144,336 \$445,969	5,689,100 \$212,398	34 35
50,000 \$7,000			50,000 \$7,000												36 37
1,275,000 \$19,000	1,275,000 \$19,000				2,028,571 \$62,000	2,000,000 \$60,000		28,571 \$2,000		826,260 \$30,544	736,260 \$15,344		90,000 \$15,200		38 39
										7,642,788 \$452,919	954,400 \$45,445		6,688,888 \$407,474	687,500 \$27,500	40 41
35,000 \$700	35,000 \$700				18,000 \$540	18,000 \$540				30,000 \$600	30,000 \$600				42 43
45,200 \$9,910			45,200 \$9,910		200,000 \$5,500	200,000 \$5,500				7,283,781 \$294,716	6,582,500 \$232,412	335,328 \$39,009	365,958 \$28,295	5,001,600 \$184,898	44 45

¹ Includes establishments distributed as follows: North Carolina, 1; South Carolina, 1; Texas, 1.

The figures in Table 22 include the quantity and value of fish canned in fish-canning establishments as such, and also the quantity and value reported as a subsidiary product in establishments engaged primarily in the canning and preserving of oysters, or in the canning and preserving of fruits and vegetables. The values reported do not include the amounts reported as the value of all other products, and therefore the totals given in Table 22 do not agree with the total products given elsewhere in this report, or with those of the report on this industry as presented in the general report on Manufactures, Parts I and II. In addition to those included under "other varieties" there are some varieties of fish, known to be canned or preserved, which do not appear in Table 22. This is accounted for by the fact that it was impossible to ascertain the quantity and value of each, as they were not separately reported. Accordingly they were included under "all other products" in Table 21.

Table 22 shows that the total value of fish canned, smoked, and salted during the census year was \$20,836,057. The total number of pounds of canned fish was 172,856,178, valued at \$14,589,127; of smoked fish, 21,723,426 pounds, valued at \$986,003; and of salted fish, 125,669,131 pounds, valued at \$5,260,927. Attention is here directed to the fact that the values

given are those fixed at the factory. In making deductions relative to the average value per pound this should be borne in mind.

It appears that the New England states led in this industry, reporting \$9,179,616 as the value of the fish products, or 44 per cent of the total value. The Pacific states ranked second, reporting \$6,824,672 as the value of prepared fish, or 32.7 per cent of the total value. Alaska ranked third, with \$3,821,136. The Middle and Central states followed in the order given.

In the total number of pounds of canned fish, Alaska ranked first, reporting 52,011,552 pounds, or 30.1 per cent of the total number; Maine ranked second, with 48,451,808 pounds; Washington third, with 43,195,262 pounds; Oregon fourth, with 16,469,602 pounds, and California fifth, with 3,869,124 pounds. The total number of pounds of canned fish reported by these 5 states was 163,997,348, or 94.9 per cent of the total number of pounds reported for the entire country.

The smoking and salting of fish, although carried on extensively in the Pacific states, is principally confined to the states on the Atlantic coast.

The principal details of the statistics for the canning and preserving of fish as carried on in cities of over 20,000 population are shown in Table 23.

TABLE 23.—FISH, CANNING AND PRESERVING: STATISTICS OF CITIES OF 20,000 POPULATION OR OVER, 1900.

CITIES.	Rank by value of products.	Number of establishments.	Capital.	SALARIED OFFICIALS, CLERKS, ETC.		WAGE-EARNERS.		Miscellaneous expenses.	Cost of materials used.	Value of products.
				Number.	Salaries.	Average number.	Total wages.			
Total		108	\$2,658,878	196	\$184,150	1,977	\$746,315	\$192,687	\$4,847,813	\$6,857,803
Gloucester, Mass	1	88	1,479,647	85	68,106	1,154	398,703	100,769	2,845,657	3,746,326
Seattle, Wash	2	7	856,620	38	25,380	259	106,384	82,501	743,602	1,037,174
Boston, Mass	3	13	200,080	32	31,494	96	49,156	13,151	553,645	725,785
San Francisco, Cal	4	12	132,385	13	24,420	123	58,518	13,817	190,927	984,969
New York, N. Y	5	7	51,915	4	2,620	23	13,074	9,327	96,145	140,955
Tacoma, Wash	6	3	26,725	2	1,400	27	11,690	1,600	48,590	74,375
Portland, Me	7	5	10,290	.....	.....	14	6,180	906	27,881	39,375
Chelsea, Mass	8	3	5,125	.....	.....	4	2,128	784	22,136	31,825
Milwaukee, Wis	9	5	2,540	.....	.....	1	290	452	16,172	20,667
Chicago, Ill	10	4	2,655	.....	.....	5	2,642	526	3,195	8,904
All other cities ¹		11	405,946	27	30,730	271	97,600	18,814	299,857	616,752

¹ Includes establishments distributed as follows: Buffalo, N. Y., 1; Cleveland, Ohio, 1; District of Columbia, 1; Los Angeles, Cal., 1; New Britain, Conn., 1; New Orleans, La., 2; Philadelphia, Pa., 1; Portland, Oreg., 1; St. Louis, Mo., 1; Wilmington, Del., 1.

It appears from Table 23 that of the total value of products, \$6,857,803, or 32.9 per cent, was reported for the cities named, and of this amount \$3,746,326, or 18 per cent of the total for the United States, was returned for Gloucester. In this connection attention should be directed to the fact that in general the Eastern cities included in Table 23 are not only engaged in canning, but also in the salting and smoking of almost every variety of fish that is native of the surrounding waters. Many large establishments also handle fresh fish in large quantities, and as it was impossible to separate

the amounts directly chargeable to the manufacturing branch of the business, the value of fresh fish handled is included in the total value of products. This is especially true of Gloucester, and should be taken into consideration in making comparisons and deductions. The Western cities named are engaged almost exclusively in the canning of salmon caught in the waters of the Columbia river and its tributaries. The industry has its center in the city of Astoria, Oreg., but, inasmuch as it has less than 20,000 population, separate statistics are not shown for that city.

HISTORICAL AND DESCRIPTIVE.

No food supply is so subject to rapid putrefaction as fishery products, and for their preservation all the generally known processes are employed. The canning of various kinds of fish has always been an important branch of the canning industry. Even before the processes of Soddington and Appert were known the people of Holland put up salmon in tin cans in the following manner: The head of the fish was severed immediately after caught, and the fish was then hung up by the tail to permit the blood to flow from it. The viscera were then removed, and the fish, after being carefully washed, was boiled in a brine of white salt. Before being completely cooked, however, it was taken out of the brine, cooled, smoked for a day or two by exposure to juniper, and then placed in tin cans liberally supplied with butter freshly salted and melted. In winter, olive oil was used instead of butter. The cans were then covered and soldered.¹

After the introduction of the Appert process, and the substitution of tin cans for glass, fish canning was successfully and extensively carried on at Aberdeen, Scotland; Sligo, Ireland; and various other points in Europe. About the year 1845, the canning of sardines was successfully established on the coast of France, and up to the present time the industry in that country has had an uninterrupted and remarkable growth.

Prior to 1843, the canning of fish in the United States was very limited, but in that year the firm of Treat, Noble & Holliday, with the assistance of Mr. Charles Mitchell, a native of Scotland who had mastered the methods used in the canneries of Aberdeen, successfully began the canning of lobsters and mackerel at Eastport, Maine. Chiefly through the efforts of Mr. U. S. Treat they succeeded in introducing their goods, and with a ready market at their command the enterprise proved a success. The business after 1849, rapidly increased, and in 1860 canneries engaged in putting up lobsters, mackerel, and fruits and vegetables were found in many of the coast cities of Maine. The supply of lobsters on the coast of Maine rapidly decreased, and a prejudice also existed against the canneries, resulting in the enactment of stringent laws restricting the time of operation of canneries and canning of short lobsters. This caused a rapid decrease in the number of factories engaged in lobster canning, and in the year 1895 the last establishment engaged exclusively in the canning of lobsters suspended operations. During the census year, as indicated in Table 22, there were no lobsters reported as canned.

Salmon canning, one of the most important branches of the fish-canning industry, was carried on to a limited extent in Europe and the United States, prior to 1864. In that year the industry was started on the Pacific coast

at Washington, Yolo county, Cal., on the Sacramento River, by Messrs. Hapgood, Hume & Co. Their success can be attributed to the fact that a member of the firm had previously mastered the process of canning as practiced on the eastern coast, and consequently the goods packed found a ready market. With the increasing demands for the product, an establishment was built on the Columbia River, at Eagle Cliff, in 1866. The industry developed rapidly and reached its maximum production in 1883. The constant fishing for salmon along the river seriously affected the possible supply, but the exhaustion of these fisheries, threatened in the early years of the decade, was averted by more rigid laws against improvident fishing and also by the artificial propagation of fish.² The waters of the streams and rivers of Alaska were found to possess an unlimited supply of salmon, and in 1878 canneries were located at Klawak and Old Sitka, the latter cannery being removed to Cook Inlet in 1882. In the following year there were 5 canneries located in Alaska, and six years later, 37 were in operation, with an output of 714,196 cases. The great production of these canneries in 1890 and 1891 glutted the markets, with a considerable loss to the owners of the canneries. This led to a combination of the firms engaged in this business to limit the yearly output of each salmon cannery. This plan has been successfully adopted, and the average output each year is now regulated to meet the probable consumption.

Since the beginning of the industry, in 1864, the methods in the process of canning have been greatly improved. The original appliances and devices used were very crude and involved considerable labor and expense in operation. The improvements made have mainly been in lessening the period of cooking, permitting the escape of heated air in the cans, softening the bones of the small fish, and in the filling, capping, labeling, and boxing of the cans.

Salmon canneries are generally located at the water's edge or partly projecting over the water. The fish are received by the Chinese, who have practically a monopoly on the labor performed in salmon canneries, weighed, and thrown from the scales upon a floor where they are washed and treated to an ice-cold water bath to keep them fresh and cool. They are then taken to the dressing tables, where the head, fins, and tail are severed. After this they are passed to another operator, who removes the viscera and thoroughly scrapes the carcass inside and out. The waste if not used for oil or fertilizer is thrown back into the water. The fish is then subjected to another washing and at the same time the scales are removed. It is now placed in a second tank of clear water for its final washing and cleaning. By a mechanical device, operated either by hand or machin-

¹Treatise on fishing for herring, etc., published in 1800, at Dublin.

²United States Fish Commission Bulletin, 1898, pages 22-31.

ery, the fish is cut transversely in sections of the exact length of the cans to be filled. The fish is then ready for the fillers' table, where it is placed in cans either by machinery or by hand, after which the cans are topped and soldered together. After the cans are tested for defects they are sent to the "bathroom" for their first cooking. Here they are heated in retorts made of heavy plank well bolted to sustain the steam pressure, or in retorts made of iron or steel plate. It is necessary to cook not only the fish thoroughly but also the bones in order to make them crumble to pieces. After the first cooking, the cans are tested by the process known as "blowing" or "renting," which consists of making a small perforation in each can to permit the escape of the steam, which if allowed to remain would ruin the can. The can is then placed in another retort for its second or final cooking, after which it is subjected to a lye bath to remove the grease and dirt. Fresh water is then poured on the can to remove the lye. When once cooled the cans are lacquered, and after being labeled and cased they are ready for the market.¹

The sardine canning of Maine is next in importance to the salmon canning of the Pacific coast. The sardine is a general term applied to various small-sized fishes, varying in length from 5 to 10 inches. They are found in various parts of the world, the best known being the young of the pilchard, which are plentiful along the coast of France, and the young of the sea herring, found along the coast of Maine. The canning of the sardine was begun at Nantes, France, in 1834, and although attempts had been made to put up herring along the coast of Maine as early as 1867, it was not a decided success until 1875. For the first five years the industry was confined within narrow limits, but by 1880 the in-

dustry was augmented by the establishment of canneries at Eastport, Robinson, Lubec, Jonesport, East Lamoine, and Camden, Maine. This industry during its early days at Eastport and Lubec, outranked all other branches of business in importance, furnishing employment for a majority of the inhabitants.

The process used in putting up the sardine is an exceedingly complicated one, and the methods employed in different places are quite at variance. Wherein the treatment of the sardine differs from that accorded the salmon is the use of oil in putting up the former. The fish is fried in oil and then placed in a can with a solution of oil. The oil used in the French sardine canneries is either olive oil or peanut oil, while cottonseed oil is the most extensively used in Maine. The sardine is also put up in mustard, spices, and tomato sauce.

In addition to the fishes named, eels, herring, menhaden, smelt, sturgeon, halibut, Spanish mackerel, and several other varieties are canned in the principal canneries.

Canned marine products are very aptly divided into five general classes, viz: First, plain boiled, steamed, or otherwise cooked; second, preserved in oil; third, preserved with vinegar, sauces, spices, jellies, etc.; fourth, cooked with vegetables; fifth, preserved by some other process, but placed in cans for convenience. In the first class, salmon, mackerel, halibut, lobsters, clams, etc., are included, while sardines make up the second class. Herring put up as "brook trout," eels, sturgeon, etc., comprise the third division, and the fourth class is made up of fish chowder, clam chowder, codfish balls, etc. The last class includes fishes prepared by smoking and salting, and then canned for convenience.²

Table 24 shows the detailed statistics, by states and territories, for the industry as returned for 1900.

¹ United States Fish Commission Bulletin, 1893, pages 22-31.

² United States Fish Commission Bulletin, 1898, page 511.

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TABLE 24.—FISH, CANNING AND PRESERVING.

	United States.	Alaska.	California.	Delaware.	Illinois.	Louisiana.	
1	Number of establishments.....	348	86	19	3	4	8
	Character of organization:						
2	Individual.....	184	4	2	2	4	1
3	Firm and limited partnership.....	102	1	9	1	1	4
4	Incorporated company.....	112	31	8	1	1	1
	Capital:						
5	Total.....	\$19,514,215	\$3,203,228	\$691,285	\$1,935	\$2,655	\$186,680
6	Land.....	\$757,510	\$73,135	\$51,000	\$400	\$475	\$10,150
7	Buildings.....	\$3,914,853	\$971,094	\$70,100	\$500	\$750	\$35,121
8	Machinery, tools, and implements.....	\$5,164,046	\$1,849,264	\$69,285	\$185	\$330	\$33,538
9	Cash and sundries.....	\$9,077,806	\$309,735	\$500,950	\$950	\$1,100	\$107,880
10	Proprietors and firm members.....	386	7	33	5	4	12
	Salaried officials, clerks, etc.:						
11	Total number.....	618	64	33			8
12	Total salaries.....	\$585,160	\$106,430	\$49,710			\$9,500
	Officers of corporations—						
13	Number.....	72	6	11			
14	Salaries.....	\$115,030	\$18,240	\$27,000			
	General superintendents, managers, clerks, etc.—						
15	Total number.....	546	58	22			8
16	Total salaries.....	\$470,130	\$88,190	\$22,710			\$9,600
	Men—						
17	Number.....	486	58	20			8
18	Salaries.....	\$450,956	\$88,190	\$21,670			\$9,500
	Women—						
19	Number.....	60		2			
20	Salaries.....	\$19,174		\$1,040			
	Wage-earners, including pieceworkers, and total wages:						
21	Greatest number employed at any one time during the year.....	26,984	4,931	737		6	536
22	Least number employed at any one time during the year.....	17,674	3,981	272		3	207
23	Average number.....	13,410	2,092	376		5	236
24	Wages.....	\$4,229,038	\$1,242,642	\$158,888		\$2,642	\$44,710
	Men, 16 years and over—						
25	Average number.....	9,731	2,091	279		5	45
26	Wages.....	\$3,733,606	\$1,242,237	\$136,422		\$2,642	\$22,450
	Women, 16 years and over—						
27	Average number.....	2,533	1	73			161
28	Wages.....	\$369,781	\$405	\$19,680			\$21,260
	Children, under 16 years—						
29	Average number.....	1,146		24			30
30	Wages.....	\$126,351		\$2,786			\$1,000
	Average number of wage-earners, including pieceworkers, employed during each month—						
	Men, 16 years and over—						
31	January.....	2,240	7	118		6	46
32	February.....	3,147	801	118		6	46
33	March.....	6,625	3,678	163		6	71
34	April.....	9,113	3,974	201		5	71
35	May.....	14,770	4,603	317		4	64
36	June.....	15,321	4,805	315		4	29
37	July.....	16,360	4,605	343		4	30
38	August.....	14,579	2,201	507		3	36
39	September.....	12,156	419	447		5	46
40	October.....	10,879		332		5	37
41	November.....	8,580		195		5	27
42	December.....	3,001		194		5	27
	Women, 16 years and over:						
43	January.....	591		28			140
44	February.....	680		28			140
45	March.....	1,081		28			395
46	April.....	1,186		46			395
47	May.....	3,749		90			250
48	June.....	3,611		114			25
49	July.....	3,803		127			140
50	August.....	3,999	10	155			140
51	September.....	4,136	2	181			240
52	October.....	3,810		73			110
53	November.....	3,303		29			10
54	December.....	581		29			10
	Children, under 16 years.						
55	January.....	104		10			
56	February.....	94		10			
57	March.....	339		10			100
58	April.....	413		24			85
59	May.....	1,770		27			75
60	June.....	1,765		38			
61	July.....	1,855		32			
62	August.....	1,952		47			
63	September.....	1,985		57			50
64	October.....	1,776		12			50
65	November.....	1,538		10			
66	December.....	155		10			
	Miscellaneous expenses:						
67	Total.....	\$883,963	\$150,854	\$23,370	\$89	\$526	\$6,408
68	Rent of works.....	\$45,178		\$6,626	\$64	\$110	
69	Taxes, not including internal revenue.....	\$91,645	\$31,314	\$1,885	\$14	\$13	\$2,239
70	Rent of offices, interest, insurance, and all sundry expenses not hitherto included.....	\$665,304	\$118,540	\$14,709	\$11	\$403	\$4,169
71	Contract work.....	\$78,236	\$1,000	\$150			
	Materials used:						
72	Aggregate cost.....	\$13,232,001	\$1,687,883	\$449,718	\$6,238	\$3,195	\$67,583
	Principal materials—						
73	Total.....	\$7,730,325		\$406,764	\$5,984	\$2,650	\$41,888
74	Purchased in raw state.....	\$6,512,438		\$336,775	\$3,984	\$1,750	\$37,288
75	Purchased in partially manufactured form.....	\$1,217,887		\$69,989	\$2,000	\$900	\$4,600
76	Fuel.....	\$175,935	\$38,150	\$7,800	\$104	\$245	\$2,215
77	Rent of power and heat.....	\$6,365					
78	Mill supplies.....	\$24,085	\$4,003	\$395			\$300
79	All other materials.....	\$5,101,663	\$1,455,730	\$33,834	\$85	\$300	\$22,955
80	Freight.....	\$193,628	\$83,000	\$925	\$65		\$225

CANNING AND PRESERVING.

BY STATES AND TERRITORIES, 1900.

Maine.	Maryland.	Massachusetts.	Michigan.	Mississippi.	New York.	Ohio.	Oregon.	Virginia.	Washington.	Wisconsin.	All other states. ¹	
117	3	61	4	4	9	3	24	5	36	6	8	1
59	3	27	2	1	3	2	5	2	12	5	5	2
33	3	27	2	1	5	2	2	3	8	1	2	3
25		7		3	1	1	17		16		1	4
\$8,481,056	\$65,600	\$1,734,227	\$6,800	\$122,580	\$100,564	\$56,068	\$2,558,642	\$10,325	\$2,222,726	\$4,500	\$65,245	5
\$137,355	\$7,500	\$194,557	\$700	\$4,362	\$17,021	\$200	\$127,522	\$200	\$118,238	\$1,125	\$13,520	6
\$740,315	\$8,900	\$206,559	\$1,850	\$9,003	\$25,553	\$1,025	\$1,539,129	\$2,700	\$284,804	\$1,150	\$16,300	7
\$2,045,117	\$7,400	\$256,568	\$250	\$12,625	\$10,005	\$42,943	\$363,795	\$1,825	\$457,473	\$815	\$12,675	8
\$5,558,299	\$41,800	\$1,076,543	\$4,000	\$96,587	\$47,985	\$11,900	\$528,196	\$5,600	\$1,362,161	\$1,500	\$22,750	9
135	8	85	6	1	15	3	10	9	36	7	10	10
177	6	122		9	7	5	58	6	116		7	11
\$139,497	\$2,880	\$108,131		\$7,600	\$6,520	\$4,160	\$56,125	\$550	\$93,117		\$5,940	12
15		7		4	3	1	11		14			13
\$20,800		\$11,500		\$4,000	\$3,900	\$1,800	\$13,370		\$14,420			14
102	6	115		5	4	4	47	6	102		7	15
\$118,697	\$2,880	\$91,631		\$3,600	\$2,620	\$2,360	\$42,755	\$550	\$78,697		\$5,940	16
129	6	100		5	4	3	45	6	98		4	17
\$111,181	\$2,880	\$85,223		\$3,600	\$2,620	\$2,000	\$42,205	\$550	\$76,957		\$4,380	18
33		15				1	2		4		8	19
\$7,516		\$6,408				\$360	\$550		\$1,740		\$1,560	20
10,481	598	1,908	55	490	105	111	1,646	101	4,960	3	316	21
8,878	540	885	14	170	100	12	727	84	1,521	3	217	22
5,567	442	1,328	19	231	66	51	636	18	2,190	3	150	23
\$1,184,850	\$68,500	\$475,123	\$7,961	\$41,023	\$20,842	\$21,600	\$219,744	\$4,545	\$711,214	\$1,010	\$20,339	24
2,895	207	1,194	18	71	39	51	620	11	2,086	2	117	25
\$833,157	\$36,900	\$449,781	\$7,886	\$20,353	\$18,424	\$21,600	\$217,750	\$2,995	\$693,480	\$720	\$26,709	26
1,740	179	134		98	27		11	6	73		24	27
\$245,302	\$22,600	\$25,342		\$14,125	\$2,418		\$1,494	\$1,825	\$13,730		\$2,100	28
926	56		1	62			5	1	31	1	9	29
\$106,391	\$4,000		\$75	\$6,550			\$500	\$225	\$4,004	\$295	\$530	30
172	195	979	32	75	30	25	45		453	2	55	31
150	195	1,127	36	75	30	25	45		452	2	39	32
251	195	1,130	18	65	30	54	83	3	829	2	48	33
343	195	1,074	13	70	29	59	734	63	2,148	2	42	34
4,611	211	1,179	12	45	48	59	768	50	2,609	2	188	35
4,809	236	1,166	13	25	50	58	769	10	2,843	2	187	36
4,671	236	1,247	13	70	50	50	774		4,080	2	179	37
4,743	236	1,284	14	110	50	45	1,216		3,954	2	178	38
5,022	195	1,310	15	100	48	50	1,073		3,231	2	193	39
4,960	195	1,392	19	90	48	50	1,129		2,421	2	199	40
4,582	195	1,306	19	70	30	110	761		1,226	2	52	41
426	198	1,132	15	63	29	25	49		784	2	52	42
91	137	128		44	2				19		2	43
67	137	139		44	2				19		20	44
196	137	131		104	2				11		7	45
263	137	104		139	2				86		7	46
2,838	187	115		55	52	12	12	25	89		36	47
2,789	287	127		55	52	12	12	20	94		36	48
2,828	279	127		70	52	12	12		185		48	49
2,860	283	132		141	52	26	26		156		38	50
3,038	45	155		181	52	116	37		115		40	51
2,993	143	179		171	52	16	16		45		28	52
2,808	137	156		84	2		15		42		20	53
183	137	112		84	2				19		5	54
10	50			23						1	10	55
10	50			23						1	56	56
80	50		2	98						1	3	57
92	50			108			14	6	26	1	5	58
1,521	50		2	50			14	6	26	1	4	59
1,569	75		2	25			14	6	25	1	10	60
1,586	75			30					91	1	40	61
1,611	69			85			14		105	1	10	62
1,651	50		2	125					55	1	4	63
1,554	50		2	74					23	1	10	64
1,406	50		2	43					23	1	3	65
21	50		2	63						1	8	66
\$97,859	\$11,020	\$118,058	\$1,318	\$17,997	\$11,741	\$2,610	\$147,858	\$496	\$285,853	\$1,005	\$6,801	67
\$3,777		\$21,296	\$100	\$150	\$1,100	\$1,400	\$3,376	\$90	\$6,989	\$25	\$75	68
\$11,585	\$770	\$13,642	\$51	\$412	\$1,056	\$110	\$7,502	\$6	\$20,619	\$19	\$408	69
\$82,322	\$10,250	\$82,320	\$1,077	\$17,435	\$9,585	\$1,100	\$76,015	\$400	\$242,689	\$961	\$6,818	70
\$175		\$800	\$90				\$60,965		\$15,056			71
\$2,578,636	\$154,605	\$3,471,112	\$52,949	\$190,441	\$134,211	\$70,406	\$1,182,218	\$13,239	\$3,086,865	\$28,142	\$154,560	72
\$807,806	\$88,700	\$3,077,215	\$48,032	\$128,281	\$105,778	\$50,396	\$844,940	\$9,447	\$1,955,720	\$27,654	\$129,070	73
\$532,187	\$88,700	\$2,356,054	\$46,913	\$128,281	\$101,733	\$5,200	\$776,284	\$7,272	\$1,933,893	\$27,544	\$128,580	74
\$275,619		\$721,161	\$1,119		\$4,045	\$45,196	\$68,656	\$2,175	\$21,827	\$110	\$490	75
\$64,719	\$3,235	\$8,007	\$677	\$1,580	\$1,525	\$510	\$13,695	\$60	\$30,617	\$346	\$2,450	76
\$1,201		\$2,284			\$200				\$2,680			77
\$5,976	\$600	\$232	\$10	\$1,719	\$75		\$1,127	\$140	\$7,173		\$330	78
\$1,676,882	\$62,050	\$372,799	\$3,430	\$58,861	\$23,973	\$19,500	\$304,536	\$2,932	\$1,055,994	\$142	\$7,650	79
\$22,072	\$20	\$10,575	\$800		\$2,660		\$17,920	\$600	\$34,676		\$15,030	80

¹Includes establishments distributed as follows: District of Columbia, 1; Missouri, 1; New Hampshire, 1; New Jersey, 1; North Carolina, 1; Pennsylvania, 1; South Carolina, 1; Texas, 1.

TABLE 24.—FISH, CANNING AND PRESERVING:

	United States.	Alaska.	California.	Delaware.	Illinois.	Louisiana.	
1	Products:						
	Aggregate value.....	\$22,253,749	\$3,821,186	\$866,482	\$8,478	\$8,900	\$144,379
2	Canned fish—						
3	Total pounds.....	171,941,626	52,011,552	3,869,124			616,417
	Total value.....	\$14,574,741	\$3,608,788	\$341,668			\$91,211
4	Salmon—						
5	Pounds.....	114,645,144	51,992,352	3,454,016			
	Value.....	\$9,287,162	\$3,607,888	\$260,858			
6	Sardines—						
7	Pounds.....	44,951,244		388,708			
	Value.....	\$4,212,351		\$78,860			
8	Clams—						
9	Pounds.....	4,416,584	19,200	26,400			
	Value.....	\$342,574	\$900	\$1,950			
10	Oysters—						
11	Pounds.....	4,104,818					
	Value.....	\$266,018					
12	Mackerel—						
13	Pounds.....	1,589,900					
	Value.....	\$164,179					
14	Shrimps—						
15	Pounds.....	1,126,139					514,165
	Value.....	\$147,862					\$79,805
16	Crabs—						
17	Pounds.....	347,607					
	Value.....	\$97,278					
18	Other varieties—						
19	Pounds.....	760,240					102,252
	Value.....	\$57,317					\$11,406
20	Smoked fish—						
21	Total pounds.....	21,252,066		225,000	138,550	52,019	
	Total value.....	\$978,041		\$9,000	\$6,883	\$6,900	
22	Herring—						
23	Pounds.....	12,676,429			135,550		
	Value.....	\$340,290			\$6,133		
24	Halibut—						
25	Pounds.....	3,621,462					
	Value.....	\$271,032					
26	Salmon—						
27	Pounds.....	1,975,647		225,000		11,855	
	Value.....	\$136,331		\$9,000		\$1,700	
28	Sturgeon—						
29	Pounds.....	514,900				7,500	
	Value.....	\$77,879				\$1,120	
30	Finnan haddie—						
31	Pounds.....	1,860,500			1,000		
	Value.....	\$75,360			\$600		
32	Other varieties—						
33	Pounds.....	1,103,128			2,000	33,164	
	Value.....	\$72,149			\$100	\$4,080	
34	Salted fish—						
35	Total pounds.....	125,669,131	5,689,100	7,144,336	31,800	28,571	95,200
	Total value.....	\$5,260,927	\$212,398	\$445,969	\$1,640	\$2,000	\$16,910
36	Cod—						
37	Pounds.....	65,418,710	687,500	6,688,383			
	Value.....	\$3,108,545	\$27,500	\$407,474			
38	Mackerel—						
39	Pounds.....	10,458,313					50,000
	Value.....	\$662,008					\$7,000
40	Herring—						
41	Pounds.....	15,933,426		90,000		28,571	
	Value.....	\$394,020		\$15,200		\$2,000	
42	Haddock—						
43	Pounds.....	6,927,919					
	Value.....	\$197,360					
44	Other varieties—						
45	Pounds.....	26,930,763	5,001,600	365,953	31,800		45,200
	Value.....	\$898,994	\$184,898	\$23,295	\$1,640		\$9,910
46	All other products, value.....	\$1,445,040		\$69,795			\$36,253
47	Comparison of products:						
48	Number of establishments reporting for both years.....	213	7	15	1	4	1
49	Value for census year.....	\$12,331,453	\$300,416	\$304,242	\$6,833	\$3,900	\$97,800
50	Value for preceding business year.....	\$10,185,844	\$621,300	\$574,789	\$6,150	\$7,080	\$81,000
51	Power:						
52	Number reporting power.....	144	26	7			3
53	Total horsepower.....	4,306	577	98			77
54	Owned—						
55	Engines—						
56	Steam—						
57	Number.....	231	31	9			6
58	Horsepower.....	3,954	577	73			72
59	Gas or gasoline—						
60	Number.....	12		2			
61	Horsepower.....	132		25			
62	Water wheels—						
63	Number.....	1					
64	Horsepower.....	1					
65	Electric motors—						
66	Number.....	7					1
67	Horsepower.....	32					6
68	Furnished to other establishments—						
69	Horsepower.....	3					
70	Rented—						
71	Horsepower.....	137					
72	Establishments classified by number of employees:						
73	Total number of establishments.....	348	36	19	3	4	6
74	No employees.....	20		6	3	1	
75	Under 5.....	43		3		3	1
76	5 to 20.....	103	6	3			2
77	21 to 50.....	69	2	2			
78	51 to 100.....	36	4	2			
79	101 to 250.....	60	19	3			3
80	251 to 500.....	11	5				
81	501 to 1,000.....	6					

CANNING AND PRESERVING.

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BY STATES AND TERRITORIES, 1900—Continued.

Maine.	Maryland.	Massachu- setts.	Michigan.	Mississippi.	New York.	Ohio.	Oregon.	Virginia.	Washington.	Wisconsin.	All other states. ¹	
\$4,779,793	\$248,100	\$4,619,362	\$65,077	\$337,939	\$197,869	\$251,040	\$1,788,809	\$24,700	\$4,831,038	\$85,792	\$224,970	1
48,411,624	2,650,571	1,836,796		2,375,190	166,896		16,469,602	86,000	43,195,262		302,592	2
\$4,309,184	\$282,100	\$256,431		\$211,001	\$23,025		\$1,697,064	\$5,000	\$3,762,169		\$87,150	3
303,750		10,560							42,969,114			4
\$16,200		\$980							\$3,745,957			5
44,420,236		142,300										6
\$4,049,784		\$83,707										7
3,096,086	400,000	80,400			166,896		192,000	38,000	221,952		177,600	8
\$207,201	\$40,000	\$5,853			\$23,025		\$20,000	\$5,000	\$15,045		\$23,600	9
	1,920,000			1,822,568			362,250					10
	\$100,000			\$144,283			\$21,735					11
84,464		1,555,436										12
\$2,488		\$161,691										13
		7,200		589,782							64,992	14
		\$800		\$62,707							\$4,550	15
	330,571			12,840					4,196			16
	\$92,100			\$4,011					\$1,167			17
557,088		40,900									60,000	18
\$33,511		\$3,400									\$9,000	19
6,765,186		6,141,232	\$34,169		2,309,600	146,500	250,000		3,700,800	468,900	220,100	20
\$150,310		\$328,640	\$64,377		\$101,082	\$13,100	\$10,000		\$225,992	\$85,227	\$21,180	21
6,422,476		3,025,878	597,425		1,694,000	100,000			593,600		107,500	22
\$136,310		\$105,729	\$45,668		\$17,040	\$7,000			\$17,500		\$4,910	23
		1,862,462							1,757,000		2,000	24
		\$156,432							\$114,400		\$200	25
		25,392			97,000		250,000		1,347,400		19,500	26
		\$4,059			\$13,900		\$10,000		\$93,772		\$3,900	27
			1,300		454,000	22,500			2,800		26,800	28
			\$169		\$66,110	\$8,500			\$320		\$6,060	29
80,000		1,227,500									52,000	30
\$8,800		\$62,320									\$3,640	31
262,720			235,444		64,600	24,000				468,900	12,300	32
\$5,200			\$19,040		\$4,032	\$2,600				\$35,227	\$1,870	33
17,845,321		31,240,501			1,167,814	2,218,000	335,328	1,310,000	8,303,160		260,000	34
\$293,577		\$3,807,908			\$51,235	\$36,040	\$39,009	\$19,700	\$298,801		\$10,690	35
8,535,000		48,501,427							954,400		52,000	36
\$80,454		\$2,544,552							\$45,445		\$3,120	37
		10,262,099			111,214						35,000	38
		\$644,523			\$7,785						\$2,700	39
3,549,045		7,147,950			1,046,600	2,000,000		1,275,000	736,260		60,000	40
\$73,029		\$165,147			\$42,500	\$60,000		\$19,000	\$15,344		\$1,800	41
681,050		6,168,869				18,000		35,000	30,000			42
\$12,652		\$182,868				\$540		\$700	\$600			43
5,080,226		9,165,156			10,000	200,000	335,328		6,532,500		113,000	44
\$127,442		\$270,818			\$1,000	\$5,500	\$39,009		\$232,412		\$3,070	45
\$26,662	\$16,000	\$226,483	\$200	\$126,938	\$22,477	\$171,900	\$42,736		\$549,076	\$565	\$155,950	46
68	1	51	1	4	8	3	15	3	24	6	6	47
\$1,208,104	\$2,100	\$4,474,351	\$2,168	\$337,939	\$196,469	\$251,040	\$794,152	\$19,000	\$3,094,077	\$35,792	\$193,070	48
\$359,493	\$2,100	\$3,931,612	\$1,900	\$223,433	\$181,005	\$245,800	\$375,782	\$19,000	\$2,254,100	\$25,900	\$175,100	49
41	1	10	1	3	2	2	18		28		4	50
1,421	220	127	3	99	10		312		1,258		104	51
83	3	3		4	1		26					52
1,354	220	80		99	2		262		1,111		104	53
2		1	1				2		4			54
15		7	3				40		42			55
									1			56
									1			57
3							2		1			58
52							10		15			59
			3									60
			40		8				39			61
117	3	61	4	4	9	3	24	5	36	6	8	62
2						2			2	4	2	63
15		11	1		4		1		2	2		64
44	1	25	2	1	4		3	3	6		3	65
27		13	1				10	2	11		1	66
10		7			1		5		6		1	67
12	1	5		3		1	4		8		1	68
3	1						1		1			69
4									2			70

¹Includes establishments distributed as follows: District of Columbia, 1; Missouri, 1; New Hampshire, 1; New Jersey, 1; North Carolina, 1; Pennsylvania, 1; South Carolina, 1; Texas, 1.

OYSTERS, CANNING AND PRESERVING.

Table 25 is a comparative summary of the statistics for the establishments engaged in the canning and preserving of oysters as returned at the censuses of 1890 and 1900, with the percentages of increase for the decade.

TABLE 25.—OYSTERS, CANNING AND PRESERVING: COMPARATIVE SUMMARY, 1890 AND 1900, WITH PER CENT OF INCREASE FOR THE DECADE.

	1900	1890	Per cent of increase.
Number of establishments	39	16	143.8
Capital	\$1,240,696	\$1,106,962	12.1
Salaried officials, clerks, etc., number	119	161	95.1
Salaries	\$112,879	\$69,891	61.5
Wage-earners, average number	2,779	3,453	119.5
Total wages	\$680,016	\$642,610	22.0
Men, 16 years and over	1,355	1,482	28.6
Wages	\$419,032	\$303,778	37.9
Women, 16 years and over	1,123	1,702	234.0
Wages	\$175,865	\$316,080	244.4
Children, under 16 years	301	269	12.0
Wages	\$35,119	\$22,752	54.4
Miscellaneous expenses	\$93,707	\$80,199	16.8
Cost of materials used	\$2,608,757	\$2,088,867	24.9
Value of products	\$3,670,134	\$3,260,766	12.6

¹ Includes proprietors and firm members, with their salaries; number only reported in 1900, but not included in this table. (See Table 34.)

² Decrease.

Although the canning and preserving of oysters existed as an industry as early as 1850, it was usually carried on in connection with the canning and preserving of fish, and as the statistics were included under this classification they do not appear separately until the census of 1890. In that year the number of establishments engaged primarily in this industry had increased to 16, and the capital to \$1,106,962. They reported 3,453 wage-earners, \$642,610 paid for wages, \$2,088,867 for materials, and \$3,260,766 as the value of products. Between 1890 and 1900 the increase in the number of establishments was more than the total number reported for 1890, while the capital and value of products showed a normal increase. Thus the average capital, per establishment, has decreased from \$69,185 to \$31,813—that is, the average capital in 1900 was less than one-half that reported for 1890. This is probably accounted for in a great measure by the fact that some of the largest establishments have become engaged in the canning and preserving of fruits and vegetables or fish, and have made oyster canning subsidiary to these. The table further indicates that a number of small establishments have engaged in the industry during the decade. The total number of wage-earners has decreased 674, or 19.5 per cent, and the wages have also decreased, but they show a relatively smaller decrease than is shown in the number of wage-earners. The number of children employed, however, and their wages, have exhibited a substantial decrease. The apparent decrease in the number of wage-earners is due, as has been explained before, to the difference in the method of computing adopted for the two censuses. An examination of the schedules for different states shows that the establishments engaged in canning and preserving oysters were in operation eight months during the census year, but many large plants continued in operation during the

summer months canning and preserving fruits and vegetables. The operations of these large establishments during the summer months, increased the average time of employment for the wage-earners employed in this industry to nine and one-half months. Reduced to the basis of 1890 the average number of employees in 1900, for the "industrial year" of eight months, was 3,510, which is greater than the average reported for 1890. The relative proportion of the cost of materials to the value of products has slightly increased since 1890.

In the canning and preserving of oysters, as in the other two branches of the canning industry included in this report, the individual form of organization predominates. Of the total number of establishments, 20, or 51.3 per cent, were conducted by individuals; 11, or 28.2 per cent were operated by firms and limited partnerships; and the remaining 8, or 20.5 per cent by incorporated companies.

Table 26 shows, by states arranged geographically, the number of establishments from which returns were received in 1900, with the increase during the decade.

TABLE 26.—OYSTERS, CANNING AND PRESERVING: COMPARATIVE SUMMARY, NUMBER OF ACTIVE ESTABLISHMENTS, 1890 AND 1900, AND INCREASE DURING THE DECADE, BY STATES, ARRANGED GEOGRAPHICALLY.

	1900	1890	Increase.
United States	39	16	23
Middle states	17	8	9
Delaware	1	1	1
Maryland	16	8	8
Southern states	18	7	11
Virginia	1	1	1
North Carolina	1	1	1
South Carolina	1	1	1
Georgia	1	1	1
Florida	6	1	5
Kentucky	1	1	1
Alabama	1	1	1
Mississippi	4	8	1
Louisiana	3	1	3
Central states	1	1	1
Michigan	1	1	1
Iowa	1	1	1
Pacific states	3	3	3
Washington	3	3	3

¹ Decrease.

It appears that the greatest increase occurred in the Southern states, which group reported 7 establishments in 1890 and 18 in 1900, an increase of 11, or 157.1 per cent. Of the states of this group, Florida showed the greatest development, reporting an increase of 5. The number in the Middle states increased from 8 to 17, an increase of 9. The greatest increase in this group was shown by Maryland, which reported an increase of 8, or an even 100 per cent.

The above table should be considered in connection with Table 27, which is a summary of the totals for the canning and preserving of oysters as returned at the census of 1890 and 1900.

TABLE 27.—OYSTERS, CANNING AND PRESERVING: COMPARATIVE SUMMARY BY STATES, 1890 AND 1900.

	Year.	United States.	Florida.	Louisiana.	Maryland.	Mississippi.	Washington.	All other states.
Number of establishments.....	1900	39	6	3	16	4	3	27
	1890	16	(³)		8	3		45
Capital:								
Total.....	1900	\$1,240,696	\$78,895	\$64,250	\$799,005	\$205,549	\$9,800	\$83,197
	1890	\$1,106,962	(³)		\$953,232	\$132,940		\$20,790
Land.....	1900	\$95,000	\$16,000	\$4,900	\$51,650	\$17,500		\$4,850
	1890	\$234,200	(³)		\$229,000	\$4,000		\$1,200
Buildings.....	1900	\$238,718	\$10,820	\$31,200	\$135,793	\$42,000		\$18,900
	1890	\$180,750	(³)		\$148,000	\$32,000		\$750
Machinery, tools, and implements.....	1900	\$151,717	\$18,975	\$8,700	\$77,748	\$31,000	\$5,800	\$9,994
	1890	\$89,300	(³)		\$68,000	\$18,000		\$8,300
Cash and sundries.....	1900	\$755,266	\$83,100	\$19,450	\$538,814	\$115,049	\$4,500	\$49,353
	1890	\$602,712	(³)		\$508,232	\$78,940		\$15,540
Salaried officials, clerks, etc., number.....	1900	119	8	9	79	7	2	14
	1890	161	(³)		46			8
Salaries.....	1900	\$112,879	\$7,001	\$6,540	\$81,048	\$9,300	\$1,400	\$7,590
	1890	\$69,891	(³)		\$59,060	\$6,625		\$4,206
Wage-earners, average number.....	1900	2,779	148	97	1,444	419	24	647
	1890	3,453	(³)		2,884	391		228
Total wages.....	1900	\$630,016	\$32,392	\$33,915	\$379,591	\$81,954	\$12,070	\$90,094
	1890	\$642,610	(³)		\$559,040	\$63,900		\$20,270
Men, 16 years and over.....	1900	1,855	44	81	712	113	22	888
	1890	1,482	(³)		1,161	171		150
Wages.....	1900	\$419,032	\$12,957	\$32,165	\$247,117	\$47,254	\$11,550	\$67,989
	1890	\$308,778	(³)		\$255,380	\$35,300		\$13,093
Women, 16 years and over.....	1900	1,123	80	7	618	219	2	197
	1890	1,702	(³)		1,523	125		54
Wages.....	1900	\$175,865	\$16,300	\$1,000	\$114,000	\$26,100	\$520	\$17,945
	1890	\$316,080	(³)		\$294,460	\$16,200		\$5,420
Children, under 16 years.....	1900	301	24	9	114	87		67
	1890	269	(³)		150	95		24
Wages.....	1900	\$35,119	\$3,135	\$750	\$18,474	\$8,600		\$4,160
	1890	\$22,752	(³)		\$9,200	\$11,800		\$1,752
Miscellaneous expenses.....	1900	\$93,707	\$5,881	\$3,123	\$70,100	\$8,518	\$1,249	\$4,836
	1890	\$80,190	(³)		\$43,801	\$33,450		\$3,448
Cost of materials used.....	1900	\$2,608,757	\$48,029	\$109,205	\$1,771,377	\$427,490	\$38,061	\$214,595
	1890	\$2,088,867	(³)		\$1,877,353	\$153,957		\$57,557
Value of products.....	1900	\$3,670,184	\$100,543	\$165,458	\$2,417,331	\$569,000	\$65,980	\$351,822
	1890	\$3,260,766	(³)		\$2,834,400	\$384,250		\$92,116

¹ Includes proprietors and firm members, with their salaries; number only reported in 1900, but not included in this table. (See Table 34).
² Includes establishments distributed as follows: Alabama, 1; Delaware, 1; Georgia, 1; Iowa, 1; North Carolina, 1; South Carolina, 1; Virginia, 1.
³ Included under all other states in 1890.
⁴ Includes establishments distributed as follows: Alabama, 1; Florida, 1; Kentucky, 1; Michigan, 1; Virginia, 1.

Table 27 gives a concise résumé of the industry for 1890 and 1900 and indicates the growth and development in each state during the decade. In 1890 the canning and preserving of oysters was carried on by 16 establishments distributed among 7 states, whereas in 1900 there were 39 establishments reported by 12 states, the number of establishments having increased 23, and the number of states engaged in the industry, 8. The same arrangement as has been explained before was pursued in order not to divulge the operations of individual establishments, and states reporting fewer than 3 establishments were reported under "all other states." The states generally reported a substantial increase in the number of establishments, capital, and value of products. Maryland, however, although showing twice as many establishments in 1900 as in 1890, showed a considerable decrease in both the capital and value of products, owing to the fact that a number of small establishments have engaged in the industry since 1890, while several of the larger factories on the other hand had become interested principally in the canning and pre-

serving of fruits and vegetables, and were so classified by this office, according to the rule adopted to classify according to the predominating product. As in the case of the other industries treated in this report, the canning of oysters is localized in points nearest the supply of oysters. Maryland, which is in close proximity to the famous oyster beds, notwithstanding the apparent decrease which is above accounted for, led in both years in the number of establishments, in capital, and in the value of products. The value of products for the census year for this state was \$2,417,331, or 65.9 per cent of the total value of products of this industry. Mississippi, Louisiana, and Florida, which were supplied by the oyster beds of the Gulf of Mexico, followed Maryland in the order named.

The summary, by states, of the establishments engaged in the canning and preserving of oysters, classified according to the number of employees (not including proprietors and firm members), is shown in Table 28. In this connection attention is here directed to the fact that the data contained in this table were computed

from the greatest number employed at any one time during the year. This should be taken into consideration in making deductions.

TABLE 28.—OYSTERS, CANNING AND PRESERVING: ESTABLISHMENTS CLASSIFIED BY NUMBER OF EMPLOYEES (NOT INCLUDING PROPRIETORS AND FIRM MEMBERS), BY STATES ARRANGED GEOGRAPHICALLY, 1900.

STATES.	Total number of establishments.	NUMBER OF ESTABLISHMENTS EMPLOYING—					
		5 to 20.	21 to 50.	51 to 100.	101 to 250.	251 to 500.	501 to 1,000.
United States.....	39	6	9	9	9	4	2
Middle states.....	17	2	5	4	2	2	2
Delaware.....	1			1			
Maryland.....	16	2	5	3	2	2	2
Southern states.....	18		4	5	7	2	
Virginia.....	1		1				
North Carolina.....	1				1		
South Carolina.....	1			1			
Georgia.....	1					1	
Florida.....	6		2	1	3		
Alabama.....	1			1	1		
Mississippi.....	4			1	2	1	
Louisiana.....	3		1	2			
Central states.....	1	1					
Iowa.....	1	1					
Pacific states.....	3	3					
Washington.....	3	3					

As indicated by Table 28, the classes of establishments employing 21 to 50, 51 to 100, and 101 to 250, each reported 9 establishments, while 6 establishments were reported in group 5 to 20, 4 in the group 251 to 500, and only 2 in the group 501 to 1,000. The Middle states reported the largest number of establishments employing from 21 to 50, but the Southern states returned the largest number for the groups 51 to 100, and 101 to 250. All of the establishments located in the Central and Pacific states were small ones, employing from 5 to 20. Maryland was the only state having establishments employing over 500, but in this state the largest number of establishments employed from 21 to 50. Florida reported 3 establishments employing over 100, and Maryland and Mississippi each reported 2 in this class.

Table 29 presents a comparative summary of the statistics of capital for 1890 and 1900, with the percentages of the total and of the increase for the several items.

TABLE 29.—OYSTERS, CANNING AND PRESERVING: STATISTICS OF CAPITAL, 1890 AND 1900.

	1900		1890		Per cent of increase.
	Amount.	Per cent of total.	Amount.	Per cent of total.	
Total.....	\$1,240,696	100.0	\$1,106,962	100.0	12.1
Land.....	95,000	7.7	284,200	21.2	159.4
Buildings.....	238,713	19.2	180,750	16.3	32.1
Machinery, tools, and implements.....	151,717	12.2	89,800	8.1	69.9
Cash and sundries.....	755,266	60.9	602,712	54.4	25.3

¹ Decrease.

The item cash and sundries, including cash on hand, bills receivable, unsettled ledger accounts, raw materials, stock in process of manufacture, finished products on hand, and other sundries, formed the principal item of capital in both years. This is but natural in an industry which neither requires large and expensive buildings especially adapted for the purpose, nor necessitates the use of costly and complicated machinery and mechanical appliances in the preparation of its product. This item also formed a relatively larger per cent of the total capital in 1900 than in 1890. The value of land, which formed the second largest item in 1890, actually decreased to \$95,000, or 59.4 per cent, and formed but 7.7 per cent of the total as compared with 21.2 per cent in 1890.

As the several items of miscellaneous expenses for 1890 can not be shown separately, a detailed comparison with those reported for 1900 is impossible. The expenses of this nature in the oyster-canning industry do not call for special comment, but the several subdivisions for 1900 may be found in Table 34.

The cost of materials used with the proportion each formed of the total, for 1900, is given in Table 30.

TABLE 30.—OYSTERS, CANNING AND PRESERVING: COST OF MATERIALS USED, 1900.

	Amount.	Per cent of total.
Total.....	\$2,608,767	100.0
Principal materials ¹	2,571,027	98.5
Fuel.....	25,090	1.0
Rent of power and heat.....	60	(²)
Freight.....	12,580	0.5

¹ Includes raw materials, mill supplies, and all other materials. These are shown separately in Table 34.

² Less than one-tenth of 1 per cent.

Of the total cost of materials the amount reported for principal materials formed 98.5 per cent. This included the materials purchased both in the raw state and in partially manufactured form. Those purchased in the raw state, including oysters and fish, amounted to \$1,792,725, or 68.7 per cent of the total cost of materials. The remainder of principal materials, amounting to \$778,302, includes mill supplies and "all other materials," the cost of cans, solder, and such other materials as were necessary to prepare the product for the market, which amounted to \$768,927, or 29.5 per cent of the total. These items are shown separately in Table 24. It is a significant fact that the cost of fuel formed only 1 per cent of the total cost of materials. The cost of freight is an insignificant item in this industry, but it should be considered only in connection with the cost of materials, as the latter in many cases are bought delivered, and manufacturers find it impossible to report separately the amount directly chargeable to freight.

Table 31 shows the value of products by states for 1900.

TABLE 31.—OYSTERS, CANNING AND PRESERVING: VALUE OF PRODUCTS, BY STATES, ARRANGED GEOGRAPHICALLY, 1900.

STATES.	VALUE.		
	Total products.	Oysters, etc.	All other products.
United States.....	\$3,670,134	\$1,649,480	\$2,020,654
Middle states.....	2,417,331	570,478	1,846,853
Maryland.....	2,417,331	570,478	1,846,853
Southern states.....	1,186,823	1,049,547	137,276
Florida.....	100,543	97,743	2,800
Mississippi.....	569,000	569,000	.....
Louisiana.....	165,458	94,702	70,756
All other states ¹	351,822	288,102	63,720
Pacific states.....	65,980	29,455	36,525
Washington.....	65,980	29,455	36,525

¹Includes establishments distributed as follows: Alabama, 1; Delaware, 1; Georgia, 1; Iowa, 1; North Carolina, 1; South Carolina, 1; and Virginia, 1.

Table 31 is of interest as showing some curious facts regarding the industry. It will be noticed that of the total value of products, \$1,649,480, or 44.9 per cent, was reported as the value of oysters, while \$2,020,654, or 55.1 per cent, was given as the value of all other products. In 2 states, Maryland and Washington, the value of all other products exceeded the value of oysters. This is especially true of Maryland, which reported 76.4 per cent of the value of products under "all other products." The value of all other products for the industry includes the value of fish canned and preserved in connection with oysters; but it is the correlation of fishing industry with the canning and preserving of fish and oysters that is chiefly responsible for the apparent inconsistency. Over 75 per cent of the value of other products represents the value of fresh oysters which are handled in bulk in large quantities by several large oyster-canning houses. As it was impossible to separate the amounts directly chargeable to the manufacturing branch of the business, the value of fresh oysters has been included in the total value of products.

The tables which have thus far been shown give an incomplete statistical picture of the oyster canning and preserving industry for the reason that, as pointed out above, establishments are classified according to the predominating product. In many instances, the canning and preserving of oysters is carried on in connection with some other branch of the canning industry, and the totals have not been included in the above tables. It is possible, however, to show the total quantity and value of oysters canned and preserved during the census year as reported by establishments of any character. This is done in Table 32.

TABLE 32.—OYSTERS, CANNING AND PRESERVING: QUANTITY AND VALUE OF PRODUCTS, BY STATES, ARRANGED GEOGRAPHICALLY, 1900.

STATES.	Pounds.	Value.	PER CENT OF TOTAL.	
			Pounds.	Value.
United States.....	33,356,677	\$2,380,711	100.0	100.0
Middle states.....	17,295,216	1,249,478	51.9	52.5
Maryland.....	17,295,216	1,249,478	51.9	52.5

TABLE 32.—OYSTERS, CANNING AND PRESERVING: QUANTITY AND VALUE OF PRODUCTS, BY STATES, ARRANGED GEOGRAPHICALLY, 1900—Continued.

STATES.	Pounds.	Value.	PER CENT OF TOTAL.	
			Pounds.	Value.
Southern states.....	16,011,961	\$1,114,698	48.0	\$46.8
Florida.....	1,504,416	95,793	4.5	4.0
Mississippi.....	7,900,472	689,608	23.7	26.9
Louisiana.....	1,272,750	71,625	3.8	3.0
Other states ¹	5,334,323	307,677	16.0	12.9
Pacific states.....	49,500	16,535	.1	.7
Washington.....	49,500	16,535	.1	.7

¹Includes establishments distributed as follows: Alabama, 1; Georgia, 1; Iowa, 1; North Carolina, 1; and South Carolina, 1.

Table 32 shows the quantity and value of oysters canned and preserved in oyster-canning establishments as such and also the quantity and value reported as a subsidiary product in establishments engaged primarily in the canning and preserving of fish and fruits and vegetables. The values reported do not include the amounts reported as the value of all other products, therefore the totals given in Table 32 do not agree with the total products given elsewhere in this report, or with those of the report on this industry as presented in the general report on Manufactures, Parts I and II. This should be taken into consideration if comparisons are made with the figures reported in Table 31, as the totals given in the latter table include the value of "all other products"—the value of shrimps, crabs, and other fish canned. Furthermore, there are in Baltimore several large establishments engaged in handling fresh oysters in bulk in connection with the canning business, and, as it was impossible to segregate the amounts directly chargeable to the manufacturing part of the business, the value of raw oysters sold is included under the heading "all other products."

Table 32 indicates that there were 33,356,677 pounds of oysters canned during the census year, valued at \$2,380,711, an average value of \$0.071 per pound. It should be noticed that the average value is that fixed at the factory and is obtained from the totals of the whole number of establishments reporting, and that it therefore does not represent the actual value in any particular locality. Quite naturally, Maryland, the home of the famous "cove oyster," took first rank in this industry, and the quantity and value of oysters canned in that state formed over 50 per cent of the totals for the country. Mississippi followed Maryland with a product about half as large, or approximately 25 per cent of the total for the United States. Florida and Louisiana followed Mississippi in the order named, the combined totals for these states constituting nearly 9 per cent of the total. The oysters canned in Mississippi, Florida, and Louisiana are received from the Gulf of Mexico. The industry is also carried on to a limited extent in Washington and Oregon.

The principal details of the statistics for the canning of oysters as carried on in cities of over 20,000 population are shown in Table 33.

TABLE 33.—OYSTERS, CANNING AND PRESERVING: STATISTICS OF CITIES OF 20,000 POPULATION OR OVER, 1900.

CITIES.	Rank by value of products.	Number of establishments.	Capital.	SALARIED OFFICIALS, CLERKS, ETC.		WAGE-EARNERS.		Miscellaneous expenses.	Cost of materials used.	Value of products.
				Number.	Salaries.	Average number.	Wages.			
Total		19	\$798,446	81	\$82,608	1,442	\$389,441	\$69,570	\$1,772,094	\$2,443,948
Baltimore, Md.	1	15	784,271	77	80,248	1,416	376,591	67,988	1,724,513	2,364,968
All other cities ¹		4	14,175	4	2,360	26	12,850	1,582	47,581	78,980

¹ Includes establishments distributed as follows: Des Moines, Iowa, 1; Seattle, Wash., 3.

It appears from Table 33 that of the total value of products, \$2,443,948, or 66.6 per cent, was reported for the cities named, and that of this amount \$2,364,968, or 64.4 per cent of the total for the United States, was re-

turned for Baltimore. With the exception of Baltimore, which since the inception of the industry has always been the home of oyster canning and preserving, the industry can not be said to be preeminently a city industry.

HISTORICAL AND DESCRIPTIVE.

The oyster is a marine bivalve mollusk of the genus *Ostrea*, the most important species being the *Ostrea edulis*, the oyster commonly found in Europe, and the *Ostrea virginiana*, the common American oyster. They are usually found attached to a solid substance in the most brackish waters at the mouth of rivers or in the shallow waters along the seacoasts, in depths varying from 15 to 180 feet, according to the temperature of the water. Moving sand or muddy ground is not conducive to their growth, as they require some solid substance to which to attach themselves.

Oyster fishing has always been an important industry in European, Asiatic, and American waters. The oyster, however, in the oyster regions of Europe and Asia, is not found at the present time in natural reefs in its primitive condition, but is produced on areas of ground under individual ownership or protection, as the public reefs in those countries have been depleted. France and Great Britain lead all European countries in the production of the oyster, and its culture is carried on more extensively and successfully in France than anywhere in the world.

When the first settlements were made in America, oysters were found in lavish abundance all along the Atlantic coast, from Maine to Florida, the principal beds being in Chesapeake Bay, Cape Cod, and Long Island Sound. Constant fishing, however, soon had its effect upon the more Northern fisheries, and by the year 1860 the natural beds of the North Atlantic coast were exhausted. Chesapeake Bay and the waters along the coast of Virginia still produce a good supply, and the young were transplanted from these sections to the more Northern beds, where they were fattened and prepared for market. Were it not for the supply of seed oysters secured from these southern waters, the states north of Connecticut would be in the same condition as the European countries in oyster culture. The public beds along the coasts of Connecticut, New York, New Jersey, and Delaware are so far depleted that the supply is very irregular and uncertain

and the oyster found is very small. In the Chesapeake Bay and Southern waters the public reefs are somewhat exhausted, the oysters are small, and many are transplanted to private grounds for maturing.¹ Oysters are found in the Gulf of Mexico, and also to a small extent along the Pacific coast. Seed oysters from the Atlantic coast have been planted on the Pacific coast, but with little success.²

The inception and growth of oyster canning has been practically simultaneous with the canning of fish. In the early days of the canning industry the two were often carried on under the same roof, and the canning of oysters as a distinct industry did not begin prior to 1850, although Thomas Kensett, the pioneer in this branch of canned goods, began in Baltimore as early as 1820. Kensett was followed by several others, and in the year 1850 the industry was established on a permanent footing.³ Many New Englanders, attracted by the excellent fisheries of the place, located in Baltimore, and in time engaged in oyster canning. Oysters are canned at one or two Chesapeake ports, and at four or five cities on the northern coast of the Gulf of Mexico. The term "cove" is applied to oysters put up in tin cans, cooked, hermetically sealed, and kept for some time. The original "cove oysters" were found in coves on the west side of Chesapeake Bay, above the Potomac, and were famous for their size and quality.

Improvements in the methods of preserving have been as marked in oyster canning as in any other branch of the canning industry. Originally the oyster shells were opened by hand, but in 1858, Louis McMurray, of Baltimore, introduced the scalding of the oysters before they were "shucked," and this treatment greatly facilitated their removal from the shell. This method was replaced two years later by steaming, a process in which the oysters were put in baskets having a capacity of three pecks or more, and a large number of the baskets were placed

¹ Stevenson, Report on Industries of Maryland, 1894.

² Oyster Culture, by H. F. Moore.

³ Fish Bulletin, 1899, page 516.

in a huge box, through which steam was passed. The modern method of "shucking" was inaugurated by Henry Evans in 1862. His process consists of placing the oysters in cars of iron framework, 6 to 8 feet long, and holding about 20 bushels of unshucked oysters, and the cars are run on a track from the wharf to a steam-tight box, ranging from 15 to 20 feet long, and fitted with appliances for admitting the steam at any desired pressure, and a door at each end of the box permitting the entry of the car, and then so arranged that the doors can be closed, thus making a practically air-tight compartment.¹ The steam is turned on for about fifteen minutes, the chest is then opened and the cars run into the shucking shed, where employees, each provided with a knife, are able to separate very easily the oysters from the shell. After they are steamed and "shucked" they are washed in cold water and sent to the "fillers' table." Here they are placed in cans, weighed, and hermetically sealed. The cans are then put into a cylindrical basket and lowered into the "process kettle," in which they are steamed to a sufficient degree to kill all germs of fermentation. After coming from the "process kettle," they are cooled in a large vat of cold water and then transferred to the labeling and packing department.² The total cost of handling a bushel of oysters in the Baltimore canneries has been estimated at

29 cents, while the average price during recent years of a bushel of oysters for the canning trade has been about 55 cents.³

The structure of the oysters on the Gulf of Mexico is such that it disintegrates and is shiny in appearance when canned in the manner of the more Northern oyster. In canning this variety, the following process was introduced in 1880 by Mr. J. T. Maybury: "To ten gallons of pure water, add one-half gallon of good commercial vinegar and one-tenth gill of a saturated aqueous solution of salicylic acid, to which mixture sufficient common salt is added to impart the requisite salty flavor to the oysters. The mixture is boiled a few minutes and poured over the oysters in the cans, which are at once sealed and placed in a steam bath, the temperature of which is 202° F. This temperature is gradually raised to 240° and maintained at that degree for about forty-five minutes. The cans are then vented, resealed, and steamed as before for about thirty minutes, after which they are ready to be labeled and packed."⁴ By this process the fatty portion of the oyster is coagulated and the body made more dense and firm.

Table 34 shows the detailed statement, by states, of the industry for 1900.

¹ Letters Patent, No. 35511, June 10, 1862. Fish Bulletin, 1899, page 517.

³ Fish Bulletin, 1899, page 517.

⁴ Ibid, page 518.

TABLE 34.—OYSTERS, CANNING AND PRESERVING: BY STATES, 1900.

	United States.	Florida.	Louisiana.	Maryland.	Mississippi.	Washington.	All other states. ¹
Number of establishments.....	89	6	3	16	4	3	7
Character of organization:							
Individual.....	20	3	1	11	2	1	2
Firm and limited partnership.....	11	1	2	2	1	2	3
Incorporated company.....	8	2		3	1		2
Capital:							
Total.....	\$1,240,696	\$78,895	\$64,250	\$799,005	\$205,549	\$9,800	\$88,197
Land.....	\$95,000	\$16,000	\$4,900	\$51,650	\$17,500		\$4,950
Buildings.....	\$238,713	\$10,820	\$31,200	\$135,793	\$42,000		\$18,900
Machinery, tools, and implements.....	\$151,717	\$18,975	\$8,700	\$77,748	\$81,000	\$5,300	\$9,994
Cash and sundries.....	\$755,266	\$33,100	\$19,450	\$539,814	\$115,049	\$4,500	\$49,853
Proprietors and firm members.....	47	6	5	15	5	5	11
Salaried officials, clerks, etc:							
Total number.....	119	8	9	79	7	2	14
Total salaries.....	\$112,879	\$7,001	\$6,540	\$81,048	\$9,300	\$1,400	\$7,590
Officers of corporations—							
Number.....	15	1		9	2		3
Salaries.....	\$34,850	\$1,000		\$26,350	\$5,100		\$2,400
General superintendents, managers, clerks, etc.—							
Total number.....	104	7	9	70	5	2	11
Total salaries.....	\$78,029	\$6,001	\$6,540	\$54,698	\$4,200	\$1,400	\$5,190
Men—							
Number.....	96	7	9	63	5	1	11
Salaries.....	\$74,967	\$6,001	\$6,540	\$52,136	\$4,200	\$900	\$5,190
Women—							
Number.....	8			7		1	
Salaries.....	\$3,062			\$2,562		\$500	
Wage-earners, including pieceworkers, and total wages:							
Greatest number employed at any one time during the year.....	5,122	521	180	2,603	875	40	903
Least number employed at any one time during the year.....	2,051	399	118	506	374	15	639
Average number.....	2,779	148	97	1,444	419	24	647
Wages.....	\$630,016	\$32,392	\$33,915	\$379,591	\$81,954	\$12,070	\$90,094
Men, 16 years and over—							
Average number.....	1,355	44	81	712	118	22	383
Wages.....	\$419,032	\$12,957	\$32,165	\$247,117	\$47,254	\$11,550	\$67,989
Women, 16 years and over—							
Average number.....	1,123	80	7	618	219	2	197
Wages.....	\$175,865	\$16,300	\$1,000	\$114,000	\$26,100	\$520	\$17,945
Children, under 16 years—							
Average number.....	301	24	9	114	87		67
Wages.....	\$85,119	\$3,135	\$760	\$18,474	\$8,600		\$4,160

¹ Includes establishments distributed as follows: Alabama, 1; Delaware, 1; Georgia, 1; Iowa, 1; North Carolina, 1; South Carolina, 1; Virginia, 1.

MANUFACTURES.

TABLE 34.—OYSTERS, CANNING AND PRESERVING: BY STATES, 1900—Continued.

	United States.	Florida.	Louisiana.	Maryland.	Mississippi.	Washington.	All other states. ¹
Average number of wage-earners, including pieceworkers, employed during each month:							
Men, 16 years and over—							
January	1,682	98	110	642	205	32	545
February	1,599	88	110	621	205	30	545
March	1,629	90	110	651	205	28	545
April	1,298	86	114	384	205	19	490
May	885	5	25	472	19	12	302
June	736			650	14	12	60
July	582			500	10	12	60
August	709			625	10	12	62
September	1,348	14	116	888	22	15	343
October	1,868	12	130	1,008	155	28	540
November	2,002	58	130	1,082	155	32	545
December	2,022	80	130	1,076	155	36	545
Women, 16 years and over—							
January	1,001	175		199	350	2	275
February	966	165		174	350	2	275
March	1,494	178		690	350	2	274
April	1,097	142	4	355	350	2	244
May	799	50	20	557	6	2	164
June	1,021			963	6	2	50
July	601			545	6		50
August	1,208			1,150	6		50
September	1,348	5		1,080	81	2	180
October	1,402	5	20	735	375	2	265
November	1,266	105	20	489	375	2	275
December	1,273	139	20	464	373	2	275
Children under 16 years—							
January	273	68		5	120		80
February	273	68		5	120		80
March	341	65		75	120		81
April	317	36	5	75	120		81
May	218	2	25	130			61
June	280			200			30
July	180			150			30
August	230			200			30
September	311			200	50		61
October	460		30	170	175		85
November	400	10	25	105	170		90
December	379	39	25	55	170		90
Miscellaneous expenses:							
Total	\$93,707	\$5,881	\$3,123	\$70,100	\$8,518	\$1,249	\$4,836
Rent of works	\$5,615	\$705		\$5,770		\$610	\$1,530
Taxes, not including internal-revenue	\$7,649	\$201	\$463	\$4,870	\$768	\$41	\$1,306
Rent of offices, interest, insurance, and all sundry expenses not hitherto included	\$76,643	\$4,175	\$2,660	\$59,460	\$7,750	\$598	\$2,000
Contract work	\$800	\$800					
Material used:							
Total cost	\$2,608,757	\$48,029	\$109,205	\$1,771,877	\$427,490	\$38,061	\$214,595
Principal materials	\$1,792,725	\$18,507	\$101,295	\$1,228,548	\$206,000	\$34,762	\$143,613
Fuel	\$25,090	\$2,950	\$800	\$12,742	\$6,040	\$100	\$2,458
Rent of power and heat	\$60					\$60	
Mill supplies	\$9,375	\$710	\$3,510	\$3,325	\$1,700	\$20	\$110
All other materials	\$768,927	\$23,802	\$3,300	\$526,502	\$146,950	\$2,564	\$65,309
Freight	\$12,580	\$2,000	\$300	\$200	\$6,300	\$555	\$2,905
Products:							
Aggregate value	\$3,670,134	\$100,543	\$165,458	\$2,417,331	\$569,000	\$65,980	\$851,322
Total pounds	22,196,978	1,530,812	1,688,700	6,915,734	6,850,875	224,388	4,980,467
Total value	\$1,649,480	\$97,743	\$94,702	\$570,478	\$569,000	\$29,455	\$288,102
Oysters—							
Pounds	20,792,371	1,504,416	1,272,750	6,915,734	6,077,904	49,500	4,972,067
Value	\$1,635,693	\$95,793	\$71,625	\$570,478	\$495,320	\$16,535	\$285,342
Shrimps—							
Pounds	302,821		450		772,971	15,000	14,400
Value	\$78,115		\$25		\$73,680	\$2,250	\$2,160
Crabs—							
Pounds	92,400					92,400	
Value	\$7,295					\$7,295	
Clams—							
Pounds	67,488					67,488	
Value	\$3,375					\$3,375	
Other varieties—							
Pounds	441,896	26,396	415,500				
Value	\$25,002	\$1,950	\$23,052				
Value of all other products	\$2,020,654	\$2,800	\$70,756	\$1,846,853		\$36,525	\$63,720
Comparison of products:							
Number of establishments reporting for both years	32	4	1	15	3	3	6
Value for census year	\$3,399,761	\$72,470	\$107,633	\$2,364,968	\$504,000	\$65,980	\$284,710
Value for preceding year	\$3,116,591	\$71,300	\$97,600	\$2,232,501	\$449,000	\$65,650	\$200,540
Power:							
Number of establishments reporting	20	4	2	6	4	2	2
Total horsepower	922	145	80	387	115	10	185
Owned—							
Engines—							
Steam—							
Number	42	4	2	24	7	2	3
Horsepower	920	145	80	387	115	8	185
Electric horsepower	2					2	
Establishments classified by number of persons employed:							
Total number of establishments	39	6	3	16	4	3	7
No employees							
Under 5	6			2		3	1
5 to 20	9	2	1	5			1
21 to 50	9	1	2	3	1		2
51 to 100	9	3		2	2		2
101 to 250	4			2	1		1
251 to 500							
501 to 1,000	2			2			

¹Includes establishments distributed as follows: Alabama, 1; Delaware, 1; Georgia, 1; Iowa, 1; North Carolina, 1; South Carolina, 1; Virginia, 1.