SLAUGHTERING AND MEAT PACKING

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SLAUGHTERING AND MEAT PACKING.

The statistics for slaughtering and meat packing of this report relate only to the establishments engaged in the wholesale industry. At the censuses of 1890, 1900, and 1905 the statistics were segregated so as to show separate totals for establishments engaged in both slaughtering and packing and those engaged in slaughtering only. At the census of 1880 but one total was shown for the entire industry designated as "slaughtering and meat packing, not including retail butchering." At the census of 1870 statistics were presented under four classifications—"meat, cured and packed, not specified," "meat packed, beef," "meat packed, pork," and "butchering." At the census of 1860 the industry was designated as "provisions" and at 1850 as "pork and beef packing." From the classifications, therefore, it would appear that the intention at the earlier as well as the later censuses was to eliminate from the Census reports establishments engaged in retail butchering and to limit the statistics to those engaged in a wholesale business.

The line of demarcation between establishments of a character to be included in the census and those to be excluded is sometimes difficult to draw. The term "wholesale" is generally applied to an establishment that disposes of its product to merchants and not directly to the consumer. Many butchers who dispose of the greater part of their products at retail make a practice of selling large weights to other butchers and some who slaughter almost wholly for the retail trade will at times sell at wholesale because of the perishable nature of the product. The reports of such establishments were sometimes secured and included in the statistics, although their wholesale trade might have formed only a small proportion of the year's transactions.

Under these conditions establishments enumerated at one census would possibly be omitted at a subsequent census, and the same class of establishments might not be enumerated at the same census in all sections of the country. Therefore the statistics can be accepted as representing establishments engaged wholly or largely in the wholesale trade, but not as the total for all establishments that were in any way engaged in a wholesale business.

The statistics for the 929 establishments reported at the census of 1905, together with those for similar establishments reported at each census from 1850 to 1900, are presented in Table 1.

TABLE 1.—COMBINED SLAUGHTERING AND MEAT PACKING—COMPARATIVE SUMMARY, WITH PER CENT OF INCREASE: 1850 TO 1905.

	CENSUS.							PER CENT OF INCREASE.					
	1905	1900[1]	1890	1880	1870	1860	1850	1900 to 1905	1890 to 1900	1880 to 1890	1870 to 1880	1860 to 1870	1850 to 1860
Number of establishments	929	882	1,118	872	768	259	185	5.3	[2]21.1	28.2	13.5	196.5	40.0
Capital	$237,714,690	$188,800,181	$116,887,504	$49,419,213	$24,224,692	$10,158,362	$3,482,500	25.9	61.5	136.5	104.0	138.5	191.7
Salaried officials, clerks, etc., number	11,974	10,199	[3]3,971	(4)	(4)	(4)	(4)	17.4	156.8	.....	.....	.....	.....
Salaries	$13,343,902	$10,101,647	[3]$4,536,600	(4)	(4)	(4)	(4)	32.1	122.7	.....	.....	.....	.....
Wage-earners, average number	74,134	68,386	43,975	27,297	8,366	5,058	3,276	8.4	55.5	61.1	226.3	65.4	54.4
Total wages	$40,326,972	$33,392,253	$24,304,976	$10,508,530	$2,553,447	$1,019,266	$1,231,536	20.8	37.4	131.3	311.5	150.5	[2]17.2
Men 16 years and over	68,692	63,774	42,285	26,113	7,906	5,039	3,267	7.7	50.8	61.9	230.3	56.9	54.2
Wages	$38,585,653	$32,175,287	$23,887,890	(4)	(4)	(4)	(4)	19.9	34.7	.....	.....	.....	.....
Women 16 years and over	4,468	2,945	990	.....	202	19	9	51.7	197.5	.....	.....	968.2	111.1
Wages	$1,481,453	$853,613	$285,554	.....	(4)	(4)	(4)	73.6	198.9	.....	.....	.....	.....
Children under 16 years	974	1,667	700	1,184	258	(4)	(4)	[2]41.6	138.1	[2]40.9	358.9	.....	.....
Wages	$259,866	$363,353	$131,532	(4)	(4)	(4)	(4)	[2]28.5	176.3	.....	.....	.....	.....
Miscellaneous expenses	$30,631,359	$24,029,710	$15,716,735	(5)	(5)	(5)	(5)	27.5	52.9	.....	.....	.....	.....
Cost of materials used	$805,856,969	$682,096,839	$480,962,211	$267,738,902	$61,674,024	$23,564,433	$9,451,096	18.1	41.8	79.6	334.1	161.7	149.3
Value of products	$913,914,624	$783,779,191	$561,611,668	$303,562,413	$75,826,500	$29,441,776	$11,981,642	16.6	39.6	85.0	300.3	157.5	145.7

[1] The statistics for 1900 do not agree with those published at the Twelfth Census, as it was necessary to revise the figures for Maryland and Montana to bring them into comparison with the statistics for 1905.
[2] Decrease.
[3] Includes proprietors and firm members, with their salaries; number only reported in 1900 and 1905, but not included in this table.
[4] Not reported separately.
[5] Not reported.

The statistics shown in Table 1 indicate a remarkable development of the industry since 1850.[1] In every item of the statistics for 1905, except the number of children employed and their wages, an increase is shown over 1900. While the percentages of increase between 1900 and 1905 are less than those shown prior to 1900, it should be borne in mind that but five years have elapsed between 1900 and 1905, as compared with ten years between the previous censuses.

The amount of capital invested has increased $48,914,509, or 25.9 per cent, since 1900; the total amount of wages paid, $6,934,719, or 20.8 per cent; and the value of products, $130,135,433, or 16.6 per cent.

Even the number of establishments, in which, owing to the growth of concentration, many industries show losses at the present census, shows a slight relative increase. It is still, however, nearly 200 short of the number reported in 1890, when the maximum for the industry was reached, a fact which would seem to indicate that this industry was among the first to undergo the process of concentration, which here seems to have already attained a relatively advanced state between 1890 and 1900.

In addition to reports for "slaughtering and meat packing, wholesale," and "slaughtering, wholesale, not including meat packing," dealt with in this report as "combined slaughtering and meat packing," the Bureau of the Census collected statistics from factories in which sausage was made as the principal product, and also from those where the manufacture of "lard, refined," was of primary importance. Table 2 is a comparative summary for 1900 and 1905 of these three branches of the meat industry.

[1] For information concerning this development, see Special report on "Slaughtering and meat packing" Twelfth Census, Manufactures, Part III, page 387.

TABLE 2.—COMBINED SLAUGHTERING AND MEAT PACKING, REFINED LARD, AND SAUSAGE—COMPARATIVE SUMMARY, BY INDUSTRIES: 1905 AND 1900.

INDUSTRY.	Census.	Number of establishments.	Capital.	SALARIED OFFICIALS, CLERKS, ETC.		WAGE-EARNERS AND WAGES.		Miscellaneous expenses.	Cost of materials used.	Value of products.
				Number.	Salaries.	Average number.	Wages.			
Total	1905	1,230	$241,581,827	12,173	$13,560,778	75,840	$41,286,183	$31,095,759	$817,065,740	$928,166,129
	1900	1,099	191,544,837	10,371	10,260,390	69,763	34,083,603	24,293,162	692,806,944	796,998,548
Combined slaughtering and meat packing	1905	929	237,714,690	11,974	13,343,902	74,134	40,326,972	30,631,359	805,856,969	913,914,624
	1900	882	188,800,181	10,199	10,101,647	68,386	33,392,253	24,029,710	682,096,839	783,779,191
Lard, refined	1905	9	1,162,891	77	107,579	441	219,387	160,448	5,640,178	6,128,601
	1900	19	1,335,759	54	79,675	499	237,930	127,500	7,496,845	8,630,901
Sausage	1905	292	2,704,246	122	109,297	1,265	739,824	303,952	5,568,593	8,122,904
	1900	198	1,408,897	118	109,068	878	453,420	135,952	3,213,260	4,588,456

The capital reported at the census of 1905 was an increase of $50,036,990 over 1900, and the value of products an increase of $131,167,581. To these increases combined slaughtering and meat packing contributed 97.8 per cent and 99.2 per cent, respectively.

Table 3 is a comparative summary for 1900 and 1905 of the statistics for each of the two branches of the industry, together with the proportion each branch is of the total.

TABLE 3.—COMBINED SLAUGHTERING AND MEAT PACKING—COMPARATIVE SUMMARY, BY BRANCHES, WITH PER CENT EACH IS OF TOTAL: 1905 AND 1900.

	TOTAL.		SLAUGHTERING AND MEAT PACKING, WHOLESALE.				SLAUGHTERING, WHOLESALE, NOT INCLUDING MEAT PACKING.			
	1905	1900[1]	1905	Per cent of total.	1900	Per cent of total.	1905	Per cent of total.	1900	Per cent of total.
Number of establishments	929	882	559	60.2	557	63.2	370	39.8	325	36.8
Capital	$237,714,690	$188,800,181	$219,818,627	92.5	$173,866,377	92.1	$17,896,063	7.5	$14,933,804	7.9
Salaried officials, clerks, etc., number	11,974	10,199	11,305	94.4	9,635	94.5	669	5.6	564	5.5
Salaries	$13,343,902	$10,101,647	$12,458,332	93.4	$9,452,733	93.6	$885,570	6.6	$648,914	6.4
Wage-earners, average number	74,134	68,386	69,593	93.9	64,681	94.6	4,541	6.1	3,705	5.4
Total wages	$40,326,972	$33,392,253	$37,090,399	92.0	$31,033,850	92.9	$3,236,573	8.0	$2,358,403	7.1
Men 16 years and over	68,662	63,774	64,171	93.4	60,095	94.2	4,521	6.6	3,679	5.8
Wages	$38,585,653	$32,175,287	$35,355,164	91.6	$29,822,799	92.7	$3,230,489	8.4	$2,352,488	7.3
Women 16 years and over	4,468	2,945	4,459	99.8	2,935	99.7	9	0.2	10	0.3
Wages	$1,481,453	$853,613	$1,478,413	99.8	$849,974	99.6	$3,040	0.2	$3,639	0.4
Children under 16 years	974	1,667	963	98.9	1,651	99.0	11	1.1	16	1.0
Wages	$259,866	$363,353	$256,822	98.8	$361,077	99.4	$3,044	1.2	$2,276	0.6
Miscellaneous expenses	$30,631,359	$24,029,710	$28,032,248	91.5	$22,658,444	94.3	$2,599,111	8.5	$1,371,266	5.7
Cost of materials used	$805,856,969	$682,096,839	$706,230,069	87.6	$605,223,221	88.7	$99,626,900	12.4	$76,873,618	11.3
Value of products	$913,914,624	$783,779,191	$801,757,137	87.7	$697,056,065	88.9	$112,157,487	12.3	$86,723,126	11.1

[1] The statistics for 1900 do not agree with those published at the Twelfth Census, as it was necessary to revise the figures for Maryland and Montana to bring them into comparison with the statistics for 1905.

In 1905 the slaughtering and meat packing branch of the industry reported 60.2 per cent of the establishments, 92.5 per cent of the capital, 93.9 per cent of the wage-earners, 92 per cent of the total wages paid, and 87.7 per cent of the value of products for the combined industry. Its relative importance was slightly less in 1905 than in 1900 for every item except capital, the proportional falling off in value of products being 1.2 per cent.

A great difference in the average size of establishments in the two branches of the industry is revealed by the table, large establishments being the rule in slaughtering and meat packing, while those engaged in slaughtering exclusive of meat packing are relatively small. For the latter class the average amount of capital per establishment was $48,368, the average number of wage-earners 12, the average amount of wages paid $8,747, and the average value of products $303,128. For slaughtering and meat packing the average amount of capital per establishment was $393,235, or about eight times as great as in the other branch; the average number of wage-earners 124, or more than ten times as great; the average amount of wages paid $66,351, or more than seven times as great; and the average value of products $1,434,270, or nearly five times as great.

Although the relative increases for slaughtering, not including meat packing, are larger than for slaughtering and meat packing, the absolute increases are much greater for the latter industry. For slaughtering and meat packing the absolute increase in capital was $45,952,250, or 93.9 per cent of the increase for the combined industry, against an increase of but $2,962,259 for slaughtering, wholesale, not including meat packing. The increase in value of products for slaughtering and meat packing amounted to $104,701,072, or 80.5 per cent of the increase for the combined industry, $79,266,711 in excess of the increase in this item for slaughtering, not including meat packing.

The industry by geographic divisions and states and territories.—From Table 4, which gives the statistics for the combined industry, by geographic divisions, for the censuses of 1900 and 1905, may be ascertained the distribution of the industry through the different sections of the country, as well as the relative growth in each section since the census of 1900.

TABLE 4.—COMBINED SLAUGHTERING AND MEAT PACKING—COMPARATIVE SUMMARY, BY GEOGRAPHIC DIVISIONS, WITH PER CENT OF INCREASE AND PER CENT OF TOTAL: 1905 AND 1900.

DIVISION.	Census.	Number of establishments.	CAPITAL.		WAGE-EARNERS AND WAGES.				PRODUCTS.	
			Amount.	Per cent of total.	Average number.	Per cent of total.	Wages.	Per cent of total.	Value.	Per cent of total.
United States	1905	929	$237,714,690	100.0	74,134	100.0	$40,326,972	100.0	$913,914,624	100.0
	1900	882	$188,800,181	100.0	68,386	100.0	$33,392,253	100.0	$783,779,191	100.0
Per cent of increase		5.3	25.9		8.4		20.8		16.6	
New England states	1905	66	$14,262,815	6.0	3,495	4.7	$1,834,926	4.5	$43,321,437	4.7
	1900	53	$12,771,719	6.8	3,377	4.9	$1,618,280	4.8	$38,363,304	4.9
Per cent of increase		24.5	11.7		3.5		13.4		12.9	
Middle states	1905	343	$29,360,292	12.3	7,306	9.9	$4,763,012	11.8	$132,046,195	14.5
	1900	318	$25,170,646	13.3	5,931	8.7	$3,396,542	10.2	$105,793,628	13.5
Per cent of increase		7.9	16.6		23.2		40.2		24.8	
Southern states	1905	78	$11,066,139	4.7	3,213	4.3	$1,457,641	3.6	$31,380,583	3.4
	1900	72	$3,940,221	2.1	1,423	2.1	$584,527	1.7	$14,340,158	1.8
Per cent of increase		8.3	180.9		125.8		149.4		118.8	
Central states	1905	308	$127,389,701	53.6	42,956	57.9	$22,685,237	56.3	$505,366,122	55.3
	1900	297	$106,345,536	56.3	41,703	61.0	$20,168,719	60.4	$447,978,081	57.2
Per cent of increase		3.7	19.8		3.0		12.5		12.8	
Western states	1905	51	$47,529,844	20.0	15,325	20.7	$8,248,965	20.5	$170,737,664	18.7
	1900	57	$34,884,444	18.5	14,624	21.4	$6,835,174	20.5	$155,054,071	19.8
Per cent of increase		[1] 10.5	36.2		4.8		20.7		10.1	
Pacific states	1905	83	$8,105,899	3.4	1,839	2.5	$1,337,191	3.3	$31,062,623	3.4
	1900	85	$5,687,615	3.0	1,328	1.9	$789,011	2.4	$22,249,049	2.8
Per cent of increase		[1] 2.4	42.5		38.5		69.5		39.6	

[1] Decrease.

From this table it is apparent that the industry is concentrated largely in the Central states, more than one-half of the total for each item being reported by this division, both for 1900 and 1905. Although the percentages of increase were comparatively small for 1905, the actual increases were large. The value of products increased $57,387,141, which is 44.1 per cent of the aggregate increase in the United States. The Western states, although reporting barely one-third of the value of products reported by the Central states, are second in importance, and the Middle states third. The Southern and the Pacific states occupy the least important positions in the industry, although both groups show large increases in every item. The increase in value of products was 118.8 per cent in the Southern states, and 39.6 per cent in the Pacific states. As a result of the high relative increases in these divisions, the Central states, in spite of their extremely large absolute increases, show a falling off in their percentages of the total. For 1905 they reported 55.3 per cent of the total value of products, as compared with 57.2 per cent for 1900, a relative loss of 1.9 per cent. The Western

states show a smaller loss in proportion of the total, and the New England states have also suffered a slight loss. On the other hand, the Southern states show proportional advances in all the items, that in capital being from 2.1 per cent to 4.7 per cent, a relative gain of 2.6 per cent, and that in value of products being from 1.8 per cent to 3.4 per cent, a gain of 1.6 per cent. The Middle states also show a proportional gain in every item except capital, in which there is a relative loss of 1 per cent. The largest proportional gain was that of 1.6 per cent in wages. The Pacific states have made slight proportional gains in every item. In the latter group, however, the rate of growth was not sufficiently rapid to keep it from being outstripped by the Southern states, which for 1900 reported a value of products $7,908,891 less than that reported by the Pacific states, but for 1905 reported a value $317,960 greater. It is interesting to note that even for 1900 the Southern states contained a larger proportion of the total average number of wage-earners than did the Pacific states, the percentages being 2.1 and 1.9, respectively; but for the total wages the positions were reversed, the percentages being 1.7 and 2.4. This variation is probably to be explained by the different conditions of the labor market in these two sections.

Table 5 is a comparative summary, by states and territories, of the statistics for the combined industry at the censuses of 1900 and 1905.

A comparison of Tables 4 and 5 reveals the interesting fact that in each geographic division more than one-half of the total value of products for the division was reported by a single state. Of the Central states, which formed the leading group, Illinois alone reported 62.8 per cent of the total value of products for the division and 51 per cent of the increase of the division in this item since 1900. There is a much more general development of the industry, however, throughout the Central states than in any other geographic division. Of the Western states, Kansas reported 56.5 per cent of the total for the division, while the increase for this state from 1900 to 1905 was $3,280,163 in excess of the total increase for the division. In New England more than five-sixths of the total value of products was reported by Massachusetts; in the Middle states more than one-half by New York; and in the Pacific states approximately two-thirds by California. In the Southern states Texas, which quadrupled its value of products from 1900 to 1905, reported slightly more than one-half of the value of products and 70 per cent of the increase.

Although slaughtering and meat packing was reported from 41 states and territories, the industry was practically centralized in the following 14 states, named in the order of the value of products: Illinois, Kansas, New York, Nebraska, Missouri, Massachusetts, Pennsylvania, Iowa, Indiana, Ohio, California, Minnesota, New Jersey, and Wisconsin. For 1900 the order was as follows: Illinois, Kansas, Nebraska, New York, Indiana, Missouri, Massachusetts, Iowa, Pennsylvania, Ohio, California, New Jersey, Wisconsin, and Minnesota. The removal from Indiana since 1900 of a large establishment caused this state to fall from fifth to ninth place. The aggregate value of the slaughtering and meat packing products of these 14 states constituted 92.6 per cent of the entire production in 1905.

The 5 states showing the largest increase in value of products were Illinois, with an increase of $29,283,805; Kansas, with $18,963,756; Missouri, with $16,990,248; New York, with $15,786,905; and Texas, with $11,926,733—a total gain for the 5 states of $92,951,447, or 71.4 per cent of the total increase in value of products for the whole industry. Sixteen states reported a decrease in value of products, but with the exception of the losses in Indiana and Nebraska the decreases were of minor importance. The decrease in Nebraska was due to the idleness of a large plant. The explanation of the decrease in Indiana has already been given.

Illinois, by far the most important state, for 1905 reported 7.3 per cent of the establishments, 33.9 per cent of the capital, 36.4 per cent of the wage-earners, 36.1 per cent of the wages paid, and 34.7 per cent of the products for the whole country. Kansas ranks next to Illinois, with 2.4 per cent of the establishments, 10.7 per cent of the capital, 12.7 per cent of the wage-earners, 12 per cent of the wages, and 10.5 per cent of the value of products.

TABLE 5.—COMBINED SLAUGHTERING AND MEAT PACKING—COMPARATIVE SUMMARY, BY STATES AND TERRITORIES: 1905 AND 1900.

STATE OR TERRITORY.	Census.	Number of establishments.	Capital.	SALARIED OFFICIALS, CLERKS, ETC.		WAGE-EARNERS AND WAGES.		Miscellaneous expenses.	Cost of materials used.	Value of products.
				Number.	Salaries.	Average number.	Wages.			
United States	1905	929	$237,714,690	11,974	$13,343,902	74,134	$40,326,972	$30,631,359	$805,856,969	$913,914,624
	1900	882	188,800,181	10,199	10,101,647	68,386	33,392,253	24,020,710	682,096,839	783,779,191
California	1905	59	4,835,578	287	350,722	1,253	890,658	655,782	18,618,549	21,795,694
	1900	58	3,913,081	180	254,507	925	544,659	441,210	13,555,445	15,717,712
Colorado	1905	11	1,107,121	52	54,913	247	175,419	134,052	2,781,789	3,323,503
	1900	14	1,380,518	48	60,896	261	170,744	56,384	3,721,610	4,343,983
Connecticut	1905	4	668,159	20	18,040	311	166,236	47,937	2,667,668	2,974,374
	1900	12	562,564	37	36,662	380	174,239	76,721	3,143,590	3,663,393
Idaho [1]	1905	3	92,557	7	9,040	10	8,160	9,067	120,431	158,975
Illinois	1905	68	80,477,268	5,633	6,559,729	26,953	14,560,777	12,962,530	279,854,559	317,206,082
	1900	64	71,229,262	4,226	4,424,285	27,861	14,044,838	14,211,306	246,713,309	287,922,277
Indiana	1905	42	7,358,006	195	247,355	3,140	1,362,552	591,098	26,193,351	29,352,593
	1900	36	8,860,284	303	314,603	3,597	1,565,752	530,956	38,608,841	43,862,273
Iowa	1905	19	7,297,359	284	298,856	3,088	1,323,468	709,738	27,188,659	30,074,070
	1900	27	6,351,353	193	197,376	2,887	1,208,167	441,986	21,556,644	25,695,044
Kansas	1905	22	25,332,330	983	983,690	9,302	4,836,095	3,724,073	85,145,905	96,375,639
	1900	14	16,486,177	1,841	1,631,866	8,117	3,575,049	2,003,771	67,908,960	77,411,883
Kentucky	1905	22	1,464,299	46	44,379	472	243,098	126,858	4,595,466	5,093,731
	1900	28	1,326,976	62	51,799	511	214,271	105,694	4,444,621	5,177,167
Maryland	1905	37	1,285,033	60	58,336	540	307,906	152,423	5,787,699	6,702,061
	1900	45	1,193,985	43	28,204	452	214,088	79,140	5,697,543	6,345,410
Massachusetts	1905	42	12,755,034	403	392,354	2,871	1,501,085	830,691	33,242,733	37,098,502
	1900	22	11,314,075	220	250,296	2,748	1,318,077	591,102	28,040,069	31,633,483
Michigan	1905	18	1,349,137	63	65,289	469	248,959	150,440	5,520,647	6,193,280
	1900	29	1,438,351	71	66,661	456	230,637	87,201	4,770,640	5,337,417
Minnesota	1905	24	3,421,533	280	252,951	1,362	780,633	407,848	15,057,875	17,526,707
	1900	20	1,355,011	125	102,709	668	303,977	90,796	6,823,255	7,810,555
Missouri	1905	33	16,425,899	597	623,129	4,218	2,369,193	1,869,075	54,042,087	60,031,133
	1900	37	7,944,033	242	253,775	3,102	1,440,742	364,267	39,108,137	43,040,885
New Jersey	1905	39	2,335,477	96	108,701	678	446,054	309,541	15,679,581	17,238,076
	1900	41	1,588,389	100	94,080	558	331,825	164,281	12,849,902	14,046,217
New York	1905	101	17,232,855	663	821,042	3,500	2,423,485	2,301,389	65,280,369	73,218,198
	1900	110	15,357,075	602	584,386	3,099	1,846,434	1,274,534	50,523,186	57,431,293
North Carolina [2]	1905	3	58,389	3	3,000	20	8,160	3,936	164,895	192,223
North Dakota [3]	1900	3	104,371	8	8,760	34	15,977	8,975	198,175	256,160
Ohio	1905	88	6,357,135	316	293,534	2,237	1,309,021	648,940	25,022,324	28,720,044
	1900	71	5,355,626	313	266,001	1,765	811,398	639,008	17,927,953	20,660,780
Oklahoma [2]	1905	5	121,750	1	3,500	37	21,660	10,909	236,954	287,866
Oregon	1905	10	974,727	60	72,914	246	155,498	126,178	2,389,902	2,907,154
	1900	9	760,448	41	47,130	172	87,821	35,768	1,350,361	1,638,480
Pennsylvania	1905	156	8,061,250	337	361,896	2,413	1,469,716	920,321	27,784,202	32,321,089
	1900	111	6,548,577	376	317,153	1,669	920,190	526,972	21,601,810	25,238,772
Rhode Island	1905	6	523,142	11	11,280	151	82,058	34,022	2,290,310	2,499,440
	1900	7	759,850	16	17,636	209	107,104	44,736	2,246,780	2,503,466
Utah	1905	3	147,664	9	10,260	31	20,950	16,595	513,543	653,314
	1900	8	117,027	6	2,472	42	18,653	5,940	385,353	453,456
Vermont [1]	1905	3	29,400	1	1,800	11	5,115	1,815	57,661	74,454
All other states	[4] 1905	113	38,002,988	1,567	1,697,192	10,484	5,610,926	3,886,101	105,610,810	121,287,422
	[5] 1900	116	24,853,148	1,146	1,090,330	8,873	4,247,611	2,248,782	90,011,655	103,589,085

[1] No establishments reported in 1900.
[2] Included in "all other states" in 1900.
[3] No establishments reported in 1905.
[4] Includes establishments distributed as follows: Alabama, 2; Delaware, 6; District of Columbia, 4; Florida, 1; Georgia, 4; Louisiana, 2; Maine, 11; Montana, 2; Nebraska, 8; Nevada, 1; Tennessee, 9; Texas, 10; Virginia, 15; Washington, 14; West Virginia, 7; Wisconsin, 16; Wyoming, 1.
[5] Includes establishments distributed as follows: Alabama, 2; Arkansas, 2; Delaware, 4; District of Columbia, 7; Georgia, 7; Maine, 11; Montana, 3; Nebraska, 12; New Hampshire, 1; New Mexico, 2; North Carolina, 1; Oklahoma, 2; South Carolina, 1; South Dakota, 1; Tennessee, 8; Texas, 12; Virginia, 4; Washington, 18; West Virginia, 3; Wisconsin, 13; Wyoming, 2.

Table 6 shows for the censuses from 1890 to 1905 the proportion of the total value of products reported by each of the 14 leading states in the industry.

TABLE 6.—*Combined slaughtering and meat packing—per cent of total value of products, for the fourteen leading states: 1890 to 1905.*

STATE.	PER CENT OF TOTAL VALUE OF PRODUCTS.		
	1905	1900	1890
United States	100.0	100.0	100.0
Fourteen states	92.6	93.7	94.7
Illinois	34.7	36.7	37.8
Kansas	10.5	9.9	8.0
New York	8.0	7.3	13.6
Nebraska	7.6	9.1	5.2
Missouri	6.6	5.5	3.3
Massachusetts	4.1	4.0	3.6
Pennsylvania	3.5	3.2	3.9
Iowa	3.3	3.3	4.2
Indiana	3.2	5.6	5.0
Ohio	3.1	2.6	3.0
California	2.4	2.0	1.7
Minnesota	1.9	1.0	0.4
New Jersey	1.9	1.8	3.2
Wisconsin	1.8	1.7	1.8

While the Central states, as shown in Table 4, reported 55.3 per cent of the total value of products, 2 of the Central states, Illinois and Missouri, together reported 41.3 per cent of the total value of products, and approximately three-fourths of the total for the division, although 5 other states in this division are included in the leading 14. In the Western states, which ranked second among the geographic divisions, reporting 18.7 per cent of the total, the industry was almost wholly confined to Kansas and Nebraska, which together reported 18.1 per cent of the total value of products for the country.

Although more than one-third of the total value of products for the industry was reported by Illinois, its proportion of the total in 1905 was 2 per cent less than in 1900 and 3.1 per cent less than in 1890. This, however, does not indicate any actual falling off in the industry, but merely that it has failed to keep pace with the rapid growth of the industry in the country as a whole, a fact perhaps to be expected in view of the high state of development which was early reached by this state. Kansas, Missouri, Massachusetts, Ohio, California, and Minnesota show an increased proportion in 1905 as compared with either 1890 or 1900. New York, Pennsylvania, and New Jersey show larger percentages in 1905 than in 1900, but smaller than in 1890; while Nebraska has decreased relatively since 1900, although there is still a proportional increase over 1890.

The industry in cities.—Table 7 is a comparative summary, for the censuses from 1880 to 1905, for cities having a population, in 1900, of 8,000 and over, reporting products valued at over $5,000,000 for 1905. The totals for East St. Louis, Ill., for 1905, do not agree with those shown in the general tables, as, for the purpose of making these figures comparable with those of prior censuses, the corporate limits of the city were not strictly followed. Kansas City, Kans., and South Omaha, Nebr., are included with "all other cities of this class," although they rank second and third, respectively, at the census of 1905; and likewise Cambridge, Mass., Sioux City, Iowa, Jersey City, N. J., Ottumwa, Iowa, and Cedar Rapids, Iowa—which rank fifteenth, seventeenth, eighteenth, nineteenth, and twenty-second, respectively—in order that the operations of individual establishments may not be discoverable through comparisons with the detailed tables for the branches of the industry.

TABLE 7.—COMBINED SLAUGHTERING AND MEAT PACKING—COMPARATIVE SUMMARY, FOR CITIES HAVING PRODUCTS VALUED AT OVER $5,000,000 AT THE CENSUS OF 1905: 1880 TO 1905.

CITY.	Census.	Number of establishments.	Capital.	SALARIED OFFICIALS, CLERKS, ETC.		WAGE-EARNERS AND WAGES.		Miscellaneous expenses.	Cost of materials used.	Value of products.	Rank for 1905 and 1900.
				Number.	Salaries.	Average number.	Wages.				
United States	1905	929	$237,714,690	11,974	$13,343,902	74,134	$40,326,972	$30,631,359	$805,856,969	$913,914,624	.....
	1900	882	188,800,181	10,199	10,101,647	68,386	33,392,253	24,029,710	682,096,839	783,779,191	.....
	1890	1,118	116,887,504	[1] 3,971	[1] 4,536,600	43,975	24,304,976	15,716,735	480,962,211	561,611,668	.....
	1880	872	49,419,213	(2)	(2)	27,297	10,508,550	(3)	267,738,902	303,562,413	.....
Total, 25 selected cities [4]	1905	424	194,394,345	9,837	11,186,210	61,412	33,371,452	25,802,341	676,012,466	762,612,773	.....
	1900	398	159,960,556	8,748	8,804,608	59,351	29,034,068	22,048,001	580,790,975	665,368,476	.....
Allegheny, Pa. [2]	1905	11	1,810,039	74	90,061	613	395,351	249,468	5,405,610	6,485,182	21
	1900	8	1,497,666	52	57,800	438	233,028	111,546	3,538,805	3,996,807	25
	1890	7	140,860	13	9,750	42	17,390	7,104	233,876	294,065	.....
Baltimore, Md.	1905	34	930,333	51	50,792	433	238,637	137,968	4,649,159	5,406,274	28
	1900	42	1,045,495	36	25,204	385	179,268	73,549	5,002,973	5,570,590	20
	1890	14	958,521	53	53,904	368	171,208	75,232	3,668,147	4,311,412	.....
	1880	6	705,000	.....	.....	194	85,300	.....	2,559,662	2,742,645	.....
Buffalo, N. Y.	1905	26	4,870,083	277	264,988	1,159	588,862	485,622	14,167,105	16,136,373	10
	1900	24	5,173,694	203	146,523	928	436,869	342,878	10,026,676	11,601,167	12
	1890	34	2,915,280	90	96,374	766	377,849	128,844	8,437,164	9,951,044	.....
	1880	6	872,500	.....	.....	289	170,433	.....	3,023,924	3,441,280	.....
Chicago, Ill.	1905	32	70,265,373	4,960	5,940,176	22,613	12,388,214	11,628,056	237,038,571	269,581,486	1
	1900	38	67,137,569	4,010	4,233,994	25,345	12,875,676	13,829,825	218,241,331	256,527,949	1
	1890	57	39,222,195	900	1,003,668	16,975	10,002,573	6,218,026	173,568,365	203,606,402	.....
	1880	70	8,455,200	.....	.....	7,478	3,392,748	.....	74,546,319	85,324,371	.....

[1] Includes proprietors and firm members, with their salaries; number only reported in 1900 and 1905, but not included in this table.
[2] Not reported separately in 1880.
[3] Not reported.
[4] All cities not reported separately for 1890 and 1880.

TABLE 7.—COMBINED SLAUGHTERING AND MEAT PACKING—COMPARATIVE SUMMARY, FOR CITIES HAVING PRODUCTS VALUED AT OVER $5,000,000 AT THE CENSUS OF 1905: 1880 TO 1905—Continued.

CITY.	Census.	Number of establishments.	Capital.	SALARIED OFFICIALS, CLERKS, ETC.		WAGE-EARNERS AND WAGES.		Miscellaneous expenses.	Cost of materials used.	Value of products.	Rank for 1905 and 1900.
				Number.	Salaries.	Average number.	Wages.				
Cincinnati, Ohio	1905	45	$2,825,858	103	$112,683	866	$515,400	$265,602	$11,721,316	$13,446,202	12
	1900	27	2,803,064	98	103,830	856	414,621	437,889	8,806,652	10,370,177	13
	1890	83	2,215,490	149	173,404	675	373,859	152,452	7,873,703	9,511,188	.....
	1880	49	4,074,682	.....	.....	1,143	338,302	.....	10,454,991	11,614,810	.....
Cleveland, Ohio	1905	8	2,203,486	135	121,403	924	532,738	198,830	9,133,952	10,317,494	14
	1900	10	1,827,288	173	135,886	577	235,023	175,132	6,759,023	7,514,470	17
	1890	13	744,465	73	79,080	382	200,981	30,570	4,983,627	5,582,666	.....
	1880	12	447,000	.....	.....	416	192,892	.....	4,886,771	5,427,938	.....
Detroit, Mich	1905	11	1,250,742	56	57,410	420	221,764	137,712	4,752,760	5,349,647	24
	1900	16	1,184,776	61	59,581	338	177,856	70,587	3,628,440	4,047,749	24
	1890	19	818,023	78	70,526	280	145,288	46,009	2,953,987	3,404,424	.....
	1880	7	485,000	.....	.....	147	79,067	.....	1,413,426	1,721,231	.....
East St. Louis, Ill.[1]	1905	3	8,024,281	554	496,024	3,658	1,782,779	1,084,636	36,281,338	39,972,245	6
	1900	3	3,183,288	156	138,259	2,159	985,497	305,594	25,370,543	27,676,818	6
	1880	3	1,550,000	.....	.....	2,540	530,019	.....	6,104,019	7,950,000	.....
Indianapolis, Ind	1905	9	6,120,562	130	186,231	2,671	1,124,075	484,136	22,233,871	24,458,810	7
	1900	7	3,807,246	136	128,834	1,943	783,226	218,989	17,400,330	18,781,442	7
	1890	8	990,220	51	48,000	827	386,472	108,015	5,408,053	6,295,975	.....
	1880	7	1,618,000	.....	.....	892	345,236	.....	7,890,208	9,014,422	.....
Louisville, Ky	1905	13	1,391,674	45	43,929	433	228,836	124,625	4,263,949	5,286,137	25
	1900	12	1,218,426	52	45,739	449	189,417	100,312	3,828,486	4,444,978	22
	1890	12	1,272,415	33	22,967	327	101,328	124,475	2,023,501	2,555,154	.....
	1880	23	2,144,500	.....	.....	366	141,092	.....	3,438,459	4,287,158	.....
Milwaukee (including Cudahy), Wis.	1905	9	4,342,107	119	165,203	1,391	682,408	552,610	13,143,047	15,394,168	11
	1900	7	3,578,690	116	140,333	1,293	530,483	385,102	11,405,186	13,045,979	9
	[2] 1890	9	2,291,971	43	56,728	742	358,830	96,989	8,635,671	9,704,966	.....
	[2] 1880	7	789,000	.....	.....	953	187,596	.....	5,529,618	6,099,486	.....
New York: Brooklyn borough	1905	11	1,431,580	63	71,961	307	245,963	164,730	6,758,717	7,499,974	20
	1900	10	618,825	35	32,660	227	136,777	59,293	3,783,042	4,126,632	23
	1890	37	1,672,528	95	155,258	449	335,959	120,002	11,640,449	13,087,354	.....
	1880	28	1,125,000	.....	.....	260	194,568	.....	7,340,450	8,010,492	.....
Manhattan and Bronx boroughs	1905	34	9,980,594	270	435,134	1,690	1,429,687	1,437,702	41,907,452	46,477,324	4
	1900	42	8,648,436	320	378,194	1,705	1,166,749	829,740	34,230,835	38,752,586	4
	1890	56	7,143,468	282	418,226	2,165	1,577,238	639,538	44,761,605	50,251,504	.....
	1880	58	1,801,000	.....	.....	895	575,521	.....	27,763,577	29,297,527	.....
Philadelphia, Pa	1905	87	2,533,443	77	86,158	774	498,929	312,442	11,147,549	12,706,519	13
	1900	58	1,882,732	141	111,925	617	372,610	221,674	10,321,065	12,020,462	11
	1890	202	3,722,207	264	291,776	908	514,177	207,080	13,674,466	16,094,498	.....
	1880	19	1,965,625	.....	.....	359	165,353	.....	7,042,781	7,869,114	.....
St. Joseph (including South St. Joseph), Mo.[1]	1905	6	12,334,944	391	366,299	2,913	1,573,448	1,583,103	37,626,899	42,075,116	5
	1900	5	5,200,899	131	106,001	2,216	980,749	190,550	27,645,318	29,704,973	5
	[3] 1880	5	134,500	.....	.....	204	37,290	.....	1,224,208	1,439,843	.....
St. Louis, Mo	1905	20	3,944,105	203	254,230	1,237	752,839	271,997	16,043,450	17,485,393	9
	1900	25	2,608,249	103	142,573	841	448,287	171,902	11,120,325	12,943,376	10
	1890	60	3,216,571	129	170,226	631	366,011	98,530	9,864,639	12,048,114	.....
	1880	32	1,243,000	.....	.....	584	269,763	.....	7,085,909	8,424,064	.....
San Francisco, Cal	1905	29	1,236,237	89	111,107	283	247,971	145,608	7,556,245	8,994,992	16
	1900	26	2,305,362	114	177,490	532	323,931	306,408	8,622,994	9,991,599	14
	1890	25	1,591,779	86	122,090	249	198,637	226,259	5,575,801	6,670,474	.....
	1880	24	1,586,200	.....	.....	309	239,868	.....	4,511,721	6,013,602	.....
Somerville, Mass.[1]	1905	4	7,216,744	236	242,648	1,521	800,258	439,858	17,164,332	18,917,495	8
	1900	4	6,801,141	45	70,618	1,435	692,999	314,036	14,233,788	15,602,242	8
	1880	3	760,840	.....	.....	263	122,889	.....	3,368,396	3,702,601	.....
All other cities of this class[4]	1905	32	51,682,160	2,004	2,089,773	17,506	9,123,293	6,097,636	175,017,144	196,621,942	.....
	1900	34	39,347,710	2,766	2,569,164	17,067	7,871,002	3,902,995	157,025,163	178,558,480	.....

[1] No figures available for 1890.
[2] Does not include Cudahy for 1890 and 1880.
[3] Does not include South St. Joseph for 1880.
[4] Includes the following cities in order to avoid disclosing figures of individual establishments: Cambridge, Mass.; Cedar Rapids, Iowa; Jersey City, N. J.; Kansas City, Kans.; Ottumwa, Iowa; Sioux City, Iowa; South Omaha, Nebr.

The 25 cities included in Table 7 contained 45.6 per cent of all establishments engaged in slaughtering and meat packing, with 81.8 per cent of the capital, 82.8 per cent of the wage-earners, 82.8 per cent of the wages, and 83.4 per cent of the aggregate value of products. The corresponding percentages for 1900 were: Number of establishments, 45.1; capital, 84.7; wage-earners, 86.8; wages, 86.9; and value of products, 84.9. A comparison of the percentages for 1900 and 1905 shows that, although there was a slight gain for 1905 in the number of establishments, there was a decrease in all other items.

Of the cities shown in Table 7, Chicago, Ill., ranked first, with products valued at $269,581,486, or 35.3 per cent of the total for the 25 cities and 29.5 per cent of the total for the United States. Kansas City, Kans., was second; South Omaha, Nebr., third; New York (Manhattan and Bronx boroughs), N. Y., fourth; and St. Joseph (including South St. Joseph), Mo. fifth. These 5 cities held the same rank in 1900.

Baltimore, Md., and San Francisco, Cal., show a decrease in the value of products for 1905 as compared with 1900. The decrease in Baltimore was only 2.9 per cent, whereas that in San Francisco was 10 per cent.

The greatest percentage of increase for 1905 over 1900 was 81.7 per cent for Brooklyn borough, New York. Allegheny, Pa., had an increase of 62.3 per cent, and East St. Louis, Ill., 44.4 per cent. The greatest actual increase in value of products was in Kansas City, Kans., included in "all other cities of this class."

It will be observed that of the 25 cities presented in the table all but 3—Baltimore, Detroit, and Louisville—are situated in one of the 14 leading states shown in Table 6. The total value of products for these 3 cities is, however, relatively small, forming but 1.8 per cent of the total for the industry. If this be deducted from the total for the 25 cities, it appears that while the 14 leading states reported 92.6 per cent of the total value of products, 22 cities in these states reported 81.7 per cent, or slightly more than four-fifths, of the total, and approximately eight-ninths of the total for the states given.

It has been shown that the slaughtering and meat packing industry was concentrated mainly in a few states, and in a comparatively few cities in those states. A comparison of Table 7 with the preceding tables will bring out this fact even more forcibly. Illinois was the leading state in the industry, reporting 34.7 per cent of the total value of products; but Chicago alone reported 29.5 per cent, and together with East St. Louis, 33.9 per cent of the total. Of the $317,206,082 reported for Illinois, $309,553,731, or 97.6 per cent, was reported by the 2 cities named. Similarly Kansas reported 10.5 per cent of the total value of products, but more than nine-tenths of the total for the state was reported from Kansas City. The proportions for Missouri are even more striking, for out of the $60,031,133 value of products for that state, $59,560,509, or 99.2 per cent, was reported by St. Joseph and St. Louis. Other leading states show a similarly great concentration of the industry in one or two large cities. This follows from the nature of the industry; a slaughtering and meat packing establishment, to reach its highest development, must have the best transportation facilities both for handling live stock and distributing its products. The industry is also highly centralized in the large cities of the Central and Western states, because they are near great stock raising sections.

Materials used.—The kind, quantity, and cost of materials used, as reported for the industry at the censuses of 1890, 1900, and 1905, with the percentages of increase, are shown in Table 8. In some few cases where establishments were unable to furnish details as to quantities and values of the different materials, the total cost only being reported, a segregation was made based upon the average prices prevailing in the localities to which such establishments belonged.

TABLE 8.—*Combined slaughtering and meat packing—kind, quantity, and cost of materials used, with per cent of increase: 1890 to 1905.*

KIND.	CENSUS.			PER CENT OF INCREASE.	
	1905	1900	1890	1900 to 1905	1890 to 1900
Total cost	$805,856,969	$682,096,839	$480,962,211	18.1	41.8
Beeves slaughtered—					
Number	7,147,835	5,525,824	5,422,044	29.4	1.9
Cost	$289,040,930	$247,146,262	$193,348,810	17.0	27.8
Sheep slaughtered—					
Number	10,875,339	9,110,172	6,178,449	19.4	47.5
Cost	$44,359,804	$36,859,832	$24,358,179	20.3	51.3
Hogs slaughtered—					
Number	30,977,639	30,595,522	22,349,451	1.2	36.9
Cost	$329,765,480	$278,370,494	$207,228,609	18.5	34.3
All other animals slaughtered	[1] $12,727,462	[1] $7,806,844	[1] $5,246,661	63.0	48.8
Dressed meat purchased	$53,114,957	$54,247,986	$25,674,343	[2] 2.1	111.3
Fuel	$4,639,315	$2,736,131	$1,569,396	69.6	74.3
Rent of power and heat	$117,098	$30,946	$25,240	278.4	22.6
All other materials, including mill supplies and freight	$72,091,923	$54,898,344	$23,510,973	31.3	133.5

[1] Includes calves. [2] Decrease.

The increase in the number of beeves slaughtered, as reported at the census of 1905, compared with 1900, was 1,622,011, or 29.4 per cent, while the cost increased $41,894,668, or 17 per cent. The increase in number of cattle killed in 1900, as compared with 1890, was only 103,780, or 1.9 per cent, but the increase in cost was $53,797,452, or 27.8 per cent. In other words, the average cost per animal increased from $35.66 for 1890 to $44.73 for 1900, but it decreased to $40.44 for 1905. This decline since 1900 was due both to a lighter average weight and to a lower price per pound. The average gross weight of beeves slaughtered for 1905 was 1,047 pounds, or 22 pounds per animal less than for 1900, and the average cost per pound on the hoof was 3.9 cents for 1905, or three-tenths of a cent lower than for 1900.

The increase in the number and value of sheep slaughtered, as reported at the census of 1905, compared with 1900, was 19.4 per cent and 20.3 per cent, respectively, and there was but a slight variation between the two census periods in cost per pound or average weight. Although the number of hogs killed increased only 1.2 per cent for 1905, as compared with 1900, the value increased 18.5 per cent. For 1900 the average price per hog was $9.10 and for 1905 it was $10.65, an increase in price of $1.55 per animal, and as the average gross weight decreased from 218 pounds for 1900 to 213 for 1905, the average cost per pound (gross weight) increased from 4.2 to 5 cents.

Included in the cost of "all other animals slaughtered" is that of calves, which constitutes the greater part of this item. For 1905 the cost of calves slaughtered amounted to $12,665,557, or 99.5 per cent of this item, and for 1900, $7,252,545, or 92.9 per cent. The

balance of this item consists in the main of the cost of poultry killed.

Comparing the figures in Table 8 for the three principal kinds of live stock slaughtered, it will be seen that both the greatest number and greatest cost were reported for hogs, while the lowest number was for beeves and the lowest cost for sheep. The greatest absolute increase in number was that of 1,765,167 in the number of sheep slaughtered, but the greatest relative increase was in the number of beeves. The lowest increase, both relative and absolute, was in the number of hogs. The largest absolute increase in cost was $51,394,986 for hogs, which showed the smallest increase in number; but the largest relative increase in cost was for sheep, which showed the smallest actual increase. Beeves, which showed the greatest relative increase in number, showed the smallest in cost. The only form of live stock showing a consistent rate of increase from 1900 to 1905 in both number and cost was sheep, for which there was a variation of only nine-tenths of 1 per cent in the respective increases, against 17.3 per cent and 12.4 per cent for hogs and beeves, respectively.

Although the cost of fuel shows a relative increase smaller by 3.7 per cent at the census of 1905 than at that of 1900, the actual increase for the five-year period exceeded that for the previous decade by $736,449. The amount paid for rent of power and heat also shows the large relative advance of 278.4 per cent, although the total for this item remained comparatively insignificant.

Practically the entire cost of rented power and heat represents electric power current purchased from outside sources, and the increase would seem to indicate a gradually increasing use of electrical machinery and appliances. By a reference to Tables 12 and 13 it may be seen that for 1905 the slaughtering and meat packing branch of the industry paid 94 per cent of the total cost of fuel and 89.6 per cent of the cost of rented power and heat.

Besides mill supplies and freight, the item "all other materials" includes cost of boxes, cans, and cases, and also cost of materials required in the utilization of the "waste."

The total gross weight and the total net dressed weight, with the percentage it formed of the gross weight, and the average weight per animal for all beeves, sheep, and hogs slaughtered, as reported at the censuses of 1900 and 1905, are shown in Table 9.

TABLE 9.—COMBINED SLAUGHTERING AND MEAT PACKING—NUMBER AND GROSS AND NET WEIGHT OF ANIMALS SLAUGHTERED: 1905 AND 1900.

	BEEVES.		SHEEP.		HOGS.	
	1905	1900	1905	1900	1905	1900
Number slaughtered	7,147,835	5,525,824	10,875,339	9,110,172	30,977,639	30,595,522
Gross weight on hoof, pounds	7,485,407,044	5,908,165,706	930,168,367	764,269,802	6,586,349,782	6,676,709,331
Average weight, pounds	1,047	1,069	86	84	213	218
Net weight dressed, pounds	4,066,264,877	3,222,733,617	464,872,621	389,132,646	5,048,832,850	5,203,280,487
Percentage of gross weight	54.3	54.5	50.0	50.9	76.6	77.9

From Table 9 it is seen that the average weight of beeves and hogs was less for 1905 than for 1900, while that for sheep was 2 pounds more. For each class of animals the net dressed weight forms a slightly smaller percentage of the gross weight.

Products.—A comparative summary of the quantities and values of the various products of slaughtering and meat packing establishments at the censuses of 1890, 1900, and 1905, with the percentages of increase, is given in Table 10. In the case of establishments which gave only the total value of products a segregation was made to show the quantities and values of the different kinds, as was done for materials used, upon the basis of the average prices prevailing in the localities to which such establishments belonged.

The value of all products increased $222,167,523, or 39.6 per cent, for 1900 over 1890, and $130,135,433, or 16.6 per cent, for 1905 over 1900. The increase in the value of "all other products," which amounted to $36,323,234, or 57.7 per cent, at the census of 1905, as compared with that of 1900, constituted 27.9 per cent, or more than one-fourth of the increase in value of all products, and that for beef, sold fresh, which was $36,263,077, or 17.2 per cent for the period, constituted also 27.9 per cent.

As a basis of comparison for the censuses shown in Table 10 the quantity is preferable to the value of products, both because of the fluctuations from year to year in the wholesale selling price and on account of the variations in the method of reporting value of products by establishments engaged in this industry, some of which used the cost of production as a basis for reporting the value of output, others the selling value, and still others, the factory value.

TABLE 10.—COMBINED SLAUGHTERING AND MEAT PACKING—KIND, QUANTITY, AND VALUE OF PRODUCTS, WITH PER CENT OF INCREASE: 1890 TO 1905.

KIND.	CENSUS.			PER CENT OF INCREASE.	
	1905	1900	1890	1900 to 1905	1890 to 1900
Total value	$913,914,624	$783,779,191	$561,611,668	16.6	39.5
Beef, sold fresh—					
Pounds	3,748,055,377	2,917,653,476	2,708,319,960	28.5	7.7
Value	$247,096,724	$210,833,647	$152,591,963	17.2	38.2
Beef, canned—					
Pounds	98,663,931	112,443,021	133,428,456	[1] 12.3	[1] 15.7
Value	$7,697,815	$9,166,931	$8,950,582	[1] 16.0	2.4
Beef, salted and cured—					
Pounds	136,896,697	137,588,503	576,289,731	[1] 0.5	[1] 76.1
Value	$8,107,952	$9,661,754	$23,318,414	[1] 16.1	[1] 58.6
Mutton, sold fresh—					
Pounds	460,754,244	400,812,014	267,353,788	15.0	49.9
Value	$36,880,455	$32,681,457	$21,998,023	12.8	48.6
Pork, sold fresh—					
Pounds	1,224,932,910	1,222,007,411	1,125,648,541	0.2	8.6
Value	$91,749,323	$83,934,324	$66,719,585	9.3	25.8
Pork, salted—					
Pounds	1,558,886,256	1,371,384,591	1,264,956,237	13.7	8.4
Value	$116,626,710	$88,363,629	$77,737,470	32.0	13.7
Hams, smoked bacon, sides, and shoulders—					
Pounds	1,364,015,706	1,767,313,787	1,195,616,589	[1] 22.8	47.8
Value	$132,210,611	$148,171,166	$93,396,949	[1] 10.8	58.6
Sausage, fresh and cured—					
Pounds	324,416,039	290,987,019	149,281,545	11.5	94.9
Value	$25,056,331	$21,394,253	$9,298,335	17.1	130.1
Total value—Con.					
Refined lard—					
Pounds	1,048,362,039	890,937,757	536,485,829	17.7	66.1
Value	$74,116,991	$52,586,968	$33,401,563	40.9	57.4
Neutral lard—					
Pounds	120,724,361	128,844,082	104,986,465	[1] 6.3	22.7
Value	$8,423,973	$8,553,266	$6,740,246	[1] 1.5	26.9
Oleomargarine oil—					
Gallons	19,454,799	19,111,120	16,600,652	1.8	15.1
Value	$10,201,911	$11,482,542	$12,202,117	[1] 11.2	[1] 5.9
Other oils—					
Gallons	4,893,133	8,240,569	4,427,555	[1] 40.6	86.1
Value	$2,595,951	$3,438,358	$3,590,012	[1] 24.5	[1] 4.2
Fertilizers—					
Tons	211,137	168,505	115,400	25.3	46.0
Value	$4,397,626	$3,300,042	$2,343,777	33.3	40.8
Hides—					
Number	8,039,204	6,249,414	5,346,919	28.6	16.9
Pounds	456,443,857	335,968,207	384,481,326	35.9	[1] 12.6
Value	$44,206,107	$33,883,026	$21,245,782	30.5	59.5
Wool—					
Pounds	16,377,333	13,176,686	11,127,851	24.3	18.4
Value	$5,229,521	$3,534,439	$2,009,133	56.8	66.6
All other products, including custom work	$99,316,623	$62,993,389	$26,067,717	57.7	141.7

[1] Decrease.

Although beef, sold fresh, was the foremost specific product, the hog products as a class, exceeded the beef products, as shown by the following tabular statement, which gives the total quantities of pork, beef, and mutton products, fresh, canned, salted, cured, and smoked, for the several census years:

Combined slaughtering and meat packing—quantity of selected products, with per cent of total, and per cent of increase: 1890 to 1905.

KIND.	1905		1900		1890		PER CENT OF INCREASE.	
	Pounds.	Per cent of total.	Pounds.	Per cent of total.	Pounds.	Per cent of total.	1900 to 1905	1890 to 1900
Total	8,592,205,121	100.0	7,929,202,803	100.0	7,271,613,302	100.0	8.4	9.0
Pork, fresh and salted, and hams, bacon, etc	4,147,834,872	48.3	4,360,705,789	55.0	3,586,221,367	49.3	[1] 4.9	21.6
Beef, fresh, canned, salted, and cured	3,983,616,005	46.4	3,167,685,000	39.9	3,418,038,147	47.0	25.8	[1] 7.3
Mutton	460,754,244	5.3	400,812,014	5.1	267,353,788	3.7	14.9	49.9

[1] Decrease.

These products in the aggregate show a progressive increase, although beef decreased in 1900, as compared with 1890, and pork for 1905, as compared with 1900. The increase is relatively the greatest for mutton, which constituted 5.3 per cent of the total for 1905 and only 3.7 per cent in 1890. The quantities of pork and beef bore practically the same proportion to each other for 1905 as in 1890, beef forming 49 per cent of the combined pork and beef products for 1905 and 48.8 in 1890; in 1900 it constituted but 42.1 per cent.

The decrease in canned beef and in salted and cured beef that was marked in the decade 1890 to 1900 continued both as to quantity and value, while for fresh beef was shown the heaviest proportionate increase in quantity of any of the chief products. The increase in mutton both as to quantity and value was steady and fairly uniform, with but a slight decrease in average value—from 8.2 cents per pound in 1890 to 8 cents for 1905.

Of the distinctive hog products, salt pork exceeded both that sold fresh, or smoked and cured in the form of hams, bacon, sides, and shoulders for 1905 and 1890, whereas in 1900 the products smoked and cured in the form of hams, bacon, etc., exceeded both salt pork and fresh pork. The percentage that each class of hog products bore to the total at the several censuses and the average value per pound is shown by the following tabular statement:

	1905		1900		1890	
	Per cent.	Average value per pound (cents).	Per cent.	Average value per pound (cents).	Per cent.	Average value per pound (cents).
Hog products	100.0	.....	100.0	.....	100.0	.....
Pork, sold fresh	29.5	7.5	28.0	6.9	31.4	5.9
Pork, salted	37.6	7.5	31.5	6.4	35.3	6.1
Hams, smoked bacon, sides, and shoulders	32.9	9.7	40.5	8.4	33.3	7.8

There was a decrease of 403,298,081 pounds in the quantity of hams, smoked bacon, sides, and shoulders reported at the census of 1905, compared with 1900. This is in part accounted for by the decrease of 242,862,782 pounds in the exports of hams and bacon for 1905, as compared with 1900.

In addition to the sausage made in slaughtering and meat packing establishments, there was also produced sausage of a value of $8,122,904 for 1905 by factories in which the manufacture of sausage was the principal business, making a total of $33,179,235 as the value of products of this commodity.

Likewise a considerable quantity of refined lard was manufactured by establishments not engaged in slaughtering and meat packing. The value of this lard as reported at the census of 1905 was $6,128,601, making the total value of products of refined lard $80,245,592. The figures for neutral lard show a loss for 1905, as compared with 1900, in both quantity and value, although the average value per pound advanced slightly at each census—from 6.4 cents in 1890 to 7 cents for 1905.

There was a slight increase in quantity of oleomargarine oil reported at the census of 1905 compared with 1900, accompanied by a decrease in value, so that the average value per gallon fell from 60.1 cents for 1900 to 52.4 cents for 1905. In 1890 the average value per gallon was 73.5 cents. Other oils showed a large decrease for 1905, compared with 1900; the average value per gallon for 1905 was 53.1 cents, compared with 41.7 cents in 1900 and 81.1 cents in 1890.

The quantity of fertilizers produced for 1905 increased 42,632 tons, or 25.3 per cent, over 1900, and the value increased $1,097,584, or 33.3 per cent, while the average value per ton increased from $19.58 in 1900 to $20.83 for 1905. This increase reflects the practice which is growing among slaughterers and meat packers of manufacturing complete fertilizers.

Since 1900 there has been a substantial increase in the number, pounds, and total value of hides, which include beef hides and calfskins. For 1900 the average weight of hides was 53.8 pounds, and at the census of 1905, 56.8 pounds. The average value per pound fell from 10.1 cents in 1900 to 9.7 cents at the census of 1905.

The increase in the value of wool reported at the census of 1905 was $1,895,082, or 56.8 per cent, over 1900, and in quantity it was 3,200,647 pounds, or 24.3 per cent. The average value per pound increased from 25.3 cents to 31.9 cents. By reference to Table 14 it will be seen that the total number of sheep pelts reported is greater than the number of sheep slaughtered. This is due to the fact that a few establishments bought pelts.

The item "all other products" includes the value of all veal products, fertilizer materials, amounts received for custom or contract work, and all other products not specified. A detailed statement of materials and products for 1905, by states and territories, will be found in Tables 12 to 14, inclusive.

Imports and exports.—The quantity and value of the imports and exports of all slaughtering and meat packing products from 1900 to 1905—years ending June 30—are shown in Table 11.

TABLE 11.—KIND, QUANTITY, AND VALUE OF SLAUGHTERING AND MEAT PACKING PRODUCTS IMPORTED, AND OF DOMESTIC AND FOREIGN SLAUGHTERING AND MEAT PACKING PRODUCTS EXPORTED: 1900 TO 1905.[1]

KIND.	1905	1904	1903	1902	1901	1900
IMPORTS.						
Total value	$22,949,168	$18,355,402	$24,247,683	$24,078,500	$20,524,190	$26,145,974
Bones, horns, and hoofs, unmanufactured	$926,505	$536,366	$619,239	$692,634	$674,368	$830,063
Bristles, crude, not sorted, bunched, or prepared—						
Pounds	8,122	11,241	34,239	40,537	51,539	27,140
Value	$4,054	$10,976	$13,069	$28,446	$22,310	$22,330
Bristles, sorted, bunched, or prepared—						
Pounds	2,461,464	2,576,615	3,009,806	1,972,572	1,633,036	2,503,018
Value	$2,366,444	$2,356,325	$2,641,535	$2,018,885	$1,707,887	$2,130,537
Glue—						
Pounds	7,439,735	5,798,330	5,560,616	4,787,762	4,540,951	5,577,082
Value	$701,847	$598,546	$602,077	$477,036	$473,341	$537,492
Grease and oils	$1,170,514	$1,157,923	$876,246	$981,494	$756,453	$779,666
Hide cuttings, raw, and other glue stock	$1,120,070	$854,483	$834,421	$696,439	$1,057,931	$1,223,521
Hides of cattle—						
Pounds	113,177,357	85,370,168	131,640,325	148,627,907	129,174,624	163,865,165
Value	$14,949,628	$10,989,035	$16,159,902	$17,474,039	$14,647,413	$19,408,217
Meat products—						
Meat and meat extracts	$674,441	$814,341	$719,250	$464,745	$407,003	$365,589
All other	$52,223	$30,619	$706,802	$380,403	$54,667	$105,726
Sausages, bologna	$147,119	$121,143	$111,647	$109,791	$80,605	$95,944
Sausage casings	$836,323	$885,645	$963,495	$754,588	$642,212	$646,889

[1] Bureau of Statistics, Department of Commerce and Labor, Statistical Abstract of the United States: 1905.

TABLE 11.—KIND, QUANTITY, AND VALUE OF SLAUGHTERING AND MEAT PACKING PRODUCTS IMPORTED, AND OF DOMESTIC AND FOREIGN SLAUGHTERING AND MEAT PACKING PRODUCTS EXPORTED: 1900 TO 1905—Continued.

KIND.	1905	1904	1903	1902	1901	1900
EXPORTS, DOMESTIC.						
Total value	$170,368,672	$177,424,776	$179,506,102	$196,825,960	$192,477,278	$179,950,612
Bones, hoofs, horns and horn tips, strips, and waste	$181,203	$208,523	$193,817	$163,180	$218,680	$199,194
Glue—						
Pounds	2,824,202	2,656,057	2,569,164	2,907,632	2,703,400	2,349,014
Value	$279,534	$258,511	$253,768	$284,413	$254,447	$225,844
Grease, grease scraps, and all soap stock	$3,710,907	$3,311,777	$2,926,565	$2,610,925	$3,339,948	$2,944,322
Hair, and manufactures of	$778,471	$724,514	$616,133	$633,337	$674,881	$676,658
Hides and skins, other than fur—						
Pounds	10,268,722	32,727,643	12,859,549	9,372,747	11,161,749	7,486,256
Value	$1,051,641	$3,246,887	$1,224,409	$906,504	$1,064,952	$804,674
Oil, lard—						
Gallons	260,797	376,826	356,658	460,035	766,783	738,724
Value	$154,409	$244,499	$306,334	$327,794	$438,645	$337,260
Meat products:						
Beef products—						
Beef, canned—						
Pounds	66,688,568	57,468,338	76,307,114	66,645,838	53,445,521	55,553,745
Value	$6,588,958	$5,882,888	$7,916,928	$6,646,130	$5,307,501	$5,233,982
Beef, fresh—						
Pounds	236,486,568	299,579,671	254,795,963	301,824,473	351,748,333	329,078,609
Value	$22,138,365	$26,841,586	$25,013,323	$29,045,056	$31,851,361	$29,643,830
Beef, salted or pickled—						
Pounds	55,934,705	57,584,710	52,801,220	48,632,727	55,312,632	47,306,513
Value	$3,095,304	$3,260,475	$3,814,671	$3,031,027	$3,145,219	$2,697,340
Beef, other, cured—						
Pounds	136,476	269,112	1,126,032	818,382	789,285	2,319,165
Value	$14,057	$20,542	$102,184	$72,836	$72,677	$197,051
Tallow—						
Pounds	63,536,992	76,924,174	27,368,924	34,065,758	77,166,889	89,030,943
Value	$3,022,173	$3,801,302	$1,623,852	$1,924,577	$3,848,561	$4,398,204
Hog products—						
Bacon—						
Pounds	262,246,635	249,665,941	207,336,000	383,150,624	456,122,741	512,153,729
Value	$25,428,961	$24,446,752	$22,178,525	$35,449,797	$37,499,026	$38,975,915
Hams—						
Pounds	203,458,724	194,948,864	214,183,365	227,653,232	216,571,803	196,414,412
Value	$21,562,204	$22,293,867	$25,712,633	$25,222,744	$22,842,778	$20,416,367
Pork, canned—						
Pounds	10,254,239	9,479,312	13,590,897	9,603,882	8,945,594	8,496,674
Value	$993,394	$963,321	$1,369,687	$832,910	$708,381	$658,402
Pork, fresh—						
Pounds	14,946,284	18,633,820	20,966,113	44,171,674	30,728,586	25,946,905
Value	$1,291,794	$1,669,818	$2,035,491	$3,652,464	$2,424,537	$1,925,772
Pork, salted or pickled—						
Pounds	118,887,189	112,224,861	95,287,374	115,896,275	138,643,611	133,199,683
Value	$9,412,034	$9,527,388	$9,959,762	$10,117,562	$9,926,633	$8,243,797
Lard—						
Pounds	610,238,899	561,302,643	490,755,821	556,840,222	611,357,514	661,813,663
Value	$47,243,181	$46,347,520	$50,854,504	$52,375,864	$46,560,148	$41,939,164
Lard compounds and substitutes for (cottolene, lardine, etc.)[1]—						
Pounds	61,215,187	53,603,545	46,130,004	36,201,744	23,359,966	25,852,685
Value	$3,613,235	$3,581,813	$3,607,542	$2,687,653	$1,449,878	$1,475,064
Mutton—						
Pounds	640,837	465,255	6,144,020	430,351	691,121	773,760
Value	$52,503	$40,618	$532,476	$37,067	$46,643	$64,313
Oleo, the oil—						
Pounds	145,228,245	165,183,839	126,010,339	138,546,088	161,651,413	146,739,681
Value	$11,485,145	$12,873,558	$11,981,888	$12,254,969	$11,846,373	$10,503,856
Oleomargarine (imitation butter)—						
Pounds	7,863,164	6,137,251	7,645,652	5,721,254	4,990,699	4,256,067
Value	$711,038	$605,874	$798,273	$601,521	$484,501	$416,544
Sausage and sausage meats—						
Pounds	6,061,508	5,562,349	5,264,648	7,137,297	9,799,106	.....
Value	$671,241	$602,528	$585,088	$726,437	$923,974	.....
Sausage casings	$2,646,868	$2,353,167	$1,964,524	$1,795,044	$2,778,854	$2,307,571
All other meat products—						
Canned	$1,974,693	$2,254,235	$1,831,940	$1,801,385	$1,556,671	$1,724,064
All other	$2,267,359	$2,062,813	$2,101,785	$3,624,764	$3,212,009	$3,941,394
EXPORTS, FOREIGN.						
Total value	$303,372	$356,981	$486,541	$461,867	$480,962	$332,724
Bones, horns, and hoofs, unmanufactured	$5,957	$5,391	$4,282	$1,224	$7,680	$1,315
Bristles, crude, not sorted, bunched, or prepared—						
Pounds	209	2,645	.....	98	.....	446
Value	$262	$1,618	.....	$13	.....	$220
Bristles, sorted, bunched, or prepared—						
Pounds	79,043	42,522	43,850	23,127	62,416	42,154
Value	$42,171	$18,958	$27,472	$17,568	$27,109	$21,952
Glue—						
Pounds	163,124	4,122	10,991	11,067	18,701	3,359
Value	$20,358	$559	$1,051	$1,109	$2,780	$245
Grease and oils	$9,098	$8,853	$14,521	$7,605	$10,935	$3,699
Sausages, bologna	.....	$24	.....	.....	$10	$28
Meat products:						
Meats and meat extracts	$5,222	$37,862	$150,675	$2,922	$17,392	$2,834
All other	$3,360	$3,077	$2,582	$20,755	$4,756	$4,545
Hides of cattle—						
Pounds	1,554,076	2,056,172	2,027,507	2,878,416	3,213,955	2,330,290
Value	$216,484	$279,318	$285,088	$403,148	$407,678	$296,478
Hide cuttings	$460	$1,321	$870	$7,523	$2,622	$1,408

[1] Includes stearin.

In 1900 the exigencies of the Boer War required the purchase by the United Kingdom of large supplies of meat; this demand did not exist for 1905. The decrease in exports of some of the principal meat products from 1900 to 1905, shown in Table 11, is attributable to this fact.

Canned and salted or cured beef showed an increased exportation both in quantity and value. There was also an increase in the value of exports of salted or pickled pork and refined lard.

The greatest quantity and value of the principal meat products shown in the table went to the United Kingdom. Japan was second in the quantity and value of canned beef and British Africa was third. Practically all of the fresh beef and the fresh pork was taken by the United Kingdom. Germany was second in imports of salted or pickled beef. British North America was second in the quantity and value of salted or pickled pork received and British West Indies the third. Belgium was, next to the United Kingdom, the best purchaser of bacon and hams, Germany being third in bacon, and Cuba third in hams.

The detailed statistics for each branch of the industry, and for the industry as a whole, are presented in Tables 12, 13, and 14, by states and territories.

TABLE 12.—SLAUGHTERING AND MEAT PACKING, WHOLESALE—DETAILED

		United States.	California.	Colorado.	Delaware.	District of Columbia.	Georgia.
1	Number of establishments	559	27	7	5	3	3
2	Capital, total	$219,818,627	$3,475,730	$971,874	$142,977	$280,100	$210,800
3	Land	$13,427,171	$594,881	$24,000	$13,000	$125,500	$39,000
4	Buildings	$38,370,740	$751,081	$236,560	$54,000	$51,000	$27,000
5	Machinery, tools, and implements	$27,770,453	$373,037	$84,100	$17,100	$17,100	$52,800
6	Cash and sundries	$140,250,263	$1,752,831	$626,314	$58,877	$86,500	$101,000
7	Proprietors and firm members	491	19	1	6	1	3
	Salaried officials, clerks, etc.:						
8	Total number	11,305	212	48	5	13	1
9	Total salaries	$12,458,332	$252,862	$50,993	$4,212	$18,812	$600
	Officers of corporations—						
10	Number	372	10	3		3	
11	Salaries	$1,041,176	$32,020	$4,800		$5,500	
	General superintendents, managers, clerks, etc.—						
12	Total number	10,933	202	45	5	10	1
13	Total salaries	$11,417,156	$220,242	$46,193	$4,212	$13,312	$600
	Men—						
14	Number	10,026	189	42	4	8	1
15	Salaries	$10,852,756	$212,774	$45,293	$3,848	$12,480	$600
	Women—						
16	Number	907	13	3	1	2	
17	Salaries	$564,400	$7,468	$900	$364	$832	
	Wage-earners, including piecoworkers, and total wages:						
18	Greatest number employed at any one time during the year	86,128	1,184	205	56	109	127
19	Least number employed at any one time during the year	47,890	849	215	42	73	45
20	Average number	69,593	983	225	47	93	63
21	Total wages	$37,090,399	$650,351	$158,330	$25,033	$69,108	$24,568
	Men 16 years and over—						
22	Average number	64,171	962	225	47	93	59
23	Wages	$35,355,164	$643,713	$158,330	$25,033	$69,108	$23,296
	Women 16 years and over—						
24	Average number	4,459	14				2
25	Wages	$1,478,413	$4,700				$760
	Children under 16 years—						
26	Average number	963	7				2
27	Wages	$256,822	$1,938				$452
	Average number of wage-earners, including piecoworkers, employed during each month:						
	Men 16 years and over—						
28	January	68,875	897	222	49	108	62
29	February	66,277	918	224	49	74	62
30	March	64,736	872	220	48	76	58
31	April	62,602	884	212	47	79	54
32	May	63,513	892	203	45	83	51
33	June	65,334	892	213	42	87	52
34	July	52,326	888	209	41	91	54
35	August	53,813	982	215	42	96	59
36	September	62,420	1,084	244	46	101	56
37	October	67,054	1,069	241	51	106	64
38	November	70,322	1,096	252	53	107	70
39	December	72,780	1,070	245	54	108	66
	Women 16 years and over—						
40	January	4,607	14				
41	February	4,472	14				
42	March	4,401	12				
43	April	4,389	12				
44	May	4,512	13				
45	June	4,505	14				
46	July	2,577	16				
47	August	2,889	12				24
48	September	4,310	11				
49	October	5,399	11				
50	November	5,552	12				
51	December	5,715	25				
	Children under 16 years—						
52	January	935	7				3
53	February	897	6				3
54	March	875	7				3
55	April	886	7				2
56	May	915	6				2
57	June	1,010	6				2
58	July	878	6				2
59	August	932	7				
60	September	1,122	8				5
61	October	1,034	8				
62	November	1,021	8				
63	December	1,051	8				2
64	Miscellaneous expenses, total	$28,032,248	$402,702	$121,050	$11,068	$20,020	$6,650
65	Rent of works	$290,540	$10,383	$300	$2,064	$1,200	
66	Taxes	$889,943	$13,481	$6,370	$1,117	$605	$1,146
67	Rent of offices, interest, insurance, and all other sundry expenses not hitherto included	$26,827,146	$408,838	$114,380	$6,087	$17,295	$5,504
68	Contract work	$14,619				$1,820	
69	Materials used, total cost	$706,230,060	$10,324,710	$2,405,872	$476,850	$175,055	$187,408
	Animals slaughtered—						
	Bovines—						
70	Number	5,981,724	113,410	23,030	3,255	2,080	3,800
71	Cost	$233,516,420	$4,417,539	$788,374	$102,750	$83,200	$60,500
	Sheep—						
72	Number	7,011,797	377,012	28,010	2,400	1,000	900
73	Cost	$27,759,260	$1,325,855	$103,357	$10,800	$4,000	$1,825
	Hogs—						
74	Number	28,627,068	257,926	106,941	18,790	18,200	18,400
75	Cost	$313,326,071	$2,368,275	$1,280,780	$210,000	$118,300	$96,050
	Calves—						
76	Number	781,954	13,841	3,458	500	780	1,800
77	Cost	$5,816,351	$154,225	$27,080	$6,350	$5,400	$6,300
78	All other animals	$53,405					
79	Dressed meat, purchased fresh or partially cured (to be manufactured)	$52,978,269	$1,439,004	$135,200	$77,040	$210,600	
80	Fuel	$4,359,332	$63,795	$23,271	$2,822	$7,085	$11,652
81	Rent of power and heat	$104,906	$11,820	$1,100	$285		
82	Mill supplies	$562,379	$5,679	$1,010	$286	$759	$586
83	All other materials	$60,526,047	$514,545	$30,700	$3,562	$25,980	$3,015
84	Freight	$1,247,620	$23,954		$2,355	$10,671	

SUMMARY, BY STATES AND TERRITORIES: 1905.

Idaho.	Illinois.	Indiana.	Iowa.	Kansas.	Kentucky.	Maryland.	Massachusetts.	Michigan.	Minnesota.	Missouri.	Nebraska.	
3	59	28	13	17	16	29	13	8	14	25	6	1
$92,557	$80,052,168	$7,114,431	$7,208,199	$24,988,794	$1,450,264	$1,262,102	$11,131,419	$1,252,767	$3,280,383	$16,347,439	$20,592,542	2
$11,846	$3,941,072	$300,768	$139,000	$1,142,192	$42,048	$62,253	$941,200	$103,050	$178,570	$518,564	$828,410	3
$23,540	$12,399,232	$1,451,042	$1,798,008	$4,366,142	$143,876	$213,371	$2,099,457	$208,816	$529,865	$2,578,590	$3,491,401	4
$10,500	$9,419,338	$983,593	$881,113	$3,269,031	$221,300	$148,230	$1,179,263	$104,950	$532,075	$1,846,836	$2,737,706	5
$46,671	$54,292,526	$4,379,028	$4,390,078	$16,211,429	$1,043,040	$838,248	$6,911,499	$835,951	$2,039,873	$11,403,449	$13,535,025	6
2	46	22	6	13	22	40	7	7	18	14	.....	7
7	5,614	181	278	960	46	59	304	57	267	595	869	8
$9,040	$6,539,145	$234,455	$296,046	$961,485	$44,379	$58,024	$270,571	$55,729	$241,581	$620,129	$936,340	9
4	55	18	19	10	5	6	12	3	3	26	7	10
$5,500	$209,618	$42,950	$51,500	$52,755	$9,917	$8,580	$40,791	$6,500	$6,000	$58,045	$48,915	11
3	5,559	163	259	950	41	53	292	54	264	569	862	12
$3,540	$6,329,527	$191,505	$244,546	$908,730	$34,462	$49,444	$229,780	$49,229	$235,581	$562,084	$887,425	13
3	5,116	154	234	882	40	49	260	46	243	529	803	14
$3,540	$6,034,983	$187,629	$231,969	$865,615	$34,150	$46,992	$212,608	$45,664	$223,759	$530,104	$844,235	15
.....	443	9	25	68	1	4	32	8	21	40	59	16
.....	$294,544	$3,876	$12,577	$43,115	$312	$2,452	$17,172	$3,565	$11,822	$25,980	$43,190	17
10	33,875	3,450	4,070	11,235	601	544	2,690	458	1,869	5,621	6,717	18
10	13,792	2,486	2,234	7,793	376	463	2,266	391	600	2,836	3,542	19
10	26,683	3,067	3,055	9,259	462	512	2,333	420	1,320	4,156	5,585	20
$8,160	$14,302,274	$1,321,548	$1,302,191	$4,757,253	$238,962	$292,802	$1,165,205	$217,342	$756,293	$2,334,025	$3,156,918	21
10	23,003	2,736	2,788	8,251	461	508	2,288	419	1,288	4,068	5,200	22
$8,160	$13,472,150	$1,220,541	$1,246,114	$4,454,223	$238,722	$292,126	$1,155,124	$216,952	$745,052	$2,317,068	$2,978,405	23
.....	2,700	282	130	687	1	.....	20	1	24	39	228	24
.....	$904,842	$90,701	$29,850	$202,537	$240	.....	$4,571	$390	$8,518	$7,565	$125,362	25
.....	80	49	137	321	.....	4	25	.....	8	49	157	26
.....	$15,282	$10,306	$26,227	$100,493	.....	$676	$5,510	.....	$2,723	$9,392	$53,151	27
10	27,934	2,846	3,279	7,793	500	517	2,445	441	1,448	3,600	5,465	28
10	26,804	2,684	2,977	7,731	449	518	2,483	414	1,323	3,571	5,117	29
10	26,005	2,518	2,635	7,592	320	514	2,299	409	1,222	3,944	5,512	30
10	24,701	2,358	2,378	7,788	357	513	2,169	406	1,176	3,674	5,521	31
10	24,793	2,491	2,550	7,947	388	513	2,150	393	1,217	3,814	5,629	32
10	24,904	2,739	2,796	8,053	413	500	2,248	413	1,242	4,469	5,745	33
10	14,825	2,932	2,712	7,872	509	499	2,265	411	893	3,585	4,137	34
10	15,137	2,809	2,697	8,639	504	497	2,231	412	1,135	3,855	3,670	35
10	21,648	2,813	2,629	9,042	490	488	2,270	414	1,158	4,462	4,749	36
10	25,248	2,744	2,575	8,939	513	502	2,258	421	1,335	4,399	5,559	37
10	26,733	2,806	2,838	8,951	537	517	2,266	440	1,621	4,596	5,612	38
10	28,104	2,972	3,390	8,665	552	518	2,372	448	1,686	4,847	5,684	39
.....	2,937	291	137	599	1	.....	25	1	29	19	243	40
.....	2,884	286	126	608	1	.....	23	1	28	23	175	41
.....	2,891	251	116	615	1	.....	23	1	27	40	195	42
.....	2,715	247	108	667	1	.....	20	1	25	49	240	43
.....	2,823	250	123	660	1	.....	20	1	25	46	246	44
.....	2,881	286	138	630	1	.....	18	1	29	61	224	45
.....	1,066	316	136	606	1	.....	18	1	8	22	80	46
.....	1,278	314	118	670	1	.....	16	1	16	14	101	47
.....	2,438	275	124	803	1	.....	16	1	16	33	241	48
.....	3,408	270	136	820	1	.....	18	1	24	29	308	49
.....	3,490	282	145	784	1	.....	20	1	28	63	340	50
.....	3,580	316	153	782	1	.....	23	1	33	69	343	51
.....	70	50	158	283	.....	4	24	.....	9	54	137	52
.....	78	50	152	283	.....	4	23	.....	10	53	110	53
.....	84	45	120	299	.....	4	24	.....	7	52	122	54
.....	80	40	112	307	.....	4	25	.....	7	53	145	55
.....	80	45	124	306	.....	4	24	.....	8	52	150	56
.....	84	50	146	315	.....	4	26	.....	12	61	181	57
.....	69	52	126	302	.....	4	28	.....	6	23	157	58
.....	70	52	122	338	.....	4	28	.....	10	41	142	59
.....	89	48	148	370	.....	4	26	.....	9	58	223	60
.....	80	50	136	360	.....	4	25	.....	7	46	184	61
.....	81	50	132	360	.....	4	24	.....	6	44	166	62
.....	86	56	168	329	.....	4	23	.....	5	51	167	63
$9,067	$12,873,051	$571,470	$697,742	$3,550,017	$124,884	$144,411	$646,334	$137,889	$391,793	$1,861,971	$2,060,648	64
$75	$78,020	$6,710	$7,920	$90	$1,380	$12,297	$3,000	$2,100	$2,533	$17,190	.....	65
$719	$318,782	$41,643	$12,896	$143,640	$6,440	$7,093	$82,322	$11,733	$13,304	$18,339	$62,645	66
$8,273	$12,476,080	$523,117	$676,926	$3,404,062	$117,064	$124,166	$559,678	$124,056	$375,956	$1,826,442	$1,998,003	67
.....	$100	.....	.....	$2,225	.....	$855	$1,334	.....	.....	.....	.....	68
$120,431	$273,355,866	$24,793,586	$26,895,711	$83,680,531	$4,421,037	$5,466,072	$27,321,077	$4,406,112	$14,373,743	$53,521,528	$61,205,612	69
2,388	2,527,763	157,886	86,424	980,662	13,970	5,845	434	1,180	93,169	567,599	625,853	70
$59,665	$106,254,907	$6,682,204	$2,966,106	$36,881,754	$535,202	$173,800	$24,502	$38,400	$2,598,446	$21,861,223	$25,068,632	71
4,304	3,393,835	24,601	10,592	751,405	3,956	.....	.....	2,000	139,635	557,599	949,310	72
$12,135	$14,258,047	$104,666	$40,027	$2,761,254	$11,635	.....	.....	$7,000	$551,729	$2,197,628	$3,482,582	73
4,038	7,678,370	1,433,907	2,052,023	3,073,553	376,180	631,746	1,529,401	287,593	1,042,433	2,102,386	2,357,285	74
$40,442	$86,699,545	$15,161,563	$22,407,522	$33,558,626	$3,761,208	$4,250,344	$21,266,310	$3,414,547	$9,760,675	$23,014,156	$27,648,897	75
822	288,401	24,226	4,261	90,641	1,251	.....	337	1,450	19,381	43,056	9,151	76
$6,123	$2,047,318	$205,778	$30,180	$717,151	$5,802	.....	$2,224	$8,800	$106,548	$338,803	$72,221	77
.....	$11,872	$6,116	$2,000	.....	$30	.....	.....	$665	$4,122	$1,000	.....	78
.....	$18,977,058	$1,510,718	$90,279	$5,013,185	$17,190	$726,818	$5,106,112	$843,036	$224,665	$1,355,366	$584,709	79
$1,096	$1,384,613	$152,315	$183,721	$659,930	$28,859	$43,568	$132,301	$25,563	$73,759	$308,278	$465,864	80
$480	$54,015	$255	$4,249	$850	.....	$800	$1,482	.....	$2,222	$300	.....	81
$40	$185,804	$9,852	$10,385	$65,880	$2,049	$5,411	$17,212	$2,480	$6,324	$37,676	$71,417	82
$450	$43,254,984	$912,930	$1,146,358	$4,012,898	$58,743	$168,886	$664,894	$53,522	$1,034,110	$4,118,480	$3,811,290	83
.....	$227,703	$47,189	$14,884	$9,003	$319	$96,445	$106,040	$12,090	$11,143	$288,618	.....	84

TABLE 12.—SLAUGHTERING AND MEAT PACKING, WHOLESALE—DETAILED

		United States.	California.	Colorado.	Delaware.	District of Columbia.	Georgia.
85	Products, total value	$801,757,137	$12,205,716	$2,859,368	$547,700	$615,464	$273,943
	Beef—						
	Sold fresh (exclusive of purchased dressed fresh beef)—						
86	Pounds	3,079,657,996	57,850,619	12,645,890	2,115,880	720,000	1,198,759
87	Value	$196,512,506	$3,888,738	$893,535	$148,640	$50,400	$85,285
	Canned—						
88	Pounds	98,693,931	310,499	.....	.....	.....	.....
89	Value	$7,697,815	$18,370	.....	.....	.....	.....
	Salted and cured—						
90	Pounds	129,521,208	2,386,927	5,000	.....	52,000	.....
91	Value	$7,776,480	$171,352	$500	.....	$4,160	.....
	Mutton, sold fresh (exclusive of purchased dressed fresh mutton)—						
92	Pounds	301,046,592	14,795,373	1,101,338	105,000	30,000	32,750
93	Value	$22,646,726	$1,140,148	$98,533	$10,500	$5,000	$2,385
	Veal, sold fresh (exclusive of purchased dressed fresh veal)—						
94	Pounds	77,559,850	2,015,143	448,089	63,300	54,600	90,000
95	Value	$5,716,992	$140,923	$36,583	$6,936	$5,460	$7,200
	Pork—						
	Sold fresh (exclusive of purchased dressed fresh pork)—						
96	Pounds	957,198,147	15,878,759	2,987,911	589,080	418,500	1,127,000
97	Value	$74,135,180	$1,283,589	$285,709	$54,908	$33,480	$87,938
	Salted—						
98	Pounds	1,558,811,356	4,694,766	4,817,974	498,800	74,564	60,000
99	Value	$116,619,973	$461,314	$333,757	$40,016	$7,456	$4,400
	Hams, smoked bacon, sides, and shoulders—						
100	Pounds	1,363,838,540	18,482,572	6,269,875	1,149,500	1,583,558	125,000
101	Value	$132,193,951	$2,270,661	$648,372	$113,700	$141,280	$12,095
	Sausage, fresh and cured—						
102	Pounds	322,486,176	4,306,552	1,506,525	315,200	2,518,250	160,000
103	Value	$24,894,001	$446,503	$117,444	$29,140	$226,550	$12,000
	All other meat, sold fresh (exclusive of purchased dressed fresh meat)—						
104	Pounds	123,018,281	350,000	.....	130,000	.....	.....
105	Value	$9,553,329	$17,500	.....	$13,000	.....	.....
106	Canned goods, value	$8,416,850	$51,203	.....	.....	.....	.....
	Refined lard—						
107	Pounds	1,043,259,594	7,488,235	2,506,783	1,412,330	910,000	63,000
108	Value	$73,805,824	$560,027	$179,557	$106,577	$72,800	$5,270
	Neutral lard—						
109	Pounds	119,141,744	819,227	16,400	.....	620,000	.....
110	Value	$8,325,009	$66,058	$1,640	.....	$43,820	.....
	Oleomargarine oil—						
111	Gallons	15,708,340	.....	.....	.....	.....	.....
112	Value	$8,066,367	.....	.....	.....	.....	.....
	Other oils—						
113	Gallons	3,588,032	9,259	1,200	.....	.....	.....
114	Value	$1,702,331	$5,707	$600	.....	.....	.....
	Soap—						
115	Pounds	49,781,256	.....	.....	.....	.....	.....
116	Value	$1,813,138	.....	.....	.....	.....	.....
	Fertilizers—						
117	Tons	205,402	1,833	507	28	130	.....
118	Value	$4,240,605	$51,286	$5,003	$388	$2,340	.....
	Fertilizer materials (bones, offal, tankage, etc.)—						
119	Tons	133,367	438	40	354	10	50
120	Value	$2,494,574	$6,358	$400	$3,555	$100	$1,000
	Glue—						
121	Pounds	17,526,090	.....	.....	.....	.....	.....
122	Value	$1,087,604	.....	.....	.....	.....	.....
	Hides—						
123	Number	6,394,327	124,321	25,080	3,255	2,800	3,800
124	Pounds	372,811,380	6,556,620	1,484,140	227,850	120,180	160,500
125	Value	$36,143,450	$656,000	$126,617	$15,940	$10,358	$11,678
	Sheep pelts—						
126	Number	6,048,684	377,012	28,010	2,100	1,000	900
127	Value	$6,051,493	$324,700	$22,725	$2,100	$500	$375
	Wool—						
128	Pounds	9,672,001	60,000	.....	.....	.....	.....
129	Value	$2,009,013	$21,000	.....	.....	.....	.....
130	Fine chemicals (pancreatin, pepsin, etc.)	$208,002	.....	.....	.....	.....	.....
131	All other products	$48,848,701	$605,220	$63,550	$2,291	$11,760	$43,417
132	Amount received for custom or contract work	$105,633	.....	$13,847	.....	.....	.....
	Weight of animals slaughtered (pounds):						
	Beeves—						
133	Gross weight on the hoof	6,229,335,794	111,783,047	23,602,827	4,060,000	2,080,000	2,515,000
134	Net weight dressed	3,301,998,330	60,177,134	12,828,670	2,115,880	1,040,000	1,218,750
	Sheep—						
135	Gross weight on the hoof	600,558,367	36,993,306	2,465,084	210,000	55,000	46,000
136	Net weight dressed	298,356,922	18,074,042	1,161,358	105,000	30,000	32,750
	Hogs—						
137	Gross weight on the hoof	6,231,500,179	44,511,207	24,076,280	4,107,400	2,584,000	2,020,000
138	Net weight dressed	4,770,617,008	34,182,205	18,056,072	3,295,000	1,938,000	1,531,000
	Calves—						
139	Gross weight on the hoof	134,706,620	3,180,738	783,750	105,000	105,300	180,000
140	Net weight dressed	84,230,921	2,015,143	454,722	63,300	54,600	90,000
	Power:						
141	Number of establishments reporting	498	22	7	5	3	3
142	Total horsepower	142,591	1,779	758	100	113	344
	Owned—						
	Engines—						
	Steam—						
143	Number	1,024	20	12	4	4	8
144	Horsepower	102,216	1,136	758	138	108	364
	Gas and gasoline—						
145	Number	19	.....	.....	.....	.....	.....
146	Horsepower	503	.....	.....	.....	.....	.....
	Water wheels—						
147	Number	1	.....	.....	.....	.....	.....
148	Horsepower	60	.....	.....	.....	.....	.....
	Water motors—						
149	Number	3	.....	.....	.....	.....	.....
150	Horsepower	8	.....	.....	.....	.....	.....
	Electric motors—						
151	Number	2,022	4	.....	.....	1	1
152	Horsepower	35,970	21	.....	.....	5	40
153	Other power, horsepower	1,158	300	.....	.....	.....	.....
	Rented—						
	Electric motors—						
154	Number	102	22	.....	2	.....	.....
155	Horsepower	2,076	322	.....	22	.....	.....
156	Furnished to other establishments, horsepower	1,002	.....	.....	.....	.....	.....

SUMMARY, BY STATES AND TERRITORIES: 1905—Continued.

Idaho.	Illinois.	Indiana.	Iowa.	Kansas.	Kentucky.	Maryland.	Massachusetts.	Michigan.	Minnesota.	Missouri.	Nebraska.	
$158,975	$309,853,630	$27,639,010	$29,714,737	$94,702,378	$5,469,911	$6,332,914	$30,253,838	$4,901,435	$16,723,276	$59,416,759	$69,243,468	85
1,215,200	1,324,054,307	82,526,407	39,038,300	491,233,965	5,335,142	2,226,818	360,533	570,000	47,504,949	313,049,260	336,843,262	86
$66,821	$88,618,333	$6,034,219	$2,672,240	$29,306,017	$343,486	$147,450	$24,336	$38,500	$2,411,216	$18,957,375	$19,985,184	87
.....	73,266,797	1,530,000	2,557,027	7,566,980	.....	.....	.....	.....	.....	1,985,936	7,701,792	88
.....	$6,108,692	$159,180	$87,593	$411,268	.....	.....	.....	.....	.....	$54,282	$299,365	89
.....	78,334,416	2,557,500	1,255,572	11,144,304	37,425	129,600	2,294,490	29,429	826,980	904,663	15,006,931	90
.....	$4,931,741	$357,780	$87,254	$473,961	$3,892	$7,070	$116,063	$2,892	$42,817	$55,576	$583,349	91
190,825	150,278,448	1,086,931	426,944	29,234,944	140,965	.....	.....	82,500	6,230,313	23,318,189	42,556,050	92
$14,414	$11,659,039	$95,975	$38,611	$2,078,265	$12,264	.....	.....	$6,675	$394,023	$1,811,600	$2,746,883	93
100,900	29,758,118	1,928,776	410,139	9,518,019	75,282	.....	22,246	130,500	1,887,524	4,873,113	1,085,020	94
$7,510	$2,084,488	$181,487	$33,623	$631,355	$5,701	.....	$2,381	$10,065	$116,969	$339,090	$66,875	95
362,800	226,419,428	18,071,274	39,952,675	78,674,972	4,932,887	17,690,875	78,150,774	9,732,875	42,821,396	116,256,674	83,291,604	96
$32,025	$16,657,198	$1,317,453	$2,885,191	$5,647,257	$416,585	$1,538,427	$7,037,134	$828,780	$3,156,638	$8,245,808	$5,873,886	97
7,000	584,019,438	16,192,188	120,255,136	171,957,267	19,290,675	1,847,580	107,572,101	15,252,000	52,555,395	131,795,452	146,084,937	98
$560	$42,973,175	$1,307,795	$7,139,130	$13,628,093	$1,596,606	$160,568	$8,791,623	$1,304,205	$4,240,053	$9,624,998	$10,447,734	99
152,100	301,720,854	140,394,873	95,005,454	131,997,527	19,799,275	28,828,762	59,518,493	15,025,890	19,186,367	63,962,310	104,747,378	100
$18,380	$29,780,849	$11,924,835	$8,913,171	$14,135,135	$1,902,770	$2,872,818	$5,622,780	$1,640,322	$1,919,167	$5,887,371	$10,197,694	101
32,800	99,194,762	15,393,570	9,826,458	24,169,700	4,002,001	8,362,360	17,501,829	3,022,472	8,151,961	19,127,535	18,192,410	102
$2,772	$7,753,709	$1,172,287	$658,407	$1,814,777	$298,181	$645,566	$1,435,539	$219,210	$696,695	$1,294,756	$1,199,537	103
.....	56,323,948	751,200	13,599,742	5,343,167	600	16,600	.....	7,630	794,420	2,625,218	8,198,486	104
.....	$5,346,938	$59,484	$894,121	$200,693	$42	$1,328	.....	$763	$72,200	$120,590	$561,107	105
.....	$4,819,452	$244,750	$418,575	$1,742,092	.....	$28,000	.....	.....	.....	$9,836	$721,225	106
65,000	408,370,245	35,501,430	58,272,811	125,803,240	6,211,015	8,562,932	81,424,583	8,027,572	26,325,556	28,254,570	74,188,636	107
$6,000	$28,151,535	$2,484,288	$4,145,629	$9,109,438	$478,286	$649,716	$6,237,845	$613,730	$1,925,587	$1,959,757	$5,154,213	108
.....	47,780,170	8,118,420	6,900,196	6,745,857	4,119,256	1,826,640	3,193,230	119,000	110,000	4,337,120	10,514,595	109
.....	$3,281,564	$613,622	$535,303	$451,555	$289,713	$135,469	$156,001	$10,640	$8,000	$295,158	$697,188	110
.....	9,143,055	266,101	109,133	1,611,428	5,750	.....	.....	.....	283,912	1,829,250	1,742,076	111
.....	$4,515,283	$145,915	$60,023	$869,945	$3,019	.....	.....	.....	$142,517	$1,021,529	$949,543	112
.....	986,981	188,883	236,629	24,051	.....	.....	68,369	.....	150	235,269	787,937	113
.....	$496,239	$101,722	$49,089	$13,731	.....	.....	$28,839	.....	$75	$96,655	$518,363	114
.....	34,537,665	2,198,000	.....	228,622	.....	.....	.....	.....	89,600	.....	.....	115
.....	$1,380,204	$62,500	.....	$13,718	.....	.....	.....	.....	$2,240	.....	.....	116
.....	130,310	9,513	5,686	16,319	195	104	.....	384	6,967	8,253	10,320	117
.....	$2,304,519	$172,814	$120,340	$413,338	$3,252	$1,560	.....	$6,912	$150,391	$207,171	$395,184	118
.....	48,317	1,562	2,557	6,128	1,482	3,680	1,188	90	50	33,809	12,990	119
.....	$1,222,931	$14,915	$48,269	$118,260	$21,768	$98,451	$33,998	$500	$550	$408,287	$221,835	120
.....	12,463,446	.....	537,686	1,973,564	.....	.....	.....	.....	.....	.....	1,679,631	121
.....	$785,658	.....	$25,540	$100,417	.....	.....	.....	.....	.....	.....	$117,564	122
2,388	2,650,829	166,691	88,440	1,022,696	14,570	5,845	771	1,230	110,024	600,758	684,989	123
122,350	159,355,767	9,943,443	6,258,608	56,781,604	817,931	333,364	40,572	68,450	5,684,279	37,597,316	39,787,110	124
$8,669	$16,080,053	$951,232	$606,595	$5,647,218	$71,016	$25,855	$3,958	$5,172	$579,631	$3,314,510	$3,721,338	125
4,394	3,391,780	25,177	10,591	731,182	3,928	.....	.....	1,800	147,731	573,076	956,686	126
$2,424	$2,679,920	$20,190	$8,824	$711,519	$2,824	.....	.....	$1,000	$154,726	$540,701	$1,003,744	127
.....	8,653,419	.....	30,572	.....	.....	.....	.....	800	.....	.....	.....	128
.....	$2,385,020	.....	$9,172	.....	.....	.....	.....	$160	.....	.....	.....	129
.....	$170,069	.....	.....	.....	.....	.....	$19,842	$900	.....	.....	$16,991	130
.....	$25,562,013	$212,816	$277,537	$7,184,246	$19,581	$20,636	$719,562	$152,069	$708,542	$5,169,684	$3,764,666	131
.....	$14,909	$3,751	$500	$80	$925	.....	$23,937	.....	$1,239	$2,025	.....	132
2,418,000	2,705,804,540	166,965,243	87,023,700	999,538,841	14,362,157	5,767,554	554,666	1,140,000	95,275,012	587,889,512	679,103,833	133
1,231,500	1,500,180,002	87,492,764	44,034,011	540,919,446	7,640,991	3,072,818	360,533	570,000	47,998,539	322,211,355	372,365,240	134
374,450	290,620,611	2,131,331	969,147	60,841,769	275,627	.....	.....	165,000	13,259,084	47,079,562	85,314,793	135
190,825	146,384,162	1,088,081	427,034	30,611,884	140,965	.....	.....	82,500	6,376,203	23,494,316	41,323,122	136
807,600	1,744,195,118	294,540,050	466,405,393	690,561,244	73,938,153	83,815,028	389,684,281	56,301,856	207,004,058	469,107,160	569,359,412	137
602,100	1,298,712,990	235,360,517	356,257,920	523,304,593	57,887,109	65,502,634	306,325,386	42,802,229	162,118,119	370,312,030	424,617,248	138
146,310	45,413,366	3,036,541	733,913	20,444,908	127,715	.....	37,024	498,750	3,001,065	8,303,922	1,660,065	139
101,400	30,168,557	1,039,072	410,313	12,232,965	76,138	.....	22,246	355,500	1,950,443	5,291,220	1,075,196	140
2	57	26	13	17	13	26	11	8	12	21	6	141
22	58,175	4,847	4,820	18,907	977	1,126	2,916	969	1,581	9,534	9,021	142
2	173	62	38	71	21	30	27	13	20	65	28	143
12	36,544	4,131	4,053	13,527	887	1,110	2,632	794	1,436	7,462	6,303	144
.....	3	2	1	.....	.....	.....	1	.....	.....	2	.....	145
.....	232	35	16	.....	.....	.....	3	.....	.....	13	.....	146
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	147
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	60	.....	148
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	149
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	150
.....	1,049	64	57	263	3	1	25	16	3	121	140	151
.....	19,576	671	656	5,318	90	16	168	175	10	1,999	2,718	152
.....	855	.....	.....	.....	.....	.....	3	.....	.....	.....	.....	153
1	65	3	7	4	.....	.....	3	.....	11	.....	.....	154
10	968	10	95	62	.....	.....	110	.....	135	.....	.....	155
.....	1,700	8	.....	.....	.....	.....	37	.....	7	.....	.....	156

TABLE 12.—SLAUGHTERING AND MEAT PACKING, WHOLESALE—DETAILED

		New Jersey.	New York.	Ohio.	Oregon.
1	Number of establishments	18	45	56	10
2	Capital, total	$1,458,400	$7,682,740	$6,068,069	$974,727
3	Land	$241,100	$958,833	$732,572	$191,817
4	Buildings	$422,308	$1,126,076	$1,188,993	$168,198
5	Machinery, tools, and implements	$256,969	$957,009	$870,154	$176,429
6	Cash and sundries	$538,023	$4,640,822	$3,276,350	$438,283
7	Proprietors and firm members	15	49	51	7
	Salaried officials, clerks, etc.:				
8	Total number	64	400	305	60
9	Total salaries	$67,964	$393,706	$284,668	$72,914
	Officers of corporations—				
10	Number	10	28	42	16
11	Salaries	$28,044	$98,066	$83,070	$28,425
	General superintendents, managers, clerks, etc.—				
12	Total number	54	372	263	44
13	Total salaries	$39,920	$295,640	$201,598	$44,489
	Men—				
14	Number	45	306	237	40
15	Salaries	$36,104	$262,886	$188,304	$42,313
	Women—				
16	Number	9	66	26	4
17	Salaries	$3,816	$32,754	$13,294	$2,176
	Wage-earners, including pieceworkers, and total wages:				
18	Greatest number employed at any one time during the year	406	1,846	2,340	322
19	Least number employed at any one time during the year	351	1,579	1,958	253
20	Average number	381	1,695	2,112	246
21	Total wages	$254,050	$932,777	$1,231,630	$155,498
	Men 16 years and over—				
22	Average number	379	1,532	2,074	244
23	Wages	$253,322	$880,092	$1,220,661	$154,678
	Women 16 years and over—				
24	Average number	2	163	35	1
25	Wages	$728	$52,685	$10,099	$520
	Children under 16 years—				
26	Average number	.....	.....	3	1
27	Wages	.....	.....	$870	$300
	Average number of wage-earners, including pieceworkers, employed during each month:				
	Men 16 years and over—				
28	January	396	1,580	2,135	238
29	February	390	1,572	2,088	223
30	March	384	1,546	2,023	230
31	April	382	1,461	1,993	228
32	May	379	1,467	1,997	229
33	June	365	1,489	1,997	227
34	July	362	1,491	2,035	229
35	August	362	1,491	2,043	228
36	September	368	1,518	2,054	244
37	October	381	1,574	2,147	278
38	November	388	1,592	2,163	282
39	December	391	1,603	2,213	292
	Women 16 years and over—				
40	January	2	161	36	1
41	February	2	160	36	1
42	March	2	158	36	1
43	April	2	163	33	1
44	May	2	158	33	1
45	June	2	164	33	1
46	July	2	166	32	1
47	August	2	165	33	1
48	September	2	168	38	1
49	October	2	168	36	1
50	November	2	162	37	1
51	December	2	163	37	1
	Children under 16 years—				
52	January	.....	.....	4	1
53	February	.....	.....	2	1
54	March	.....	.....	3	1
55	April	.....	.....	3	1
56	May	.....	.....	2	1
57	June	.....	.....	3	1
58	July	.....	.....	3	1
59	August	.....	.....	1	1
60	September	.....	.....	1	1
61	October	.....	.....	3	1
62	November	.....	.....	4	1
63	December	.....	.....	7	1
64	Miscellaneous expenses, total	$149,261	$921,214	$627,881	$126,178
65	Rent of works	$14,000	$17,796	$14,685	$5,400
66	Taxes	$6,868	$25,057	$31,663	$6,181
67	Rent of offices, interest, insurance, and all other sundry expenses not hitherto included	$128,193	$877,791	$581,393	$108,397
68	Contract work	$200	$570	$140	$6,200
69	Materials used, total cost	$4,368,777	$19,660,621	$22,928,214	$2,389,902
	Animals slaughtered—				
	Beeves—				
70	Number	4,782	57,403	143,014	25,462
71	Cost	$220,996	$2,172,362	$4,950,978	$902,812
	Sheep—				
72	Number	59,444	39,599	98,450	82,870
73	Cost	$248,009	$154,963	$328,593	$233,373
	Hogs—				
74	Number	230,158	884,039	1,434,838	60,931
75	Cost	$1,959,258	$9,363,559	$14,822,843	$711,755
	Calves—				
76	Number	10,920	5,442	55,001	2,831
77	Cost	$118,882	$41,678	$426,465	$17,565
78	All other animals	.....	.....	$25,000	.....
79	Dressed meat, purchased fresh or partially cured (to be manufactured)	$1,702,936	$6,684,462	$1,497,516	$359,504
80	Fuel	$24,013	$116,635	$115,263	$21,402
81	Rent of power and heat	$2,650	$8,671	$1,216	$240
82	Mill supplies	$2,790	$9,842	$23,518	$2,636
83	All other materials	$63,005	$1,101,555	$711,433	$54,913
84	Freight	$26,238	$6,894	$25,389	$85,702

[1] Includes establishments distributed as follows: Alabama, 1; Connecticut, 2; Maine, 2; Montana, 1; Nevada, 1; Oklahoma, 1; Vermont, 1; Wyoming, 1.

SUMMARY, BY STATES AND TERRITORIES: 1905—Continued.

Pennsylvania.	Rhode Island.	Tennessee.	Texas.	Utah.	Virginia.	Washington.	West Virginia.	Wisconsin.	All other states.[1]	
71	6	8	9	3	14	13	6	14	10	1
$7,286,060	$523,142	$379,420	$6,374,743	$147,664	$683,332	$2,283,644	$477,646	$4,689,064	$926,430	2
$578,628	$25,800	$70,550	$724,550	$10,000	$43,100	$318,905	$30,025	$364,437	$130,600	3
$1,598,017	$60,940	$105,150	$1,819,704	$8,200	$91,750	$249,760	$64,339	$607,425	$433,899	4
$941,836	$44,596	$166,650	$1,513,587	$9,800	$130,485	$158,643	$44,500	$479,477	$141,346	5
$4,167,579	$391,806	$37,070	$2,316,902	$119,664	$417,997	$1,556,336	$338,782	$3,237,725	$220,585	6
77	7	9	2	1	12	9	6	13	6	7
302	11	8	333	9	30	58	29	140	40	8
$324,790	$11,280	$7,600	$323,110	$10,260	$27,628	$79,096	$19,800	$187,373	$53,740	9
29	2	5	8	3	4	9	8	21	3	10
$68,640	$2,600	$4,300	$22,000	$5,040	$8,160	$21,000	$9,180	$69,660	$9,000	11
273	9	3	325	6	26	49	21	119	37	12
$256,150	$8,680	$3,300	$301,110	$5,220	$19,468	$58,096	$10,620	$117,713	$44,740	13
249	9	3	309	2	24	38	15	111	35	14
$245,792	$8,680	$3,300	$286,567	$3,300	$18,468	$48,796	$9,000	$113,263	$43,740	15
24	.....	.....	16	4	2	11	6	8	2	16
$10,358	.....	.....	$14,543	$1,920	$1,000	$9,300	$1,620	$4,450	$1,000	17
2,257	154	152	2,416	32	265	366	146	2,052	493	18
1,941	148	118	1,450	29	134	297	117	1,137	365	19
2,104	151	46	2,019	31	158	335	133	1,483	426	20
$1,268,347	$82,058	$18,378	$866,498	$20,950	$69,277	$286,910	$73,628	$727,164	$232,031	21
2,072	151	45	1,871	31	150	332	132	1,432	420	22
$1,258,220	$82,058	$18,178	$831,511	$20,950	$67,127	$284,964	$73,420	$714,344	$230,622	23
26	.....	1	85	.....	4	3	.....	8	3	24
$8,908	.....	$200	$18,741	.....	$1,150	$1,946	.....	$2,620	$780	25
6	.....	.....	63	.....	4	.....	1	43	3	26
$1,219	.....	.....	$16,246	.....	$1,000	.....	$208	$10,200	$629	27
2,070	152	36	1,684	31	213	333	145	1,799	447	28
2,035	152	35	1,701	31	178	317	120	1,582	445	29
2,007	150	36	1,802	31	144	319	120	1,249	441	30
2,016	148	35	1,869	31	120	308	120	1,184	380	31
2,020	150	38	1,862	31	122	323	145	1,200	381	32
1,990	152	37	1,881	31	116	324	144	1,378	385	33
1,992	152	38	1,684	31	115	331	144	1,397	392	34
2,015	150	40	1,949	31	123	332	144	1,460	395	35
2,079	149	41	1,866	31	118	337	104	1,407	400	36
2,183	151	41	1,986	31	138	351	118	1,186	455	37
2,216	153	74	2,117	31	189	353	136	1,597	460	38
2,241	153	89	2,051	31	224	356	144	1,745	459	39
26	.....	.....	66	.....	3	3	.....	11	2	40
27	.....	.....	58	.....	3	3	.....	11	2	41
28	.....	.....	76	.....	3	3	.....	10	2	42
26	.....	.....	64	.....	3	3	.....	7	2	43
27	.....	.....	69	.....	3	3	.....	4	2	44
26	.....	.....	74	.....	3	3	.....	4	2	45
24	.....	.....	68	.....	5	3	.....	4	2	46
24	.....	.....	85	.....	5	3	.....	4	2	47
25	.....	.....	97	.....	7	3	.....	8	2	48
26	.....	.....	118	.....	6	3	.....	9	4	49
26	.....	.....	124	.....	3	3	.....	12	7	50
27	.....	12	121	.....	4	3	.....	12	7	51
6	.....	.....	55	.....	5	.....	1	53	2	52
6	.....	.....	65	.....	5	.....	1	43	2	53
6	.....	.....	56	.....	4	.....	1	35	2	54
5	.....	.....	56	.....	3	.....	1	33	2	55
5	.....	.....	65	.....	4	.....	1	34	2	56
5	.....	.....	66	.....	4	.....	1	40	3	57
6	.....	.....	51	.....	4	.....	1	35	2	58
6	.....	.....	60	.....	3	.....	1	44	2	59
6	.....	.....	62	.....	5	.....	1	54	4	60
7	.....	.....	72	.....	6	.....	1	38	6	61
7	.....	.....	74	.....	2	.....	1	52	5	62
7	.....	.....	74	.....	3	.....	1	55	4	63
$752,942	$34,022	$11,662	$714,693	$16,595	$54,596	$190,319	$18,257	$590,285	$102,676	64
$54,854	$1,900	.....	.....	$3,245	$2,000	$2,540	$2,780	$11,869	$13,300	65
$25,877	$1,209	$432	$22,865	$342	$2,314	$9,661	$2,725	$18,044	$4,430	66
$671,246	$30,913	$11,230	$691,828	$13,008	$50,282	$177,968	$12,752	$560,372	$84,946	67
$965	.....	.....	.....	.....	.....	$150	.....	.....	.....	68
$20,852,061	$2,290,310	$229,534	$13,593,181	$513,543	$1,745,634	$5,423,134	$1,667,648	$13,684,979	$3,451,330	69
99,402	.....	950	285,295	12,660	7,340	54,539	7,477	59,659	14,984	70
$4,904,918	.....	$37,588	$6,051,742	$312,164	$252,800	$2,348,411	$299,682	$1,954,522	$444,241	71
143,478	.....	235	49,831	26,371	7,150	179,819	4,204	58,374	15,623	72
$613,532	.....	$700	$165,281	$88,692	$29,650	$720,781	$16,198	$238,003	$48,945	73
1,061,263	89,548	16,090	347,040	3,740	126,095	122,313	115,430	938,418	207,993	74
$9,929,973	$1,438,173	$184,983	$3,218,450	$33,024	$986,708	$1,504,273	$1,291,090	$10,040,488	$2,774,654	75
52,650	.....	135	94,093	3,330	6,330	5,463	3,791	34,507	4,105	76
$469,360	.....	$400	$603,625	$27,130	$49,100	$55,716	$25,628	$193,544	$46,895	77
.....	.....	.....	.....	$650	.....	.....	$1,950	.....	.....	78
$3,352,303	$806,189	.....	$660,107	$42,600	$280,984	$625,682	$22,500	$572,156	$59,750	79
$134,268	$4,801	$2,941	$195,687	$4,320	$15,190	$17,244	$9,651	$106,530	$22,915	80
$1,813	$2,236	.....	.....	$4,160	.....	$2,620	$14	$400	$3,000	81
$21,894	$641	$365	$40,513	$803	$1,855	$4,686	$560	$7,457	$1,960	82
$1,232,667	$37,950	$1,296	$2,654,649	.....	$116,217	$138,212	$375	$562,073	$29,455	83
$191,333	$320	$1,261	$3,127	.....	$13,130	$5,500	.....	$9,806	$19,515	84

TABLE 12.—SLAUGHTERING AND MEAT PACKING, WHOLESALE—DETAILED

		New Jersey.	New York.	Ohio.	Oregon.
85	Products, total value	$5,050,451	$22,807,856	$26,380,884	$2,407,154
	Beef—				
	Sold fresh (exclusive of purchased dressed fresh beef)—				
86	Pounds	1,681,000	29,580,449	68,632,466	13,525,565
87	Value	$208,126	$2,161,301	$4,541,938	$882,814
	Canned—				
88	Pounds		2,460,000	986,720	
89	Value		$447,903	$98,672	
	Salted and cured—				
90	Pounds	203,025	7,882,644	2,434,645	425,000
91	Value	$32,973	$435,674	$175,972	$21,500
	Mutton, sold fresh (exclusive of purchased dressed fresh mutton)				
92	Pounds	1,956,313	1,381,312	3,711,420	3,785,414
93	Value	$203,203	$140,310	$321,942	$224,207
	Veal, sold fresh (exclusive of purchased dressed fresh veal)				
94	Pounds	949,090	655,436	4,215,610	293,980
95	Value	$95,709	$54,504	$383,737	$19,822
	Pork—				
	Sold fresh (exclusive of purchased dressed fresh pork)—				
96	Pounds	13,612,074	47,999,573	47,388,532	2,148,669
97	Value	$1,412,080	$4,071,920	$4,393,345	$185,637
	Salted—				
98	Pounds	6,440,800	28,146,502	38,250,873	1,613,761
99	Value	$545,036	$2,633,425	$3,015,005	$133,741
	Hams, smoked bacon, sides, and shoulders—				
100	Pounds	12,884,743	78,349,412	78,124,528	7,633,646
101	Value	$1,271,008	$8,079,191	$7,160,699	$764,864
	Sausage, fresh and cured—				
102	Pounds	3,586,223	11,133,196	17,279,864	1,041,720
103	Value	$371,815	$920,252	$1,273,885	$79,150
	All other meat, sold fresh (exclusive of purchased dressed fresh meat)—				
104	Pounds	1,365,846	2,828,915	3,070,674	
105	Value	$97,088	$237,108	$228,607	
106	Canned goods, value		$280,270	$45,556	$9,863
	Refined lard—				
107	Pounds	1,171,700	26,338,002	42,955,326	2,449,740
108	Value	$85,520	$1,832,501	$2,994,388	$230,023
	Neutral lard—				
109	Pounds	1,050,599	7,204,608	5,808,140	
110	Value	$84,032	$482,680	$402,867	
	Oleomargarine oil—				
111	Gallons			130,250	
112	Value			$73,440	
	Other oils—				
113	Gallons	5,000	104,750	107,500	2,248
114	Value	$700	$62,413	$48,645	$1,124
	Soap—				
115	Pounds				
116	Value				
	Fertilizers—				
117	Tons	100	3,012	945	455
118	Value	$1,400	$38,082	$10,001	$9,000
	Fertilizer materials (bones, offal, tankage, etc.)—				
119	Tons	3,033	1,085	5,784	
120	Value	$22,375	$34,479	$77,528	
	Glue—				
121	Pounds			218,400	120,380
122	Value			$14,500	$9,700
	Hides—				
123	Number	6,382	59,203	176,008	26,493
124	Pounds	347,350	2,008,100	8,464,067	1,533,083
125	Value	$35,714	$247,103	$772,783	$131,093
	Sheep pelts—				
126	Number	50,444	39,500	98,450	13,267
127	Value	$10,307	$38,313	$59,426	$9,006
	Wool—				
128	Pounds	154,748			764,462
129	Value	$42,811			$150,000
130	Fine chemicals (pancreatin, pepsin, etc.)				
131	All other products	$508,314	$008,071	$260,408	$55,000
132	Amount received for custom or contract work	$12,250	$1,000	$11,786	
	Weight of animals slaughtered (pounds):				
	Bovines—				
133	Gross weight on hoof	5,167,200	57,408,300	140,804,021	26,676,430
134	Net weight dressed	2,853,072	29,580,449	73,538,221	14,158,427
	Sheep—				
135	Gross weight on hoof	3,674,288	2,602,023	7,052,021	8,205,846
136	Net weight dressed	1,950,313	1,381,312	3,711,420	3,785,452
	Hogs—				
137	Gross weight on hoof	35,474,217	105,160,424	280,073,523	13,210,813
138	Net weight dressed	27,325,824	131,095,578	226,231,303	10,314,094
	Calves—				
139	Gross weight on hoof	1,554,520	928,000	7,020,772	472,120
140	Net weight dressed	1,037,366	655,436	4,315,610	293,980
	Power:				
141	Number of establishments reporting	16	42	53	9
142	Total horsepower	533	3,116	4,023	372
	Owned—				
	Engines—				
	Steam—				
143	Number	16	62	107	12
144	Horsepower	439	2,501	3,770	321
	Gas and gasoline—				
145	Number	1		1	
146	Horsepower	5		4	
	Water wheels—				
147	Number				
148	Horsepower				
	Water motors—				
149	Number				1
150	Horsepower				3
	Electric motors—				
151	Number	3	13	14	3
152	Horsepower	42	106	106	45
153	Other power, horsepower				
	Rented—				
	Electric motors—				
154	Number	3	34	6	
155	Horsepower	47	410	44	
156	Furnished to other establishments, horsepower				

SUMMARY, BY STATES AND TERRITORIES: 1905—Continued.

Pennsylvania.	Rhode Island.	Tennessee.	Texas.	Utah.	Virginia.	Washington.	West Virginia.	Wisconsin.	All other states.	
$24,411,797	$2,499,440	$318,052	$15,620,931	$653,314	$1,996,338	$6,251,705	$1,928,017	$16,060,423	$3,958,253	85
57,583,276	.....	427,500	105,988,268	6,382,120	4,125,000	33,548,474	3,977,800	28,643,346	7,073,450	86
$4,681,190	.....	$27,787	$4,954,013	$373,514	$274,100	$2,253,838	$312,021	$1,712,783	$457,306	87
.....	.....	.....	298,180	.....	.....	.....	.....	.....	.....	88
.....	.....	.....	$12,490	.....	.....	.....	.....	.....	.....	89
924,173	.....	.....	2,020,874	25,400	5,000	242,270	.....	135,040	167,000	90
$88,394	.....	.....	$144,727	$1,420	$250	$21,271	.....	$6,690	$9,202	91
5,611,486	.....	12,925	1,670,045	1,414,405	279,500	8,355,285	135,480	2,389,517	671,920	92
$551,506	.....	$904	$127,578	$87,780	$29,370	$610,336	$12,962	$172,180	$51,133	93
4,123,742	.....	8,100	9,674,766	301,000	542,400	761,286	223,368	2,594,829	755,414	94
$446,269	.....	$486	$598,938	$27,440	$55,840	$61,700	$22,535	$201,725	$62,641	95
33,993,657	3,724,440	398,349	9,596,282	303,075	4,126,419	8,092,695	4,440,840	35,997,546	8,016,512	96
$3,052,386	$353,079	$34,496	$713,549	$21,596	$364,788	$699,795	$363,340	$2,447,493	$639,560	97
11,175,853	6,522,947	681,688	11,688,757	56,500	1,959,535	1,945,570	1,093,120	60,456,880	11,[illegible]23,297	98
$931,356	$497,013	$57,784	$958,664	$5,020	$160,994	$126,207	$89,312	$4,407,408	$946,565	99
66,891,209	8,439,327	1,398,904	14,570,855	153,500	5,869,515	8,954,554	11,636,260	40,017,552	11,964 747	100
$6,747,693	$873,134	$134,125	$1,448,276	$17,040	$630,770	$1,179,519	$967,388	$3,938,384	$970,560	101
22,812,772	2,581,420	84,007	8,497,917	302,600	2,623,068	1,404,442	681,780	12,621,837	2,050,936	102
$2,002,886	$211,946	$6,460	$436,890	$23,742	$156,025	$108,430	$52,110	$939,509	$288,578	103
13,498,980	1,900,000	11,550	9,523,500	7,000	1,008,000	1,076,070	.....	350,000	236,735	104
$939,079	$186,000	$693	$380,941	$845	$52,740	$96,546	.....	$26,500	$19,356	105
.....	.....	.....	$46,028	.....	.....	.....	.....	.....	.....	106
27,563,977	5,077,400	167,750	38,485,549	65,200	2,438,223	3,582,649	372,050	14,374,000	4,740,090	107
$2,024,711	$363,218	$12,370	$2,715,032	$5,964	$459,699	$288,548	$26,760	$995,249	$232,496	108
6,458,996	20,800	100,498	491,976	6,000	37,650	201,017	50,000	2,485,549	.....	109
$500,657	$1,560	$9,424	$33,877	$480	$2,980	$18,920	$4,000	$197,795	.....	110
294,628	.....	.....	243,416	.....	.....	.....	.....	49,350	.....	111
$147,314	.....	.....	$112,671	.....	.....	.....	.....	$25,168	.....	112
705,531	.....	.....	3,200	.....	.....	.....	.....	120,200	875	113
$321,649	.....	.....	$1,600	.....	.....	.....	.....	$44,630	$550	114
.....	.....	.....	12,727,369	.....	.....	.....	.....	.....	.....	115
.....	.....	.....	$354,476	.....	.....	.....	.....	.....	.....	116
3,211	.....	100	5,043	.....	.....	333	160	1,119	315	117
$57,090	.....	$2,050	$135,028	.....	.....	$20,000	$3,500	$28,081	$4,075	118
4,291	922	.....	522	.....	494	348	.....	2,073	570	119
$63,600	$11,536	.....	$6,240	.....	$8,145	$10,000	.....	$45,714	$13,980	120
.....	.....	.....	2,000	.....	.....	.....	.....	481,986	40,000	121
.....	.....	.....	$142	.....	.....	.....	.....	$33,273	$900	122
138,343	.....	950	304,806	12,790	13,220	59,833	9,748	60,459	16,486	123
7,142,740	.....	49,500	17,766,494	604,000	448,480	3,416,270	450,940	3,556,922	773,690	124
$711,557	.....	$4,716	$1,565,481	$61,447	$23,724	$317,169	$43,704	$323,231	$69,069	125
143,478	.....	235	49,831	26,371	7,150	179,819	4,204	55,846	15,623	126
$116,545	.....	$152	$31,315	$22,218	$6,043	$196,084	$4,048	$57,553	$14,029	127
7,000	.....	.....	.....	.....	.....	.....	.....	1,000	.....	128
$1,260	.....	.....	.....	.....	.....	.....	.....	$190	.....	129
$200	.....	.....	.....	.....	.....	.....	.....	.....	.....	130
$1,023,457	$1,954	$21,605	$842,055	$4,808	$63,370	$243,342	$26,337	$454,432	$178,253	131
$2,095	.....	$5,000	$920	.....	$7,500	.....	.....	$2,375	.....	132
112,105,904	.....	855,000	237,588,021	13,029,600	6,704,000	60,947,960	7,410,411	56,536,135	14,089,820	133
60,589,064	.....	427,500	120,696,781	6,390,120	4,130,000	33,687,921	3,978,018	29,415,074	7,095,450	134
11,340,860	.....	23,500	4,201,595	2,849,810	558,000	18,071,330	286,400	4,867,245	1,334,995	135
5,698,408	.....	12,925	2,032,765	1,414,405	279,500	8,357,339	135,480	2,397,461	671,920	136
188,883,961	23,457,480	3,825,521	66,510,641	736,300	17,977,156	28,583,671	25,552,000	200,784,666	49,233,476	137
149,728,354	18,487,340	3,105,488	49,692,252	584,200	14,001,644	20,913,736	20,466,200	156,418,214	39,446,099	138
6,982,731	.....	10,800	21,336,570	475,075	912,000	1,232,244	379,173	3,871,702	1,155,980	139
4,140,102	.....	8,100	12,298,662	301,000	542,400	761,286	223,368	2,597,322	755,414	140
62	6	4	9	2	6	11	4	14	8	141
6,820	242	855	5,355	25	720	563	701	2,340	877	142
117	6	9	23	1	13	15	10	24	11	143
6,107	138	855	2,086	10	650	481	515	2,230	757	144
3	.....	.....	.....	.....	.....	.....	4	1	.....	145
68	.....	.....	.....	.....	.....	.....	120	7	.....	146
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	147
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	148
.....	.....	.....	.....	.....	.....	2	.....	.....	.....	149
.....	.....	.....	.....	.....	.....	5	.....	.....	.....	150
43	.....	.....	176	.....	3	2	8	3	6	151
495	.....	.....	3,269	.....	70	13	66	85	30	152
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	153
3	15	.....	.....	1	.....	5	.....	2	5	154
150	104	.....	.....	15	.....	64	.....	9	90	155
55	.....	.....	185	.....	.....	.....	.....	.....	.....	156

TABLE 13.—SLAUGHTERING, WHOLESALE, NOT INCLUDING MEAT PACKING—

		United States.	California.	Colorado.	Illinois.	Indiana.	Iowa.	Kansas.	Kentucky.
1	Number of establishments	370	32	4	9	14	6	5	6
2	Capital, total	$17,896,063	$1,359,848	$135,247	$425,100	$243,575	$89,160	$343,536	$14,035
3	Land	$1,692,986	$187,000	$11,000	$200	$39,925	$17,941	$24,100	$1,450
4	Buildings	$3,641,637	$249,616	$26,500	$94,300	$57,600	$33,600	$99,004	$4,850
5	Machinery, tools, and implements	$2,221,994	$72,893	$32,000	$39,600	$51,150	$8,355	$106,821	$1,085
6	Cash and sundries	$10,339,446	$850,339	$65,747	$291,000	$94,900	$29,264	$113,611	$6,650
7	Proprietors and firm members	478	39	3	25	16	5	6	8
	Salaried officials, clerks, etc.:								
8	Total number	669	75	4	19	14	6	23	
9	Total salaries	$885,570	$97,860	$3,920	$20,584	$12,900	$2,810	$22,205	
	Officers of corporations—								
10	Number	46	13			2	1	2	
11	Salaries	$157,247	$34,400			$1,600	$250	$3,999	
	General superintendents, managers, clerks, etc.—								
12	Total number	623	62	4	19	12	5	21	
13	Total salaries	$728,323	$63,460	$3,920	$20,584	$11,300	$2,560	$18,206	
	Men—								
14	Number	533	56	4	17	12	5	18	
15	Salaries	$679,505	$57,760	$3,920	$19,544	$11,300	$2,560	$17,558	
	Women—								
16	Number	90	6		2			3	
17	Salaries	$48,818	$5,700		$1,040			$648	
	Wage-earners, including pieceworkers, and total wages:								
18	Greatest number employed at any one time during the year.	5,308	292	24	396	82	42	228	11
19	Least number employed at any one time during the year.	3,473	246	19	231	69	35	103	8
20	Average number	4,541	270	22	270	73	33	133	10
21	Total wages	$3,236,573	$240,307	$17,089	$168,503	$41,004	$21,277	$78,842	$4,136
	Men 16 years and over—								
22	Average number	4,521	268	22	270	71	33	131	9
23	Wages	$3,230,489	$239,107	$17,089	$168,503	$40,504	$21,277	$78,214	$4,010
	Women 16 years and over—								
24	Average number	9				2		1	
25	Wages	$3,040				$500		$380	
	Children under 16 years—								
26	Average number	11	2					1	1
27	Wages	$3,044	$1,200					$248	$126
	Average number of wage-earners, including pieceworkers, employed during each month:								
	Men 16 years and over—								
28	January	4,571	254	20	260	65	38	151	9
29	February	4,549	256	20	231	65	32	168	9
30	March	4,503	265	20	232	65	29	170	9
31	April	4,427	264	19	236	69	31	163	9
32	May	4,422	273	19	253	70	31	167	9
33	June	4,445	276	23	253	70	30	173	8
34	July	4,301	279	23	260	70	30	142	8
35	August	4,389	284	24	347	70	31	61	8
36	September	4,571	283	24	296	73	33	37	9
37	October	4,645	268	24	287	76	32	111	10
38	November	4,765	259	24	301	79	40	113	10
39	December	4,664	255	24	284	80	39	116	10
	Women 16 years and over—								
40	January	10				2		2	
41	February	10				2		2	
42	March	9				2		1	
43	April	9				2		1	
44	May	10				2		2	
45	June	9				2		1	
46	July	8				2			
47	August	8				2			
48	September	8				2			
49	October	9				2		1	
50	November	9				2		1	
51	December	9				2		1	
	Children under 16 years—								
52	January	8	2					1	
53	February	8	2					1	
54	March	9	2					2	
55	April	11	2					2	
56	May	14	2					2	3
57	June	13	2					1	3
58	July	12	2						3
59	August	12	2						3
60	September	15	2						
61	October	14	2					1	
62	November	8	2					1	
63	December	8	2					1	
64	Miscellaneous expenses, total	$2,599,111	$163,080	$13,002	$89,479	$19,628	$11,996	$174,056	$1,974
65	Rent of works	$278,509	$22,740	$175	$11,973	$1,350	$2,380	$600	$100
66	Taxes	$117,756	$5,655	$1,075	$710	$1,723	$717	$1,157	$99
67	Rent of offices, interest, insurance, and all other sundry expenses not hitherto included.	$2,116,062	$128,649	$11,752	$74,733	$16,555	$8,899	$172,299	$1,775
68	Contract work	$86,724	$6,036		$2,063				
69	Materials used, total cost	$99,626,900	$8,293,839	$375,917	$6,498,693	$1,399,765	$292,948	$1,465,374	$174,429
	Animals slaughtered—								
	Beeves—								
70	Number	1,166,111	146,306	5,218	115,265	20,792	5,140	38,891	3,585
71	Cost	$55,524,510	$5,317,473	$187,380	$3,771,771	$652,140	$161,014	$1,224,834	$111,230
	Sheep—								
72	Number	3,863,542	613,502	35,812	240,381	8,525	2,479	20,413	8,380
73	Cost	$16,600,544	$1,958,148	$150,936	$897,339	$31,369	$10,222	$65,100	$21,310
	Hogs—								
74	Number	2,350,571	56,159	1,800	176,000	64,860	18,450	16,058	1,100
75	Cost	$16,439,409	$523,182	$18,000	$1,760,000	$589,700	$82,338	$137,542	$3,300
	Calves—								
76	Number	786,176	29,250	500	7,527	13,340	4,285	2,110	5,735
77	Cost	$6,849,206	$258,419	$3,600	$50,182	$115,312	$25,332	$15,076	$37,295
78	All other animals	$8,500							
79	Dressed meat, purchased fresh or partially cured (to be manufactured).	$136,688		$9,000			$9,756		
80	Fuel	$279,983	$2,754	$1,690	$15,306	$6,618	$1,760	$6,663	$203
81	Rent of power and heat	$12,192	$4,952		$300			$240	
82	Mill supplies	$29,207	$732	$111	$3,574	$601	$136	$219	
83	All other materials	$2,478,162	$39,150	$1,200	$221	$3,825	$2,090	$15,700	$1,091
84	Freight	$1,268,499	$189,029	$4,000		$200	$300		

[1] Includes establishments distributed as follows: Alabama, 1; Connecticut, 2; Delaware, 1; District of Columbia, 1; Florida, 1; Georgia, 1; Louisiana, 2; Montana, 1; Nebraska, 2; Oklahoma, 2; Tennessee, 1; Texas, 1; Vermont, 2; Virginia, 1; Washington, 1; West Virginia, 1; Wisconsin, 2.

DETAILED SUMMARY, BY STATES AND TERRITORIES: 1905.

Maine.	Maryland.	Massachusetts.	Michigan.	Minnesota.	Missouri.	New Jersey.	New York.	North Carolina.	Ohio.	Pennsylvania.	All other states.[1]	
9	8	29	10	10	8	21	56	3	32	85	23	1
$281,680	$23,531	$1,623,615	$96,370	$141,150	$78,460	$877,077	$9,550,115	$58,389	$289,066	$775,190	$1,490,919	2
$19,000	.....	$98,361	$8,200	$25,600	$5,000	$85,300	$719,404	$17,000	$62,100	$62,850	$308,555	3
$88,216	$6,300	$412,390	$22,300	$48,100	$12,500	$173,800	$1,549 252	$7,250	$90,150	$123,800	$542,109	4
$17,295	$1,625	$206,347	$14,150	$17,300	$24,400	$74,900	$1,129,525	$11,139	$39,545	$79,505	$294,359	5
$157,169	$15,606	$906,517	$51,720	$50,150	$36,560	$543,077	$6,151,934	$23,000	$97,271	$509,035	$345,896	6
11	12	30	12	10	10	40	74	7	47	100	23	7
14	1	99	6	13	2	32	263	3	11	35	49	8
$8,085	$312	$121,783	$9,560	$11,370	$3,000	$40,737	$427,336	$3,000	$8,866	$37,106	$54,136	9
.....	.....	5	1	2	2	2	8	.....	.....	.....	8	10
.....	.....	$17,848	$4,000	$1,800	$3,000	$3,900	$75,000	.....	.....	.....	$11,450	11
14	1	94	5	11	.....	30	255	3	11	35	41	12
$8,085	$312	$103,935	$5,560	$9,570	.....	$36,837	$352,336	$3,000	$8,866	$37,106	$42,686	13
11	.....	87	4	8	.....	29	205	3	8	29	37	14
$7,305	.....	$98,891	$5,080	$8,200	.....	$36,417	$325,670	$3,000	$7,816	$34,038	$40,446	15
3	1	7	1	3	.....	1	50	.....	3	6	4	16
$780	$312	$5,044	$480	$1,370	.....	$420	$26,666	.....	$1,050	$3,068	$2,240	17
224	29	644	57	67	74	417	1,852	26	133	330	380	18
77	26	413	43	37	53	251	1,150	17	120	297	278	19
147	28	538	49	42	62	297	1,805	20	125	309	308	20
$78,432	$15,194	$335,880	$31,617	$24,340	$35,168	$192,004	$1,490,708	$8,160	$77,391	$201,369	$175,152	21
144	28	534	49	42	60	297	1,805	20	125	308	305	22
$77,536	$15,194	$335,040	$31,617	$24,340	$34,492	$192,004	$1,490,708	$8,160	$77,391	$201,035	$174,268	23
2	.....	1	.....	.....	2	.....	.....	.....	.....	.....	1	24
$800	.....	$320	.....	.....	$676	.....	.....	.....	.....	.....	$364	25
1	.....	3	.....	.....	.....	.....	.....	.....	.....	1	2	26
$96	.....	$520	.....	.....	.....	.....	.....	.....	.....	$334	$520	27
132	28	585	44	37	58	292	1,841	23	127	305	302	28
122	28	566	44	61	58	280	1,849	23	122	308	307	29
149	28	530	49	38	59	279	1,823	23	123	306	306	30
136	27	495	48	37	60	285	1,806	23	121	300	298	31
117	29	452	54	36	59	290	1,811	23	123	309	297	32
73	29	464	47	38	63	294	1,840	22	125	314	303	33
59	29	492	44	44	68	280	1,721	17	125	316	294	34
171	28	556	44	44	65	278	1,628	17	125	314	294	35
200	28	565	44	45	64	285	1,822	17	126	312	308	36
196	28	572	57	45	58	285	1,827	17	127	302	323	37
194	28	575	57	40	54	385	1,842	17	127	302	318	38
179	26	556	56	39	54	331	1,850	18	129	308	310	39
2	.....	1	.....	.....	2	.....	.....	.....	.....	.....	1	40
2	.....	1	.....	.....	2	.....	.....	.....	.....	.....	1	41
2	.....	1	.....	.....	2	.....	.....	.....	.....	.....	1	42
2	.....	1	.....	.....	2	.....	.....	.....	.....	.....	1	43
2	.....	1	.....	.....	2	.....	.....	.....	.....	.....	1	44
2	.....	1	.....	.....	2	.....	.....	.....	.....	.....	1	45
2	.....	1	.....	.....	2	.....	.....	.....	.....	.....	1	46
2	.....	1	.....	.....	2	.....	.....	.....	.....	.....	1	47
2	.....	1	.....	.....	2	.....	.....	.....	.....	.....	1	48
2	.....	1	.....	.....	2	.....	.....	.....	.....	.....	1	49
2	.....	1	.....	.....	2	.....	.....	.....	.....	.....	1	50
2	.....	1	.....	.....	2	.....	.....	.....	.....	.....	1	51
.....	.....	2	.....	.....	.....	.....	.....	.....	.....	1	2	52
.....	.....	2	.....	.....	.....	.....	.....	.....	.....	1	2	53
.....	.....	2	.....	.....	.....	.....	.....	.....	.....	1	2	54
.....	.....	4	.....	.....	.....	.....	.....	.....	.....	1	2	55
.....	.....	4	.....	.....	.....	.....	.....	.....	.....	1	2	56
.....	.....	4	.....	.....	.....	.....	.....	.....	.....	1	2	57
.....	.....	4	.....	.....	.....	.....	.....	.....	.....	1	2	58
.....	.....	4	.....	.....	.....	.....	.....	.....	.....	1	2	59
6	.....	4	.....	.....	.....	.....	.....	.....	.....	1	2	60
6	.....	2	.....	.....	.....	.....	.....	.....	.....	1	2	61
.....	.....	2	.....	.....	.....	.....	.....	.....	.....	1	2	62
.....	.....	2	.....	.....	.....	.....	.....	.....	.....	1	2	63
$43,195	$8,012	$184,357	$12,551	$16,055	$7,104	$160,280	$1,380,175	$3,936	$21,059	$167,379	$121,793	64
$2,600	$2,026	$23,966	$506	$2,525	$2,196	$20,905	$111,817	.....	$2,892	$56,032	$13,786	65
$884	$145	$12,049	$1,075	$745	$523	$12,656	$62,582	$260	$1,817	$3,173	$10,711	66
$39,711	$4,221	$148,342	$10,970	$11,160	$4,385	$97,240	$1,167,125	$3,676	$16,350	$100,924	$97,296	67
.....	$1,620	.....	.....	$1,625	.....	$29,479	$38,051	.....	.....	$7,250	.....	68
$475,131	$321,627	$5,921,056	$1,114,535	$684,132	$520,559	$11,310,804	$45,628,748	$164,895	$2,094,110	$6,932,141	$5,957,597	69
2,059	3,580	67,669	25,225	15,660	6,288	33,809	421,313	4,057	46,599	98,179	106,476	70
$64,108	$132,200	$3,117,487	$866,400	$496,529	$186,533	$1,618,388	$27,627,013	$117,208	$1,539,529	$5,163,388	$3,169,885	71
51,167	37,074	418,580	42,710	41,060	7,185	443,198	1,498,038	6,062	49,968	220,016	118,992	72
$187,134	$125,353	$1,826,403	$176,175	$129,575	$27,090	$2,128,345	$7,281,427	$15,667	$173,436	$956,539	$438,976	73
12,121	.....	19,964	1,010	4,661	24,546	1,052,252	739,719	1,221	12,940	24,371	123,339	74
$152,975	.....	$201,951	$10,080	$32,931	$238,976	$6,578,496	$4,761,144	$11,450	$131,744	$226,096	$979,504	75
2,477	9,234	88,314	8,110	2,442	8,988	92,469	288,309	1,741	31,905	60,217	129,214	76
$12,865	$61,324	$641,038	$55,110	$13,436	$50,320	$870,605	$2,569,653	$7,665	$238,920	$556,017	$1,267,037	77
.....	.....	.....	.....	.....	$2,500	.....	.....	$5,000	.....	.....	$1,000	78
$80	.....	.....	.....	.....	.....	$3,500	$102,362	$500	.....	$11,490	.....	79
$4,621	$150	$21,156	$2,585	$3,204	$5,470	$7,801	$138,565	$900	$4,735	$10,869	$44,933	80
.....	.....	$2,800	.....	.....	$240	$925	$75	.....	$360	.....	$2,300	81
$345	.....	$1,503	$485	$65	$1,060	$510	$14,087	$55	$622	$1,420	$3,682	82
$52,227	$2,500	$106,835	$3,100	$7,142	$8,170	$9,903	$2,199,967	$6,450	$4,264	$4,597	$9,730	83
$776	$100	$2,483	$600	$1,250	$200	$92,331	$934,455	.....	$500	$1,725	$40,550	84

TABLE 13.—SLAUGHTERING, WHOLESALE, NOT INCLUDING MEAT PACKING—

		United States.	California.	Colorado.	Illinois.	Indiana.	Iowa.	Kansas.	Kentucky.
85	Products, total value	$112,157,487	$9,589,978	$464,135	$7,352,452	$1,713,583	$359,333	$1,673,261	$223,820
	Beef—								
	Sold fresh (exclusive of purchased dressed fresh beef)—								
86	Pounds	608,397,381	82,451,380	2,943,800	52,835,225	10,698,015	2,637,522	18,744,785	1,962,000
87	Value	$50,584,218	$5,246,624	$197,541	$3,378,551	$709,689	$172,307	$1,225,548	$132,440
	Salted and cured—								
88	Pounds	7,375,489	.....	.....	.....	15,000	5,000	.....	.....
89	Value	$331,472	.....	.....	.....	$1,500	$400	.....	.....
	Mutton, sold fresh (exclusive of purchased dressed fresh mutton)—								
90	Pounds	159,707,652	23,225,621	1,629,338	10,232,675	390,125	105,801	1,011,749	315,000
91	Value	$14,233,729	$1,949,398	$157,844	$794,250	$34,891	$8,394	$88,871	$22,320
	Veal, sold fresh (exclusive of purchased dressed fresh veal)—								
92	Pounds	76,652,802	4,454,931	50,000	590,020	1,249,880	354,540	219,805	425,200
93	Value	$7,139,377	$301,679	$5,000	$50,998	$110,705	$29,245	$16,433	$35,730
	Pork—								
	Sold fresh (exclusive of purchased dressed fresh pork)—								
94	Pounds	207,734,763	6,917,870	350,000	34,200,000	9,320,100	1,307,326	2,341,599	48,200
95	Value	$17,614,143	$537,512	$28,000	$2,097,000	$676,494	$88,103	$134,902	$3,374
	Salted—								
96	Pounds	74,900	6,000	.....	.....	.....	68,500	.....	.....
97	Value	$6,737	$600	.....	.....	.....	$6,105	.....	.....
	Hams, smoked bacon, sides, and shoulders—								
98	Pounds	177,166	.....	.....	.....	.....	96,166	.....	.....
99	Value	$16,660	.....	.....	.....	.....	$9,340	.....	.....
	Sausage, fresh and cured—								
100	Pounds	1,929,863	31,200	.....	.....	300	83,942	.....	.....
101	Value	$161,430	$2,500	.....	.....	$21	$6,840	.....	.....
	All other meat, sold fresh (exclusive of purchased dressed fresh meat)—								
102	Pounds	389,400	.....	122,000	.....	60,000	.....	.....	.....
103	Value	$26,389	.....	$8,900	.....	$3,000	.....	.....	.....
	Refined lard—								
104	Pounds	5,102,445	5,200	.....	427,000	169,900	149,466	.....	.....
105	Value	$311,167	$415	.....	$30,000	$8,715	$11,009	.....	.....
	Neutral lard—								
106	Pounds	1,582,617	.....	.....	.....	20,000	.....	8,000	.....
107	Value	$98,964	.....	.....	.....	$1,600	.....	$480	.....
	Oleomargarine oil—								
108	Gallons	3,746,450	.....	.....	.....	.....	.....	.....	.....
109	Value	$2,135,544	.....	.....	.....	.....	.....	.....	.....
	Other oils—								
110	Gallons	1,305,101	.....	.....	.....	.....	.....	.....	.....
111	Value	$803,620	.....	.....	.....	.....	.....	.....	.....
	Soap—								
112	Pounds	57,600	.....	.....	.....	.....	.....	.....	.....
113	Value	$2,016	.....	.....	.....	.....	.....	.....	.....
	Fertilizers—								
114	Tons	5,735	50	100	180	.....	.....	274	.....
115	Value	$157,021	$405	$2,000	$2,500	.....	.....	$6,570	.....
	Fertilizer materials (bones, offal, tankage, etc.)—								
116	Tons	24,570	1,004	.....	12,742	799	5	.....	63
117	Value	$311,861	$9,620	.....	$121,700	$5,203	$55	.....	$504
	Glue—								
118	Pounds	357	357	.....	.....	.....	.....	.....	.....
119	Value	$25	$25	.....	.....	.....	.....	.....	.....
	Hides—								
120	Number	1,644,877	147,721	5,718	115,765	31,722	5,640	40,816	9,320
121	Pounds	83,632,468	8,318,943	300,680	5,651,870	1,485,428	303,805	2,077,260	319,450
122	Value	$8,002,657	$809,039	$26,904	$584,595	$109,047	$24,406	$181,474	$20,428
	Sheep pelts—								
123	Number	4,395,860	613,502	35,812	240,381	6,225	2,470	20,413	8,380
124	Value	$2,913,150	$417,709	$30,146	$215,430	$7,654	$2,005	$17,977	$6,872
	Wool—								
125	Pounds	6,705,332	120,000	15,370	.....	.....	.....	.....	.....
126	Value	$2,619,908	$30,100	$2,000	.....	.....	.....	.....	.....
127	All other products	$4,534,207	$278,747	$5,800	$72,228	$36,024	$1,124	.....	$2,152
128	Amount received for custom or contract work	$93,192	$5,605	.....	$5,200	$8,950	.....	$1,000	.....
	Weight of animals slaughtered (pounds):								
	Beeves—								
129	Gross weight on the hoof	1,256,072,150	157,668,858	5,139,000	102,522,110	20,527,200	5,286,685	35,805,063	3,628,500
130	Net weight dressed	674,266,547	80,102,930	2,943,800	52,835,225	10,705,815	2,700,404	19,360,214	1,962,250
	Sheep—								
131	Gross weight on the hoof	329,610,000	59,937,685	3,434,640	21,229,550	777,000	212,606	1,865,098	675,000
132	Net weight dressed	166,515,699	30,004,871	1,629,338	10,232,675	390,125	106,309	1,011,740	315,000
	Hogs—								
133	Gross weight on the hoof	354,849,603	11,600,408	450,000	43,000,000	11,992,000	1,944,950	3,089,920	66,000
134	Net weight dressed	278,215,782	6,960,270	350,000	34,200,000	9,422,900	1,512,203	2,349,599	48,200
	Calves—								
135	Gross weight on the hoof	126,976,952	8,276,836	85,000	948,263	1,990,550	514,061	355,209	696,500
136	Net weight dressed	76,818,660	4,454,931	50,000	590,020	1,249,880	356,540	219,805	425,200
	Power:								
137	Number of establishments reporting	118	8	4	5	6	4	4	.....
138	Total horsepower	10,377	295	130	360	122	75	144	.....
	Owned—								
	Engines—								
	Steam—								
139	Number	149	5	4	6	7	4	5	.....
140	Horsepower	8,757	157	127	340	120	75	136	.....
	Gas and gasoline—								
141	Number	4	.....	.....	.....	1	.....	.....	.....
142	Horsepower	18	.....	.....	.....	2	.....	.....	.....
	Water wheels—								
143	Number	5	.....	.....	.....	.....	.....	.....	.....
144	Horsepower	238	.....	.....	.....	.....	.....	.....	.....
	Water motors—								
145	Number	1	.....	1	.....	.....	.....	.....	.....
146	Horsepower	3	.....	3	.....	.....	.....	.....	.....
	Electric motors—								
147	Number	61	1	.....	1	.....	.....	.....	.....
148	Horsepower	1,042	10	.....	20	.....	.....	.....	.....
	Rented—								
	Electric motors—								
149	Number	16	7	.....	.....	.....	.....	1	.....
150	Horsepower	194	128	.....	.....	.....	.....	8	.....
151	Other kind, horsepower	125	.....	.....	.....	.....	.....	.....	.....
152	Furnished to other establishments, horsepower	145	.....	.....	.....	.....	.....	.....	.....

DETAILED SUMMARY, BY STATES AND TERRITORIES: 1905—Continued.

Maine.	Maryland.	Massachusetts.	Michigan.	Minnesota.	Missouri.	New Jersey.	New York.	North Carolina.	Ohio.	Pennsylvania.	All other states.	
$548,067	$369,147	$6,844,664	$1,204,845	$803,431	$614,374	$12,187,625	$50,410,342	$192,223	$2,348,160	$7,909,292	$7,161,755	85
984,420 $60,972	1,896,712 $130,931	40,149,551 $2,778,953	11,579,200 $813,168	7,853,520 $439,561	2,615,840 $214,569	19,972,910 $1,629,616	281,025,089 $23,958,278	1,724,036 $115,094	21,292,904 $1,425,188	59,735,847 $4,755,476	47,294,625 $3,200,112	86 87
60,000 $6,900	31,200 $2,028	200 $8					7,263,089 $323,536				1,000 $100	88 89
2,015,009 $167,461	1,316,012 $117,610	16,915,035 $1,502,370	2,268,400 $192,960	2,053,000 $132,426	237,570 $22,929	19,511,952 $1,734,960	62,053,895 $5,850,023	252,838 $16,950	1,604,614 $150,989	9,424,322 $888,984	5,054,696 $390,190	90 91
173,357 $14,671	533,372 $57,622	6,579,461 $583,600	861,870 $73,638	233,410 $15,481	548,696 $47,770	9,143,173 $903,440	25,745,050 $2,551,444	85,090 $6,385	2,465,072 $227,146	4,974,081 $541,028	17,965,794 $1,507,962	92 93
2,268,002 $170,387		3,967,190 $277,480	176,500 $10,500	720,910 $48,095	2,540,500 $198,941	108,018,643 $6,754,374	75,177,986 $5,058,750	127,225 $10,286	1,645,400 $121,254	3,340,285 $243,189	15,267,027 $1,146,412	94 95
		400 $32										96 97
									78,000 $7,020	3,000 $300		98 99
					145,410 $9,717		1,348,181 $107,854		122,880 $11,904	194,050 $22,354	3,000 $240	100 101
		1,000 $40			5,000 $100				184,800 $13,340		16,000 $1,000	102 103
					623,000 $58,671	1,755,478 $70,215	1,502,101 $94,968		363,200 $27,024	106,500 $9,250		104 105
545 $38						1,446,072 $90,825	54,000 $3,510		54,000 $2,511			106 107
		167,604 $99,825					3,578,246 $2,035,419				600 $300	108 109
		80,643 $44,774		1,000 $500			1,200,000 $750,000			100 $50	23,358 $8,296	110 111
				57,000 $2,016								112 113
				43 $588			4,320 $126,882	60 $1,200		548 $14,170	160 $2,700	114 115
85 $1,417	11 $155	2,406 $54,634	545 $2,360	483 $3,338	187 $1,622	1,316 $29,053	1,723 $34,110	75 $1,500	788 $9,803	365 $5,782	1,883 $30,846	116 117
												118 119
2,938 126,597 $13,423	12,814 289,012 $28,553	153,883 6,108,884 $573,118	25,225 1,551,050 $126,514	15,760 993,625 $74,830	11,912 374,240 $35,205	78,082 2,883,199 $205,516	547,831 33,984,115 $3,501,590	4,758 181,690 $11,507	77,604 3,173,020 $204,512	157,016 7,477,185 $758,148	198,852 8,120,915 $653,788	120 121 122
51,107 $20,570	37,074 $11,034	423,080 $144,222	42,710 $38,056	41,660 $33,076	7,185 $7,190	443,108 $547,850	2,029,954 $1,063,565	6,062 $2,231	49,668 $42,001	220,016 $219,489	117,494 $77,163	123 124
167,771 $58,272 $58,136 $60,820	60,000 $15,000 $6,814	1,153,714 $517,057 $207,964 $587					5,187,937 $1,907,334 $2,948,640 $3,530	 $25,060 $450	 $44,490	140 $25 $449,011 $1,136	400 $120 $128,092 $5,434	125 126 127 128
1,021,330 1,042,420	3,595,000 1,051,800	74,808,477 40,200,418	23,092,050 11,570,200	15,772,534 8,164,820	5,159,900 2,615,840	38,140,750 19,972,910	516,347,102 287,915,320	3,408,050 1,724,036	40,417,500 21,300,604	116,103,831 59,790,647	92,122,150 47,298,825	129 130
3,040,850 2,015,009	2,851,540 1,316,012	37,317,281 16,915,035	4,516,500 2,268,400	4,105,500 2,053,000	472,080 237,570	36,958,932 19,511,952	118,805,816 62,038,895	505,676 252,838	3,304,100 1,701,814	18,974,461 9,430,411	9,626,085 5,054,696	131 132
2,837,563 2,268,002		4,072,790 3,968,090	202,000 176,500	957,000 720,910	4,411,900 3,538,300	142,099,896 113,401,701	100,335,106 78,231,986	177,300 127,225	2,784,000 2,106,000	4,465,980 3,475,060	19,462,790 15,267,027	133 134
290,122 173,357	947,460 532,772	11,354,464 6,579,461	1,277,150 861,870	331,240 232,600	999,580 548,696	14,065,450 9,143,173	30,885,324 25,882,930	158,950 85,090	3,984,060 2,480,272	8,411,718 4,986,207	32,404,085 17,965,794	135 136
4 332		3 272	3 85	3 62	6 97	7 348	17 4,484	3 98	11 345	14 726	16 2,402	137 138
5 207		2 252	3 85	3 62	6 85	7 238	31 3,803	2 45	10 332	20 654	20 2,039	139 140
					1 4					2 12		141 142
2 125								2 53			1 60	143 144
												145 146
						2 85	43 664			6 60	8 203	147 148
		1 20			2 8		2 17		3 13			149 150
						25	146				160	151 152

TABLE 14.—COMBINED SLAUGHTERING AND MEAT PACKING—

		United States.	California.	Colorado.	Connecticut.	Idaho.
1	Number of establishments	929	59	11	4	3
2	Capital, total	$237,714,690	$4,835,578	$1,107,121	$668,159	$92,557
3	Land	$15,120,157	$781,881	$35,900	$118,000	$11,846
4	Buildings	$42,012,377	$1,003,697	$263,060	$376,899	$23,540
5	Machinery, tools, and implements	$29,992,447	$446,830	$116,100	$79,846	$10,500
6	Cash and sundries	$150,589,709	$2,603,170	$692,061	$93,414	$46,671
7	Proprietors and firm members	969	58	4	7	2
	Salaried officials, clerks, etc.:					
8	Total number	11,974	287	52	20	7
9	Total salaries	$13,343,902	$350,722	$54,913	$18,040	$9,040
	Officers of corporations—					
10	Number	418	23	3	.....	4
11	Salaries	$1,198,423	$67,020	$4,800	.....	$5,500
	General superintendents, managers, clerks, etc.—					
12	Total number	11,556	264	49	20	3
13	Total salaries	$12,145,479	$283,702	$50,113	$18,040	$3,540
	Men—					
14	Number	10,559	245	46	16	3
15	Salaries	$11,532,261	$270,534	$49,213	$16,000	$3,540
	Women—					
16	Number	997	19	3	4	.....
17	Salaries	$613,218	$13,168	$900	$2,040	.....
	Wage-earners, including pieceworkers, and total wages:					
18	Greatest number employed at any one time during the year	91,436	1,476	289	337	10
19	Least number employed at any one time during the year	51,363	1,095	234	285	10
20	Average number	74,134	1,253	247	311	10
21	Total wages	$40,326,972	$890,658	$175,419	$166,236	$8,160
	Men 16 years and over—					
22	Average number	68,692	1,230	247	311	10
23	Wages	$38,585,653	$882,820	$175,419	$166,236	$8,160
	Women 16 years and over—					
24	Average number	4,468	14	.....	.....	.....
25	Wages	$1,481,453	$4,700	.....	.....	.....
	Children under 16 years—					
26	Average number	974	9	.....	.....	.....
27	Wages	$259,866	$3,138	.....	.....	.....
	Average number of wage-earners, including pieceworkers, employed during each month:					
	Men 16 years and over—					
28	January	73,446	1,151	242	336	10
29	February	70,826	1,174	244	336	10
30	March	69,239	1,137	240	336	10
31	April	67,029	1,148	231	286	10
32	May	67,935	1,165	222	286	10
33	June	69,779	1,168	236	286	10
34	July	56,627	1,167	232	286	10
35	August	58,202	1,266	239	286	10
36	September	66,991	1,367	268	285	10
37	October	71,699	1,337	265	335	10
38	November	75,087	1,355	276	337	10
39	December	77,444	1,325	269	337	10
	Women 16 years and over—					
40	January	4,617	14	.....	.....	.....
41	February	4,482	14	.....	.....	.....
42	March	4,500	12	.....	.....	.....
43	April	4,398	12	.....	.....	.....
44	May	4,522	15	.....	.....	.....
45	June	4,604	14	.....	.....	.....
46	July	2,585	16	.....	.....	.....
47	August	2,897	12	.....	.....	.....
48	September	4,318	11	.....	.....	.....
49	October	5,408	11	.....	.....	.....
50	November	5,561	12	.....	.....	.....
51	December	5,724	25	.....	.....	.....
	Children under 16 years—					
52	January	943	9	.....	.....	.....
53	February	905	8	.....	.....	.....
54	March	884	9	.....	.....	.....
55	April	897	9	.....	.....	.....
56	May	929	8	.....	.....	.....
57	June	1,023	8	.....	.....	.....
58	July	890	8	.....	.....	.....
59	August	944	9	.....	.....	.....
60	September	1,137	10	.....	.....	.....
61	October	1,048	10	.....	.....	.....
62	November	1,029	10	.....	.....	.....
63	December	1,059	10	.....	.....	.....
64	Miscellaneous expenses, total	$30,631,359	$655,782	$134,052	$47,937	$9,067
65	Rent of works	$569,109	$33,123	$475	860	$75
66	Taxes	$1,017,699	$19,136	$7,445	$3,590	$719
67	Rent of offices, interest, insurance, and all other sundry expenses not hitherto included.	$28,943,208	$597,487	$126,132	$44,287	$8,273
68	Contract work	$101,343	$6,036	.....	.....	.....
69	Materials used, total cost	$805,856,969	$18,618,549	$2,781,789	$2,667,668	$120,431
	Animals slaughtered—					
	Beeves—					
70	Number	7,147,835	259,716	28,257	.....	2,388
71	Cost	$289,040,930	$9,735,012	$975,754	.....	$59,665
	Sheep—					
72	Number	10,875,339	990,514	63,822	24,294	4,394
73	Cost	$44,359,804	$3,284,003	$254,293	$86,647	$12,135
	Hogs—					
74	Number	30,977,639	314,085	108,741	172,567	4,038
75	Cost	$329,765,480	$2,891,457	$1,307,780	$2,485,400	$40,442
	Calves—					
76	Number	1,568,130	43,100	3,958	5,820	822
77	Cost	$12,665,557	$412,644	$30,680	$47,289	$6,123
78	All other animals	$61,905	.....	.....	.....	.....
79	Dressed meat purchased fresh, or partially cured (to be manufactured)	$53,114,957	$1,439,004	$144,200	$8,200	.....
80	Fuel	$4,639,315	$66,549	$24,961	$13,282	$1,096
81	Rent of power and heat	$117,098	$16,791	$1,100	.....	$480
82	Mill supplies	$571,586	$6,411	$1,121	$800	$40
83	All other materials	$69,004,209	$553,695	$37,900	$21,550	$450
84	Freight	$2,516,128	$212,983	$4,000	$7,500	.....

DETAILED SUMMARY, BY STATES AND TERRITORIES: 1905.

Illinois.	Indiana.	Iowa.	Kansas.	Kentucky.	Maryland.	Massachusetts.	Michigan.	
68	42	19	22	22	37	42	18	1
$80,477,268	$7,358,006	$7,297,359	$25,332,330	$1,464,299	$1,285,633	$12,755,034	$1,349,137	2
$3,941,272	$340,693	$156,941	$1,166,292	$43,498	$62,253	$1,039,561	$111,250	3
$12,493,532	$1,508,642	$1,831,608	$4,465,146	$148,726	$219,671	$2,511,847	$231,116	4
$9,458,938	$1,034,743	$889,468	$3,375,852	$222,385	$149,855	$1,385,610	$119,100	5
$54,583,526	$4,473,928	$4,419,342	$16,325,040	$1,049,690	$853,854	$7,818,016	$887,671	6
71	38	11	19	30	52	37	19	7
5[illegible]33	195	284	983	46	60	403	63	8
$6,559,729	$247,355	$298,856	$983,690	$44,379	$58,336	$392,354	$65,289	9
55	20	20	12	5	6	17	4	10
$209,618	$44,550	$51,750	$56,754	$9,917	$8,580	$58,639	$10,500	11
5,578	175	264	971	41	54	386	59	12
$6,350,111	$202,805	$247,106	$926,936	$34,462	$49,756	$333,715	$54,789	13
5,133	166	239	900	40	49	347	50	14
$6,054,527	$198,929	$234,529	$883,173	$34,150	$46,992	$311,499	$50,744	15
445	9	25	71	1	5	39	9	16
$295,584	$3,876	$12,577	$43,763	$312	$2,764	$22,216	$4,045	17
34,271	3,532	4,112	11,463	612	573	3,334	515	18
14,023	2,555	2,269	7,896	384	489	2,679	434	19
26,953	3,140	3,088	9,392	472	540	2,871	469	20
$14,560,777	$1,362,552	$1,323,468	$4,836,095	$243,098	$307,996	$1,501,085	$248,959	21
24,173	2,807	2,821	8,382	470	536	2,822	468	22
$13,640,653	$1,261,045	$1,267,391	$4,532,437	$242,732	$307,320	$1,490,164	$248,569	23
2,700	284	130	688	1	.....	21	1	24
$904,842	$91,201	$29,850	$202,917	$240	.....	$4,891	$390	25
80	49	137	322	1	4	28	.....	26
$15,282	$10,306	$26,227	$100,741	$126	$676	$6,030	.....	27
28,194	2,911	3,317	7,944	509	545	3,030	485	28
27,035	2,749	3,009	7,899	458	546	3,049	458	29
26,237	2,583	2,664	7,762	329	542	2,829	458	30
24,937	2,427	2,409	7,951	366	540	2,664	454	31
25,046	2,561	2,581	8,114	397	542	2,602	447	32
25,157	2,809	2,826	8,226	421	529	2,712	460	33
15,085	3,002	2,742	8,014	517	528	2,757	455	34
15,484	2,939	2,728	8,700	512	525	2,787	456	35
21,944	2,886	2,662	9,079	499	516	2,835	458	36
25,535	2,820	2,607	9,050	523	530	2,830	478	37
27,034	2,945	2,878	9,064	547	545	2,841	503	38
28,388	3,052	3,429	8,781	562	544	2,928	504	39
2,937	293	137	601	1	.....	26	1	40
2,884	288	126	610	1	.....	24	1	41
2,891	253	116	616	1	.....	24	1	42
2,715	249	108	668	1	.....	21	1	43
2,823	252	123	662	1	.....	21	1	44
2,881	288	138	631	1	.....	19	1	45
1,066	318	136	606	1	.....	19	1	46
1,278	316	118	670	1	.....	17	1	47
2,438	277	124	803	1	.....	17	1	48
3,408	272	136	821	1	.....	19	1	49
3,499	284	145	785	1	.....	21	1	50
3,580	318	153	783	1	.....	24	1	51
79	50	158	284	.....	4	26	.....	52
78	50	152	284	.....	4	25	.....	53
84	45	120	301	.....	4	26	.....	54
80	40	112	309	.....	4	29	.....	55
80	45	124	308	3	4	28	.....	56
84	50	146	316	3	4	30	.....	57
69	52	126	302	3	4	32	.....	58
70	52	122	338	3	4	32	.....	59
89	48	148	370	.....	4	30	.....	60
80	50	136	361	.....	4	27	.....	61
81	50	132	361	.....	4	26	.....	62
86	56	168	330	.....	4	25	.....	63
$12,962,530	$591,098	$709,738	$3,724,073	$126,858	$152,423	$830,691	$150,440	64
$90,002	$8,060	$10,300	$690	$1,480	$14,323	$26,966	$2,606	65
$319,492	$43,366	$13,613	$144,797	$6,539	$7,238	$94,371	$12,808	66
$12,550,813	$539,672	$685,825	$3,576,361	$118,839	$128,387	$708,020	$135,026	67
$2,223	.....	.....	$2,225	.....	$2,475	$1,334	.....	68
$279,854,559	$26,193,351	$27,188,659	$85,145,905	$4,595,466	$5,787,699	$33,242,733	$5,520,647	69
2,643,028	178,678	91,564	1,019,553	17,555	9,425	68,103	26,405	70
$110,026,678	$7,334,344	$3,127,120	$38,106,588	$646,432	$306,000	$3,141,989	$904,800	71
3,634,216	33,126	13,071	771,818	12,336	37,074	418,580	44,710	72
$15,155,386	$136,035	$50,249	$2,826,354	$32,945	$125,353	$1,826,403	$183,175	73
7,854,370	1,498,767	2,070,473	3,089,611	377,280	631,746	1,549,365	288,603	74
$88,459,545	$15,751,263	$22,489,860	$33,696,168	$3,764,508	$4,250,344	$21,468,261	$3,424,627	75
295,928	37,566	8,546	92,751	6,986	9,234	88,651	9,560	76
$2,097,500	$321,090	$55,512	$732,227	$43,097	$61,324	$643,262	$63,910	77
$11,872	$6,116	$2,000	.....	$30	.....	.....	$665	78
$18,977,058	$1,510,718	$100,035	$5,013,185	$17,190	$726,818	$5,106,112	$843,036	79
$1,399,919	$158,933	$185,481	$666,593	$29,062	$43,718	$153,457	$28,148	80
$54,315	$255	$4,249	$1,090	.....	$800	$4,282	.....	81
$189,378	$10,453	$10,521	$66,099	$2,049	$5,411	$18,715	$2,974	82
$43,255,205	$916,755	$1,148,448	$4,028,598	$59,834	$171,386	$771,729	$56,662	83
$227,703	$47,389	$15,184	$9,003	$319	$96,545	$108,523	$12,690	84

TABLE 14.—COMBINED SLAUGHTERING AND MEAT PACKING—DETAILED

		United States.	California.	Colorado.	Connecticut.	Idaho.
85	Products, total value	$913,914,624	$21,795,694	$3,323,503	$2,974,374	$158,975
	Beef—					
	Sold fresh (exclusive of purchased dressed fresh beef)—					
86	Pounds	3,748,055,377	140,301,999	15,589,690	.....	1,215,200
87	Value	$247,096,724	$9,135,362	$1,091,076	.....	$66,821
	Canned—					
88	Pounds	98,603,931	310,499	.....	.....	.....
89	Value	$7,697,815	$18,370	.....	.....	.....
	Salted and cured—					
90	Pounds	136,896,697	2,386,927	5,000	.....	.....
91	Value	$8,107,952	$171,352	$500	.....	.....
	Mutton, sold fresh (exclusive of purchased dressed fresh mutton)—					
92	Pounds	460,754,244	38,621,994	2,790,676	1,361,604	190,825
93	Value	$36,880,455	$3,089,546	$256,377	$98,794	$14,414
	Veal, sold fresh (exclusive of purchased dressed fresh veal)—					
94	Pounds	154,212,652	6,470,074	498,089	548,464	100,900
95	Value	$12,856,369	$451,602	$41,583	$52,864	$7,510
	Pork—					
	Sold fresh (exclusive of purchased dressed fresh pork)—					
96	Pounds	1,224,932,910	22,796,629	3,337,911	7,072,700	362,800
97	Value	$91,749,323	$1,821,101	$313,799	$558,085	$32,025
	Salted—					
98	Pounds	1,558,886,256	4,700,766	4,817,974	10,509,700	7,000
99	Value	$116,626,710	$461,914	$333,757	$858,128	$500
	Hams, smoked bacon, sides, and shoulders—					
100	Pounds	1,364,015,706	18,482,572	6,269,875	10,308,000	152,100
101	Value	$132,210,611	$2,270,661	$648,372	$813,440	$18,380
	Sausage, fresh and cured—					
102	Pounds	324,416,039	4,337,752	1,500,525	1,694,000	32,800
103	Value	$25,056,331	$449,663	$117,444	$262,980	$2,772
	All other meat, sold fresh (exclusive of purchased dressed fresh meat)—					
104	Pounds	124,307,081	350,000	122,000	.....	.....
105	Value	$9,579,718	$17,500	$8,900	.....	.....
106	Canned goods, value	$8,416,850	$51,203	.....	.....	.....
	Refined lard—					
107	Pounds	1,048,302,030	7,493,435	2,596,783	3,885,820	65,000
108	Value	$74,116,091	$569,442	$179,557	$165,900	$6,000
	Neutral lard—					
109	Pounds	120,724,361	819,227	16,400	.....	.....
110	Value	$8,423,073	$66,058	$1,640	.....	.....
	Oleomargarine oil—					
111	Gallons	19,454,799	.....	.....	.....	.....
112	Value	$10,201,911	.....	.....	.....	.....
	Other oils—					
113	Gallons	4,893,133	9,259	1,200	.....	.....
114	Value	$2,595,951	$5,707	$600	.....	.....
	Soap—					
115	Pounds	49,838,856	.....	.....	.....	.....
116	Value	$1,815,154	.....	.....	.....	.....
	Fertilizers—					
117	Tons	211,137	1,883	607	200	.....
118	Value	$4,397,626	$51,691	$7,603	$1,700	.....
	Fertilizer materials (bones, offal, tankage, etc.)—					
119	Tons	157,037	1,442	40	537	.....
120	Value	$2,806,435	$15,978	$400	$12,865	.....
	Glue—					
121	Pounds	17,526,456	357	.....	.....	.....
122	Value	$1,087,719	$25	.....	.....	.....
	Hides—					
123	Number	8,039,204	272,042	30,807	1,560	2,388
124	Pounds	456,443,857	14,875,563	1,784,820	12,480	122,350
125	Value	$44,206,107	$1,465,930	$153,521	$1,500	$8,069
	Sheep pelts—					
126	Number	11,344,544	990,514	63,822	24,204	4,394
127	Value	$8,664,643	$742,499	$52,871	$14,042	$2,424
	Wool—					
128	Pounds	16,377,333	180,000	15,370	.....	.....
129	Value	$5,229,521	$51,100	$2,000	.....	.....
130	Fine chemicals (pancreatin, pepsin, etc.)	$208,002	.....	.....	.....	.....
131	All other products	$53,382,908	$883,976	$99,356	$133,476	.....
132	Amount received for custom or contract work	$198,825	$5,605	$13,847	.....	.....
	Weight of animals slaughtered (pounds):					
	Beeves—					
133	Gross weight on the hoof	7,485,407,944	209,451,905	28,741,827	.....	2,418,000
134	Net weight dressed	4,066,264,877	140,280,064	15,772,470	.....	1,231,500
	Sheep—					
135	Gross weight on the hoof	930,168,367	00,931,081	5,809,724	2,307,930	374,450
136	Net weight dressed	464,872,621	45,078,913	2,700,676	1,361,604	100,825
	Hogs—					
137	Gross weight on the hoof	6,586,349,782	56,111,705	24,526,280	43,754,585	807,600
138	Net weight dressed	5,048,832,850	41,142,475	18,406,072	35,203,608	602,100
	Calves—					
139	Gross weight on the hoof	261,083,572	11,406,574	868,750	814,800	146,310
140	Net weight dressed	161,049,581	6,470,074	504,722	548,464	101,400
	Power:					
141	Number of establishments reporting	616	30	11	3	2
142	Total horsepower	152,968	2,074	888	310	22
	Owned—					
	Engines—					
	Steam—					
143	Number	1,173	25	16	4	2
144	Horsepower	110,973	1,293	885	310	12
	Gas and gasoline—					
145	Number	23	.....	.....	.....	.....
146	Horsepower	521	.....	.....	.....	.....
	Water wheels—					
147	Number	6	.....	.....	.....	.....
148	Horsepower	298	.....	.....	.....	.....
	Water motors—					
149	Number	4	.....	1	.....	.....
150	Horsepower	11	.....	3	.....	.....
	Electric motors—					
151	Number	2,083	5	.....	.....	.....
152	Horsepower	37,012	31	.....	.....	.....
153	Other power, horsepower	1,158	300	.....	.....	.....
	Rented—					
	Electric motors—					
154	Number	208	20	.....	.....	1
155	Horsepower	2,870	450	.....	.....	10
156	Other kind, horsepower	125	.....	.....	.....	.....
157	Furnished to other establishments, horsepower	2,137	.....	.....	.....	.....

SUMMARY, BY STATES AND TERRITORIES: 1905—Continued.

Illinois.	Indiana.	Iowa.	Kansas.	Kentucky.	Maryland.	Massachusetts.	Michigan.	
$317,206,082	$29,352,593	$30,074,070	$96,375,639	$5,693,731	$6,702,061	$37,098,502	$6,193,280	85
1,376,889,532	93,224,422	41,675,822	509,978,750	7,297,142	4,123,530	40,510,084	12,149,200	86
$91,996,384	$6,743,908	$2,844,547	$30,531,565	$475,926	$278,381	$2,803,289	$850,668	87
73,266,797	1,530,000	2,537,027	7,566,980	.....	.....	.....	.....	88
$6,108,692	$159,180	$87,593	$411,268	.....	.....	.....	.....	89
78,334,416	2,572,500	1,260,572	11,144,304	37,425	160,800	2,204,690	29,429	90
$4,931,741	$359,280	$87,654	$473,961	$3,892	$9,098	$116,071	$2,892	91
160,511,123	1,477,056	532,745	30,246,693	455,965	1,316,012	16,915,035	2,350,900	92
$12,453,289	$130,866	$47,005	$2,167,536	$34,584	$117,410	$1,502,370	$199,644	93
30,348,138	3,178,656	764,679	9,737,824	500,482	533,372	6,601,707	992,370	94
$2,135,486	$202,192	$62,868	$647,788	$41,431	$57,022	$585,081	$83,703	95
260,649,428	27,391,374	41,260,001	81,016,571	4,981,087	17,690,875	82,117,964	9,909,375	96
$18,754,198	$1,993,947	$2,973,294	$5,782,159	$419,959	$1,538,427	$7,314,614	$839,370	97
584,019,438	16,192,188	120,323,636	171,957,267	19,290,675	1,847,580	107,572,501	15,252,000	98
$42,973,175	$1,307,795	$7,145,235	$13,628,093	$1,596,606	$160,568	$8,791,655	$1,354,205	99
301,720,854	149,394,873	95,101,620	131,097,527	19,799,275	28,828,762	59,518,493	15,025,800	100
$20,780,840	$11,924,835	$8,022,511	$14,135,135	$1,902,770	$2,872,818	$5,622,780	$1,640,322	101
99,194,762	15,393,879	9,010,400	24,169,700	4,002,001	8,362,360	17,501,820	3,022,472	102
$7,753,799	$1,172,308	$665,247	$1,814,777	$208,181	$645,566	$1,435,539	$210,210	103
56,323,048	811,200	13,599,742	5,343,167	600	16,600	1,000	7,630	104
$5,346,938	$62,484	$894,121	$200,693	$42	$1,328	$40	$763	105
$4,819,452	$244,750	$418,575	$1,742,092	.....	$28,000	.....	.....	106
408,707,245	35,671,330	58,422,277	125,803,240	6,211,015	8,562,932	81,424,583	8,027,572	107
$28,181,535	$2,493,063	$4,156,638	$9,109,438	$478,286	$649,716	$6,237,845	$613,730	108
47,780,170	8,138,420	6,900,196	6,753,857	4,119,256	1,826,640	3,193,230	149,000	109
$3,281,564	$615,222	$535,303	$452,035	$289,713	$135,469	$156,601	$10,640	110
9,143,055	209,101	109,133	1,611,428	5,750	.....	167,604	.....	111
$4,515,283	$145,915	$60,023	$869,945	$3,019	.....	$99,825	.....	112
986,081	188,883	236,629	24,051	.....	.....	149,012	.....	113
$406,239	$101,722	$49,080	$13,731	.....	.....	$73,613	.....	114
34,537,605	2,198,000	.....	228,622	.....	.....	.....	.....	115
$1,380,204	$62,500	.....	$13,718	.....	.....	.....	.....	116
130,490	9,513	5,680	16,593	195	104	.....	384	117
$2,397,010	$172,814	$120,340	$419,014	$3,252	$1,560	.....	$6,012	118
61,059	2,361	2,562	6,128	1,545	3,691	3,684	635	119
$1,344,631	$20,208	$48,324	$118,260	$22,272	$98,606	$88,632	$2,860	120
12,403,440	.....	537,680	1,073,564	.....	.....	.....	.....	121
$785,058	.....	$25,540	$100,417	.....	.....	.....	.....	122
2,706,504	198,413	94,080	1,063,512	23,890	18,050	154,054	26,455	123
105,007,637	11,428,871	6,502,413	58,858,924	1,137,981	622,976	6,149,456	1,619,500	124
$16,604,648	$1,060,270	$631,001	$5,828,692	$91,444	$54,408	$577,076	$131,686	125
3,632,161	31,402	13,070	751,505	12,308	37,074	423,080	44,510	126
$2,805,350	$27,844	$10,820	$729,406	$9,696	$11,034	$144,222	$39,050	127
8,053,410	.....	30,572	.....	.....	60,000	1,153,714	800	128
$2,385,020	.....	$9,172	.....	.....	$15,000	$517,057	$160	129
$170,069	.....	.....	.....	.....	.....	$10,842	$900	130
$25,634,241	$248,840	$278,601	$7,184,246	$21,733	$27,450	$987,526	$187,550	131
$20,109	$12,701	$500	$1,080	$925	.....	$24,524	.....	132
2,808,326,050	187,402,443	92,310,385	1,035,343,904	17,990,057	9,362,554	75,303,143	24,832,050	133
1,553,015,227	98,198,579	46,734,475	590,270,060	9,603,241	5,024,618	40,560,951	12,149,200	134
311,859,161	2,908,331	1,181,753	62,706,867	950,027	2,851,540	37,317,281	4,081,500	135
156,616,837	1,478,200	533,543	31,623,633	455,965	1,316,012	16,915,035	2,350,900	136
1,787,195,118	300,532,050	468,350,343	693,651,164	74,004,153	83,815,028	304,057,071	56,503,856	137
1,332,912,090	244,783,417	357,770,123	525,654,102	57,035,309	65,502,634	310,204,376	42,978,729	138
46,361,659	5,027,091	1,247,974	20,800,117	824,215	947,460	11,391,488	1,775,900	139
30,758,577	3,188,052	766,853	12,452,770	501,338	532,772	6,691,709	1,217,370	140
62	32	17	21	13	26	14	11	141
58,535	4,060	4,805	19,051	977	1,126	3,188	1,054	142
179	69	42	76	21	30	29	16	143
36,884	4,251	4,128	13,063	887	1,110	2,884	870	144
3	3	1	.....	.....	.....	1	.....	145
232	37	16	.....	.....	.....	3	.....	146
.....	.....	.....	.....	.....	.....	.....	.....	147
.....	.....	.....	.....	.....	.....	.....	.....	148
.....	.....	.....	.....	.....	.....	.....	.....	149
.....	.....	.....	.....	.....	.....	.....	.....	150
1,050	64	57	263	3	1	25	10	151
19,596	671	656	5,318	90	16	168	175	152
855	.....	.....	.....	.....	.....	3	.....	153
65	3	7	5	.....	.....	4	.....	154
968	10	95	70	.....	.....	130	.....	155
.....	.....	.....	.....	.....	.....	.....	.....	156
1,700	8	.....	.....	.....	.....	37	.....	157

TABLE 14.—COMBINED SLAUGHTERING AND MEAT PACKING—DETAILED

		Minnesota.	Missouri.	New Jersey.	New York.	North Carolina.
1	Number of establishments	24	33	39	101	3
2	Capital, total	$3,421,533	$16,425,899	$2,335,477	$17,232,855	$58,389
3	Land	$204,170	$523,564	$326,400	$1,678,237	$17,000
4	Buildings	$577,965	$2,591,090	$596,108	$2,675,328	$7,250
5	Machinery, tools, and implements	$549,375	$1,871,236	$331,869	$2,086,534	$11,139
6	Cash and sundries	$2,090,023	$11,440,009	$1,081,100	$10,792,756	$23,000
7	Proprietors and firm members	28	24	55	123	7
	Salaried officials, clerks, etc.:					
8	Total number	280	597	96	663	3
9	Total salaries	$252,951	$623,129	$108,701	$821,042	$3,000
	Officers of corporations—					
10	Number	5	28	12	36	.....
11	Salaries	$7,800	$61,045	$31,944	$173,066	.....
	General superintendents, managers, clerks, etc.—					
12	Total number	275	569	84	627	3
13	Total salaries	$245,151	$562,084	$76,757	$647,976	$3,000
	Men—					
14	Number	251	529	74	511	3
15	Salaries	$231,959	$536,104	$72,521	$588,556	$3,000
	Women—					
16	Number	24	40	10	116	.....
17	Salaries	$13,192	$25,980	$4,236	$59,420	.....
	Wage-earners, including pieceworkers, and total wages:					
18	Greatest number employed at any one time during the year	1,036	5,695	823	3,698	26
19	Least number employed at any one time during the year	637	2,889	602	2,729	17
20	Average number	1,362	4,218	678	3,500	20
21	Total wages	$780,633	$2,369,193	$446,054	$2,423,485	$8,160
	Men 16 years and over—					
22	Average number	1,330	4,128	676	3,337	20
23	Wages	$766,392	$2,351,560	$445,326	$2,370,800	$8,160
	Women 16 years and over—					
24	Average number	24	41	2	163	.....
25	Wages	$8,518	$8,241	$728	$52,685	.....
	Children under 16 years—					
26	Average number	8	49	.....	.....	.....
27	Wages	$2,723	$9,392	.....	.....	.....
	Average number of wage-earners, including pieceworkers, employed during each month:					
	Men 16 years and over—					
28	January	1,485	3,658	688	3,421	23
29	February	1,384	3,620	670	3,421	23
30	March	1,260	4,003	663	3,369	23
31	April	1,213	3,734	667	3,267	23
32	May	1,253	3,873	660	3,278	23
33	June	1,280	4,532	659	3,329	22
34	July	937	3,653	642	3,212	17
35	August	1,179	3,920	640	3,119	17
36	September	1,203	4,526	653	3,340	17
37	October	1,380	4,457	666	3,401	17
38	November	1,661	4,650	773	3,434	17
39	December	1,725	4,901	722	3,453	18
	Women 16 years and over—					
40	January	29	21	2	161	.....
41	February	28	25	2	160	.....
42	March	27	42	2	158	.....
43	April	25	51	2	163	.....
44	May	25	48	2	158	.....
45	June	20	63	2	164	.....
46	July	8	24	2	166	.....
47	August	16	16	2	165	.....
48	September	16	35	2	168	.....
49	October	24	31	2	168	.....
50	November	28	65	2	162	.....
51	December	33	71	2	163	.....
	Children under 16 years—					
52	January	9	54	.....	.....	.....
53	February	10	53	.....	.....	.....
54	March	7	52	.....	.....	.....
55	April	7	53	.....	.....	.....
56	May	8	52	.....	.....	.....
57	June	12	61	.....	.....	.....
58	July	6	23	.....	.....	.....
59	August	10	41	.....	.....	.....
60	September	9	58	.....	.....	.....
61	October	7	46	.....	.....	.....
62	November	6	44	.....	.....	.....
63	December	5	51	.....	.....	.....
64	Miscellaneous expenses, total	$407,848	$1,869,075	$309,541	$2,301,389	$3,936
65	Rent of works	$5,058	$19,386	$34,905	$129,613	.....
66	Taxes	$14,049	$18,802	$19,524	$87,639	$260
67	Rent of offices, interest, insurance, and all other sundry expenses not hitherto included.	$387,116	$1,830,827	$225,433	$2,044,016	$3,676
68	Contract work	$1,625	.....	$29,679	$39,221	.....
69	Materials used, total cost	$15,057,875	$54,042,087	$15,079,581	$65,289,369	$164,805
	Animals slaughtered—					
	Bovines—					
70	Number	108,829	573,887	38,591	478,716	4,057
71	Cost	$3,094,975	$22,047,750	$1,839,384	$20,709,375	$117,208
	Sheep—					
72	Number	180,695	504,784	502,642	1,537,637	6,062
73	Cost	$681,304	$2,224,718	$2,376,354	$7,436,399	$15,667
	Hogs—					
74	Number	1,047,094	2,126,032	1,282,410	1,623,758	1,221
75	Cost	$9,793,606	$23,253,132	$8,537,754	$14,124,763	$11,450
	Calves—					
76	Number	21,823	52,044	103,389	203,751	1,741
77	Cost	$119,984	$389,123	$989,487	$2,611,331	$7,665
78	All other animals	$4,122	$3,500	.....	.....	$5,000
79	Dressed meat, purchased fresh or partially cured (to be manufactured)	$224,665	$1,355,366	$1,706,436	$6,786,824	$500
80	Fuel	$76,063	$313,748	$31,814	$255,200	$900
81	Rent of power and heat	$2,222	$540	$3,575	$8,746	.....
82	Mill supplies	$6,389	$38,736	$3,300	$23,029	$55
83	All other materials	$1,041,252	$4,126,650	$72,908	$3,301,522	$6,450
84	Freight	$12,393	$288,818	$118,569	$941,349	.....

[1] Includes establishments distributed as follows: Alabama, 2; Delaware, 6; District of Columbia, 4; Florida, 1; Georgia, 4; Louisiana, 2; Maine, 11; Montana, 2; Nebraska, 8; Nevada, 1; Tennessee, 9; Texas, 10; Virginia, 15; Washington, 14; West Virginia, 7; Wisconsin, 16; Wyoming, 1.

SUMMARY, BY STATES AND TERRITORIES: 1905—Continued.

Ohio.	Oklahoma.	Oregon.	Pennsylvania.	Rhode Island.	Utah.	Vermont.	All other states.[1]	
88	3	10	156	6	3	3	113	1
$6,357,135	$121,750	$974,727	$8,061,250	$523,142	$147,604	$29,400	$38,002,088	2
$794,672	$10,000	$191,817	$641,478	$25,800	$10,000	$7,500	$2,880,132	3
$1,279,143	$63,300	$168,198	$1,721,817	$60,040	$8,200	$9,500	$7,176,054	4
$909,690	$28,150	$176,429	$1,021,341	$44,506	$9,800	$2,300	$5,660,752	5
$3,373,621	$20,300	$438,283	$4,676,614	$391,806	$119,604	$10,100	$22,286,050	6
98	2	7	177	7	1	3	89	7
316	1	60	337	11	9	1	1,567	8
$293,534	$3,500	$72,914	$361,896	$11,280	$10,260	00	$1,697,192	9
42	.....	36	29	2	3	1	75	10
$83,070	.....	$28,425	$68,640	$2,600	$5,040	$1,800	$207,365	11
274	1	44	308	9	6	.....	1,402	12
$210,464	$3,500	$44,480	$293,256	$8,680	$5,220	.....	$1,480,827	13
245	1	40	278	9	2	.....	1,382	14
$196,120	$3,500	$42,313	$270,830	$8,680	$3,300	.....	$1,412,548	15
29	.....	4	30	.....	4	.....	110	16
$14,344	.....	$2,176	$13,426	.....	$1,920	.....	$77,279	17
2,473	61	322	2,587	154	32	15	13,690	18
2,078	25	253	2,238	148	29	8	7,357	19
2,237	37	246	2,413	151	31	11	10,484	20
$1,309,021	$21,600	$155,498	$1,469,716	$82,058	$20,950	$5,115	$5,610,926	21
2,199	33	244	2,380	151	31	10	9,876	22
$1,298,052	$20,080	$154,678	$1,459,255	$82,058	$20,950	$4,751	$5,377,045	23
35	3	1	26	.....	.....	1	333	24
$10,699	$780	$520	$8,908	.....	.....	$364	$151,579	25
3	1	1	7	.....	.....	.....	275	26
$870	$200	$300	$1,553	.....	.....	.....	$82,302	27
2,262	26	238	2,375	152	31	9	10,404	28
2,210	29	223	2,343	152	31	9	9,735	29
2,146	24	230	2,313	150	31	8	9,802	30
2,114	31	228	2,316	148	31	8	9,826	31
2,120	34	229	2,329	150	31	9	9,964	32
2,122	38	227	2,304	152	31	9	10,234	33
2,160	41	229	2,308	152	31	9	8,441	34
2,168	39	228	2,329	150	31	10	8,440	35
2,480	41	244	2,301	149	31	11	9,396	36
2,274	35	278	2,485	151	31	12	10,162	37
2,200	30	282	2,518	153	31	13	10,900	38
2,342	28	202	2,540	153	31	13	11,088	39
36	2	1	26	.....	.....	1	328	40
36	2	1	27	.....	.....	1	252	41
36	2	1	28	.....	.....	1	289	42
33	2	1	26	.....	.....	1	319	43
33	2	1	27	.....	.....	1	327	44
33	2	1	26	.....	.....	1	310	45
32	2	1	24	.....	.....	1	162	46
33	2	1	24	.....	.....	1	224	47
38	2	1	25	.....	.....	1	358	48
36	4	1	26	.....	.....	1	446	49
37	7	1	26	.....	.....	1	484	50
37	7	1	27	.....	.....	1	497	51
4	.....	1	7	.....	.....	.....	258	52
2	.....	1	7	.....	.....	.....	231	53
3	.....	1	7	.....	.....	.....	225	54
3	.....	1	6	.....	.....	.....	244	55
2	.....	1	6	.....	.....	.....	260	56
3	.....	1	6	.....	.....	.....	299	57
3	.....	1	7	.....	.....	.....	254	58
1	.....	1	7	.....	.....	.....	254	59
1	2	1	7	.....	.....	.....	300	60
3	4	1	8	.....	.....	.....	311	61
4	3	1	8	.....	.....	.....	299	62
7	3	1	8	.....	.....	.....	305	63
$648,940	$10,009	$126,178	$920,321	$34,022	$16,505	$1,815	$3,886,101	64
$17,577	$30	$5,400	$110,886	$1,000	$3,245	.....	$52,943	65
$33,480	$454	$6,181	$20,050	$1,200	$342	$210	$133,325	66
$597,743	$10,410	$108,307	$772,170	$30,913	$13,008	$1,605	$3,697,863	67
$140	.....	$6,200	$8,215	.....	.....	.....	$1,970	68
$25,022,324	$236,054	$2,380,902	$27,784,202	$2,290,310	$513,543	$57,061	$105,610,810	69
189,613	3,274	25,402	197,581	.....	12,660	720	1,169,773	70
$6,490,507	$76,170	$902,812	$10,008,306	.....	$312,164	$23,000	$30,904,801	71
148,418	305	82,870	363,494	.....	26,371	825	1,413,221	72
$502,029	$802	$233,373	$1,570,071	.....	$88,092	$3,300	$5,254,036	73
1,447,778	14,505	60,931	1,085,634	89,548	3,740	2,180	4,232,262	74
$14,954,587	$144,226	$711,755	$10,159,069	$1,438,173	$33,024	$25,060	$46,551,386	75
86,906	735	2,831	112,867	.....	3,330	500	285,231	76
$665,385	$3,016	$17,565	$1,025,377	.....	$27,130	$4,320	$2,290,516	77
$25,000	.....	.....	.....	.....	$650	.....	$2,950	78
$1,497,516	$8,250	$359,504	$3,303,703	$806,189	$42,690	.....	$3,080,758	79
$119,998	$2,050	$21,402	$145,137	$4,801	$4,320	$500	$890,683	80
$1,576	.....	$240	$1,813	$2,230	$4,160	.....	$8,628	81
$24,140	$250	$2,636	$23,314	$641	$803	$60	$133,301	82
$715,697	$1,500	$54,013	$1,237,204	$37,950	.....	$471	$7,385,400	83
$25,880	.....	$85,702	$193,058	$320	.....	$50	$108,141	84

TABLE 14.—COMBINED SLAUGHTERING AND MEAT PACKING—DETAILED

		Minnesota.	Missouri.	New Jersey.	New York.	North Carolina.
85	Products, total value	$17,526,707	$60,031,133	$17,238,076	$73,218,198	$192,223
	Beef—					
	Sold fresh (exclusive of purchased dressed fresh beef)—					
86	Pounds	55,358,469	315,665,100	21,653,910	310,605,538	1,724,036
87	Value	$2,850,777	$19,171,944	$1,837,742	$26,119,579	$115,694
	Canned—					
88	Pounds		1,985,936		2,460,000	
89	Value		$54,282		$447,903	
	Salted and cured—					
90	Pounds	826,980	904,663	293,925	15,145,733	
91	Value	$42,817	$55,576	$32,973	$759,210	
	Mutton, sold fresh (exclusive of purchased dressed fresh mutton)—					
92	Pounds	8,283,313	23,555,759	21,468,265	63,435,207	252,838
93	Value	$526,449	$1,834,529	$1,938,163	$5,991,233	$16,950
	Veal, sold fresh (exclusive of purchased dressed fresh veal)—					
94	Pounds	2,120,934	5,421,809	10,092,263	26,400,486	85,090
95	Value	$132,450	$386,860	$1,059,149	$2,605,948	$6,385
	Pork—					
	Sold fresh (exclusive of purchased dressed fresh pork)—					
96	Pounds	43,542,306	118,707,174	121,630,717	123,177,559	127,225
97	Value	$3,204,733	$8,444,749	$8,166,454	$9,130,670	$10,286
	Salted—					
98	Pounds	52,555,395	131,795,452	6,440,860	28,146,502	
99	Value	$4,240,053	$9,624,998	$545,936	$2,633,425	
	Hams, smoked bacon, sides, and shoulders—					
100	Pounds	19,186,367	63,962,310	12,884,743	78,349,412	
101	Value	$1,949,197	$5,887,371	$1,271,008	$8,079,191	
	Sausage, fresh and cured—					
102	Pounds	8,151,961	19,272,945	3,586,223	12,481,377	
103	Value	$696,695	$1,304,473	$371,815	$1,028,106	
	All other meat sold fresh (exclusive of purchased dressed fresh meat)—					
104	Pounds	794,420	2,630,218	1,365,846	2,828,915	
105	Value	$72,200	$120,690	$97,088	$237,168	
106	Canned goods, value		$9,836		$280,270	
	Refined lard—					
107	Pounds	26,325,556	28,878,170	2,927,178	27,840,103	
108	Value	$1,925,587	$2,018,428	$155,735	$1,927,559	
	Neutral lard—					
109	Pounds	110,000	4,337,120	2,496,471	7,258,608	
110	Value	$8,000	$295,158	$174,857	$486,196	
	Oleomargarine oil—					
111	Gallons	283,012	1,820,250		3,578,246	
112	Value	$142,517	$1,021,529		$2,035,419	
	Other oils—					
113	Gallons	1,150	235,269	5,000	1,304,750	
114	Value	$575	$96,055	$700	$812,413	
	Soap—					
115	Pounds	147,200				
116	Value	$4,256				
	Fertilizers—					
117	Tons	7,010	8,253	100	7,332	60
118	Value	$150,079	$207,171	$1,400	$164,964	$1,200
	Fertilizer materials (bones, offal, tankage, etc.)—					
119	Tons	533	33,996	5,249	3,408	75
120	Value	$3,888	$409,999	$51,428	$68,598	$1,500
	Glue—					
121	Pounds					
122	Value					
	Hides—					
123	Number	125,784	612,670	85,064	607,034	4,758
124	Pounds	6,587,904	37,971,556	3,230,549	36,892,215	181,690
125	Value	$654,461	$3,340,715	$301,230	$3,748,693	$11,567
	Sheep pelts—					
126	Number	188,791	580,261	502,042	2,069,553	6,062
127	Value	$187,802	$547,801	$507,247	$1,101,878	$2,231
	Wool—					
128	Pounds			154,748	5,187,937	
129	Value			$42,811	$1,997,334	
130	Fine chemicals (pancreatin, pepsin, etc.)					
131	All other products	$761,582	$5,187,434	$610,099	$3,557,311	$26,960
132	Amount received for custom or contract work	$1,719	$2,025	$12,250	$5,130	$450
	Weight of animals slaughtered (pounds):					
	Bovines—					
133	Gross weight on the hoof	111,047,546	503,049,472	43,313,950	573,815,462	3,408,050
134	Net weight dressed	56,163,359	324,827,195	22,826,582	317,495,778	1,724,036
	Sheep—					
135	Gross weight on the hoof	17,364,584	47,551,042	40,633,220	121,468,439	505,676
136	Net weight dressed	8,429,203	23,731,886	21,468,265	63,450,207	252,838
	Hogs—					
137	Gross weight on the hoof	207,061,058	473,519,060	177,574,113	265,594,550	177,300
138	Net weight dressed	162,830,029	373,850,330	140,727,525	209,327,504	127,225
	Calves—					
139	Gross weight on the hoof	3,332,305	9,303,502	15,619,070	40,814,200	158,950
140	Net weight dressed	2,183,103	5,839,016	10,180,530	26,538,366	85,090
	Power:					
141	Number of establishments reporting	15	27	23	50	3
142	Total horsepower	1,643	9,631	881	7,600	98
	Owned—					
	Engines—					
	Steam—					
143	Number	23	71	23	93	2
144	Horsepower	1,498	7,547	677	6,304	45
	Gas and gasoline—					
145	Number		3	1		
146	Horsepower		17	5		
	Water wheels—					
147	Number		1			2
148	Horsepower		60			53
	Water motors—					
149	Number					
150	Horsepower					
	Electric motors—					
151	Number	3	121	5	56	
152	Horsepower	10	1,969	127	800	
153	Other power, horsepower					
	Rented—					
	Electric motors—					
154	Number	11	2	3	36	
155	Horsepower	135	8	47	436	
156	Other kind, horsepower			25		
157	Furnished to other establishments, horsepower	7			145	

SUMMARY, BY STATES AND TERRITORIES: 1905—Continued.

Ohio.	Oklahoma.	Oregon.	Pennsylvania.	Rhode Island.	Utah.	Vermont.	All other states.	
$28,725,044	$287,806	$2,907,154	$32,321,089	$2,490,440	$653,314	$74,454	$121,287,422	85
89,925,370	1,480,200	13,525,565	117,319,123	.....	6,382,120	412,000	571,048,575	86
$5,907,126	$75,523	$882,814	$9,436,666	.....	$373,514	$25,530	$33,421,388	87
986,720	.....	.....	.....	.....	.....	.....	7,090,972	88
$98,672	.....	.....	.....	.....	.....	.....	$311,855	89
2,434,645	167,000	425,000	924,173	.....	25,400	.....	17,523,115	90
$175,072	$9,202	$21,500	$88,294	.....	$1,420	.....	$764,447	91
5,406,034	14,890	3,785,414	15,035,808	.....	1,414,405	37,432	61,894,251	92
$472,631	$1,162	$223,207	$1,440,490	.....	$87,780	$3,843	$4,232,083	93
6,680,682	60,714	293,980	9,097,823	.....	301,000	46,600	33,336,516	94
$610,883	$3,710	$19,822	$987,297	.....	$27,440	$3,801	$2,552,594	95
49,033,932	578,600	2,148,669	37,333,942	3,724,440	303,075	218,900	165,759,656	96
$4,514,599	$39,904	$185,657	$3,295,575	$353,079	$21,596	$17,003	$12,024,040	97
38,230,873	864,000	1,613,701	11,175,853	6,522,047	56,500	32,500	224,960,948	98
$3,015,005	$66,480	$133,741	$931,356	$407,013	$5,020	$2,600	$16,325,392	99
78,202,528	739,200	7,633,646	66,894,209	8,439,327	153,500	52,000	190,917,723	100
$7,167,719	$59,784	$764,864	$6,747,993	$873,134	$17,040	$6,240	$18,855,227	101
17,402,744	104,000	1,041,720	23,007,722	2,581,420	302,600	26,000	47,328,847	102
$1,285,789	$8,000	$79,150	$2,025,240	$211,946	$23,742	$2,600	$3,181,889	103
4,155,474	.....	.....	13,498,980	1,900,000	7,000	32,500	20,518,441	104
$241,956	.....	.....	$939,079	$186,000	$845	$985	$1,150,898	105
$45,556	.....	$9,863	.....	.....	.....	.....	$767,253	106
43,318,526	195,080	2,449,740	27,670,477	5,077,400	65,200	26,000	136,027,377	107
$3,022,312	$13,557	$220,023	$2,033,961	$363,218	$5,904	$2,340	$9,587,217	108
5,862,140	.....	.....	6,458,996	20,800	6,000	.....	14,507,830	109
$405,378	.....	.....	$500,057	$1,560	$480	.....	$1,008,042	110
130,250	.....	.....	294,628	.....	.....	.....	2,035,442	111
$73,440	.....	.....	$147,314	.....	.....	.....	$1,087,682	112
107,500	.....	2,248	705,631	.....	.....	.....	935,570	113
$48,645	.....	$1,124	$321,699	.....	.....	.....	$573,439	114
.....	.....	.....	.....	.....	.....	.....	12,727,369	115
.....	.....	.....	.....	.....	.....	.....	$954,476	116
945	.....	455	3,759	.....	.....	.....	17,508	117
$16,901	.....	$9,000	$71,260	.....	.....	.....	$591,646	118
6,572	.....	.....	4,656	922	.....	.....	18,842	119
$87,191	.....	.....	$69,382	$11,536	.....	.....	$329,967	120
218,400	.....	129,386	.....	.....	.....	.....	2,203,617	121
$14,500	.....	$9,700	.....	.....	.....	.....	$151,870	122
254,572	3,906	26,493	296,259	.....	12,790	1,480	1,355,340	123
11,638,587	172,240	1,533,083	14,619,934	.....	604,000	51,600	74,778,128	124
$1,037,295	$14,133	$131,603	$1,409,705	.....	$61,447	$4,164	$6,753,831	125
148,118	365	13,267	363,494	.....	26,371	825	1,416,571	126
$101,427	$210	$9,906	$336,037	.....	$22,218	$803	$1,407,021	127
.....	.....	764,462	7,140	.....	.....	400	168,771	128
.....	.....	$150,000	$1,285	.....	.....	$120	$58,462	129
.....	.....	.....	$200	.....	.....	.....	$16,991	130
$313,967	$2,176	$55,690	$1,473,368	$1,954	$4,808	$4,025	$5,698,079	131
$11,780	$25	.....	$4,131	.....	.....	$400	$81,624	132
181,281,521	2,845,400	26,676,430	222,209,735	.....	13,029,600	736,000	1,162,361,260	133
94,937,825	1,480,200	14,158,427	120,379,711	.....	6,300,120	412,000	622,619,659	134
11,046,121	27,935	8,205,846	30,315,321	.....	2,849,810	67,625	126,161,903	135
5,413,234	14,890	3,785,452	15,128,819	.....	1,414,405	37,432	61,034,041	136
291,857,523	3,022,410	13,219,813	193,349,941	23,457,480	736,300	455,000	945,606,301	137
228,427,393	2,426,570	10,314,994	153,204,323	18,487,340	584,200	361,900	714,968,372	138
11,611,732	101,490	472,120	15,394,449	.....	475,075	85,600	62,642,051	139
6,795,882	60,714	293,980	9,126,309	.....	301,000	46,600	35,953,081	140
64	1	9	76	6	2	3	86	141
4,368	80	372	7,546	242	25	70	23,323	142
117	1	12	137	6	1	2	176	143
4,111	50	324	6,761	138	10	10	16,312	144
1	.....	.....	5	.....	.....	.....	5	145
4	.....	.....	80	.....	.....	.....	127	146
.....	.....	.....	.....	.....	.....	1	2	147
.....	.....	.....	.....	.....	.....	60	125	148
.....	.....	1	.....	.....	.....	.....	2	149
.....	.....	3	.....	.....	.....	.....	5	150
14	6	3	49	.....	.....	.....	342	151
196	30	45	555	.....	.....	.....	6,469	152
.....	.....	.....	.....	.....	.....	.....	.....	153
9	.....	.....	3	15	1	.....	14	154
57	.....	.....	150	104	15	.....	185	155
.....	.....	.....	.....	.....	.....	.....	100	156
.....	.....	.....	55	.....	.....	.....	185	157

MANUFACTURED ICE

MANUFACTURED ICE.

By Hugh B. Meloy.

Not many years ago ice was a great luxury to persons living south of the natural ice zone, and even to a large proportion of those living in northern cities, but it may now be regarded as an absolute necessity both for industrial enterprises and for domestic use.

The statistics concerning the manufacture of ice are of considerable interest, especially as the industry has passed beyond the experimental stage and is now firmly established. As presented in this report the statistics relate to establishments engaged exclusively in the manufacture of ice for sale.

In many instances cold storage systems were operated in connection with ice plants, and in such cases their receipts have been included in the totals for "all other products." No statistics are shown for ice manufactured in breweries, in meat, provision, and cold storage warehouses, and in other plants that produce it for their own use and not for sale. The production made for sale by such establishments comprises the partial products of establishments engaged primarily in the manufacture of other products.

Table 1 presents in summarized form the totals for the industry as returned at each census from 1870 to 1905, with the percentages of increase for each period.

Table 1.—COMPARATIVE SUMMARY, WITH PER CENT OF INCREASE: 1870 TO 1905.

	Census.					Per cent of increase.			
	1905[1]	1900[2]	1890	1880	1870	1900 to 1905	1890 to 1900	1880 to 1890	1870 to 1880
Number of establishments	1,320	787	222	35	4	67.7	254.5	534.3	775.0
Capital	$66,592,001	$38,204,054	$9,840,468	$1,251,200	$434,000	74.3	288.0	687.0	188.3
Salaried officials, clerks, etc	2,332	1,545	[3] 439	(4)	(4)	50.9	251.9	.....	.....
Salaries	$2,001,111	$1,234,803	[3] $345,491	(4)	(4)	62.1	257.7	.....	.....
Wage-earners, average number	10,101	6,933	2,826	447	97	45.7	145.3	532.2	360.8
Total wages	$5,549,162	$3,424,305	$1,095,996	$140,885	$40,600	62.1	212.4	677.9	247.0
Men 16 years and over	10,029	6,889	2,811	380	96	45.6	145.1	622.6	305.2
Wages	$5,538,163	$3,416,844	$1,094,634	(4)	(4)	62.1	212.1	.....	.....
Women 16 years and over	18	8	.....	50	.....	125.0	.....	.....	.....
Wages	$3,078	$3,592	.....	(4)	.....	10.7	.....	.....	.....
Children under 16 years	54	36	15	8	1	50.0	140.0	87.5	700.0
Wages	$7,021	$3,869	$1,362	(4)	(4)	81.5	184.1	.....	.....
Miscellaneous expenses	$4,014,861	$1,779,890	$477,485	(5)	(5)	125.6	272.8	.....	.....
Cost of materials used	$6,011,325	$3,339,724	$940,699	$158,112	$82,165	80.0	255.0	495.0	92.4
Value of products	$23,790,045	$13,874,513	$4,000,083	$544,703	$258,250	71.5	183.1	799.7	110.9

[1] Exclusive of the statistics of 163 establishments engaged primarily in the manufacture of other products. These establishments made ice to the value of $1,800,012.

[2] The figures reported for 1900 include the statistics for 12 establishments, the schedules for which were received too late to be included in the totals for this industry as presented in the general report on Manufactures, Parts I and II.

[3] Includes proprietors and firm members, with their salaries; number only reported in 1900 and 1905, but not included in this table.

[4] Not reported separately.

[5] Not reported.

The growth of the industry since the census of 1870 has been marvelous, the number of ice producing plants having increased from 4 in that year to 1,320 at the census of 1905. The increase in the number of plants at the census of 1905 compared with that of 1900 is very marked, particularly as it does not include the large number of ice making and refrigerating plants installed in the breweries and cold storage warehouses. Between 1870 and 1905 the invested capital increased from $434,000 to $66,592,001; the value of products, from $258,250 to $23,790,045; and the number of employees, from 97 to 12,433.

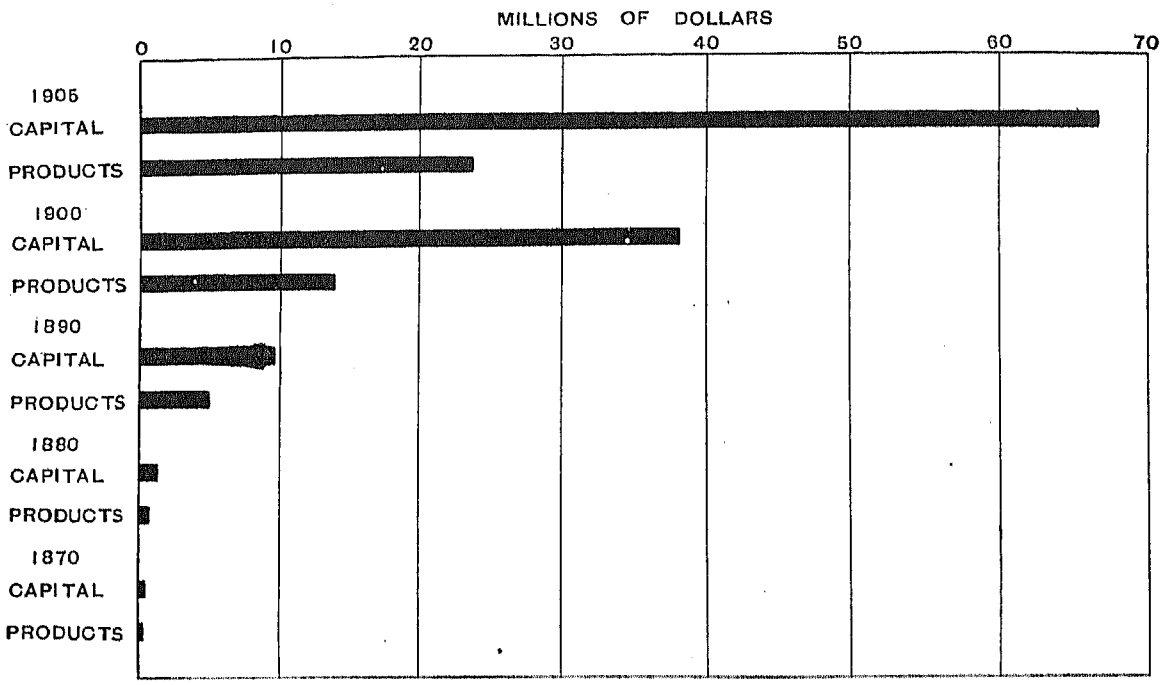
In 1870 ice was worth from $20 to $30 per ton, while for 1905 the average value was $3.12 for the same unit.

A few years ago artificially produced ice was soft and very perishable, but that made according to the improved methods in use at present is as hard and lasting as any that can be obtained from natural sources. The cost of the production of ice during the experimental stage of the industry was much in excess of that of the

matured and perfected product of the present day. This high cost was due principally to inferior machinery, which caused a loss by the leakage of gas and by an abnormal consumption of fuel. These objectionable features have been overcome by the introduction of perfected compressors and condensation and expansion coils, and the employment of competent engineers, with the result that the present condition of inexpensive production has been made possible.

The great advancement of the ice industry in the United States is perhaps more graphically indicated in the following diagram:

DIAGRAM 1.—COMPARATIVE GROWTH OF CAPITAL AND PRODUCTS: 1870 TO 1905.



Number of establishments.—Table 2 shows, for 1900 and 1905, the total number of establishments manufacturing ice and the number of compressor and absorption systems in use in each state and territory engaged in the industry.

TABLE 2.—*Number of establishments, by systems, by geographic divisions, and by states and territories: 1905 and 1900.*

STATE OR TERRITORY.	NUMBER OF ESTABLISHMENTS.		NUMBER OF SYSTEMS.			
			Compressor.		Absorption.	
	1905	1900	1905	1900	1905	1900
United States	1,320	787	1,100	571	232	216
North Atlantic division	217	147	200	136	18	11
Massachusetts	1	.....	1	.....	.....	.....
Rhode Island	3	2	3	2	.....	.....
Connecticut	7	5	6	5	1	.....
New York	58	41	53	37	5	4
New Jersey	39	26	35	24	4	2
Pennsylvania	[1] 109	73	102	68	8	5
South Atlantic division	266	170	197	111	70	59
Delaware	10	7	10	7	.....	.....
Maryland	[2] 27	18	26	18	.....	.....
District of Columbia	6	4	6	4	.....	.....
Virginia	[1] 48	30	42	22	7	8
West Virginia	[1] 30	8	28	4	3	4
North Carolina	32	23	27	19	5	4
South Carolina	18	13	12	7	6	6
Georgia	48	32	28	16	20	16
Florida	47	35	18	14	29	21

[1] One establishment used both the compressor and absorption systems.
[2] One establishment used the vacuum system.

TABLE 2.—*Number of establishments, by systems, by geographic divisions, and by states and territories: 1905 and 1900*—Continued.

STATE OR TERRITORY.	NUMBER OF ESTABLISHMENTS.		NUMBER OF SYSTEMS.			
			Compressor.		Absorption.	
	1905	1900	1905	1900	1905	1900
North Central division	281	172	224	116	60	56
Ohio	[1] 69	42	55	30	15	12
Indiana	[1] 66	47	38	25	29	22
Illinois	[1] 43	29	35	20	9	9
Wisconsin	1	.....	1	.....	.....	.....
Iowa	4	3	3	2	1	1
Missouri	53	31	52	28	1	3
Nebraska	1	1	1	1	.....	.....
Kansas	44	19	30	10	5	9
South Central division	430	245	365	165	70	80
Kentucky	[3] 48	31	25	12	26	19
Tennessee	37	27	31	22	6	5
Alabama	30	23	25	14	14	9
Mississippi	[1] 37	23	30	13	8	10
Louisiana	[1] 62	36	54	13	9	23
Arkansas	38	18	38	18	.....	.....
Indian Territory	22	3	21	3	1	.....
Oklahoma	22	7	21	5	1	2
Texas	125	77	120	65	5	12
Western division	126	53	114	43	14	10
Idaho	1	.....	1	.....	.....	.....
Colorado	16	6	12	2	4	4
New Mexico	7	4	5	2	2	2
Arizona	13	9	13	9	.....	.....
Utah	1	1	1	1	.....	.....
Nevada	2	.....	2	.....	.....	.....
Washington	12	4	9	4	3	.....
Oregon	20	9	20	9	.....	.....
California	[4] 54	20	51	16	5	4

[3] Three establishments used both the compressor and absorption systems.
[4] Two establishments used both the compressor and absorption systems.

At the census of 1900 the number of states for which ice producing plants were reported was 37, while at the census of 1905 the number was 41, the 4 additional states being Massachusetts, Wisconsin, Idaho, and Nevada. In proportion to the population the Southern states had a much larger number of ice manufacturing plants than the Northern and Western states.

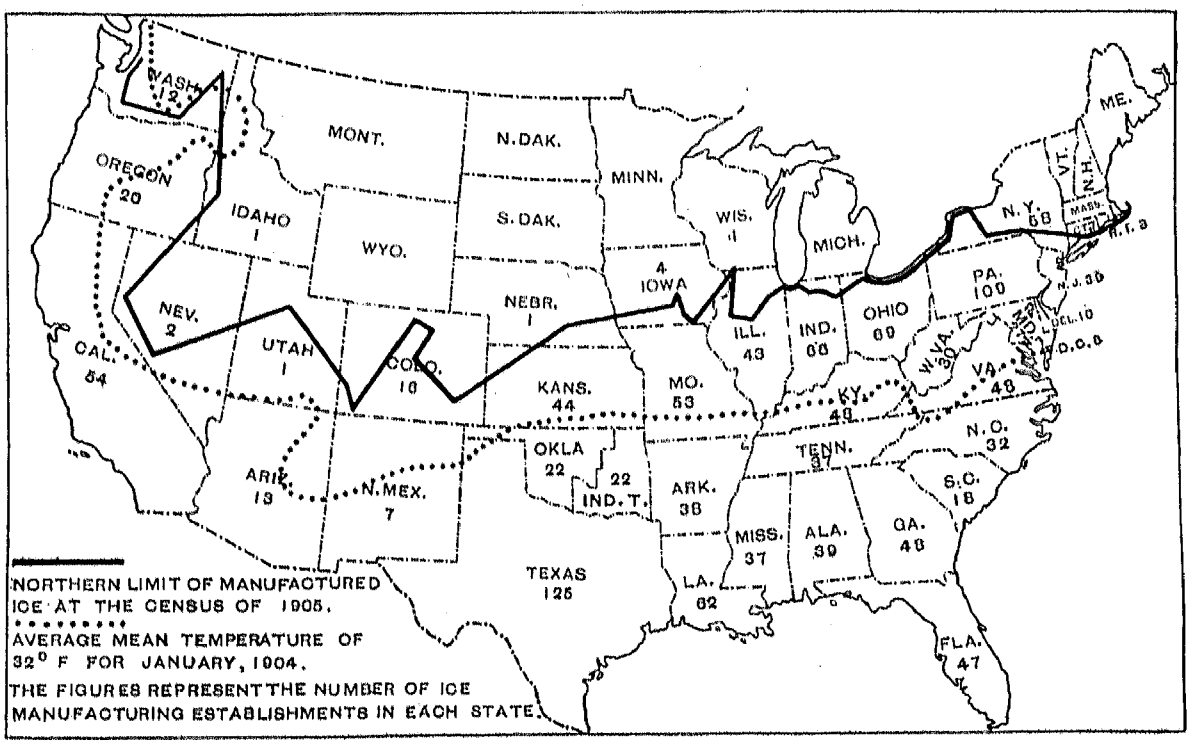
The states for which no ice plants were reported are as follows: Maine, New Hampshire, Vermont, Michigan, Minnesota, North Dakota, South Dakota, Montana, and Wyoming, all of which are located in a section especially adapted to the production of natural ice. There are, however, a large number of cold storage warehouses in these states.

Of the two fundamental systems used in the manufacture of ice, the compressor system predominated at the two censuses. According to the reports for 1905, 1,100 establishments used the compressor system and only 232 the absorption system. The excess of the number of systems over the number of establishments reporting is the result of the fact that 12 establishments used both the compressor and the absorption systems and 1 used the vacuum system.

Although the outlay of capital required for installation is much greater for the compressor system of manufacture than for the absorption system, the former system is apparently superseding the latter throughout the country with the exception of certain parts of the South, where the opinion seems to prevail that the heavy compressors and the other requisite machinery do not work to advantage, because of the extreme heat produced, consequently, in those sections the absorption system, requiring less machinery and a smaller amount of labor, predominates. Florida and Kentucky are the only states in which the number of establishments using the absorption system was greater than the number using the compressor system.

Map 1 shows the northern limit of manufactured ice, as indicated by the reports received at the census of 1905. The approximate southern limit of natural ice is defined by a line indicating an average mean temperature of 32° F. for January, 1904, according to the reports of the observers of the United States Weather Bureau, and a middle zone lying between these lines may be termed the competitive area, since in it both the natural and the artificial ice are produced.

MAP 1.—ZONES OF NATURAL AND MANUFACTURED ICE: 1905.



No reports of the manufacture of ice were received at the census of 1905 from any part of the territory north of the line shown on the map as the "northern limit of manufactured ice." This indicates apparently that in that northern territory the crop of natural ice is plentiful and can be harvested and sold at a price lower than the cost of the artificial product. The zone below the line that marks an average mean temperature of 32° F. for January, 1904, is made up of territory in which the manufactured article is used almost exclusively, because of the expense of procuring natural ice. Although manufactured ice has a practical monopoly in this territory, a considerable supply of natural ice from the North is still received at some of the larger cities, especially those along the seacoast.

Capital.—Table 3 shows the absolute and per cent distribution of capital for 1900 and 1905, and the per cent of increase.

TABLE 3.—*Capital, with per cent each item forms of total, and per cent of increase: 1905 and 1900.*

	CENSUS.				Per cent of increase.
	1905		1900		
	Amount.	Per cent of total.	Amount.	Per cent of total.	
Total	$66,592,001	100.0	$38,204,054	100.0	74.3
Land	8,855,242	13.3	4,679,379	12.3	89.2
Buildings	15,429,399	23.2	7,387,014	19.3	108.9
Machinery, tools, and implements	36,451,321	54.7	22,852,158	59.8	59.5
Cash and sundries	5,856,039	8.8	3,285,503	8.6	78.2

As shown by Table 3, machinery, tools, and implements was the principal item according to value at both censuses. At the census of 1905 as compared with that of 1900, the capital invested in compressors, engines, pumps, boilers, condensers, and all other requisite apparatus and equipment increased $13,599,163, or 59.5 per cent; the value of the buildings, the next largest item, increased $8,042,385, or 108.9 per cent; and the value of the land, $4,175,863, or 89.2 per cent; while cash on hand, bills receivable, unsettled ledger accounts, raw materials, stock in process of manufacture, finished products on hand, and other sundries, increased in value $2,570,536, or 78.2 per cent.

Materials used.—Table 4 is a detailed statement of the cost of the different materials used in the manufacture of ice, with the percentages that the cost of the various items forms of the total at the census of 1905.

TABLE 4.—*Materials used, by kind and cost, with per cent of total: 1905.*

KIND.	Cost.	Per cent of total.
Total	$6,011,325	100.0
Ammonia	613,138	10.2
Fuel	4,365,316	72.6
Rent of power and heat	77,577	1.3
Mill supplies	328,794	5.5
Freight	81,175	1.3
All other materials	545,325	9.1

It is evident from the figures in Table 4 that the cost of the refrigerant employed is very low when compared with that of the fuel used, which is the largest item of expense. The quantity of ammonia used, for which a cost of $613,138 was reported, was returned as 3,428,431 pounds. The mill supplies include oil, waste, belting, packing, and all supplies consumed in the operation of the machinery, and the item "all other materials" includes salt, chloride of calcium, cases, cartons, etc.

Anhydrous ammonia is reported as having cost $522,275, or 85.2 per cent of the total amount expended for all the ammonia used, the cost of the aqua ammonia being only $90,863. The difference in the cost of the two kinds of ammonia results from the fact that in the compressor systems, which constitute more than four-fifths of all the systems, anhydrous or dry ammonia is used almost exclusively, while in the refrigeration process of the absorption system aqua ammonia is used chiefly.

Products.—Table 5 shows the production of ice, by tons, for the states and territories, arranged according to the number of establishments at the census of 1905.

TABLE 5.—*Number of establishments and tons of ice manufactured, by states and territories: 1905.*

STATE OR TERRITORY.	Number of establishments.	Quantity of ice manufactured (tons).
United States	1,320	7,199,448
Texas	125	426,755
Pennsylvania	109	988,853
Ohio	69	499,922
Indiana	66	285,511
Louisiana	62	300,334
New York	58	847,035
California	54	319,423
Missouri	53	411,818
Georgia	48	222,555
Kentucky	48	233,424
Virginia	48	166,909
Florida	47	169,051
Kansas	44	166,718
Illinois	43	260,542
Alabama	39	129,620
New Jersey	30	238,172
Arkansas	38	138,015
Mississippi	37	136,368
Tennessee	37	177,824
North Carolina	32	110,414
West Virginia	30	96,588
Maryland	27	228,541
Indian Territory	22	45,476
Oklahoma	22	51,181
Oregon	20	39,738
South Carolina	18	75,803
Colorado	16	113,049
Arizona	13	27,580
Washington	12	51,872
Delaware	10	38,692
Connecticut	7	35,175
New Mexico	7	16,337
District of Columbia	6	84,524
Iowa	4	26,872
Rhode Island	3	9,331
All other states [1]	7	28,526

[1] Includes establishments distributed as follows: Idaho, 1; Massachusetts, 1; Nebraska, 1; Nevada, 2; Utah, 1; Wisconsin, 1.

The leading states according to the number of establishments were Texas, Pennsylvania, Ohio, Indiana, Louisiana, New York, California, and Missouri. According to the quantity of ice produced, however, the rank of the states differs considerably, the 10 leading ones being Pennsylvania, New York, Ohio, Texas, Missouri, California, Louisiana, Indiana, Illinois, and New Jersey.

Table 6 is a comparative statement for 1900 and 1905 of the quantity and value of the different kinds of ice produced, with the corresponding percentages of increase.

The quantity of can ice manufactured increased 2,556,025 tons, or 61.7 per cent, and the value $8,157,387, or 63.4 per cent; while the plate ice increased 348,984 tons, or 225.6 per cent, in the quantity produced, and $989,242, or 224.5 per cent, in the value.

TABLE 6.—*Ice manufactured, by kind, quantity, and value, with per cent of increase: 1905 and 1900.*

KIND.	1905	1900	Per cent of increase.
Total tons	7,199,448	4,294,439	67.6
Total value	$22,450,503	$13,303,874	68.8
Can ice:			
Tons	6,695,789	4,139,764	61.7
Value	$21,020,547	$12,863,160	63.4
Plate ice:			
Tons	503,659	154,675	225.6
Value	$1,429,956	$440,714	224.5

The can ice process of manufacturing is used to a much greater extent than the plate process. This may be attributed to the fact that formerly the fundamental principles governing the elimination of foreign substances without distillation were not understood. During distillation all foreign objects, such as mud and germs, are removed from the water, and, by the application of the proper temperature, clear ice is produced. With the plate system no distillation is required, only a continual circulation of the water to be frozen being necessary. The objects in solution collect slowly in the center of the tank, and since the water is never frozen there they are drawn off when the ice gets thick enough to pull. It is said that all the objectionable phases have been overcome in the perfected plate system, and that a pure crystal ice is produced at the minimum average cost of 50 cents per ton.[1]

During the last intercensal period the development of both the can and the plate ice making systems was rapid, the increase in either case being noteworthy.

The ice sold by establishments engaged primarily in the manufacture of other products is an important factor and has to be considered in determining the total production manufactured for sale. The chief establishments producing ice as a by-product or partial product are breweries and slaughtering and meat packing establishments.

Table 7 shows the partial products of such establishments together with the production of the ice industry proper, the total production, and the number of establishments reporting manufactured ice as a partial product and a chief product, by states, for 1905.

[1] "Ice and Refrigeration," June, 1905.

TABLE 7.—TOTAL ICE PRODUCTION—ICE INDUSTRY AND PARTIAL PRODUCTS OF OTHER INDUSTRIES, BY STATES: 1905.

STATE.	NUMBER OF ESTABLISHMENTS.			ICE.									
				Aggregate.		Ice industry.		Partial products.					
								Total.		Can.		Plate.	
	Total.	Ice industry.	Partial products.	Tons.	Value.	Tons.	Value.	Tons.	Value.	Tons.	Value.	Tons.	Value.
United States	1,483	1,320	163	8,014,137	$24,350,415	7,199,448	$22,450,503	814,689	$1,899,912	754,923	$1,760,564	59,766	$139,348
Alabama	43	39	4	144,843	578,511	129,620	529,433	15,223	49,078	15,223	49,078	.....	.....
Arkansas	41	38	3	144,277	456,813	138,015	436,312	6,262	20,501	6,262	20,501	.....	.....
California	62	54	8	331,803	1,106,511	319,423	1,042,722	12,380	63,789	11,504	59,409	876	4,380
District of Columbia	10	6	4	131,349	369,502	84,524	260,990	46,825	108,512	19,825	37,512	27,000	71,000
Georgia	54	48	6	241,205	873,059	222,555	814,856	18,650	58,203	18,650	58,203	.....	.....
Illinois	58	43	15	342,198	915,824	260,542	812,977	81,656	102,847	81,656	102,847	.....	.....
Indiana	70	66	4	311,517	765,776	285,511	707,576	26,006	58,200	26,006	58,200	.....	.....
Kansas	50	44	6	185,603	610,339	166,718	552,183	18,885	58,156	18,885	58,156	.....	.....
Kentucky	52	48	4	265,620	790,252	233,424	698,115	32,196	92,137	32,196	92,137	.....	.....
Mississippi	43	37	6	143,131	610,851	136,368	582,465	6,763	28,386	6,763	28,386	.....	.....
Missouri	66	53	13	551,033	1,249,581	411,818	1,039,128	139,215	210,453	123,095	178,213	16,120	32,240
New York	66	58	8	915,961	1,871,916	847,935	1,725,653	68,026	146,263	66,826	143,080	1,200	3,183
Ohio	93	69	24	621,542	1,366,950	499,922	1,147,007	121,620	219,943	113,690	211,083	7,930	8,860
Oregon	27	20	7	43,456	219,149	39,738	191,914	3,718	27,235	3,718	27,235	.....	.....
Pennsylvania	123	109	14	1,017,380	2,766,482	988,853	2,685,128	28,527	81,354	28,527	81,354	.....	.....
Rhode Island	6	3	3	33,800	67,986	9,331	19,023	24,469	48,963	24,469	48,963	.....	.....
Tennessee	42	37	5	192,697	727,263	177,824	674,560	14,873	52,703	14,873	52,703	.....	.....
Texas	134	125	9	490,414	2,220,874	426,755	2,014,702	63,659	206,172	63,659	206,172	.....	.....
Virginia	51	48	3	189,109	653,482	166,909	587,961	22,200	65,521	22,200	65,521	.....	.....
All other states	392	[1] 375	[2] 17	1,717,199	6,129,294	1,653,663	5,927,798	63,536	201,496	56,896	181,811	6,640	19,685

[1] Includes establishments distributed as follows: Arizona, 13; Colorado, 16; Connecticut, 7; Delaware, 10; Florida, 47; Idaho, 1; Indian Territory, 22; Iowa, 4; Louisiana, 62; Maryland, 27; Massachusetts, 1; Nebraska, 1; Nevada, 2; New Jersey, 39; New Mexico, 7; North Carolina, 32; Oklahoma, 22; South Carolina, 18; Utah, 1; Washington, 12; West Virginia, 30; Wisconsin, 1.

[2] Includes establishments distributed as follows: Arizona, 2; Colorado, 1; Connecticut, 2; Florida, 1; Idaho, 1; New Jersey, 2; New Mexico, 2; North Carolina, 1; Oklahoma, 1; Washington, 2; West Virginia, 2.

Of the total number of establishments manufacturing ice for sale, the establishments manufacturing ice as a partial product constituted 11 per cent of the total number and their production formed 10.2 per cent in quantity of the total ice manufactured for sale and 7.8 per cent in value.

The average value per ton of the ice manufactured as a partial product was materially less than that for the ice industry proper, the former being $2.33 per ton as compared with $3.12 per ton for the latter. In certain states the production of establishments otherwise classified forms a large part of the total product,

notably as follows: In Rhode Island, the partial product constituted 72.4 per cent of the total ice manufactured for sale; in the District of Columbia, 35.6 per cent; Missouri, 25.3 per cent; Illinois, 23.9 per cent; Ohio, 19.6 per cent; Texas, 13 per cent; Kentucky, 12.1 per cent; Virginia, 11.7 per cent; Alabama, 10.5 per cent; and Kansas, 10.2 per cent.

The industry in large cities.—Table 8 is a summary of the statistics of ice manufacture for cities of 20,000 inhabitants and over, arranged in the order of their rank according to the number of tons produced for 1905.

According to the amount of ice produced New York, by reason of its enormous population, ranked first among the cities for 1905 and for 1900. Of the 778,991 tons manufactured for 1905, 739,717 tons were can ice and the remainder plate ice. For Philadelphia, which ranked next in production, 460,817 tons were reported, of which 403,160 tons were can ice and the remainder plate ice.

TABLE 8.—SUMMARY FOR CITIES HAVING A POPULATION IN 1900 OF 20,000 AND OVER: 1905.

City.	Rank by number of tons.	Number of establishments.	Capital.	Salaried officials, clerks, etc.		Wage-earners and wages.		Miscellaneous expenses.	Cost of materials used.	Products.			
				Number.	Salaries.	Average number.	Wages.			Total value.	Ice.		All other.
											Tons.	Value.	
Total		358	$38,759,230	1,098	$1,057,638	4,992	$3,077,527	$2,511,032	$3,450,576	$13,057,187	4,574,137	$12,172,290	$884,897
New York, N. Y.	1	35	5,125,310	69	73,815	504	363,244	313,752	522,963	1,501,625	778,991	1,501,625	.....
Brooklyn borough		8	847,332	18	23,137	99	67,858	53,421	89,334	261,229	137,729	261,229	.....
Manhattan and Bronx boroughs		17	3,706,891	37	38,084	349	269,935	235,024	368,632	1,074,990	574,233	1,074,990	.....
Richmond and Queens boroughs		10	571,087	14	12,594	56	34,451	25,397	64,997	165,406	67,029	165,406	.....
Philadelphia, Pa.	2	32	3,634,591	77	65,965	497	249,644	203,773	353,408	1,188,028	460,817	1,152,631	35,397
St. Louis, Mo.	3	9	1,523,465	31	38,109	167	124,163	73,998	186,443	515,753	232,495	472,396	43,357
Baltimore, Md.	4	9	1,323,873	21	30,647	145	84,862	66,304	143,219	574,643	186,776	574,632	11
New Orleans, La.	5	16	1,918,231	35	34,115	129	85,879	94,655	140,968	451,403	165,464	451,358	45
Cincinnati, Ohio	6	10	1,146,256	23	26,624	109	68,288	64,148	99,601	331,603	149,481	296,319	35,284
Pittsburg, Pa.	7	6	1,615,505	60	72,979	321	181,536	131,115	105,656	599,250	129,406	431,686	167,564
Cleveland, Ohio	8	4	666,709	8	10,320	43	32,821	42,971	45,112	194,885	102,887	194,885	.....
Chicago, Ill.	9	3	341,053	52	46,858	133	77,781	71,835	86,744	349,033	95,661	278,757	70,276
Los Angeles, Cal.	10	5	1,272,226	20	23,225	144	114,089	116,417	91,067	470,185	86,332	308,685	161,500
Washington, D. C.	11	6	700,018	13	12,218	94	46,430	43,096	71,426	260,990	84,524	260,990	.....
San Francisco, Cal.	12	4	815,552	9	11,040	84	76,136	60,735	68,484	278,107	82,012	227,885	50,222
Louisville, Ky.	13	6	493,809	15	17,151	57	33,612	22,785	40,997	199,726	74,930	199,726	.....
Memphis, Tenn.	14	4	437,317	31	32,063	179	109,703	78,568	39,895	309,953	73,107	309,953	.....
Newark, N. J.	15	3	813,039	10	15,326	58	39,235	29,443	38,889	168,614	73,051	168,614	.....
Kansas City, Mo.	16	4	412,810	10	14,025	73	48,037	17,631	72,769	156,589	68,632	137,350	19,239
Allegheny, Pa.	17	4	667,755	19	23,768	62	45,032	56,376	40,691	216,126	68,314	202,137	13,989
Indianapolis, Ind.	18	10	375,118	23	12,643	75	44,399	21,272	38,588	151,655	67,992	132,170	19,485
Columbus, Ohio	19	4	657,500	18	10,448	93	42,074	21,324	34,284	128,390	66,025	120,991	7,399
Nashville, Tenn.	20	3	128,900	9	9,480	53	24,555	15,498	32,721	120,316	41,864	120,316	.....
Norfolk, Va.	21	4	592,013	9	6,960	60	23,929	38,238	51,310	131,425	40,494	101,425	30,000
Dallas, Tex.	22	4	469,685	12	16,595	49	25,799	26,966	41,013	149,199	36,889	138,468	10,731
Mobile, Ala.	23	7	391,619	14	9,580	55	27,724	16,608	36,054	143,908	34,502	143,908	.....
Evansville, Ind.	24	3	374,206	12	10,964	34	17,952	20,010	15,366	84,256	31,942	80,506	3,750
Pueblo, Colo.	25	3	127,200	6	5,550	29	19,565	14,385	16,861	88,550	27,350	85,550	3,000
Portland, Oreg.	26	6	257,000	6	6,510	45	37,750	15,124	26,268	136,900	26,600	116,000	20,900
Seattle, Wash.	27	4	329,700	5	8,700	55	44,700	17,535	21,523	116,484	26,500	99,484	17,000
Charleston, S. C.	28	4	306,830	3	2,700	38	18,778	10,289	32,711	71,586	26,340	71,586	.....
Augusta, Ga.	29	3	179,500	12	8,240	18	6,200	21,468	14,536	63,000	26,000	63,000	.....
Richmond, Va.	30	3	328,967	8	10,590	64	28,226	11,984	23,173	94,333	25,795	82,029	12,304
Fort Worth, Tex.	31	4	188,500	9	9,727	51	32,744	11,811	28,336	107,531	24,431	104,531	3,000
Camden, N. J.	32	3	121,894	2	1,280	11	7,177	8,085	15,749	54,540	24,260	54,540	.....
Galveston, Tex.	33	3	196,895	5	4,555	28	16,075	13,628	30,184	83,147	20,550	83,147	.....
San Antonio, Tex.	34	3	238,742	13	12,120	28	13,902	14,198	23,668	77,346	18,057	76,346	1,000
Wichita, Kans.	35	3	175,578	16	13,285	27	20,291	11,176	13,748	74,154	16,200	74,154	.....
Wheeling, W. Va.	36	3	213,931	2	2,340	26	18,805	15,514	7,915	48,188	13,679	48,188	.....
Knoxville, Tenn.	37	3	119,602	11	6,565	20	8,765	7,811	7,771	46,166	12,645	46,147	19
All other cities[1]	.....	118	10,078,331	400	340,558	1,433	817,625	690,506	790,465	3,319,600	1,053,142	3,160,175	159,425

[1] Includes establishments distributed as follows: Akron, Ohio, 1; Allentown, Pa., 2; Altoona, Pa., 2; Anderson, Ind., 1; Atlanta, Ga., 1; Austin, Tex., 2; Binghamton, N. Y., 1; Birmingham, Ala., 2; Bloomington, Ill., 1; Bridgeport, Conn., 2; Buffalo, N. Y., 2; Canton, Ohio, 1; Chattanooga, Tenn., 1; Chester, Pa., 1; Colorado Springs, Colo., 2; Columbia, S. C., 2; Covington, Ky., 2; Dayton, Ohio, 1; Decatur, Ill., 1; Denver, Colo., 2; Des Moines, Iowa, 1; East St. Louis, Ill., 1; Elizabeth, N. J., 2; Elmira, N. Y., 1; Erie, Pa., 1; Fort Wayne, Ind., 1; Hamilton, Ohio, 1; Houston, Tex., 2; Jamestown, N. Y., 1; Jacksonville, Fla., 2; Johnstown, Pa., 1; Joliet, Ill., 1; Joplin, Mo., 1; Kansas City, Kans., 1; Lancaster, Pa., 1; Leavenworth, Kans., 2; Lexington, Ky., 2; Lima, Ohio, 1; Lincoln, Nebr., 1; Little Rock, Ark., 2; McKeesport, Pa., 2; Macon, Ga., 2; Montgomery, Ala., 2; Muncie, Ind., 2; New Albany, Ind., 2; Newcastle, Pa., 2; New Haven, Conn., 1; Newport, Ky., 1; Newport, R. I., 1; Norristown, Pa., 1; Oakland, Cal., 2; Orange, N. J., 1; Peoria, Ill., 1; Petersburg, Va., 1; Poughkeepsie, N. Y., 1; Quincy, Ill., 1; Rochester, N. Y., 1; Reading, Pa., 2; Roanoke, Va., 2; Sacramento, Cal., 1; Salt Lake City, Utah, 1; San Jose, Cal., 1; Savannah, Ga., 2; Shenandoah, Pa., 1; South Bend, Ind., 1; Springfield, Ill., 2; Springfield, Mo., 2; Springfield, Ohio, 1; St. Joseph, Mo., 1; Spokane, Wash., 1; Tacoma, Wash., 2; Terre Haute, Ind., 2; Toledo, Ohio, 1; Topeka, Kans., 2; Trenton, N. J., 2; Waco, Tex., 2; Wilkesbarre, Pa., 1; Williamsport, Pa., 1; Wilmington, Del., 2; Wilmington, N. C., 2; Yonkers, N. Y., 1; Youngstown, Ohio, 1; Zanesville, Ohio, 1.

For the 16 establishments in New Orleans, 165,464 tons were reported, or more than one-half of the production of the 62 plants situated in the state of Louisiana. The 9 establishments in St. Louis produced 232,495 tons, or more than one-half of the total for the 53 plants located in the state of Missouri. For Dallas with 4 plants, Fort Worth with 4, Galveston with 3, and San Antonio with 3, the production of ice amounted to 99,927 tons, or nearly one-fourth of the total quantity produced by the 125 plants in the state of Texas.

From a consideration of the statistics presented in Tables 5 and 7 it is seen that the production of the plants in the cities formed a large proportion of the total production in the states in which the cities are located. The 35 plants in New York city alone produced

778,991 tons, or a little more than nine-tenths of the total amount of ice manufactured by the 58 establishments in the state of New York. The 42 plants in 3 of the large cities in Pennsylvania produced 658,537 tons, or about two-thirds of the total for the 109 establishments in the state.

These tables show, moreover, that as a rule the average capacity of the plants located in the cities was greater than the average for all the plants in the respective states. For New York city the average product per establishment was 22,257 tons, while the average for the state was only 14,620 tons. For Texas the production per plant was 3,414 tons, while for its large cities shown in Table 5 the average ranged from 6,019 tons for San Antonio to 9,222 tons for Dallas. For the cities in Ohio the average tonnage ranged from 14,948 for Cincinnati to 25,722 for Cleveland, and the average for the state was 7,245 tons.

Exports.—Ice was exported during the year ending June 30, 1904, to the following countries: Quebec, Ontario, Manitoba, and other Canadian points, 4,836 tons, valued at $4,866; Mexico, 1,132 tons, valued at $9,119; West Indies, 6,379 tons, valued at $7,254; and South America, 5,399 tons, valued at $6,744. The ice exported is almost exclusively natural, the manufactured product being kept for home consumption. The figures from a trade standpoint are comparatively of no importance.

The quantity of ice exported will probably decrease as time advances, for artificial ice plants are being installed abroad, and steamships are being equipped with refrigerator systems. In 1904, as compared with 1900, there was an increase in the number of tons shipped but a reduction in the total value and in the price per ton.

Many efforts have been made to establish a trade in the exportation of ice, but, with few exceptions, they have failed because of the large losses sustained.

The exportation of ice from the United States, as reported to the Bureau of Statistics, at intervals of five years from 1850 to 1904, is shown in the following tabular statement:

Quantity and value of ice exported: 1850 to 1904.[1]

YEAR.[2]	Tons.	Value.	YEAR.	Tons.	Value.
1904	17,746	$27,983	1875	53,724	$208,249
1900	13,720	20,501	1870	65,802	207,702
1895	17,205	41,915	1865	50,927	225,825
1890	44,849	111,762	1860	40,153	183,134
1885	38,901	80,420	1855	41,117	190,793
1880	45,666	136,686	1850	.....	107,018

[1] Bureau of Statistics, Department of Commerce and Labor, "Commerce and Navigation of the United States."
[2] Year ending June 30.

HISTORICAL AND DESCRIPTIVE.

Refrigeration and the artificial production of ice as carried on at the present time are the result of many years of study and experimentation, and in many respects the various stages through which the artificial ice industry has passed are of unusual interest.

It is not known when preparations for producing artificial cold were first used, but the subject is mentioned many times in the writings of the ancient Egyptians and Greeks, showing that those nations were familiar with the first principles of producing refrigeration. It was known that if a porous clay vessel filled with water is left in the shade or in a current of air, the water becomes cold, and this method of cooling water was in general use.

As time progressed it was found that ice and snow preserved in caves or holes in the earth could be used for cooling purposes. This discovery was made use of first in Greece and at a later period in France.

A process of producing ice was introduced in India at an early date and is still followed in certain sections of that country. In this process a number of porous earthen trays are smeared with butter to prevent the ice from adhering, and placed on a bed of straw or sugar cane halms about 4 or 5 inches thick. The water to be frozen is placed in them in the evening, and during the night the extremely rapid evaporation through the buttered trays and into the dry, hot atmosphere causes a shallow crust of ice to form on the surface and sides of the trays. In the early morning hours the ice is removed with the aid of an iron hook and stored away for use.

At a more recent date the French and English people became very much interested in the subject of refrigeration and began experiments with salts and chemicals mixed with water or snow. Concentrated and persistent study led to the discovery of liquid gases and their value as cooling agents, but many years elapsed before an advantageous method of applying this discovery was developed. Finally, the laws governing the compression, liquefaction, and expansion of these gases were comprehended, and machines were produced which could successfully carry out the theory of refrigeration. The invention of the first ice machine is accredited to Mr. Jacob Perkins, an American civil engineer residing in London, in which city he obtained his patent in 1834. His machine used ether as a refrigerant. The expansion pipes were immersed in brine, as they are in the can ice system of to-day, but wooden boxes were used instead of iron cans. This invention is generally acknowledged to be the forerunner of the modern compressor system.[1]

Although artificial ice was produced in commercial quantities as long ago as 1755, it was not generally

[1] "Ice and Refrigeration," August, 1901, page 46.

manufactured until about thirty-five years ago, at which time the demand for refrigerants in connection with the shipping of southern fruit to other sections of the United States became of great importance. This, combined with the demand for ice for use in the transportation of meat, forced the artificial ice industry ahead at a marvelous rate.

Since there is more need of refrigerants in the South, the first outlay of capital was invested in that section, the first plant of note being erected at New Orleans in 1866.

The modern ice manufacturing plant is equipped with one or more of the following systems: Compressor, absorption, vacuum, or cold air. The first two systems are used very generally throughout the United States. The third is rarely used in this country, being in operation in only one establishment. The fourth is generally used on shipboard. While all of these systems accomplish the same result, in that they absorb heat and furnish refrigeration, the essential principles are radically different.

The compressor system involves the use of a very volatile liquid or a gas which can readily be reduced to a liquid. Ether, carbonic acid gas, carbonic anhydride, or ammonia is generally used, ammonia being preferable for most machines. The ammonia gas used is of two grades, one of which is strictly anhydrous and the other slightly humid. The humid variety is preferred for some machines, because the moisture present absorbs the heat produced during compression, and consequently the cylinder of the compressor does not become overheated, the theory being that if the cylinder is cool it will receive more gas during the suction than it would if it were hot, with the result that it will turn out more compressed gas at the end of each stroke of the piston.

The majority of compressor machines now in use employ anhydrous ammonia exclusively and have jacketed compressors through which cool water is continually flowing. The ammonia gas, condensed at a pressure of from 125 to 175 pounds to the square inch, is forced into an atmospherically or water cooled worm or coil, where it is chilled and reduced to a liquid form ready for refrigerant purposes. This coil is connected by an expansion valve with a similar coil known as the expansion pipe. Upon being released this liquid instantly becomes a gas, and in the process absorbs the heat from the surrounding objects. After completing its work as a refrigerant it returns to the compressor and starts its cycle anew.

The anhydrous ammonia used in this system has a molecular weight of 17 and a density of 8.5, and contains only .025 per cent of moisture.[1] When in a liquid state it boils at the extremely low temperature of 40° below zero.

The absorption system, which was invented about the year 1850 by Ferdinand Carré, involves an entirely different set of principles. Instead of anhydrous ammonia, aqua or liquid ammonia of 26° strength at 60° F. is used. This liquid is forced into a tank, which is furnished with a steam coil and is kept at a specified degree of heat, just below the boiling point of water. Here the gas in solution is eliminated and the necessary amount of pressure produced to force the gas into the condensing coil where it is chilled, and becomes a liquid in an almost anhydrous state. It then goes through an expansion valve into an expansion pipe, where it performs its work of refrigeration. At the end of the expansion pipe is a suction pump which forces the gas back to the cooled mother water, which absorbs it in the ratio of one volume of water to five hundred of gas. The aqua ammonia resulting is pumped into the generator to be redistilled. Although these are distinctly separate operations, they follow each other in such quick succession as to be practically continuous and form stages of a closed cycle.

The cold air system, patented in 1857, was invented by Dr. John Gorrie in 1849 and consists of very simple machinery, in which air is used as the means of refrigeration. A double pump or compressor, a cooling worm connected with a receiving tank for the liquid air, and a jacketed auxiliary pump compose the necessary equipment.[2] The compressed air is forced into a cooling coil, where it is condensed to a liquid which flows into a receiving tank, and thence to the auxiliary pump cylinder which is driven by the expansion of the liquid. During this expansion it absorbs the heat from the brine circulating through the jacket of the auxiliary. This brine in turn flows through an ice making tank and reduces its temperature accordingly.

As a rule the cold air system is used on vessels and launches, chiefly because of its safe character as regards explosions and its freedom from gaseous odors. The compressor system also is used on vessels, and when this is the case, carbonic anhydride is preferred as the refrigerant. The greatest drawback to the cold air system is that the pipes are continually becoming frosted inside, which reduces their efficiency for refrigerating to such an extent that the machines have to be stopped occasionally and the pipes blown out with hot air.

The vacuum system invented by Dr. William Cullen in 1755 is based upon the principle of the cooling of water by its own evaporation. The machinery used is very simple, consisting of a small rejector pump, a large vacuum pump, and a still for distilling the water from the sulphuric acid, which absorbs from 10 to 12 tons of water for every ton of ice produced. The pump produces a vacuum over the water and the acid absorbs the vapor which forms to take the place of the displaced air, thus causing the water to freeze. The underlying purpose is to reduce the pressure so that the boiling point of water, which under normal atmos-

[1] "Refrigeration, Cold Storage, and Ice Making," page 48.

[2] "Refrigeration, Cold Storage, and Ice Making," page 192.

pheric pressure is 212° F. will be 32° F. To produce this condition the atmospheric pressure has to be reduced until it becomes a minus or vacuum of .089 pound to the square inch. This is absolutely necessary for the production of ice by this process. This ice is always opaque and more or less porous, but is a very good product.

Can ice is invariably made of distilled water, which is usually obtained by the condensation of the exhaust steam from the engines running the compressors, although in some cases live steam is condensed and used. When exhaust steam is condensed, it is free from mineral and vegetable matter, but it retains more or less oil from the engines. In order to extract this oil, the presence of which would greatly diminish the commercial value of the ice, the mixture is passed through an oil filter and thence through a series of strainers composed of strata of gravel, sand, and charcoal. Even when this process is carefully followed the gases and acids formed through distillation sometimes remain and cause the ice when melted to have a disagreeable taste.

If distilled water were not used the can ice would be opaque, as a result of the minerals and other substances held in solution. Although a very pure and germless grade of can ice is produced from distilled water, it has the disadvantage of a soft porous core. The water being frozen in a can immersed in brine, hardens from all sides toward the center, where some air remains and produces the soft porous core. Since this core has a relatively greater surface than the rest of the block, it dissolves very rapidly into its normal liquid state upon being exposed to the atmosphere. This ice is much superior to natural ice, even when the mud and other contaminating substances have been precipitated during the freezing of rivers and lakes, and a fairly good clear product has been obtained. Ice harvested from rivers and ponds containing sewage is always to be rejected, as it is unfit for domestic use because of the typhoid and other disease germs which may be present in such waters.

Plate ice is not made of distilled water, but of the best spring or well water obtainable, and it is said to possess certain qualities that can not be secured in ice made from distilled water. In sections of the country where water is impregnated with alkali, lime, or other obnoxious substances, plate ice can not be used for drinking or in cooking, but it meets all requirements for storage, etc., even better than can ice, because it is frozen evenly. It is said, moreover, that the cost of the production of plate ice is considerably less than that of can ice.

Plate ice is produced in tanks, usually about 16 feet long, 8 feet deep, and 2 feet wide, with sides of iron plates, which are in contact with direct expansion coils. The tanks are filled with water, which is kept in an agitated condition by air jets, the result being that ice forms on the plates as it would on the top of a running brook and is not permitted to congeal in the center. This is primarily the secret of producing an extremely hard, clear ice with neither a porous core nor a soft surface.

Another kind of ice, which is made on the same principle as plate ice, is known as block ice. This is produced directly on the ammonia pipes without the use of steel plates, and is separated from the pipes by means of a steam knife, which cuts the ice into blocks about 8 feet long, 2 feet wide, and 8 inches thick.

It is asserted that plate and block ice made by any water that is not contaminated with malignant bacteria will be as clear and as pure as though it were made of the purest spring water.

As a result of the conditions created by ice plants, the immediate shipment of fruits and produce is no longer necessary, and goods ordinarily classed as perishable can be kept for a long time without marked deterioration in quality.

At present, cars, ships, and warehouses are equipped with cold storage systems. Without this equipment the fresh meat industry could not be carried on as it is to-day. Meat shipped from this country to Europe, Asia, China, or the Philippines undergoes practically no change of temperature from the time of its first chilling at the storage rooms until it is needed for consumption in the locality to which it has been shipped.

The history of ice manufacture as an industry and additional descriptive matter of a technical character were included in the Report on Manufactures, Twelfth Census, Part III, page 675, to which the reader is referred.

Table 9, which is a comparative summary for the United States by states and territories, shows the principal items of capital, salaries and wages, miscellaneous expenses, materials used, and products as reported at the censuses of 1900 and 1905.

The detailed statistics for the industry for 1905 are shown in Table 10. In this table totals for each state and territory in which there were 3 or more establishments are presented separately, and the statistics for the other states are combined so as not to disclose the operations of individual establishments.

TABLE 9.—COMPARATIVE SUMMARY, BY

	STATE OR TERRITORY.	Census.	Number of establishments.	Capital.	SALARIED OFFICIALS, CLERKS, ETC.		WAGE-EARNERS AND WAGES.		Miscellaneous expenses.	MATERIALS USED.							
										Aggregate cost.	Ammonia.						
											Total.		Compressor system.				
													Total.		Anhydrous ammonia.		
					Number.	Salaries.	Average number.	Wages.			Pounds.	Cost.	Pounds.	Cost.	Pounds.	Cost.
1	United States.	1905	1,320	$66,592,001	2,332	$2,001,111	10,101	$5,549,162	$4,014,861	$6,011,325	3,428,431	$613,138	1,944,266	$493,524	1,795,893	$484,769
2		1900	787	38,204,054	1,545	1,234,803	6,933	3,424,305	1,779,890	3,339,724	2,379,989	359,549	946,666	249,838	946,666	249,838
3	Alabama	1905	39	1,480,230	61	52,360	243	104,009	84,944	122,037	110,344	15,225	32,536	9,061	32,536	9,061
4		1900	23	631,667	43	35,680	168	56,251	31,777	53,399	122,415	12,766	24,989	6,745	24,989	6,745
5	Arizona	1905	13	420,343	13	11,855	72	54,652	34,861	57,836	12,654	4,948	12,654	4,948	12,654	4,948
6		1900	9	228,670	12	10,370	44	30,608	10,408	41,505	10,279	4,133	10,279	4,133	10,279	4,133
7	Arkansas	1905	38	1,317,075	65	45,433	261	123,077	74,003	106,217	35,344	10,093	35,344	10,093	33,844	9,973
8		1900	18	637,639	26	24,330	163	61,064	30,702	51,700	20,984	5,910	20,984	5,910	20,984	5,910
9	California	1905	54	3,549,556	67	70,865	415	335,141	254,873	298,926	305,695	36,899	55,661	17,592	46,631	16,928
10		1900	20	1,305,971	64	62,661	190	132,023	89,759	119,889	67,653	12,913	24,653	8,013	24,653	8,013
11	Colorado	1905	16	1,240,294	35	35,476	138	92,568	54,226	70,592	37,120	6,577	27,641	5,322	13,632	4,299
12		1900	6	664,360	18	21,235	93	53,517	12,611	31,446	44,264	5,564	5,646	1,714	5,646	1,714
13	Connecticut	1905	7	362,683	20	14,181	42	31,164	17,137	24,690	7,770	1,527	5,058	1,292	5,058	1,292
14		1900	5	316,722	15	17,681	38	21,041	11,363	16,014	5,313	1,371	5,313	1,371	5,313	1,371
15	Delaware	1905	10	316,428	17	9,662	64	30,869	28,562	25,858	12,621	3,174	12,621	3,174	12,621	3,174
16		1900	7	259,501	8	4,316	28	12,480	8,214	13,654	6,030	1,580	6,030	1,580	6,030	1,580
17	District of Columbia	1905	6	700,018	13	12,218	94	46,430	43,096	71,426	44,149	11,589	44,149	11,589	44,149	11,589
18		1900	4	629,992	16	14,310	83	40,603	36,979	61,267	9,310	2,314	9,310	2,314	9,310	2,314
19	Florida	1905	47	1,360,095	69	59,781	295	150,575	93,852	171,292	186,934	20,111	29,458	8,346	20,458	8,346
20		1900	35	740,131	24	21,371	244	100,533	21,472	131,816	149,086	13,276	17,831	5,174	17,831	5,174
21	Georgia	1905	48	1,704,716	105	76,056	399	141,746	167,130	200,457	166,273	21,409	59,712	14,779	51,862	14,365
22		1900	32	975,160	48	42,535	251	86,210	49,654	120,512	107,925	12,736	26,090	6,773	26,090	6,773
23	Illinois	1905	43	2,162,126	134	110,466	485	268,786	175,516	247,374	141,702	24,366	80,687	19,129	74,145	18,782
24		1900	29	1,689,253	92	75,210	624	303,317	173,895	173,850	74,829	14,813	49,256	12,324	49,256	12,324
25	Indian Territory	1905	22	605,859	26	19,525	82	44,043	34,294	44,702	15,015	4,543	14,807	4,481	14,807	4,481
26		1900	3	62,974	4	1,525	10	4,003	1,830	5,327	1,550	443	1,550	443	1,550	443
27	Indiana	1905	66	2,204,227	104	73,039	391	199,113	110,263	161,357	115,831	15,256	34,117	8,857	33,517	8,827
28		1900	47	1,530,603	61	43,856	343	161,902	67,954	121,390	144,476	15,809	28,017	7,717	28,017	7,717
29	Iowa	1905	4	186,824	6	5,416	20	11,968	12,205	16,214	6,900	976	2,500	712	2,500	712
30		1900	3	165,300	10	3,055	33	15,067	9,014	10,530	24,600	1,749	2,100	549	2,100	549
31	Kansas	1905	44	1,372,599	67	55,186	237	145,469	68,379	141,100	58,471	11,752	38,489	9,272	31,520	8,854
32		1900	19	425,199	20	13,420	114	55,427	15,715	55,784	42,938	5,891	13,019	3,434	13,019	3,434
33	Kentucky	1905	48	1,815,678	66	54,618	345	152,086	114,818	138,501	155,601	16,866	32,541	7,559	28,041	7,324
34		1900	31	1,200,117	52	32,600	192	84,321	64,870	81,564	99,007	12,006	23,527	6,612	23,527	6,612
35	Louisiana	1905	62	3,495,818	101	86,665	458	236,102	171,472	333,069	171,907	29,417	70,530	20,475	69,030	20,375
36		1900	36	2,205,961	78	67,132	299	126,067	85,103	193,241	191,178	24,424	32,807	9,222	32,807	9,222
37	Maryland	1905	27	1,688,339	50	45,861	253	125,834	90,594	180,382	85,214	20,263	85,214	20,263	85,214	20,263
38		1900	18	649,692	19	14,535	138	74,633	24,490	84,070	22,515	5,177	22,515	5,177	22,515	5,177
39	Mississippi	1905	37	1,265,613	79	63,747	274	118,528	82,513	145,197	54,338	11,857	31,008	8,787	31,008	8,787
40		1900	23	597,871	28	23,900	162	56,503	33,730	68,520	44,115	6,489	10,216	2,541	10,216	2,541
41	Missouri	1905	53	3,317,855	96	94,435	433	271,614	161,225	390,186	223,784	44,054	216,284	43,679	161,371	40,344
42		1900	31	1,835,166	65	66,315	279	157,006	72,868	226,385	123,114	22,302	89,285	19,375	89,285	19,375
43	New Jersey	1905	39	2,748,564	52	46,612	268	159,306	120,819	171,660	78,452	17,233	54,886	13,053	50,886	12,853
44		1900	26	1,653,028	52	37,090	183	94,070	51,276	108,158	33,503	6,876	25,693	6,255	25,693	6,255
45	New Mexico	1905	7	190,088	4	5,100	23	19,666	5,361	15,948	4,790	1,505	2,100	836	2,100	836
46		1900	4	118,450	2	2,400	22	15,300	1,983	15,480	14,758	1,700	2,336	610	2,336	610
47	New York	1905	58	5,972,164	99	99,592	603	424,065	365,461	576,563	205,232	51,336	194,881	49,368	194,881	49,368
48		1900	41	2,554,722	63	51,780	319	201,394	177,727	208,695	102,620	23,274	89,120	21,726	89,120	21,726
49	North Carolina	1905	32	860,441	69	57,516	235	82,572	52,041	97,305	27,931	6,876	21,299	5,952	21,299	5,952
50		1900	23	523,243	37	32,317	161	52,647	18,042	66,291	44,418	6,143	16,338	4,415	16,338	4,415
51	Ohio	1905	69	4,495,209	141	111,197	520	295,764	210,970	291,644	195,353	28,612	92,457	21,373	82,257	20,862
52		1900	42	1,777,430	79	53,410	299	154,561	71,065	138,135	141,365	14,756	39,096	9,617	39,096	9,617
53	Oklahoma	1905	22	735,368	39	28,097	115	63,333	45,178	76,266	21,009	6,168	20,809	6,108	20,809	6,108
54		1900	7	194,323	16	13,080	51	28,171	17,968	30,662	10,328	1,833	2,530	733	2,530	733
55	Oregon	1905	20	451,249	18	15,365	75	56,831	24,160	40,566	11,093	3,097	11,093	3,097	11,093	3,097
56		1900	9	172,800	9	13,980	35	25,235	14,502	19,155	6,043	1,934	6,043	1,934	6,043	1,934
57	Pennsylvania	1905	109	9,711,731	284	261,955	1,236	732,285	591,501	711,448	364,200	72,518	266,239	66,584	263,564	66,496
58		1900	73	8,259,861	246	160,993	930	537,748	290,339	302,484	225,936	48,887	175,608	44,858	175,608	44,858

STATES AND TERRITORIES: 1905 AND 1900.

MATERIALS USED—continued.									PRODUCTS.								
Ammonia—Continued.								Cost of fuel, mill supplies, all other materials, freight, and rent of power and heat.	Aggregate value.	Ice.						All other products (value).	
Compressor system—Con.		Absorption system.								Total.		Can.		Plate.			
Aqua ammonia.		Total.		Anhydrous ammonia.		Aqua ammonia.											
Pounds	Cost.	Pounds.	Cost.	Pounds	Cost.	Pounds	Cost.			Tons.	Value.	Tons.	Value.	Tons.	Value.		
148,373	$8,755	1,484,165	$119,614	136,604	$37,506	1,347,561	$82,108	$5,368,187	$25,790,045	7,199,448	$22,450,503	6,695,789	$21,020,547	503,659	$1,429,956	$1,330,542	1
.....	.....	1,433,323	109,711	109,869	29,842	1,323,454	79,869	2,080,175	13,874,513	4,294,439	13,303,874	4,139,764	12,863,160	154,675	440,714	570,639	2
.....	.....	77,808	6,164	4,075	1,128	73,733	5,036	106,812	532,253	129,620	529,433	129,620	529,433	.....	.....	2,820	3
.....	.....	97,426	6,021	.....	.....	97,426	6,021	40,633	253,475	55,908	252,675	55,908	252,675	.....	.....	800	4
.....	.....	.....	.....	.....	.....	.....	.....	52,888	259,288	27,580	252,079	27,580	252,079	.....	.....	7,209	5
.....	.....	.....	.....	.....	.....	.....	.....	37,372	132,611	14,709	120,765	14,709	120,765	.....	.....	11,846	6
1,500	120	.....	.....	.....	.....	.....	.....	96,124	487,917	138,015	436,312	138,015	436,312	.....	.....	51,605	7
.....	.....	.....	.....	.....	.....	.....	.....	45,790	236,289	51,236	225,029	51,236	225,029	.....	.....	11,260	8
9,630	664	250,034	19,307	5,100	1,828	244,934	17,479	262,027	1,307,073	319,423	1,042,722	261,870	886,255	57,553	156,467	264,351	9
.....	.....	43,000	4,900	8,000	2,400	35,000	2,500	106,976	511,197	90,679	415,388	80,679	353,888	10,000	61,500	95,809	10
14,600	1,023	9,479	1,255	2,279	752	7,200	503	64,015	376,086	113,049	371,686	113,049	371,686	.....	.....	4,400	11
.....	.....	38,618	3,850	5,389	1,693	33,229	2,157	25,882	204,029	51,545	204,029	51,545	204,029	.....	.....	.....	12
.....	.....	2,712	235	420	109	2,292	126	22,563	120,774	35,175	108,172	29,504	85,488	5,671	22,684	12,602	13
.....	.....	.....	.....	.....	.....	.....	.....	14,643	95,304	25,950	95,304	21,650	73,804	4,300	21,500	.....	14
.....	.....	.....	.....	.....	.....	.....	.....	22,684	141,583	38,692	141,577	8,146	36,041	30,546	105,536	6	15
.....	.....	.....	.....	.....	.....	.....	.....	12,074	71,240	26,738	71,240	24,700	61,050	2,038	10,190	.....	16
.....	.....	.....	.....	.....	.....	.....	.....	59,837	260,990	84,524	260,990	55,933	179,947	28,591	81,043	.....	17
.....	.....	.....	.....	.....	.....	.....	.....	58,953	182,575	64,950	147,575	44,450	105,575	20,500	42,000	35,000	18
.....	.....	157,476	11,765	9,625	2,761	147,851	9,004	151,181	684,388	169,051	676,707	167,251	667,507	1,800	9,200	7,681	19
.....	.....	131,255	8,102	1,905	576	129,350	7,526	118,540	438,782	125,184	437,382	125,184	437,382	.....	.....	1,400	20
7,850	414	106,561	6,630	1,300	242	105,261	6,388	179,048	858,058	222,555	814,856	216,981	797,208	5,574	17,648	43,202	21
.....	.....	81,835	5,903	3,858	986	77,977	4,977	113,776	456,964	131,236	455,699	131,236	455,699	.....	.....	1,265	22
6,542	347	61,015	5,237	8,562	2,204	52,453	3,033	223,008	940,007	200,542	812,977	232,305	729,987	28,237	82,990	127,030	23
.....	.....	25,573	2,489	5,140	1,350	20,433	1,139	150,037	990,827	249,813	877,178	240,013	869,178	800	8,000	113,649	24
.....	.....	208	62	208	62	.....	.....	40,240	242,334	45,476	238,735	45,476	238,735	.....	.....	3,599	25
.....	.....	.....	.....	.....	.....	.....	.....	4,884	19,540	3,060	19,440	3,060	19,440	.....	.....	100	26
600	30	81,714	6,399	7,387	1,957	74,327	4,442	146,101	748,369	285,511	707,576	282,911	702,376	2,600	5,200	40,793	27
.....	.....	116,459	8,092	8,862	2,276	107,597	5,816	105,581	544,605	199,184	514,531	199,184	514,531	.....	.....	29,474	28
.....	.....	4,400	264	.....	.....	4,400	264	15,238	51,215	26,872	45,990	26,872	45,990	.....	.....	5,225	29
.....	.....	22,500	1,200	.....	.....	22,500	1,200	8,781	38,400	13,500	36,600	13,500	36,600	.....	.....	1,800	30
6,060	418	19,982	2,480	5,565	1,590	14,417	890	120,348	585,317	166,718	552,183	166,718	552,183	.....	.....	33,134	31
.....	.....	20,919	2,457	3,354	1,001	20,565	1,456	49,893	196,310	62,486	193,310	62,486	193,310	.....	.....	3,000	32
4,500	235	123,069	9,307	13,708	3,538	109,262	5,769	121,635	703,365	233,424	698,115	218,709	664,129	14,715	33,986	5,250	33
.....	.....	75,480	5,394	5,980	1,691	69,500	3,703	69,558	454,497	137,472	375,897	137,472	375,897	.....	.....	78,600	34
1,500	100	101,377	8,042	12,720	3,637	88,648	5,305	303,652	1,099,726	300,334	1,047,703	300,334	1,047,703	.....	.....	52,023	35
.....	.....	158,371	15,202	20,819	5,825	137,552	9,377	168,817	591,500	179,716	563,561	179,716	563,561	.....	.....	27,939	36
.....	.....	.....	.....	.....	.....	.....	.....	100,119	720,553	228,541	728,577	134,197	430,566	94,344	298,011	976	37
.....	.....	.....	.....	.....	.....	.....	.....	78,893	358,668	120,740	358,668	116,800	348,083	3,940	10,585	.....	38
.....	.....	25,330	3,070	4,280	1,195	19,050	1,875	133,340	603,485	136,368	582,465	136,368	582,465	.....	.....	21,020	39
.....	.....	33,899	3,048	8,973	2,330	24,926	1,618	62,031	288,739	57,207	268,175	57,207	268,175	.....	.....	20,564	40
54,913	3,335	7,500	375	.....	.....	7,500	375	355,132	1,120,080	411,818	1,030,128	411,818	1,030,128	.....	.....	90,852	41
.....	.....	33,829	2,927	2,378	521	31,451	2,406	206,083	641,405	285,796	635,503	285,796	635,503	.....	.....	5,902	42
4,000	200	23,566	4,180	12,746	3,302	10,820	878	154,436	647,504	238,172	618,956	181,202	479,441	56,970	139,515	28,608	43
.....	.....	7,000	621	1,000	230	6,000	391	101,282	391,685	109,755	379,776	154,615	341,176	15,140	38,600	11,999	44
.....	.....	2,600	369	1,600	592	1,000	77	14,443	83,657	16,337	82,357	16,337	82,357	.....	.....	1,300	45
.....	.....	12,422	1,000	300	90	12,122	1,000	13,780	77,775	10,915	77,775	10,915	77,775	.....	.....	.....	46
.....	.....	10,351	1,968	6,670	1,774	3,681	194	525,227	1,748,871	847,935	1,725,653	708,045	1,624,806	49,890	100,847	23,218	47
.....	.....	13,500	1,548	4,000	1,048	9,500	500	245,421	1,051,372	457,779	1,025,308	456,279	1,015,308	1,500	10,000	26,064	48
.....	.....	6,632	924	2,432	651	4,200	273	99,480	417,868	110,414	417,868	110,414	417,868	.....	.....	.....	49
.....	.....	28,080	1,728	410	115	27,670	1,613	60,148	228,305	61,338	228,305	61,338	228,305	.....	.....	.....	50
10,200	511	102,896	7,239	9,149	2,296	93,747	4,943	263,032	1,217,405	499,022	1,147,007	475,022	1,116,537	24,000	30,470	70,458	51
.....	.....	102,269	5,130	955	234	101,314	4,905	123,379	582,538	237,750	577,038	220,833	548,542	16,917	28,496	5,500	52
.....	.....	200	60	200	60	.....	.....	70,098	285,313	51,181	275,647	51,181	275,647	.....	.....	9,666	53
.....	.....	7,798	1,100	2,312	600	5,486	500	28,820	106,003	22,218	106,003	22,218	106,003	.....	.....	.....	54
.....	.....	.....	.....	.....	.....	.....	.....	36,509	216,726	39,738	191,914	37,388	175,664	2,350	16,250	24,812	55
.....	.....	.....	.....	.....	.....	.....	.....	17,221	116,031	17,165	95,200	17,165	95,200	.....	.....	20,771	56
2,675	88	97,961	5,934	6,388	1,605	91,573	4,329	638,930	2,035,607	988,853	2,085,128	916,692	2,481,640	72,161	203,488	250,479	57
.....	.....	50,328	4,020	4,386	1,106	45,942	2,923	343,597	2,038,504	735,018	2,000,931	684,144	1,866,770	50,874	134,161	37,573	58

TABLE 9.—COMPARATIVE SUMMARY, BY

	STATE OR TERRITORY.	Census.	Number of establishments.	Capital.	SALARIED OFFICIALS, CLERKS, ETC.		WAGE-EARNERS AND WAGES.		Miscellaneous expenses.	MATERIALS USED.						
										Aggregate cost.	Ammonia					
											Total.		Compressor system.			
													Total.		Anhydrous ammonia.	
					Number.	Salaries.	Average number.	Wages.			Pounds.	Cost.	Pounds.	Cost.	Pounds.	Cost.
59	Rhode Island[1]	1905	3	$68,400	3	$1,400	6	$4,170	$2,656	$2,974	600	$159	600	$159	600	$159
60	South Carolina	1905	18	712,546	25	22,507	111	44,556	35,240	74,812	30,051	5,077	18,701	3,200	9,697	2,727
61		1900	13	407,400	13	10,182	73	23,781	18,225	37,327	58,333	4,439	3,277	857	3,277	857
62	Tennessee	1905	37	1,124,789	79	66,624	382	191,246	140,246	123,484	77,209	11,189	40,528	8,555	28,528	7,873
63		1900	27	1,103,501	67	58,622	385	177,461	58,878	109,505	88,573	13,685	28,649	7,478	28,649	7,478
64	Texas	1905	125	5,140,487	216	197,063	869	450,672	317,075	572,988	205,363	53,311	163,399	48,790	162,619	48,742
65		1900	77	2,563,888	171	124,671	618	305,282	132,435	320,381	168,637	32,280	91,995	27,350	91,995	27,350
66	Virginia	1905	48	1,805,126	56	41,083	346	138,044	97,015	171,545	191,138	28,625	87,369	22,356	87,369	22,356
67		1900	30	1,198,981	46	34,934	205	87,193	37,174	106,323	88,607	12,928	28,137	8,334	28,137	8,334
68	Washington	1905	12	486,025	11	14,160	99	78,062	44,929	41,241	15,775	3,999	8,100	2,841	7,650	2,805
69		1900	4	252,300	13	13,750	35	25,700	10,735	17,318	6,883	2,605	6,883	2,605	6,883	2,605
70	West Virginia	1905	30	1,286,955	36	28,095	176	94,426	63,196	60,530	45,239	9,161	33,375	8,472	32,715	8,441
71		1900	8	413,452	19	13,716	80	39,537	11,188	22,327	74,870	5,573	4,100	975	4,100	975
72	All other states	[2] 1905	7	236,683	6	7,900	36	30,360	16,050	26,379	7,329	2,470	7,329	2,470	7,329	2,470
73		[3] 1900	4	198,726	9	7,923	41	23,649	15,876	19,620	3,435	970	3,435	970	3,435	970

[1] Included in "all other states" in 1900.
[2] Includes establishments distributed as follows: Idaho, 1; Massachusetts, 1; Nebraska, 1; Nevada, 2; Utah, 1; Wisconsin, 1.

STATES AND TERRITORIES: 1905 AND 1900—Continued.

MATERIALS USED—continued.									PRODUCTS.								
Ammonia—Continued.								Cost of fuel, mill supplies, all other materials, freight, and rent of power and heat.	Aggregate value.	Ice.						All other products (value).	
Compressor system—Con.		Absorption system.								Total.		Can.		Plate.			
Aqua ammonia.		Total.		Anhydrous ammonia.		Aqua ammonia.											
Pounds	Cost.	Pounds.	Cost.	Pounds	Cost.	Pounds	Cost.			Tons.	Value.	Tons.	Value.	Tons.	Value.		
.....	.....	.....	.....	.....	.....	.....	.....	$2,815	$19,023	9,331	$19,023	8,612	$17,225	719	$1,798	.....	59
9,004	$473	11,350	$1,877	5,850	$1,511	5,500	$366	69,735	243,083	75,803	243,107	75,803	243,107	.....	.....	$576	60
.....	.....	55,056	3,582	336	84	54,720	3,498	32,888	116,357	45,228	116,357	44,853	114,857	375	1,500	.....	61
12,000	682	36,681	2,634	2,281	615	34,400	2,019	112,295	684,420	177,824	674,560	177,824	674,560	.....	.....	9,860	62
.....	.....	59,924	6,207	12,757	3,438	47,167	2,769	95,820	538,107	158,931	538,107	158,931	538,107	.....	.....	.....	63
780	48	41,964	4,521	7,697	2,314	34,267	2,207	519,677	2,083,880	426,755	2,014,702	425,195	2,009,305	1,560	5,397	69,178	64
.....	.....	76,642	4,930	706	205	75,936	4,725	288,101	1,184,332	231,450	1,168,040	229,050	1,159,040	2,400	9,000	15,692	65
.....	.....	103,769	6,269	3,900	1,001	99,869	5,268	142,920	635,772	146,909	587,901	132,439	529,406	14,470	58,555	47,811	66
.....	.....	60,470	4,594	4,974	1,316	55,496	3,278	93,395	427,974	118,240	417,052	96,458	362,542	21,782	54,510	10,922	67
450	36	7,675	1,158	2,175	733	5,500	425	37,242	243,015	51,872	226,015	44,872	191,015	7,000	35,000	17,000	68
.....	.....	.....	.....	.....	.....	.....	.....	14,713	103,600	17,300	103,600	17,300	103,600	.....	.....	.....	69
600	31	11,864	689	188	49	11,676	640	51,369	353,102	96,588	340,304	93,458	328,514	3,130	11,790	12,798	70
.....	.....	70,770	4,598	3,075	727	67,695	3,871	16,754	119,401	35,734	119,201	35,734	119,201	.....	.....	200	71
.....	.....	.....	.....	.....	.....	.....	.....	23,909	112,318	28,526	112,318	26,748	98,237	1,778	14,081	.....	72
.....	.....	.....	.....	.....	.....	.....	.....	18,650	86,172	28,500	82,572	24,400	72,500	4,100	10,072	3,600	73

[a] Includes establishments distributed as follows: Nebraska, 1; Rhode Island, 2; Utah, 1.

TABLE 10.—MANUFACTURED ICE—DETAILED SUMMARY,

		United States.	Alabama.	Arizona.	Arkansas.	California.	Colorado.
1	Number of establishments	1,320	39	13	38	54	16
2	Capital, total	$66,592,001	$1,480,230	$420,343	$1,317,075	$3,549,556	$1,240,294
3	Land	$8,855,242	$176,652	$25,000	$116,152	$438,727	$110,721
4	Buildings	$15,429,399	$213,128	$111,059	$268,322	$1,068,779	$328,277
5	Machinery, tools, and implements	$36,451,321	$915,594	$231,344	$777,193	$1,727,421	$707,608
6	Cash and sundries	$5,856,039	$174,856	$52,040	$155,408	$314,629	$93,688
7	Proprietors and firm members	746	32	12	7	35	9
	Salaried officials, clerks, etc.:						
8	Total number	2,332	61	13	65	67	35
9	Total salaries	$2,001,111	$52,360	$11,855	$45,433	$70,865	$35,476
	Officers of corporations—						
10	Number	695	30	5	16	10	9
11	Salaries	$661,616	$27,480	$4,860	$10,713	$9,575	$12,100
	General superintendents, managers, clerks, etc.—						
12	Total number	1,637	31	8	49	57	26
13	Total salaries	$1,339,495	$24,880	$6,995	$34,720	$61,290	$23,376
	Men—						
14	Number	1,514	29	8	47	53	26
15	Salaries	$1,291,381	$24,400	$6,995	$34,520	$59,790	$23,376
	Women—						
16	Number	123	2	.....	2	4	.....
17	Salaries	$48,114	$480	.....	$200	$1,500	.....
	Wage-earners, including pieceworkers, and total wages:						
18	Greatest number employed at any one time during the year	15,841	416	103	454	544	199
19	Least number employed at any one time during the year	7,110	219	69	215	306	101
20	Average number	10,101	243	72	261	415	138
21	Total wages	$5,549,162	$104,009	$54,652	$123,077	$335,141	$92,568
	Men 16 years and over—						
22	Average number	10,029	243	71	260	415	137
23	Wages	$5,538,163	$104,009	$54,472	$122,879	$335,141	$92,468
	Women 16 years and over—						
24	Average number	18	.....	.....	.....	.....	.....
25	Wages	$3,978	.....	.....	.....	.....	.....
	Children under 16 years—						
26	Average number	54	.....	1	1	.....	1
27	Wages	$7,021	.....	$180	$198	.....	$100
	Average number of wage-earners, including pieceworkers, employed during each month:[1]						
	Men 16 years and over—						
28	January	5,590	97	51	116	312	88
29	February	5,802	100	52	120	334	97
30	March	6,871	130	55	150	354	106
31	April	9,272	253	68	226	404	117
32	May	11,843	293	79	307	440	143
33	June	13,801	373	101	366	469	163
34	July	14,755	396	97	399	513	180
35	August	14,722	394	97	402	490	192
36	September	13,759	362	81	404	489	181
37	October	10,698	251	62	308	441	155
38	November	7,338	146	59	172	394	125
39	December	5,897	121	50	141	340	97
40	Miscellaneous expenses, total	$4,014,861	$84,944	$34,861	$74,003	$254,873	$54,226
41	Rent of works	$246,762	$8,440	$268	$1,000	$2,447	$2,399
42	Taxes	$465,570	$13,950	$4,494	$10,318	$21,819	$5,546
43	Rent of offices, interest, insurance, and all other sundry expenses not hitherto included.	$3,280,087	$62,554	$20,299	$62,085	$230,607	$46,281
44	Contract work	$22,442	.....	$9,800	$600	.....	.....
45	Materials used, aggregate cost	$6,011,325	$122,037	$57,836	$106,217	$298,926	$70,502
	Ammonia—						
46	Total pounds	3,428,431	110,344	12,654	35,344	305,605	37,120
47	Total cost	$613,138	$15,225	$4,948	$10,093	$36,899	$6,577
	Anhydrous—						
48	Pounds	1,932,497	36,611	12,654	33,844	51,131	15,311
49	Cost	$522,275	$10,189	$4,948	$9,973	$18,756	$5,051
	Aqua—						
50	Pounds	1,495,934	73,733	.....	1,500	254,564	21,809
51	Cost	$90,863	$5,036	.....	$120	$18,143	$1,526
52	Fuel	$4,365,316	$88,484	$44,141	$77,502	$189,245	$49,842
53	Rent of power and heat	$77,577	.....	$305	.....	$20,585	$1,020
54	Mill supplies	$328,794	$9,085	$3,675	$6,083	$16,119	$2,011
55	All other materials	$545,325	$9,018	$4,467	$9,024	$35,350	$10,092
56	Freight	$81,175	$225	.....	$2,015	$728	$150
57	Products, aggregate value	$23,700,045	$532,253	$250,288	$487,917	$1,307,073	$376,086
	Ice—						
58	Total tons	7,199,448	129,620	27,580	138,015	310,423	113,049
59	Total value	$22,450,503	$529,433	$252,079	$436,312	$1,042,722	$371,686
	Can ice—						
60	Tons	6,695,789	129,620	27,580	138,015	261,870	113,049
61	Value	$21,020,547	$529,433	$252,079	$436,312	$886,255	$371,686
	Plate ice—						
62	Tons	503,659	.....	.....	.....	57,553	.....
63	Value	$1,429,956	.....	.....	.....	$156,467	.....
64	All other products	$1,339,542	$2,820	$7,209	$51,605	$264,351	$1,400
	Power:						
65	Number of establishments reporting	1,277	36	13	38	53	16
66	Total horsepower	195,171	3,784	1,190	4,633	6,188	2,363
	Owned—						
	Engines—						
	Steam—						
67	Number	2,580	64	22	71	64	24
68	Horsepower	184,570	3,784	1,186	4,622	5,027	2,127
	Gas and gasoline—						
69	Number	22	.....	.....	.....	1	.....
70	Horsepower	618	.....	.....	.....	5	.....
	Water wheels—						
71	Number	18	.....	.....	.....	9	.....
72	Horsepower	1,075	.....	.....	.....	283	.....
	Electric motors—						
73	Number	287	.....	.....	2	44	6
74	Horsepower	3,511	.....	.....	11	400	176
75	Other power, horsepower	1,979	.....	.....	.....	.....	.....
	Rented—						
	Electric motors—						
76	Number	50	.....	2	.....	20	2
77	Horsepower	1,068	.....	4	.....	473	60
78	Other kind, horsepower	2,350	.....	.....	.....	.....	.....
79	Furnished to other establishments, horsepower	543	.....	.....	.....	.....	.....

[1] The average numbers of women and children employed during each month, being small, are not shown in this table.

BY STATES AND TERRITORIES: 1905.

Connecticut.	Delaware.	District of Columbia.	Florida.	Georgia.	Illinois.	Indian Territory.	Indiana.	Iowa.	Kansas.	Kentucky.	Louisiana.	
7	10	6	47	48	43	22	66	4	44	48	62	1
$362,683	$316,428	$700,018	$1,360,095	$1,704,716	$2,162,126	$605,859	$2,204,227	*$186,824	$1,372,599	$1,815,678	$3,495,818	2
$51,000	$26,102	$236,250	$130,306	$181,735	$140,129	$51,044	$266,635	$27,500	$74,736	$130,655	$390,090	3
$105,850	$144,336	$111,750	$225,271	$362,020	$542,435	$122,408	$497,843	$59,213	$350,372	$459,077	$691,374	4
$167,017	$120,900	$305,975	$802,543	$1,046,306	$1,195,344	$370,945	$1,249,600	$94,505	$872,918	$1,038,490	$2,120,171	5
$38,816	$25,090	$46,043	$111,975	$114,655	$284,218	$61,462	$190,143	$5,606	$74,573	$187,456	$294,183	6
6	6	1	41	18	29	14	52	.....	33	33	27	7
20	17	13	69	105	134	26	104	6	67	66	101	8
$14,181	$9,662	$12,218	$59,781	$76,056	$110,466	$19,525	$73,039	$5,416	$55,186	$54,618	$80,605	9
4	9	6	20	34	24	3	38	1	25	30	34	10
$5,254	$3,800	$8,000	$20,800	$28,245	$33,388	$900	$23,782	$1,500	$23,231	$29,750	$36,610	11
16	8	7	49	71	110	23	66	5	42	36	67	12
$8,927	$5,772	$4,218	$38,981	$47,811	$77,078	$18,625	$49,257	$3,916	$31,955	$24,808	$50,055	13
13	8	5	48	69	94	22	58	4	37	32	64	14
$8,355	$5,772	$3,672	$38,513	$46,839	$71,109	$18,025	$46,115	$3,580	$28,680	$24,088	$49,195	15
3	.....	2	1	2	16	1	8	1	5	4	3	16
$572	.....	$546	$468	$972	$5,969	$600	$3,142	$336	$3,275	$780	$800	17
58	115	133	403	714	715	150	645	41	387	579	711	18
42	55	66	231	283	303	63	280	22	164	219	313	19
42	64	94	295	399	485	82	391	20	237	345	458	20
$31,164	$30,869	$46,430	$150,575	$141,746	$268,786	$44,043	$199,113	$11,968	$145,469	$152,086	$236,102	21
42	64	94	293	398	484	79	390	20	235	343	442	22
$31,164	$30,869	$46,430	$150,063	$141,606	$268,626	$43,758	$199,013	$11,968	$145,054	$151,634	$234,590	23
.....	.....	.....	1	.....	1	.....	.....	.....	.....	1	4	24
.....	.....	.....	$312	.....	$160	.....	.....	.....	.....	$150	$336	25
.....	.....	.....	1	1	.....	3	1	.....	2	1	12	26
.....	.....	.....	$200	$140	.....	$285	$100	.....	$415	$302	$1,176	27
31	28	70	239	174	353	21	201	3	122	143	219	28
32	27	64	241	185	356	21	213	3	130	145	235	29
34	37	74	258	259	399	32	234	3	182	206	318	30
37	56	77	284	458	438	66	334	16	211	316	449	31
44	86	106	300	513	540	105	440	26	264	433	502	32
53	106	116	333	571	638	133	520	29	323	511	621	33
56	98	120	352	634	667	137	577	37	358	545	639	34
56	96	120	358	635	673	134	592	36	364	541	643	35
54	93	121	342	548	633	125	564	34	331	500	606	36
45	70	110	300	386	479	90	438	28	255	372	508	37
31	41	75	259	232	338	49	333	14	155	232	310	38
31	30	75	241	181	294	35	225	11	125	172	204	39
$17,137	$28,562	$43,096	$93,852	$167,130	$175,516	$34,294	$110,263	$12,205	$68,379	$114,818	$171,472	40
$600	.....	$9,380	$6,470	$1,342	$39,881	$8	$2,052	.....	$600	$1,407	$1,500	41
$1,013	$1,029	$2,528	$9,820	$18,259	$11,906	$3,502	$16,699	$1,182	$9,658	$12,020	$24,081	42
$14,624	$27,533	$31,188	$77,562	$146,904	$123,729	$30,784	$91,512	$11,023	$57,821	$99,001	$145,282	43
.....	.....	.....	.....	$625	.....	.....	.....	.....	.....	$590	.....	44
$24,090	$25,858	$71,426	$171,292	$200,457	$247,374	$44,792	$161,357	$16,214	$141,100	$138,501	$333,060	45
7,770	12,621	44,140	180,934	166,273	141,702	15,015	115,831	6,900	58,471	155,601	171,907	46
$1,527	$3,174	$11,589	$20,111	$21,409	$24,366	$4,543	$15,256	$976	$11,752	$16,866	$20,417	47
5,478	12,621	44,140	39,083	53,162	82,707	15,015	40,904	2,500	37,094	41,839	81,759	48
$1,401	$3,174	$11,589	$11,107	$14,607	$20,986	$4,543	$10,784	$712	$10,444	$10,862	$24,012	49
2,292	.....	.....	147,851	113,111	58,995	.....	74,927	4,400	21,377	113,762	90,148	50
$126	.....	.....	$9,004	$6,802	$3,380	.....	$4,472	$204	$1,308	$6,004	$5,405	51
$18,091	$17,938	$49,620	$130,043	$141,645	$157,045	$36,005	$125,002	$13,232	$105,191	$97,258	$258,602	52
.....	.....	.....	$604	.....	$1,450	.....	.....	.....	$300	$3,486	$80	53
$504	$1,070	$4,221	$6,087	$8,116	$11,508	$2,650	$8,942	$080	$8,168	$7,123	$15,801	54
$3,898	$1,700	$5,987	$12,302	$29,287	$42,108	$1,382	$11,023	$882	$7,713	$13,648	$24,029	55
$10	$1,976	.....	$2,085	.....	$10,897	$212	$1,134	$135	$7,076	$120	$5,050	56
$120,774	$141,583	$260,000	$684,388	$858,058	$940,007	$242,334	$748,309	$51,215	$585,317	$703,305	$1,099,726	57
35,175	38,692	84,524	169,051	222,555	260,542	45,476	285,511	26,872	166,718	233,424	300,334	58
$108,172	$141,577	$260,000	$676,707	$814,856	$812,977	$238,735	$707,576	$45,900	$552,183	$698,115	$1,047,703	59
29,504	8,146	55,933	167,251	216,981	232,305	45,476	282,911	26,872	166,718	218,709	300,334	60
$85,488	$36,041	$179,047	$667,507	$797,208	$729,987	$238,735	$702,376	$45,900	$552,183	$664,129	$1,047,703	61
5,671	30,546	28,591	1,800	5,574	28,237	.....	2,600	.....	.....	14,715	.....	62
$22,684	$105,536	$81,043	$9,200	$17,648	$82,090	.....	$5,200	.....	.....	$33,986	.....	63
$12,602	$6	.....	$7,681	$43,202	$127,030	$3,599	$40,703	$5,225	$33,134	$5,250	$52,023	64
7	10	6	36	44	42	21	63	4	44	47	61	65
785	705	2,770	3,048	5,403	6,626	2,044	5,076	784	5,601	8,790	8,471	66
12	17	22	71	111	86	31	100	11	74	95	109	67
780	705	2,560	2,933	5,353	5,579	2,030	5,580	784	5,569	8,475	8,170	68
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	1	69
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6	2	70
.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	71
.....	.....	210	.....	.....	.....	.....	.....	.....	.....	.....	.....	72
1	.....	.....	3	17	12	2	10	.....	6	3	9	73
5	.....	.....	105	140	117	8	65	.....	32	30	195	74
.....	.....	.....	.....	.....	800	.....	22	.....	.....	200	100	75
.....	.....	.....	1	.....	2	.....	.....	.....	.....	2	1	76
.....	.....	.....	10	.....	130	.....	.....	.....	.....	4	4	77
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	75	.....	78
.....	4	.....	.....	3	35	.....	.....	.....	4	.....	63	79

TABLE 10.—MANUFACTURED ICE—DETAILED

		Maryland.	Mississippi.	Missouri.	New Jersey.	New Mexico.	New York.	North Carolina.
1	Number of establishments	27	37	53	39	7	58	32
2	Capital, total	$1,688,339	$1,265,613	$3,317,855	$2,748,564	$190,088	$5,972,164	$860,441
3	Land	$350,525	$137,600	$419,477	$373,799	$10,948	$1,164,227	$80,300
4	Buildings	$311,661	$295,428	$863,897	$506,771	$40,566	$1,721,849	$142,750
5	Machinery, tools, and implements	$227,678	$729,599	$1,838,246	$1,530,990	$117,390	$2,749,524	$541,226
6	Cash and sundries	$98,475	$102,986	$196,235	$337,004	$21,184	$336,564	$96,165
7	Proprietors and firm members	15	23	30	18	5	21	13
	Salaried officials, clerks, etc.:							
8	Total number	50	79	96	52	4	99	69
9	Total salaries	$45,861	$63,747	$94,435	$46,612	$5,100	$99,592	$57,516
	Officers of corporations—							
10	Number	19	12	37	16	3	24	25
11	Salaries	$19,873	$6,495	$40,225	$17,775	$3,300	$25,625	$22,822
	General superintendents, managers, clerks, etc.—							
12	Total number	31	67	59	36	1	75	44
13	Total salaries	$25,988	$57,252	$54,210	$28,837	$1,800	$73,967	$34,694
	Men—							
14	Number	29	66	55	31	1	71	42
15	Salaries	$25,388	$56,892	$53,040	$27,415	$1,800	$72,175	$33,594
	Women—							
16	Number	2	1	4	5	.....	4	2
17	Salaries	$600	$360	$1,170	$1,422	.....	$1,792	$1,100
	Wage-earners, including pieceworkers, and total wages:							
18	Greatest number employed at any one time during the year	426	449	684	419	40	884	428
19	Least number employed at any one time during the year	203	237	301	166	23	459	186
20	Average number	253	274	433	268	23	603	235
21	Total wages	$125,834	$118,528	$271,614	$159,306	$19,666	$424,095	$82,572
	Men 16 years and over—							
22	Average number	248	263	433	268	23	603	235
23	Wages	$125,130	$116,922	$271,614	$159,306	$19,666	$424,095	$82,572
	Women 16 years and over—							
24	Average number	1	.....	.....	.....	.....	.....	.....
25	Wages	$300	.....	.....	.....	.....	.....	.....
	Children under 16 years—							
26	Average number	4	11	.....	.....	.....	.....	.....
27	Wages	$404	$1,606	.....	.....	.....	.....	.....
	Average number of wage-earners, including pieceworkers, employed during each month:							
	Men 16 years and over—							
28	January	132	107	204	138	7	402	112
29	February	130	113	214	148	7	423	113
30	March	136	165	263	162	15	489	148
31	April	246	262	360	245	20	556	208
32	May	319	366	532	313	22	660	355
33	June	359	401	608	366	29	765	374
34	July	376	403	634	400	35	809	384
35	August	377	406	647	401	37	778	383
36	September	365	399	596	366	35	746	327
37	October	250	293	511	305	28	656	194
38	November	158	140	376	215	23	498	117
39	December	128	101	251	157	18	454	105
40	Miscellaneous expenses, total	$90,594	$82,513	$161,225	$129,819	$5,361	$365,461	$52,041
41	Rent of works	$7,379	$82	$1,540	$3,000	$40	$41,320	$375
42	Taxes	$9,802	$15,549	$19,571	$15,318	$1,921	$31,174	$8,006
43	Rent of offices, interest, insurance, and all other sundry expenses not hitherto included.	$70,813	$66,882	$136,052	$109,892	$3,400	$292,967	$43,660
44	Contract work	$2,600	.....	$4,062	$1,609	.....	.....	.....
45	Materials used, aggregate cost	$180,382	$145,197	$399,186	$171,669	$15,948	$576,563	$97,365
	Ammonia—							
46	Total pounds	85,214	54,338	223,784	78,452	4,790	205,232	27,931
47	Total cost	$20,263	$11,857	$44,054	$17,233	$1,505	$51,336	$6,876
	Anhydrous—							
48	Pounds	85,214	35,288	161,371	63,632	3,790	201,551	23,731
49	Cost	$20,263	$9,982	$40,344	$16,155	$1,428	$51,142	$6,603
	Aqua—							
50	Pounds	.....	19,050	62,413	14,820	1,000	3,681	4,200
51	Cost	.....	$1,875	$3,710	$1,078	$77	$194	$273
52	Fuel	$122,766	$96,611	$297,098	$134,782	$13,309	$404,991	$75,694
53	Rent of power and heat	.....	.....	.....	.....	.....	$34,533	$150
54	Mill supplies	$11,913	$6,372	$23,072	$8,312	$744	$34,049	$4,945
55	All other materials	$24,260	$24,569	$30,740	$10,753	$390	$50,724	$9,700
56	Freight	$1,180	$5,788	$4,222	$589	.....	$930	.....
57	Products, aggregate value	$729,553	$603,485	$1,129,980	$647,564	$83,657	$1,748,871	$417,868
	Ice—							
58	Total tons	228,541	136,368	411,818	238,172	16,337	847,935	110,414
59	Total value	$728,577	$582,465	$1,039,128	$618,956	$82,357	$1,725,653	$417,868
	Can ice—							
60	Tons	134,197	136,368	411,818	181,202	16,337	798,045	110,414
61	Value	$430,566	$582,465	$1,039,128	$479,441	$82,357	$1,624,806	$417,868
	Plate ice—							
62	Tons	94,344	.....	.....	56,970	.....	49,890	.....
63	Value	$298,011	.....	.....	$139,515	.....	$100,847	.....
64	All other products	$976	$21,020	$90,852	$28,608	$1,300	$23,218	.....
	Power:							
65	Number of establishments reporting	27	35	53	39	5	58	28
66	Total horsepower	4,352	4,190	14,151	6,731	462	16,239	3,033
	Owned—							
	Engines—							
	Steam—							
67	Number	46	75	137	107	5	128	44
68	Horsepower	4,230	4,171	13,296	6,427	377	14,271	2,976
	Gas and gasoline—							
69	Number	.....	.....	.....	4	.....	.....	1
70	Horsepower	.....	.....	.....	200	.....	.....	5
	Water wheels—							
71	Number	.....	.....	.....	1	.....	.....	.....
72	Horsepower	.....	.....	.....	50	.....	.....	.....
	Electric motors—							
73	Number	13	2	31	7	.....	22	5
74	Horsepower	72	19	605	54	.....	281	42
75	Other power, horsepower	50	.....	250	.....	85	.....	.....
	Rented—							
	Electric motors—							
76	Number	.....	.....	.....	.....	.....	4	2
77	Horsepower	.....	.....	.....	.....	.....	112	10
78	Other kind, horsepower	.....	.....	.....	.....	.....	1,575	.....
79	Furnished to other establishments, horsepower	2	.....	80	30	.....	50	.....

[1] Includes establishments distributed as follows: Idaho, 1; Massachusetts, 1; Nebraska, 1; Nevada, 2; Utah, 1; Wisconsin, 1.

SUMMARY, BY STATES AND TERRITORIES: 1905—Continued.

Ohio.	Oklahoma.	Oregon.	Pennsylvania.	Rhode Island.	South Carolina.	Tennessee.	Texas.	Virginia.	Washington.	West Virginia.	All other states.[1]	
69	22	20	109	3	18	37	125	48	12	30	7	1
$4,495,209	$735,368	$451,249	$9,711,731	$68,400	$712,346	$1,124,789	$5,140,487	$1,805,126	$486,025	$1,286,955	$236,683	2
$678,449	$38,065	$53,650	$1,780,898	$700	$77,950	$134,130	$520,312	$174,302	$127,300	$133,776	$25,400	3
$977,169	$173,148	$97,942	$2,397,285	$6,000	$127,449	$246,650	$1,025,362	$344,750	$101,396	$308,412	$78,500	4
$2,374,759	$452,061	$241,742	$4,609,058	$57,000	$417,162	$640,566	$3,228,428	$1,090,500	$207,980	$735,532	$128,000	5
$464,832	$72,094	$57,915	$924,490	$4,700	$89,785	$103,443	$366,385	$195,574	$49,349	$109,235	$4,783	6
31	9	14	57	2	8	26	59	43	9	5	3	7
141	39	18	284	3	25	79	216	56	11	36	6	8
$111,197	$28,097	$15,365	$261,955	$1,400	$22,507	$66,624	$197,063	$41,083	$14,160	$28,095	$7,900	9
62	12	5	53	.....	7	27	52	22	2	17	2	10
$50,599	$10,080	$6,100	$58,189	.....	$10,525	$26,250	$49,245	$15,953	$1,800	$15,082	$1,600	11
79	27	13	231	3	18	52	164	34	9	19	4	12
$60,598	$18,017	$9,265	$203,766	$1,400	$11,982	$40,374	$147,818	$25,130	$12,360	$13,013	$6,300	13
65	25	10	209	2	18	47	161	34	9	18	4	14
$55,517	$17,217	$8,350	$192,602	$1,200	$11,982	$38,264	$146,188	$25,130	$12,360	$12,943	$6,300	15
14	2	3	22	1	.....	5	3	.....	.....	1	.....	16
$5,081	$800	$915	$11,164	$200	.....	$2,110	$1,630	.....	.....	$70	.....	17
829	203	122	1,689	23	189	617	1,420	580	121	288	63	18
330	66	55	657	23	90	257	581	273	90	126	36	19
520	115	75	1,236	6	111	382	869	346	99	176	36	20
$295,764	$63,333	$56,831	$732,285	$4,170	$44,556	$191,246	$450,672	$138,044	$78,062	$94,426	$30,360	21
517	115	75	1,229	6	110	376	865	346	99	172	36	22
$295,335	$63,333	$56,831	$730,079	$4,170	$44,480	$190,528	$449,756	$138,044	$78,062	$94,136	$30,360	23
2	.....	.....	7	.....	.....	1	.....	.....	.....	.....	.....	24
$364	.....	.....	$2,206	.....	.....	$150	.....	.....	.....	.....	.....	25
1	.....	.....	.....	.....	1	5	4	.....	.....	4	.....	26
$65	.....	.....	.....	.....	$76	$568	$916	.....	.....	$290	.....	27
306	54	47	749	.....	54	204	456	179	78	88	15	28
293	54	47	768	.....	64	209	475	191	82	92	15	29
360	69	46	886	.....	66	244	569	211	77	119	15	30
422	102	54	1,151	.....	93	337	784	358	82	158	24	31
565	121	76	1,491	.....	130	437	1,014	391	110	201	50	32
691	172	95	1,675	13	172	540	1,205	502	113	228	58	33
782	193	105	1,741	21	177	575	1,336	528	121	270	60	34
792	193	113	1,709	23	181	570	1,315	523	121	270	60	35
724	175	107	1,618	15	152	525	1,231	496	117	240	57	36
582	115	87	1,244	.....	106	407	952	351	110	175	34	37
380	71	65	947	.....	70	263	584	224	94	126	22	38
307	61	58	769	.....	55	201	459	198	83	97	22	39
$210,970	$45,178	$24,160	$591,501	$2,656	$35,240	$140,246	$317,075	$97,015	$44,929	$63,196	$16,050	40
$5,977	$5,026	$5,654	$78,653	$300	$895	$1,613	$2,353	$9,280	$4,072	$1,100	.....	41
$26,158	$5,300	$2,859	$63,940	$216	$7,205	$14,690	$47,577	$10,364	$6,157	$6,125	$3,414	42
$178,835	$34,852	$15,647	$448,100	$2,140	$27,140	$123,943	$266,397	$76,371	$34,700	$55,971	$12,636	43
.....	.....	.....	808	.....	.....	.....	748	1,000	.....	.....	.....	44
$291,644	$76,266	$40,566	$711,448	$2,974	$74,812	$123,484	$572,988	$171,545	$41,241	$60,530	$26,379	45
195,353	21,009	11,093	364,200	600	30,051	77,209	205,363	191,138	15,775	45,239	7,329	46
$28,612	$6,168	$3,997	$72,518	$159	$5,077	$11,189	$53,311	$28,625	$3,999	$9,161	$2,470	47
91,406	21,009	11,093	269,952	600	15,547	30,809	170,316	91,269	9,825	32,903	7,329	48
$23,158	$6,168	$3,997	$68,101	$159	$4,238	$8,488	$51,056	$23,357	$3,538	$8,490	$2,470	49
103,947	.....	.....	94,248	.....	14,504	46,400	35,047	99,869	5,950	12,336	.....	50
$5,454	.....	.....	$4,417	.....	$839	$2,701	$2,255	$5,268	$461	$671	.....	51
$217,215	$57,992	$31,568	$512,497	$2,750	$54,454	$97,759	$439,394	$119,645	$28,580	$39,764	$19,552	52
.....	$933	.....	$6,171	.....	.....	$1,200	.....	$2,000	$2,300	.....	$1,200	53
$21,672	$4,420	$1,663	$41,674	$55	$3,378	$7,495	$32,742	$6,796	$1,921	$3,960	$709	54
$23,845	$2,604	$2,835	$53,394	$10	$11,903	$5,841	$45,442	$13,748	$4,356	$5,076	$2,325	55
$300	$4,149	$503	$25,194	.....	.....	.....	$2,099	$731	$85	$2,569	$123	56
$1,217,465	$285,313	$216,726	$2,935,607	$19,023	$243,683	$684,420	$2,083,880	$635,772	$243,015	$353,102	$112,318	57
499,922	51,181	39,738	988,853	9,331	75,803	177,824	426,755	166,909	51,872	96,588	28,526	58
$1,147,007	$275,647	$191,914	$2,685,128	$19,023	$243,107	$674,560	$2,014,702	$587,961	$226,015	$340,304	$112,318	59
475,922	51,181	37,388	916,692	8,612	75,803	177,824	425,195	152,439	44,872	93,458	26,748	60
$1,116,537	$275,647	$175,664	$2,481,640	$17,225	$243,107	$674,560	$2,009,305	$529,406	$191,015	$328,514	$98,237	61
24,000	.....	2,350	72,161	719	.....	.....	1,560	14,470	7,000	3,130	1,778	62
$30,470	.....	$16,250	$203,488	$1,798	.....	.....	$5,397	$58,555	$35,000	$11,790	$14,081	63
$70,458	$9,666	$24,812	$250,479	.....	$576	$9,860	$69,178	$47,811	$17,000	$12,798	.....	64
68	21	20	108	3	17	35	124	47	12	29	7	65
12,091	3,323	1,416	24,076	290	1,844	6,342	18,735	4,628	905	2,850	562	66
145	28	26	305	2	48	82	261	81	17	43	7	67
11,852	3,255	1,312	22,904	130	1,835	6,252	17,793	4,376	755	2,614	465	68
1	.....	.....	2	4	.....	.....	.....	.....	.....	5	1	69
30	.....	.....	45	160	.....	.....	.....	.....	.....	150	15	70
.....	.....	1	.....	.....	.....	.....	2	2	1	.....	.....	71
.....	.....	104	.....	.....	.....	.....	215	193	20	.....	.....	72
12	3	.....	31	.....	1	4	26	3	.....	11	1	73
209	11	.....	500	.....	9	30	277	24	.....	86	8	74
.....	2	.....	.....	.....	.....	20	450	.....	.....	.....	.....	75
.....	1	.....	2	.....	.....	.....	.....	2	6	.....	3	76
.....	15	.....	7	.....	.....	.....	.....	35	130	.....	74	77
.....	40	.....	620	.....	.....	40	.....	.....	.....	.....	.....	78
.....	125	.....	.....	.....	.....	125	22	.....	.....	.....	.....	79

SALT

SALT

By Charles E. Munroe, Professor of Chemistry, George Washington University, Expert Special Agent.

This report deals with the manufacture of salt either through the evaporation of brine or sea water, or by the treatment of rock salt to render it marketable for use as a condiment or preservative in food or as the raw material of other manufactures. As the establishments in which salt is manufactured are also engaged in obtaining their raw material from its sources, the industry is both a manufacturing and a mining industry, and hence occupies a place upon the border line in the scheme of classification of industries adopted in the treatment of Census statistics. There exist establishments in which the salt is not only recovered from its natural sources but is further converted into other manufactured products. Such establishments, however, are classified according to the nature of their products. The establishments classified under "salt" are those only in which salt is the final product.

Statistics of this industry have been collected from the beginning of the taking of a census of manufactures. At the census of 1880 and at each subsequent census salt has been made the subject of a special report. The endeavor has been to prepare the schedule of inquiry and to compile the tables of results in such a manner that the data for each census would be comparable with those for the preceding.

The method of measuring salt which has obtained at different times and in different localities in this country has varied considerably. In this report the terms used are pounds, bushels, and barrels. The bushel of salt weighs 56 pounds and the barrel 280 pounds net.

Table 1 presents the general statistics for the establishments engaged in the manufacture of salt at the censuses from 1850 to 1905, together with the percentage of increase for each item at each of the six periods considered.

Table 1.—COMPARATIVE SUMMARY, WITH PER CENT OF INCREASE: 1850 TO 1905.

	Census.							Per cent of increase.					
	1905[1]	1900	1890	1880[2]	1870	1860	1850	1900 to 1905	1890 to 1900	1880 to 1890	1870 to 1880	1860 to 1870	1850 to 1860
Number of establishments	146	159	200	268	282	399	340	[3]8.2	[3]20.5	[3]25.4	[3]5.0	[3]29.3	17.4
Capital	$25,586,282	$27,123,364	$13,437,749	$8,225,740	$6,561,615	$3,692,215	$2,640,860	[3]5.7	101.8	63.4	25.4	77.7	39.8
Salaried officials, clerks, etc., number	418	406	[4]200	(5)	(5)	(5)	(5)	3.0	103.0	.....	.....	.....	.....
Salaries	$487,425	$499,748	[4]$189,049	(5)	(5)	(5)	(5)	[3]2.5	164.3	.....	.....	.....	.....
Wage-earners, average number	4,666	4,774	4,255	4,289	2,953	2,213	2,786	[3]2.3	12.2	[3]0.8	45.2	33.4	[3]20.6
Total wages	$2,066,399	$1,911,140	$1,593,442	$1,260,023	$1,146,910	$371,954	$753,360	8.1	19.9	26.5	9.9	208.3	[3]50.6
Men 16 years and over	4,371	4,337	4,055	(5)	(5)	(5)	(5)	0.8	7.0	.....	.....	.....	.....
Wages	$1,988,945	$1,813,638	$1,545,947	(5)	(5)	(5)	(5)	9.7	17.3	.....	.....	.....	.....
Women 16 years and over	289	378	148	(5)	(5)	(5)	(5)	[3]23.5	155.4	.....	.....	.....	.....
Wages	$75,664	$86,007	$39,191	(5)	(5)	(5)	(5)	[3]12.0	119.5	.....	.....	.....	.....
Children under 16 years	6	59	52	(5)	(5)	(5)	(5)	[3]89.8	13.5	.....	.....	.....	.....
Wages	$1,790	$11,495	$8,304	(5)	(5)	(5)	(5)	[3]84.4	38.4	.....	.....	.....	.....
Miscellaneous expenses	$1,235,579	$760,539	$674,183	(6)	(6)	(6)	(6)	62.5	12.8	.....	.....	.....	.....
Cost of materials used	$4,166,137	$3,335,922	$1,826,770	$2,074,049	$1,760,670	$1,054,780	$1,051,419	24.9	82.6	[3]11.9	17.8	66.9	0.3
Value of products	$9,437,662	$7,966,897	$5,484,618	$4,829,566	$4,818,229	$2,289,504	$2,177,945	18.5	45.3	13.6	0.2	110.4	5.1

[1] Exclusive of the statistics of 1 establishment engaged primarily in the manufacture of other products. This establishment produced 25,043 barrels of salt, valued at $8,415.
[2] Exclusive of the statistics of 8 establishments reported as "salt, ground."
[3] Decrease.
[4] Includes proprietors and firm members, with their salaries; number only reported in 1900 and 1905, but not included in this table.
[5] Not reported separately.
[6] Not reported.

The following statement shows the amount of increase in the items of Table 1 from each census to the census of 1905, with the corresponding percentages of increase:

Comparative summary of amount and per cent of increase: 1850 to 1905.

	INCREASE.						PER CENT OF INCREASE.					
	1900 to 1905	1890 to 1905	1880 to 1905	1870 to 1905	1860 to 1905	1850 to 1905	1900 to 1905	1890 to 1905	1880 to 1905	1870 to 1905	1860 to 1905	1850 to 1905
Number of establishments	[1] 13	[1] 54	[1] 122	[1] 136	[1] 253	[1] 194	[1] 8.2	[1] 27.0	[1] 45.5	[1] 48.2	[1] 63.4	[1] 57.1
Capital	[1] $1,537,082	$12,148,533	$17,360,542	$19,024,667	$21,894,067	$22,945,422	[1] 5.7	90.4	211.1	289.9	593.0	868.9
Salaried officials, clerks, etc., number	12	218	(2)	(2)	(2)	(2)	3.0	109.0	.....	.....	.....	.....
Salaries	[1] $12,223	$298,376	(2)	(2)	(2)	(2)	[1] 2.5	157.8	.....	.....	.....	.....
Wage-earners, average number	[1] 108	411	377	1,713	2,453	1,880	[1] 2.3	9.7	8.8	58.0	110.8	67.5
Total wages	$155,259	$472,957	$806,376	$919,489	$1,094,445	$1,313,039	8.1	29.7	64.0	80.2	455.6	174.3
Men 16 years and over	34	316	(2)	(2)	(2)	(2)	0.8	7.8	.....	.....	.....	.....
Wages	$175,307	$442,998	(2)	(2)	(2)	(2)	9.7	28.7	.....	.....	.....	.....
Women 16 years and over	[1] 89	141	(2)	(2)	(2)	(2)	[1] 23.5	95.3	.....	.....	.....	.....
Wages	[1] $10,343	$36,473	(2)	(2)	(2)	(2)	[1] 12.0	93.1	.....	.....	.....	.....
Children under 16 years	[1] 53	[1] 46	(2)	(2)	(2)	(2)	[1] 89.8	[1] 88.5	.....	.....	.....	.....
Wages	[1] $9,705	[1] $6,514	(2)	(2)	(2)	(2)	[1] 84.4	[1] 78.4	.....	.....	.....	.....
Miscellaneous expenses	$475,040	$561,396	(3)	(3)	(3)	(3)	62.5	83.3	.....	.....	.....	.....
Cost of materials used	$830,215	$2,339,367	$2,092,088	$2,405,467	$3,111,357	$3,114,718	24.9	128.1	100.9	136.6	295.0	296.2
Value of products	$1,470,765	$3,953,044	$4,608,096	$4,619,433	$7,148,158	$7,259,717	18.5	72.1	95.4	95.9	312.2	333.3

[1] Decrease. [2] Not reported separately. [3] Not reported.

The wage-earners were divided as follows: For 1905, men, 93.7 per cent; women, 6.2 per cent; children, one-tenth of 1 per cent. For 1900 the proportions were 90.9 per cent for men; 7.9 per cent for women; and 1.2 per cent for children. For 1890 they were 95.3 per cent for men; 3.5 per cent for women; and 1.2 per cent for children.

The proportion which each item of expense bore to the value of the products for 1905 was—for salaries and wages, 27.1 per cent; for miscellaneous expenses, 13.1 per cent; for cost of materials used, 44.1 per cent. For 1900 the proportion for salaries and wages was 30.3 per cent; for miscellaneous expenses, 9.5 per cent; and for cost of materials used, 41.9 per cent. For 1890 salaries and wages formed 32.5 per cent; miscellaneous expenses, 12.3 per cent; and cost of materials used, 33.3 per cent.

At each census since 1860 there has been a constant decrease in the number of establishments engaged in this industry, while there has been a constant increase in the total wages paid. The value of the product has steadily increased since 1850. During the period from 1850 to 1905 establishments have decreased 194, or 57.1 per cent, while the capital has increased $22,945,422; the wage-earners, 1,880; the wages, $1,313,039; the cost of materials used, $3,114,718; and the value of the products, $7,259,717.

Number of establishments.—Table 2 shows the number of establishments at each census from 1880 to 1905, by states, arranged according to the number of their establishments in 1905.

At each of the censuses noted in this table establishments were reported by 15 states, but the states which reported have varied somewhat. At each census Michigan has ranked first and New York second in the number of establishments. California has held the third place, except in 1890. Kansas, which was twelfth in 1880, passed to the third place in 1890, the fifth in 1900, and the fourth in 1905. Ohio, which occupied the third place in 1880, was fourth in 1890 and 1900, and fifth in 1905. Texas, which occupied the tenth place in 1880, was ninth in 1890 and 1900, and sixth in 1905. Utah, which was seventh in 1880, fourth in 1890, and sixth in 1900, was seventh in 1905. Louisiana, which was twelfth in 1880 and eleventh in 1890 and 1900, held the tenth place in 1905. These 8 states produced over 98 per cent of the salt reported in 1905. Kentucky, Virginia, and Wyoming, which have been producers in the past, did not report any salt for 1905, while Idaho reported a production for the first time at this census.

The constant decrease in the total number of establishments in the United States for the periods named and the constant increase in the total value of the products for the same periods indicate that there has been in this industry, as in many others, a greater concentration of industrial forces. The fluctuations in the relative number of establishments in the various states and territories have been due, in a measure, to the exploitation of deposits which have proved unprofitable to operate.

TABLE 2.—*Number of establishments, by states and territories: 1880 to 1905.*

STATE OR TERRITORY.	1905	1900	1890	1880
United States	146	159	200	268
Michigan	41	53	81	86
New York	34	38	50	69
California	26	24	9	25
Kansas	10	8	23	1
Ohio	8	10	9	25
Texas	7	3	2	3
Utah	5	5	9	10
Nevada	3	3	3	7
Oklahoma	3	4	.....	.....
West Virginia	3	4	5	15
Louisiana	2	2	1	1
Idaho	1	.....	.....	.....
Illinois	1	1	1	.....
Massachusetts	1	2	1	5
Pennsylvania	1	1	3	16
Kentucky	.....	.....	2	3
Virginia	.....	1	1	1
Wyoming	.....	.....	.....	1

Capital.—Table 3 gives, for the censuses from 1890 to 1905, the details of the capital for the United States.

TABLE 3. CAPITAL, WITH AMOUNT AND PER CENT OF INCREASE: 1890 TO 1905.

	CENSUS.			INCREASE.		PER CENT OF INCREASE.		
	1905	1900	1890	1900 to 1905	1890 to 1905	1900 to 1905	1890 to 1905	1890 to 1900
Total	$25,586,282	$27,123,364	$13,437,749	[1] $1,537,082	$12,148,533	[1] 5.7	90.4	101.8
Land	8,771,232	8,494,587	4,287,784	276,645	4,483,448	3.3	104.6	98.1
Buildings	6,115,448	8,358,018	4,255,896	[1] 2,242,570	1,859,552	[1] 26.8	43.7	96.4
Machinery, tools, and implements	5,402,772	4,523,294	2,703,868	879,478	2,698,904	19.4	99.8	67.3
Cash and sundries	5,296,830	5,747,465	2,190,201	[1] 450,635	3,106,629	[1] 7.8	141.8	162.4

[1] Decrease.

A comparison of Table 3 with Table 1 shows that while the number of establishments has steadily decreased and the value of the land, and of the machinery, tools, and implements used in the industry has increased in both periods represented in Table 3, the other items of capital fluctuated.

The percentage which each item of capital was of the total is shown in Table 4, for 1890, 1900, and 1905.

The proportion which each of the items of capital formed of the total has fluctuated at these censuses. The fact that at each the item of land has been the largest indicates that a considerable area is required on which to conduct the operations incident to this industry.

TABLE 4.—*Per cent distribution of capital: 1890 to 1905.*

	1905	1900	1890
Total	100.0	100.0	100.0
Land	34.3	31.3	31.9
Buildings	23.9	30.8	31.7
Machinery, tools, and implements	21.1	16.7	20.1
Cash and sundries	20.7	21.2	16.3

Materials used.—Table 5 shows the kind and cost of the materials used for each census from 1880 to 1905, with the per cent of increase and per cent of total cost. In the case of many of the returns the cost for freight is included in the cost given for the separate items of materials used.

TABLE 5.—MATERIALS USED, BY KIND AND COST, WITH PER CENT OF INCREASE, AND PER CENT OF TOTAL: 1880 TO 1905.

KIND.	CENSUS.				PER CENT OF INCREASE.					PER CENT OF TOTAL COST.			
	1905	1900	1890	1880	1900 to 1905	1890 to 1905	1880 to 1905	1890 to 1900	1880 to 1890	1905	1900	1890	1880
Total cost	$4,166,137	$3,335,922	$1,826,770	$2,074,040	24.9	128.1	100.9	82.6	[1] 11.9	100.0	100.0	100.0	100.0
Barrels, bags, and sacks	1,150,327	997,503	(2)	(2)	15.3	.....	.....	.....	.....	27.6	29.9	.....	.....
Cooperage stock	1,176,182	775,411	(2)	(2)	51.7	.....	.....	.....	.....	28.2	23.2	.....	.....
Cloth purchased for sacks	38,041	64,208	(2)	(2)	[1] 40.8	.....	.....	.....	.....	0.9	1.9	.....	.....
Fuel	1,355,880	991,248	745,917	916,100	36.8	81.8	48.0	32.9	[1] 18.6	32.6	29.7	40.8	44.2
Rent of power and heat	23,266	2,111	(2)	(2)	1,003.6	.....	.....	.....	.....	0.6	0.1	.....	.....
Mill supplies	104,751	192,777	(2)	(2)	[1] 45.7	.....	.....	.....	.....	2.5	5.8	.....	.....
All other materials	220,739	189,747	1,080,853	1,157,949	16.3	[1] 79.6	[1] 80.9	[1] 82.4	[1] 6.7	5.3	5.7	59.2	55.8
Freight	96,921	122,017	(2)	(2)	[1] 21.1	.....	.....	.....	.....	2.3	3.7	.....	.....

[1] Decrease.
[2] Not reported separately; included in "all other materials."

The cost of fuel constitutes the largest cost item at the census of 1905. Adding to this item, for the censuses of 1905 and 1900, the cost for rent of power and heat, the proportions shown for each census are 33.2 per cent in 1905, 29.8 per cent in 1900, 40.8 per cent in 1890, and 44.2 per cent in 1880. Several conflicting tendencies influenced the total consumption of fuel. Through inventions the evaporators employed in concentrating the brine by means of heat from fuel have been so improved that the fuel consumption per unit volume of water evaporated has markedly diminished. On the other hand, as the process of evaporating brine by means of fuel replaces evaporation by solar heat the use of fuel is increased. The quantity of fuel used and its total cost vary also with the original strength of the brine that is evaporated and the nature of the fuel employed.

Equipment of plants.—Table 6 presents detailed statistics regarding the equipment of the establishments in the several states for 1890, 1900, and 1905.

The total number of covers or ponds in 1905 was 562, or 1.6 per cent, greater than in 1900, while it was 4,359, or 10.9 per cent, less than in 1890; the area was 61,359,561 square feet, or 55.8 per cent, greater in 1905 than in 1900, and 160,452,509 square feet, or 1,481.8 per cent, greater than in 1890. For the other devices the separate statistics were not collected prior to 1900. For the period from 1900 to 1905 each of the items shows a decrease, there being a decrease of 53 in number, or 10.2 per cent, for grainers; of 194 in number, or

73.5 per cent, for open pans; of 105 in number, or 25.5 per cent, for kettles; and of 10 in number, or 25 per cent, for vacuum pans. For these devices combined, as they were reported for 1890, there is a decrease of 362 in number, or 29.3 per cent, for 1905 as compared with 1900, and of 2,543 in number, or 74.4 per cent, for 1905 as compared with 1890. Of the total area of covers or ponds in 1905, 83.4 per cent was in California, 10.9 per cent in Utah, and 5.2 per cent in New York, these 3 states containing 99.5 per cent of the total. In 1900 the proportion in California was 56.5 per cent; Utah, 35.1 per cent; and New York, 7.4 per cent. The 3 states contained 99 per cent of the total. The changes in relative proportions are due not only to a reported increase in area of 130.2 per cent in California, and of 10 per cent in New York, but also to a reported decrease of 51.8 per cent in Utah, and slight changes in other states.

TABLE 6.—*Equipment of plants, by states and territories: 1890 to 1905.*

STATE OR TERRITORY.	Census.	Number of establishments.	COVERS OR PONDS.		Grainers.	Open pans.	Kettles.	Vacuum pans.
			Number.	Square feet.				
United States.	1905	146	35,784	171,280,921	469	70	306	30
	1900	159	35,222	109,921,360	522	264	411	40
	1890	200	40,143	10,828,412	[1]3,418	(2)	(2)	(2)
California	1905	26	476	142,838,510	.....	1	.....	.....
	1900	24	474	62,062,800	.....	2	.....	1
	1890	9	.....	.....	.....	.....	.....	.....
Kansas	1905	10	.....	.....	27	27	.....	.....
	1900	8	30	144,656	13	36	.....	.....
	1890	23	545	139,520	48	.....	.....	.....
Michigan	1905	41	3,221	537,932	259	11	2	17
	1900	53	2,009	545,300	273	17	5	19
	1890	81	2,600	104,000	477	.....	.....	.....
Nevada	1905	3	8	4,800	.....	.....	.....	.....
	1900	3	2	30,000	.....	.....	.....	.....
	1890	3	.....	.....	.....	.....	.....	.....
New York	1905	34	31,980	8,990,782	63	21	218	5
	1900	38	32,295	8,176,948	92	43	338	9
	1890	50	36,588	10,469,692	1,926	.....	.....	.....
Ohio	1905	8	3	9,116	51	1	85	8
	1900	10	4	12,320	83	38	31	5
	1890	9	.....	.....	311	.....	.....	.....
Oklahoma [3]	1905	3	11	152,120	3	.....	.....	.....
	1900	4	13	92,120	2	21	.....	.....
Pennsylvania [4]	1890	3	.....	.....	22	.....	.....	.....
Texas [5]	1905	7	15	117,568	35	6	.....	.....
	1900	3	14	135,680	24	2	.....	.....
Utah	1905	5	66	18,621,328	.....	.....	1	.....
	1900	5	39	38,610,728	.....	.....	1	.....
	1890	9	.....	.....	.....	.....	.....	.....
West Virginia	1905	3	.....	.....	19	.....	.....	.....
	1900	4	.....	.....	23	.....	36	.....
	1890	5	.....	.....	149	.....	.....	.....
All other states	[6]1905	6	4	8,765	12	3	.....	.....
	[7]1900	7	342	110,808	12	105	.....	6
	[8]1890	8	410	115,200	485	.....	.....	.....

[1] Includes kettles, boilers, pans, jacketed kettles, or vacuum pans.
[2] Included in grainers.
[3] Not reported in 1890.
[4] Included in "all other states" in 1905 and 1900.
[5] Included in "all other states" in 1890.
[6] Includes establishments distributed as follows: Idaho, 1; Illinois, 1; Louisiana, 2; Massachusetts, 1; Pennsylvania, 1.
[7] Includes establishments distributed as follows: Illinois, 1; Louisiana, 2; Massachusetts, 2; Pennsylvania, 1; Virginia, 1.
[8] Includes establishments distributed as follows: Illinois, 1; Kentucky, 2; Louisiana, 1; Massachusetts, 1; Texas, 2; Virginia, 1.

The increase in number of grainers for 1905 over 1900 was—in Kansas 14, in Texas 11, and in Oklahoma 1. There was a decrease in number in each of the other states shown separately in the table which reported grainers. There was reported for Texas an increase of 4 in number, of open pans; and for Ohio an increase of 54 in number, of kettles, and of 3 in number, of vacuum pans, for 1905 over 1900. In each of the other states reporting, with the exception of Utah, there was a decrease in the number of each of these devices.

Products.—Table 7 shows the kind, quantity, and value of the products and the price of each per unit, 1890 to 1905.

TABLE 7.—*Products, by kind, quantity, and value: 1890 to 1905.*

KIND.	1905	1900	1890
Total value	$9,446,077	$7,966,897	$5,484,618
Salt:			
Barrels	[1] 17,153,615	15,187,819	10,406,860
Value	[1] $9,334,998	$7,901,836	$5,441,303
Value per barrel	$0.544	$0.520	$0.523
Bromine:			
Pounds	261,665	279,437	167,550
Value	$72,584	$64,921	$40,395
Value per pound	$0.277	$0.232	$0.241
All other products	$38,495	$140	$2,920

[1] Includes 25,043 barrels of salt, valued at $8,415, made in an establishment engaged primarily in the manufacture of other products.

The quantity of salt produced for 1905 was greater by 1,965,796 barrels, or 12.9 per cent, than in 1900, and greater by 6,746,755 barrels, or 64.8 per cent, than in 1890. Its value was $1,433,162, or 18.1 per cent, greater than in 1900, and $3,893,695, or 71.6 per cent, greater than in 1890. The quantity of salt made in 1900 was greater by 4,780,959 barrels, or 45.9 per cent, and its value greater by $2,460,533, or 45.2 per cent, than in 1890. The quantity of bromine produced in 1905 was 17,772 pounds, or 6.4 per cent, less, but its value was $7,663, or 11.8 per cent, greater than in 1900. The quantity in 1905 was 94,115 pounds, or 56.2 per cent, greater, and its value was $32,189, or 79.7 per cent, greater than in 1890. The quantity of bromine manufactured in 1900 was 111,887 pounds, or 66.8 per cent, and its value $24,526, or 60.7 per cent, greater than in 1890. Bromine is a by-product in the salt industry.

At the census of 1900 [1] it was stated that the quantity of salt reported as the production of that census year did "not include 4,520,796 barrels of salt, valued at $1,171,948, which formed an intermediate product in the manufacture of chemicals in Michigan, New York, and Pennsylvania, and were included in the report for the chemical industry. Including this intermediate product, the total output for 1900 amounted to 19,708,615 barrels, valued at $9,073,784." As a rule, in the establishments of the kind referred to no salt is actually produced, the salt brine being used di-

[1] Twelfth Census, Manufactures, Part III, page 531.

rectly in the manufacture. Nevertheless the salt, as obtained in solution, determines the value of the brine for such use and takes the place of an equivalent quantity of manufactured salt. Since the salt in the brine, therefore, goes from the well to the market in manufactured form, though in another guise, it is properly taken into account in a statistical consideration of the salt industry. In the supplemental schedules prepared for the collection of the returns for the census of manufactures there is a category for "products manufactured and consumed," under which salt might have been entered, but this has seldom been done. The quantity of salt may be calculated with a high degree of precision from the quantity and character of the products made from it or from the quantity and composition of the brine reported. To assign a value for this salt is more difficult. It certainly includes the value of the brine and the cost of its delivery at the point of consumption, and it may include more. At the census of 1900, as quoted above, the value per unit assigned to the salt estimated as being used in the manufacture of chemicals was 49.8 per cent of the average value of salt manufactured in the United States in that census year. At the census of 1905 the quantity of salt used is from various considerations estimated at 4,876,387 barrels, and its value at $1,316,624. Including this intermediate product, the total output of salt at the census of 1905 was 22,030,002 barrels, having a value of $10,651,622.

Table 8 shows the total quantity of salt reported from salt works at each census from 1850 to 1905, and also the quantity of each kind of salt manufactured and the per cent which it forms of the total at each census from 1880 to 1905.

TABLE 8.—PRODUCTION OF SALT, BY KIND AND QUANTITY, WITH PER CENT OF TOTAL: 1850 TO 1905.

KIND.	QUANTITY (BARRELS).							PER CENT OF TOTAL.			
	1905	1900	1890	1880	1870	1860	1850	1905	1900	1890	1880
Total	[1] 17,153,615	15,187,819	10,406,860	5,961,060	3,521,221	2,543,440	1,952,768	100.0	100.0	100.0	100.0
Rock salt	3,416,835	2,543,679	1,413,281	62,400	(2)	(2)	(2)	19.9	16.7	13.6	1.0
Solar salt	1,677,182	910,974	1,443,262	903,555	(2)	(2)	(2)	9.8	6.0	13.9	15.2
Salt made by the boiling process, total	12,059,598	11,733,166	7,550,317	4,995,105	(2)	(2)	(2)	70.3	77.3	72.5	83.8
Table salt	3,119,091	1,866,058	(2)	(2)	(2)	(2)	(2)	18.2	12.3	.....	.....
Common fine	6,279,336	6,866,126	(2)	(2)	(2)	(2)	(2)	36.6	45.2	.....	.....
Common coarse	1,878,666	2,635,282	(2)	(2)	(2)	(2)	(2)	11.0	17.4	.....	.....
Packers'	498,943	182,930	(2)	(2)	(2)	(2)	(2)	2.9	1.2	.....	.....
Milling	106,839	96,178	(2)	(2)	(2)	(2)	(2)	0.6	0.6	.....	.....
Other grades	176,723	86,592	(2)	(2)	(2)	(2)	(2)	1.0	0.6	.....	.....

[1] Includes 25,043 barrels of salt made in an establishment engaged primarily in the manufacture of other products.
[2] Not reported separately.

The total quantity of salt produced at salt works has increased steadily since 1850. The percentages of increase shown in 1905 over preceding censuses were 12.9 per cent over 1900; 64.8 per cent over 1890; 187.8 per cent over 1880; 387.1 per cent over 1870; 574.4 per cent over 1860; and 778.4 per cent over 1850.

From the returns received at the census of 1900 it was believed that the production of solar salt was decreasing. The returns for 1905 show that such is not the case, for the amount reported at the census of 1905 is not only greater than that reported at the census of 1900, but it is greater than that reported at any of the censuses at which the different kinds of salt have been separately reported. There has been, in fact, an increase in the quantity of each kind of salt reported in the table, it being for rock salt, at the census of 1905, 873,156 barrels, or 34.3 per cent, greater than in 1900; 2,003,554 barrels, or 141.8 per cent, greater than in 1890; and 3,354,435 barrels, or 5,375.7 per cent, greater than in 1880. The quantity of solar salt reported at the census of 1905 was 766,208 barrels, or 84.1 per cent, greater than in 1900; 233,920 barrels, or 16.2 per cent, greater than in 1890; and 773,627 barrels, or 85.6 per cent, greater than in 1880. The quantity of salt made by the boiling process reported at the census of 1905 was 326,432 barrels, or 2.8 per cent, greater than in 1900; 4,509,281 barrels, or 59.7 per cent, greater than in 1890; and 7,064,493 barrels, or 141.4 per cent, greater than in 1880.

Comparison of the grades of salt reported at the censuses of 1900 and 1905 shows in 1905 for table salt an increase of 1,253,033 barrels, or 67.1 per cent; for common fine, a decrease of 586,790 barrels, or 8.5 per cent; for common coarse, a decrease of 756,616 barrels, or 28.7 per cent; for packers', an increase of 316,013 barrels, or 172.8 per cent; for milling, an increase of 10,661 barrels, or 11.1 per cent; and for all other grades, an increase of 90,131 barrels, or 104.1 per cent. In the report for the census of 1900 it was pointed out that in the decade following the census of 1890 manufacturers had made great progress in the production of the finer grades of salt, particularly those for use for the table and dairy and in the preservation of fish and meats. The analysis of the returns for the census of 1905 shows that this condition has continued and is most marked.

Table 9 shows the quantity of salt manufactured in each state, the per cent which the product of each state forms of the total, at the censuses of 1890 to 1905.

TABLE 9.—PRODUCTION OF SALT, BY STATES AND TERRITORIES, WITH PER CENT OF TOTAL: 1890 TO 1905.

STATE OR TERRITORY.	QUANTITY (BARRELS).			PER CENT OF TOTAL.		
	1905	1900	1890	1905	1900	1890
United States	[1] 17,153,615	15,187,819	10,406,860	100.0	100.0	100.0
New York	5,494,869	4,894,852	3,226,250	32.0	32.2	31.0
Michigan	4,345,213	5,206,510	3,729,110	25.3	34.3	35.8
Kansas	2,148,152	1,645,350	1,140,799	12.5	10.8	11.0
Ohio	1,538,936	1,460,516	409,514	9.0	9.6	3.9
Utah	1,088,374	235,671	626,429	6.3	1.5	6.0
California	939,800	640,420	255,328	5.5	4.2	2.5
Texas	450,027	312,436	(2)	2.6	2.1	.....
West Virginia	130,360	221,534	285,461	0.8	1.5	2.7
Nevada	26,285	7,671	25,250	0.2	0.1	0.2
Oklahoma	11,428	4,856	.....	0.1	(3)	.....
Pennsylvania	(2)	(2)	172,400	.....	.....	1.7
All other states	[4] 980,171	[5] 558,003	[6] 536,319	5.7	3.7	5.2

[1] Includes 25,043 barrels of salt made in an establishment engaged primarily in the manufacture of other products.
[2] Included in "all other states."
[3] Less than one-tenth of 1 per cent.
[4] Includes states as follows: Idaho, Illinois, Louisiana, Massachusetts, Pennsylvania.
[5] Includes states as follows: Illinois, Louisiana, Massachusetts, Pennsylvania, Virginia.
[6] Includes states as follows: Illinois, Kentucky, Louisiana, Massachusetts, Texas, Virginia.

At each of the censuses noted in the table New York, Michigan, and Kansas have stood at the head of the list of salt producing states. Of the total production of the United States these 3 produced 77.8 per cent in 1890, 77.3 per cent in 1900, and 69.9 per cent for 1905. Michigan ranked first and New York second in 1890 and 1900, but at the present census this order is reversed. Each state named in the table except Michigan and West Virginia shows an increased production for 1905 over 1900. The greatest increase was shown by Utah, where it amounted to 852,703 barrels, or 361.8 per cent. The decrease in Michigan was 861,297 barrels, or 16.5 per cent.

In addition to the business zeal and intelligence of the manufacturers many causes have operated to bring about these changes in the relative magnitude of the industry in the various states and territories. Among these may be enumerated the discovery of better located or richer deposits of salt, the utilization of waste fuel, improvements in facilities for transportation and accessibility to markets, changes in tariff or tax or royalty, with legislation, and the combination of interests to prevent excessive production and to limit manufacture to those localities where it may be most economically carried on.

Chatard has treated of certain of these conditions very fully in the following statement:[1]

The economical application and thorough utilization of heat is the basis of the salt industry, and the value of any given process depends upon its efficiency in this respect, while the cost of the fuel required to make a bushel of salt from the brine of a district is the determining factor in considering the ability of the region to hold its own in business competition. We shall be aided in the discussion of this question if, before examining the various processes in use, we compare from this point of view the brines of a few typical localities.

[1] United States Geological Survey. Seventh Annual Report, 1885–86; "Salt Making Processes," pages 504 and 505.

In the following table the average salt contents is given, the amount of coal required being taken from Englehardt's table:

REGION.	Salt in brine (per cent).	Coal for one bushel of salt (pounds).
Warsaw, N. Y.	25.0	28
Syracuse, N. Y.	18.5	41
Saginaw, Mich.	17.5	44
Pomeroy, Ohio	7.5	112

The concentrated brine of Warsaw, therefore, requires the least coal, the Pomeroy brine the most; but the cost of fuel at Syracuse is greater than at Warsaw and much greater than at Pomeroy, where the salt works are situated at the entrances of the mines and burn the unmerchantable slack and top coal, while Saginaw, consuming the offal of the lumber mills, utilizes a material otherwise absolutely worse than useless. For this reason the competition of Saginaw overshadows all other regions. The sawdust and offal produced by the great lumber interests, though utilized as far as possible for other purposes, remain in enormous quantities, and if not burned must be removed at considerable expense. Hence it is a positive economy to manufacture salt, even should the price obtained for the product barely cover the cost of manufacture. The salt industry is, therefore, here closely connected with the lumber interest, the exhaust steam from the mills being utilized in grainers, which are heated by direct steam when the mills are not running, while the pan blocks are also fired with the offal. Without this extremely cheap fuel Saginaw would have great disadvantages as compared with other sections; with it, the market for its product is simply regulated by the cost of transportation. Salt making is there but a side issue; the offal must be got rid of, and if the price received but covers the cost the mill owner is content and still has in his favor the amount it would cost him otherwise to get rid of the waste. It is therefore evident that, so long as the lumber of that section holds out, Michigan will continue to control the market, for her brine supply is abundant and the salt must be made and sold, even if no profit is realized. The Salt Association of Michigan, managed with great skill and energy, is constantly extending its field of operation, and while the introduction of its product into new markets may, for a time, be attended by no profit, and even perhaps by a slight loss, yet the general result is satisfactory to those interested.

No change in the tariff can affect this position in relation to the other regions. Any rise in price consequent on an increase of the duty on foreign salt would but give the Michigan Association the means to pay transportation charges to more distant points than it has hitherto reached and thus widen its sphere of operations, while, with salt on the free list, Saginaw must suffer less than any other section.

The position of Syracuse in relation to the strength of its brine and the cost of its fuel is less satisfactory than that of any of the other districts, and the results of outside competition and consequent low prices realized are shown by the long lines of idle salt blocks, with their tall chimneys standing as monuments of a departing industry.

Supply and consumption.—Table 10 sets forth the exports and imports of salt, the domestic production, total quantity available, quantity available for domestic consumption, net imports, and per cent of net imports to consumption for the census years 1880 to 1905.

TABLE 10.—COMPARATIVE SUMMARY DOMESTIC PRODUCTION, IMPORTS,[1] EXPORTS,[1] AND CONSUMPTION: 1880 TO 1905.

	QUANTITY (BARRELS).				PER CENT OF INCREASE.				
	1905	1900	1890	1880	1900 to 1905	1890 to 1905	1880 to 1905	1890 to 1900	1880 to 1890
Total quantity available for all purposes	[2] 23,283,781	[3] 21,123,480	12,410,999	9,608,027	10.2	87.6	142.3	70.2	29.2
Domestic production	[2] 22,030,002	[3] 19,708,615	10,406,860	5,961,060	11.8	111.7	269.6	89.4	74.6
In warehouses at beginning of year	58,812	34,040	106,854	204,814	68.3	[4] 70.1	[4] 71.3	[4] 82.3	[4] 3.9
Imports	1,194,967	1,379,925	1,897,285	3,442,753	[4] 13.4	[4] 33.9	[4] 65.3	[4] 23.6	[4] 47.5
Exported or left in warehouse	179,082	171,319	237,553	225,475	4.5	[4] 24.6	[4] 20.6	[4] 27.9	5.4
Exports (domestic)	99,743	90,001	15,292	4,436	10.8	552.3	2,148.5	488.5	244.7
Exports (foreign)	7,462	18,629	12,588	23,680	[4] 59.9	[4] 40.7	[4] 68.5	48.0	[4] 46.8
In warehouses at end of year	71,877	62,689	209,673	197,359	14.7	[4] 65.7	[4] 63.6	[4] 70.1	6.2
Available for domestic consumption	23,104,699	20,952,161	12,173,446	9,383,152	10.3	89.8	146.2	72.1	29.7
Net imports	1,187,505	1,361,296	1,794,697	3,419,073	[4] 12.8	[4] 33.8	[4] 65.3	[4] 24.2	[4] 47.5
Per cent of net imports to consumption	5.1	6.5	14.7	36.4	[4] 21.5	[4] 65.3	[4] 86.0	[4] 55.8	[4] 59.6

[1] Bureau of Statistics, Department of Commerce and Labor, "Commerce and Navigation of the United States." For 1905 the imports and exports represent the calendar year 1904; for 1900, the calendar year 1899; for 1890 and 1880, the fiscal years ending June 30.
[2] Includes 4,876,387 barrels used in chemical manufactures in the form of brine and not first separated as salt.
[3] Includes 4,520,796 barrels used in chemical manufactures in the form of brine and not first separated as salt.
[4] Decrease.

The decrease in imports has been constant, the amount in 1905 being 184,958 barrels less than in 1900; 612,318 barrels less than in 1890; and 2,247,786 barrels less than in 1880. The per cent of net imports to consumption has fallen from 36.4 per cent in 1880 to 5.1 per cent in 1905. At the same time the domestic exports have increased markedly, the amount for 1905 being 9,742 barrels greater than in 1900; 84,451 barrels greater than for 1890; and 95,307 barrels greater than in 1880. In view of the prolonged contest in our seaboard ports between the imported salt of foreign manufacture and the domestic product, these statistics are interesting as showing conditions encouraging to the domestic industry. At the same time the net imports still exceed the domestic exports by 1,087,762 barrels.

The per capita consumption of salt for each census year is most conveniently shown in pounds and is usually so given. Reduced to pounds the domestic consumption of salt shown in Table 10 was for 1880, 2,627,282,560 pounds; for 1890, 3,408,564,880 pounds; for 1900, 4,600,782,200 pounds; and for 1905, 5,103,927,360 pounds. The population of continental United States and Alaska was 50,189,209 as enumerated at the census of 1880; 62,979,766 in 1890, and 76,058,167 in 1900. No census of population was taken in 1904. The estimated population for that year was 81,338,064. In using these statistics it is to be remembered that the census year for population does not coincide with the census year for manufactures. The census of population records existing conditions at the given date, whereas the census of manufactures records operations completed at or near the date given. On the basis of these figures the per capita consumption for 1880 was 52.3 pounds; for 1890, 54.1 pounds; for 1900, 60.5 pounds; and for 1905, 62.7 pounds. This calculation does not take into account the salt drawn from natural sources and used directly in the manufacture of other products. Including this, the total consumption was 5,866,605,080 pounds for 1900 and 6,469,315,720 pounds for 1905; while the per capita consumption for these dates was 77.1 and 79.5 pounds, respectively.

Table 11 gives detailed statistics of the salt industry, by states and territories, as reported at the census of 1905. The data for power in this table shows that the total horsepower for establishments classified under "salt" in 1905 was 19,902. A comparison with the figures for 1900 shows a decrease of 4,158 horsepower, or 17.3 per cent; the decrease in steam horsepower was 4,935, or 21.4 per cent; the gas and gasoline horsepower increased 257 horsepower, or 141.2 per cent; and the electric power, owned and rented, 469, or 240.5 per cent. Of the total horsepower for 1905, steam horsepower was 91.3 per cent; electric power, 3.3 per cent; and gas and gasoline power, 2.2 per cent. In 1900 steampower was 96 per cent; electric power, eight-tenths of 1 per cent; and gas and gasoline power, eight-tenths of 1 per cent of the total horsepower.

TABLE 11.—SALT—DETAILED SUMMARY,

		United States.	California.	Kansas.	Michigan.
1	Number of establishments	146	26	10	41
2	Capital, total	$25,586,282	$1,276,854	$1,635,963	$3,538,149
3	Land	$8,771,232	$782,910	$161,698	$427,919
4	Buildings	$6,115,448	$148,970	$463,007	$864,662
5	Machinery, tools, and implements	$5,402,772	$130,805	$390,921	$1,268,893
6	Cash and sundries	$5,296,830	$214,169	$620,337	$976,675
7	Proprietors and firm members	87	25	2	22
	Salaried officials, clerks, etc.:				
8	Total number	418	38	38	80
9	Total salaries	$487,425	$33,540	$44,647	$92,069
	Officers of corporations—				
10	Number	86	3	6	13
11	Salaries	$159,747	$1,020	$12,600	$19,250
	General superintendents, managers, clerks, etc.—				
12	Total number	332	35	32	67
13	Total salaries	$327,678	$32,520	$32,047	$72,819
	Men—				
14	Number	301	34	30	63
15	Salaries	$311,658	$32,505	$30,967	$70,731
	Women—				
16	Number	31	1	2	4
17	Salaries	$16,020	$15	$1,080	$2,088
	Wage-earners, including pieceworkers, and total wages:				
18	Greatest number employed at any one time during the year	6,524	575	675	2,034
19	Least number employed at any one time during the year	3,825	254	425	974
20	Average number	4,666	313	526	1,388
21	Total wages	$2,066,399	$138,398	$230,332	$626,026
	Men 16 years and over—				
22	Average number	4,371	310	501	1,343
23	Wages	$1,988,945	$137,618	$223,919	$614,934
	Women 16 years and over—				
24	Average number	289	3	25	39
25	Wages	$75,664	$780	$6,413	$9,302
	Children under 16 years—				
26	Average number	6			6
27	Wages	$1,790			$1,790
	Average number of wage-earners, including pieceworkers, employed during each month:				
	Men 16 years and over—				
28	January	3,959	205	551	1,093
29	February	3,762	201	493	1,047
30	March	3,968	202	430	1,148
31	April	4,128	244	444	1,365
32	May	4,384	307	446	1,560
33	June	4,551	360	477	1,562
34	July	4,697	402	499	1,501
35	August	4,863	412	522	1,548
36	September	4,819	438	536	1,385
37	October	4,916	447	546	1,457
38	November	4,454	295	535	1,319
39	December	3,951	207	533	1,131
	Women 16 years and over—				
40	January	290	3	31	34
41	February	261	3	29	26
42	March	274	3	28	27
43	April	269	3	26	22
44	May	268	3	19	31
45	June	270	3	21	30
46	July	285	3	21	29
47	August	277	3	23	26
48	September	308	3	27	47
49	October	324	3	26	70
50	November	340	3	25	81
51	December	302	3	24	45
	Children under 16 years—				
52	January				
53	February				
54	March				
55	April	4			4
56	May	7			7
57	June	7			7
58	July	13			13
59	August	10			10
60	September	9			9
61	October	9			9
62	November	7			7
63	December	5			5
64	Miscellaneous expenses, total	1			1
65	Rent of works	$1,235,579	$53,781	$197,437	$259,855
66	Taxes	$21,553	$4,850		$3,825
67	Rent of offices, interest, insurance, and all other sundry expenses not hitherto included	$93,859	$3,531	$6,017	$46,935
68	Contract work	$1,093,854	$45,400	$191,420	$198,675
69	Materials used, total cost	$26,313			$10,420
70	Barrels, bags, and sacks, purchased as such	$4,166,137	$119,739	$533,543	$1,190,951
71	Cooperage stock, purchased	$1,150,327	$87,264	$102,963	$101,687
72	Cloth, purchased for sacks	$1,176,182	$1,800	$135,812	$653,554
73	Fuel	$38,041		$2,500	$12,709
74	Rent of power and heat	$1,355,880	$22,528	$253,846	$293,093
75	Mill supplies	$23,296	$417		$6,399
76	All other materials, including cartons, etc	$104,751	$1,673	$9,354	$38,282
77	Freight	$220,739	$6,057	$27,118	$44,975
78	Products, total value	$96,921		$1,950	$40,252
	Salt (including value of packages)—	$9,437,662	$428,632	$1,123,114	$2,404,717
79	Barrels	17,128,572	939,800	2,123,109	4,345,213
80	Value	$9,326,583	$428,632	$1,094,446	$2,400,773
	Bromine:				
81	Pounds	261,665		280	8,587
82	Value	$72,584		$168	$3,944
83	All other products	$38,495		$28,500	
84	Value of packages included above	$2,370,849	$89,064	$284,375	$731,573
85	Grade of salt, total number of barrels	17,128,572	939,800	2,123,109	4,345,213
86	Table and dairy	3,119,091	295,220	92,884	317,551
87	Common fine	6,254,293	5,714	912,517	2,991,758
88	Common coarse	1,878,666	21,857	90,000	831,775
89	Packers'	498,943	7,143	35,830	148,218
90	Coarse solar	1,677,182	515,745		24,829
91	Rock salt mined	3,416,835		991,878	
92	Milling	106,839			
93	Other grades	176,723	94,121		31,082

[1] Includes establishments distributed as follows: Idaho, 1; Illinois, 1; Louisiana, 2; Massachusetts, 1; Pennsylvania, 1.

BY STATES AND TERRITORIES: 1905.

Nevada.	New York.	Ohio.	Oklahoma.	Texas.	Utah.	West Virginia.	All other states.[1]	
3	34	8	3	7	5	3	6	1
$51,520	$15,322,152	$1,241,957	$57,337	$331,061	$612,670	$110,800	$1,407,810	2
$7,500	$6,471,811	$46,847	$19,330	$50,500	$346,210	$25,800	$430,707	3
$10,500	$3,611,689	$455,500	$15,450	$111,000	$90,540	$22,000	$322,130	4
$27,020	$2,457,468	$431,000	$20,949	$94,500	$66,085	$28,000	$487,131	5
$6,500	$2,781,184	$308,610	$1,608	$75,061	$109,844	$35,000	$107,842	6
3	21	1	2	2	6	1	2	7
2	133	52	3	10	14	10	29	8
$3,000	$172,472	$52,597	$1,677	$10,028	$18,860	$10,600	$38,935	9
2	25	15	2	5	5	2	8	10
$3,000	$61,520	$25,070	$867	$7,500	$12,300	$1,800	$14,820	11
.....	108	37	1	14	9	8	21	12
.....	$110,952	$27,527	$810	$11,528	$6,560	$8,800	$24,115	13
.....	96	28	1	13	8	8	20	14
.....	$105,327	$22,415	$810	$10,628	$6,080	$8,800	$23,395	15
.....	12	9	.....	1	1	.....	1	16
.....	$5,625	$5,112	.....	$900	$480	.....	$720	17
20	1,700	711	22	256	170	93	268	18
10	1,283	438	4	124	47	67	199	19
14	1,373	539	10	172	68	80	183	20
$9,741	$585,522	$236,207	$6,635	$73,929	$43,927	$20,466	$86,156	21
14	1,234	467	10	162	67	80	183	22
$9,741	$550,097	$214,282	$6,635	$72,335	$43,762	$20,466	$86,156	23
.....	139	72	.....	10	1	.....	.....	24
.....	$35,425	$21,985	.....	$1,594	$165	.....	.....	25
.....	.....	.....	.....	.....	.....	.....	.....	26
.....	.....	.....	.....	.....	.....	.....	.....	27
14	1,063	537	.....	167	44	79	206	28
14	1,020	470	5	187	43	74	208	29
14	1,210	485	.....	148	42	81	208	30
12	1,205	388	8	127	42	73	160	31
12	1,287	365	17	107	42	77	164	32
14	1,258	397	14	163	44	84	178	33
15	1,364	438	16	144	49	86	183	34
16	1,377	470	16	195	49	86	172	35
15	1,363	502	10	193	122	82	173	36
14	1,338	515	10	182	151	80	176	37
14	1,192	539	10	175	132	81	162	38
14	1,071	498	14	156	44	77	206	39
.....	137	76	.....	8	1	.....	.....	40
.....	135	59	.....	8	1	.....	.....	41
.....	134	72	.....	9	1	.....	.....	42
.....	138	71	.....	8	1	.....	.....	43
.....	136	70	.....	8	1	.....	.....	44
.....	138	68	.....	9	1	.....	.....	45
.....	141	81	.....	9	1	.....	.....	46
.....	134	80	.....	10	1	.....	.....	47
.....	139	79	.....	12	1	.....	.....	48
.....	144	69	.....	11	1	.....	.....	49
.....	147	70	.....	13	1	.....	.....	50
.....	145	69	.....	15	1	.....	.....	51
.....	.....	.....	.....	.....	.....	.....	.....	52
.....	.....	.....	.....	.....	.....	.....	.....	53
.....	.....	.....	.....	.....	.....	.....	.....	54
.....	.....	.....	.....	.....	.....	.....	.....	55
.....	.....	.....	.....	.....	.....	.....	.....	56
.....	.....	.....	.....	.....	.....	.....	.....	57
.....	.....	.....	.....	.....	.....	.....	.....	58
.....	.....	.....	.....	.....	.....	.....	.....	59
.....	.....	.....	.....	.....	.....	.....	.....	60
.....	.....	.....	.....	.....	.....	.....	.....	61
.....	.....	.....	.....	.....	.....	.....	.....	62
.....	.....	.....	.....	.....	.....	.....	.....	63
$1,935	$487,704	$102,203	$1,208	$34,501	$22,052	$3,200	$70,713	64
.....	.....	$500	.....	$2,378	.....	.....	$10,000	65
$600	$23,205	$3,048	$45	$1,797	$1,389	$1,450	$4,792	66
$1,275	$450,208	$97,755	$770	$29,051	$21,563	$1,750	$55,921	67
.....	$14,141	.....	$477	$1,275	.....	.....	.....	68
$3,175	$1,185,816	$662,547	$4,677	$194,823	$51,362	$64,770	$154,734	69
$2,480	$442,344	$220,732	$512	$72,964	$40,782	$150	$69,449	70
.....	$204,550	$112,304	.....	$18,005	.....	$28,420	$21,668	71
.....	.....	$16,832	.....	.....	$500	$5,500	.....	72
$600	$449,460	$165,184	$4,055	$92,365	$5,233	$27,700	$41,816	73
.....	$480	$16,000	.....	.....	.....	.....	.....	74
$95	$9,300	$24,632	$100	$11,020	$982	$3,000	$6,304	75
.....	$79,673	$45,169	$10	$460	$1,780	.....	$15,497	76
.....	.....	$52,634	.....	.....	$2,085	.....	.....	77
$30,000	$3,167,279	$1,167,546	$5,498	$351,050	$236,097	$115,732	$407,097	78
26,285	5,494,869	1,538,936	11,428	450,027	1,088,374	130,360	980,171	79
$30,000	$3,166,126	$1,147,712	$5,498	$351,050	$236,097	$94,252	$371,097	80
.....	.....	73,098	.....	.....	.....	74,700	105,000	81
.....	.....	$15,992	.....	.....	.....	$16,480	$36,000	82
.....	$1,153	$3,842	.....	.....	.....	$5,000	.....	83
$2,480	$680,982	$369,487	$512	$42,499	$41,282	$34,020	$93,675	84
26,285	5,494,869	1,538,936	11,428	450,027	1,088,374	130,360	980,171	85
13,215	1,241,223	510,173	100	62,033	481,585	5,000	100,107	86
3,000	1,202,040	596,608	350	341,630	49,017	125,360	25,000	87
3,785	200,011	48,254	8,528	13,000	28	.....	571,428	88
2,143	101,609	204,000	.....	.....	.....	.....	.....	89
.....	487,116	90,000	450	20,828	527,414	.....	1,800	90
2,000	2,141,371	.....	.....	.....	.....	.....	281,580	91
2,142	.....	85,717	.....	.....	18,980	.....	.....	92
.....	30,509	3,794	2,000	3,527	11,350	.....	250	93

TABLE 11.—SALT—DETAILED SUMMARY,

		United States.	California.	Kansas.	Michigan.
	Equipment of plants:				
	Covers or ponds—				
94	Number	35,784	476	.....	3,221
95	Area in square feet	171,280,921	142,838,510	.....	537,932
96	Kettles, number	306	.....	.....	2
97	Grainers, number	469	.....	27	259
98	Open pans, number	70	1	27	11
99	Vacuum pans, number	30	.....	.....	17
	Power:				
100	Number of establishments reporting	115	14	10	36
101	Total horsepower	19,902	758	2,321	6,206
	Owned—				
	Engines—				
	Steam—				
102	Number	316	14	29	83
103	Horsepower	18,169	500	2,264	6,017
	Gas and gasoline—				
104	Number	30	16	2	.....
105	Horsepower	439	209	50	.....
	Water wheels—				
106	Number	2	.....	.....	.....
107	Horsepower	33	.....	.....	.....
	Electric motors—				
108	Number	19	1	2	6
109	Horsepower	468	2	7	115
110	Other power, horsepower	387	32	.....	.....
	Rented—				
	Electric motors—				
111	Number	18	2	.....	11
112	Horsepower	196	15	.....	74
113	Other kind, horsepower	210	.....	.....	.....
114	Furnished to other establishments, horsepower	150	.....	.....	.....

BY STATES AND TERRITORIES: 1905—Continued.

Nevada.	New York.	Ohio.	Oklahoma.	Texas.	Utah.	West Virginia.	All other states.	
8	31,980	3	11	15	66		4	94
4,800	8,990,782	9,116	152,120	117,568	18,621,328		8,765	95
	218	85			1			96
	63	51	3	35		10	12	97
	21	1		6			3	98
	5	8						99
2	27	8	1	7	3	3	4	100
90	5,073	1,796	18	497	188	725	2,230	101
	106	38	2	7	1	22	14	102
	4,708	1,280	10	380	150	680	2,120	103
5	1		1	1	1	2	1	104
80	3		5	7	30	45	10	105
	1				1			106
	25				8			107
	1	2	1				6	108
	150	91	3				100	109
	20	225		110				110
	5							111
	107							112
10		200						113
	150							114

HISTORICAL AND DESCRIPTIVE.

Salt, more precisely styled "common salt," is known in chemistry as sodium chloride and in mineralogy as halite. It occurs in nature in rock masses, known as rock salt, which frequently are of considerable magnitude. Deposits notable for their size exist in Galicia, Austria; Cardona, Spain; Stassfurt, Germany; Punjab, India; Cheshire, England; Carrickfergus, Ireland; Goderich, Canada; and in Louisiana, Michigan, New York, Kansas, and elsewhere in the United States. The deposit in Austria has been traced along the base of the Carpathian mountains for some 250 miles. This deposit is known to have been open for mining at Wieliczka, Galicia, since the early part of the twelfth century, and it is probable that operations were begun at this point at a much earlier date. The deposit in Kansas is said to be 150 miles in length and 6 miles in width, and that at Jefferson Island, La., is certainly 2,000 feet in thickness, and may be thicker. Salt also occurs disseminated through the soil, and in dry regions as an efflorescence or incrustation upon the surface, as at Salton, California.

Where pure, salt is a colorless, transparent solid. It crystallizes easily into masses which possess a vitreous luster. When powdered or in very fine crystals it is white, like snow. Very frequently rock salt is found colored, sometimes azure blue, more frequently red, and at times other colors, according to the foreign bodies present in it. The substances most commonly occurring with salt are calcium chloride and sulphate, magnesium chloride and sulphate, potassium chloride and sulphate, sodium sulphate, iron compounds, minute quantities of bromides and iodides, clay, bituminous matter, and infusoriae; the quantities and kinds of foreign bodies differ with the deposits. Salt is easily soluble in water. One hundred parts of water at 60° F. (15.5° C.) dissolve 35.9 parts of salt, forming a saturated solution which contains 26.47 per cent of salt and has a specific gravity of 1.2055. The solubility of salt in water increases but little with an increase in temperature.

Sodium chloride is constantly being formed through chemical changes occurring in the mineral constituents of the earth's crust. Owing to physiological processes salt is constantly being eliminated by living animals, and with their death and decay a still larger quantity is yielded. The wind, blowing across bodies of salt water, carries salt laden air overland, where the precipitating moisture bears it to the ground. This meteoric water dissolves additional soluble substances from the soil, but, meeting with argillaceous matter, the compounds which serve as plant food are precipitated out, while the common salt and the lime and magnesium compounds pass on to the streams and rivers and eventually to the seas and oceans, where these salts accumulate. In some cases salt bearing waters flow into landlocked depressions and form bodies like the Great Salt Lake of Utah. If conditions such as a high natural temperature, constant winds, a limited rainfall, and the absence of fresh water feeders obtain at these localities, the saline water in such lakes or in landlocked bodies of sea water may become so concentrated that the common salt and its associated compounds are precipitated out, forming in time large deposits and impregnating and incrusting the soil. This has happened about the lake at Salton and elsewhere. The most complete and detailed study of a salt deposit yet made is undoubtedly that of the famous Stassfurt deposit by Van't Hoff and his pupils, and the physicochemical results obtained ought to have much value as applied to the salt manufacture.

In geologic time accumulations of precipitated salts, like those described, have been buried beneath the earth and formed into rock masses. Eventually subterranean streams of water have encountered them and becoming, through solution, highly charged with salt, have issued at the surface as salt springs, or salt licks, which are also known as "salines." The meadow land about such springs or the intermittently overflowed land adjoining the ocean, seas, or salt lakes may, if the situation be favorable, become more or less impregnated with salt and form salt marshes. From all these sources—the oceans, the seas, the salt lakes, the salt marshes, the salt encrusted deserts, the rock deposits and the salt springs—man has gathered salt in the conduct of the industry. When ocean or sea water is used, a site for operation is selected on the shore as remote as possible from streams, so as to obtain the most highly saturated water. When salt springs are used as a source, an increased flow is secured by sinking wells to the subterranean stream. When rock salt deposits are located beneath the surface of the earth, they are frequently mined by sinking wells through which to admit fresh water, which, after becoming saturated, so as to form brine, rises, or is pumped, to the surface again. In many instances these deposits are mined, as other mineral deposits are, by sinking shafts, driving galleries, and blasting out or breaking down with explosives.

Salt is essential to the maintenance of animal life, and consequently the gathering of salt is one of the oldest of industries. Ancient literature shows that salt has long been highly prized, being used as a votive and sacrificial offering in religious ceremonies. The possession of natural sources of salt has even been made the object of war. In the Civil War repeated efforts, some of which were successful, were made to destroy the salt works of the South. It is claimed that the first roads were built to accommodate the traffic in salt. Venice is said to have owed her commercial supremacy in part to her control of the salt trade of southern Europe, and Liverpool has benefited largely by her considerable control of the trade in modern

times. In many countries the salt industry has been a government monopoly, and proved an important source of revenue.

The manufacture of salt followed close upon the settlement of this country by Europeans. Virginia had salt works at Cape Charles before 1620, and in 1633 exported salt to Massachusetts. What appears to have been the first attempt to manufacture salt in New England was made at Cape Ann in 1624, but it was not successful. During the Revolutionary War much salt was made by boiling sea water, and after its close an extensive system of salt making by solar evaporation grew up around New Bedford and Cape Cod, Mass. Lines of vats with movable roofs were constructed, connected with windmills by which the sea water was pumped into the vats. In 1830 about 600,000 bushels of salt were manufactured by solar evaporation in Massachusetts, and a still larger quantity in Maine. In 1832 the county of Barnstable, Mass., alone had 1,425,000 feet of vats, producing 358,250 bushels, but in 1834 the reduction in the tariff and the consequent cheap supplies of foreign salt, combined with cheap supplies from the rich brines in Onondaga county, N. Y., to render their operation unprofitable. Salt has been made from sea water in nearly every Atlantic state and in California at some period in our history. Its manufacture was undertaken in South Carolina in 1689 by Nathaniel Johnson, and in 1725 the legislature passed two acts for the encouragement of salt making. During the Revolutionary War many small works were erected in New Jersey and Delaware, which were repeatedly destroyed by the British. In 1812 salt was made in the flats back of the beaches in Cape May county, N. J., by digging holes in the sand and allowing the brine to drain in. This became so concentrated by natural evaporation that a barrel of it when further evaporated in kettles would yield a bushel of salt. The first production reported in Florida was for 1840, and in 1857 it was estimated that there was 100,000 bushels made, mostly at Key West. The industry began in California in 1848 or 1849 with the gathering of solar salt from the natural reservoirs along San Francisco bay. In 1867 salt works were erected at San Rafael, in Marin county, on the northern side of the bay, and later in Alameda, San Diego, and Los Angeles counties, but the industry has now become confined practically to Alameda county. The advantages derived from the situation of this county on the southeast side of San Francisco bay enable the manufacturers there to produce salt from a weak brine, which competes successfully, both in quality and price, with Liverpool salt imported in ballast. Briefly stated, these advantages are: First, a long dry season of six to eight months duration, during which little or no rain falls, whereby the expense, trouble, and loss of time incurred by eastern manufacturers in covering their brines in wet weather is avoided; second, a constant wind that furnishes power for moving the brines and promotes evaporation; and third, the wind, coming as it does from the ocean, brings no dust to render the salt impure.

At the censuses from 1810 up to 1870 as many as 26 states and territories had been returned as producers of salt. At the census of 1810 Virginia ranked first in the value of salt produced, reported as $704,000, while Kentucky came second with a value of $324,870. At the census of 1820 New York took the first place, and this it has held at every subsequent census except those of 1880 and 1890, when Michigan stood first.

The industry in New York originally centered about the salt springs in Onondaga county. These springs were known to the Indians at a very early period. They are spoken of by Le Moyne in 1653, but Father Lallemant is believed to have visited them prior to 1649 and to have been the first white man to do so. About 1770 Onondaga salt was in common use among the Delaware Indians and was sent to Quebec for sale. In 1788 a treaty was entered into with the Onondaga tribe of Indians by which the state agreed to care for the springs for the mutual benefit of whites and Indians. The operations of this treaty proving unsatisfactory, a second treaty was negotiated in 1795, by which the Onondaga salines and a tract of land about them, some 10 square miles in area, were ceded absolutely to the state in consideration of a cash payment of $1,000 and annual royalties of $700 and 150 bushels of salt. The area thus acquired constituted the Onondaga Salt Springs reservation, and included the site of the city of Syracuse and of the town of Geddes, nearly all that of the town of Salina, and the whole of Onondaga lake. By this treaty the state became bound to hold and operate the property forever. In 1797 the property was surveyed, a superintendent appointed, and a royalty of 4 cents per bushel levied, the lessees being required to produce not less than 10 bushels a year and to charge not more than 60 cents a bushel. The operation of raising the brine was also in charge of private individuals, and the state authorities then acted only to adjust difficulties between them. In 1812 the royalty was raised to 12½ cents per bushel in order to secure revenue to aid in the construction of canals; and it remained at this figure until 1834, when it was reduced to 6 cents. For the last three years preceding 1834, however, a rebate was allowed which removed the entire royalty and assisted in the payment of the canal tolls. In 1846 the royalty was modified to 1 cent per bushel, and this rate has prevailed up to the present time, although in 1898 the state sold its title to part of the lands. In return for the royalty the state sank wells, raised and delivered the brine to the manufacturer, and inspected and weighed the salt; it also leased land to the manufacturers on which to erect their works. In the winter of 1789–90 Nathaniel

Loomis made 600 bushels of salt, which were sold for $1 per bushel. In 1797, when the first leases of salt lots were made, 25,474 bushels of salt were produced. The output steadily increased until 1862, when the amount produced reached the maximum of 9,053,874 bushels. At this stage it encountered the competition of Michigan salt, produced from strong brines, with cheap fuel and, because of the location of the wells, having the advantage of cheap transportation. Owing to the competition of cheap Liverpool salt in New York city, and of Michigan salt in the markets of the South and West, the territory commanded by Onondaga salt became much restricted and the industry so depressed that in 1876 but 5,392,677 bushels were produced. Later, however, there was improvement, owing to the establishment of chemical factories by which to convert the salt on the spot into more marketable and intrinsically valuable substances.

While sinking a prospect well for oil in Wyoming county in 1880 a deposit of rock salt 70 feet in thickness was discovered at a depth of 1,300 feet, and other deposits have been found in Genesee and Livingston counties and salt works established. The brines obtained from these wells in western New York contained from 23 to 25 per cent of salt, while the deep wells at Syracuse gave brine carrying only from 17 to 20 per cent and the shallower ones still less. In practice two tons of fuel would produce as much salt at the works in western New York as three tons would at Syracuse. This advantage for the western New York works was partly offset by that which the Syracuse works derived from their proximity to the Erie canal, by means of which their product could be more cheaply transported to the seaboard. Since 1885 the deposits in western New York have been operated at a number of points by the regular methods of mining, thereby yielding rock salt. The amount of rock salt produced in New York in 1900 was 1,866,550 barrels, and in 1905, 2,141,371 barrels, an increase of 14.7 per cent.

The beginning of the industry in other states is briefly as follows: The salines near Equality, Gallatin county, Ill., were operated by the French in 1720. Salt works were erected on Big Beaver creek, in Pennsylvania, in 1784. Salt was manufactured at Avery Island, La., in 1791, but not successfully until 1812; and the deposit of rock salt, from which the brines originated, was not discovered until 1862. The industry was established in Kentucky prior to 1795. The first salt produced in Ohio was made at the old Scioto works in 1798. The recovery of salt from the incrustations on the shore of the Great Salt Lake began with the advent of the Mormons in Utah in 1847. The production of salt is recorded in Tennessee, Minnesota, Nebraska, Missouri, Arkansas, Indian Territory, and New Mexico prior to 1860, but it was probably in small quantities for immediate consumption. The salt springs of Michigan were known and used by the Indians. On March 4, 1838, over a year after Michigan became a state, an act was passed directing the state geologist to bore for salt at one or more of the salt springs and appropriating $3,000 for the purpose. The result was not satisfactory nor were the subsequent official tests made in 1840, 1841, and 1842. In 1859, encouraged by a bounty of 10 cents per bushel, offered by the legislature for all salt made in the state, a private company sank a well at East Saginaw, and obtained at a depth of 669 feet nearly saturated brine. The industry thus established grew to the first magnitude. As early as 1857 Texas was reported as producing 20,000 bushels of salt per annum, which was probably derived from an extensive salt lagoon near the Rio Grande; the first salt well sunk in the state was in the town of Colorado in 1884. Although salt was obtained at an early date in Kansas, from the incrustations on the salt marshes which are scattered over the central part of the state, the business was not organized until 1867, when a well was driven at Solomon city, and it assumed importance only with the discovery of a body of rock salt at Lyons, in Rice county, in 1887. The rock salt mined was reported at the census of 1900 as 468,029 barrels, and at the census of 1905 as 991,878 barrels, an increase of 523,849 barrels, or 111.9 per cent. It is claimed that the largest salt block in the world is located in this state and is operated with crude petroleum for fuel. Nevada reported salt for the first time at the census of 1880, when it had a production of 182,408 bushels, obtained for the most part from saline incrustations, but in the case of one establishment from wells. Salt making in Oklahoma began as late as 1896.

At the outset the Federal Government sought to protect and foster the salt industry. From the passage of the tariff act of July 4, 1789, there has usually been a tariff on foreign salt, except for brief intervals. For considerable periods, however, foreign salt used for curing fish on vessels authorized to engage in fishing on the coasts and navigable rivers and lakes within the jurisdiction of the United States, and that used in the packing of meat for exportation, have enjoyed the benefit of drawbacks, or could be imported and used in bond free of duty. The salt resources of the country were treated in the message of President Monroe to Congress, March 28, 1824. In the formation of the states of Ohio, Illinois, Indiana, and Michigan the enabling act reserved to the new state the known saline lands within its confines and bound it not to dispose of such lands. A similar plan was pursued with Missouri and Arkansas, but later on Congress, by special acts, withdrew the restrictions on the power of the states to sell their saline lands. In some instances the United States reserved to itself such land and afterwards disposed of it by sale under special acts. Many of the states have followed the example of New

York in making laws for the proper supervision and control of the industry, so as to protect the public interests and for its encouragement and advancement.

The terms "rock salt," "solar salt," and "salt made by the boiling process," used in Table 8 to distinguish the different kinds of salt, indicate partly the source of the salt and partly the method followed in its manufacture. Rock salt, as it is found in nature, varies considerably in purity. The different beds in the same deposit may, as at Cheshire, England, from which Liverpool salt is obtained, show quite different degrees of purity, or there may be a single thick deposit of great purity throughout. The latter conditions obtain at the Louisiana deposits, numerous samples of which, taken at random, showed 98 to 99.6 per cent of sodium chloride. The method of treatment of such a material so situated is described by A. F. Lucas, as follows:[1]

The mines are operated by the chamber and pillar system, and the salt is excavated by undercutting. When the shaft has reached a depth of, say, 250 feet or more below the apex of the deposit, stations are opened, and an undercut 7 feet high, with a face of 75 feet, is commenced. When this has advanced, say, 200 or 300 feet, the roof is attacked and blasted down to the height of about 20 feet. After the removal of the salt thus won, there remains a chamber, say, 75 feet wide by 200 feet long and 20 feet high, in which the roof is again broken down to the final height of 70 feet in the center and 60 feet at the pillars on either side, leaving a natural arch of rock salt, which has proved capable of resisting any overlying weight, as well as preventing leakage of surface waters.

This final excavation is performed with the aid of tripods, made of short ladders, upon which a temporary scaffold is erected for men and machines. A battery of holes, 10 feet deep, is drilled near the brow of the chamber and along its whole face and charged with low explosives. The ladders and machines are then removed and the salt is blasted down. On the pile of this material new scaffolding is erected, and the operation of drilling and blasting is repeated until the desired height of roof is reached. Loose blocks or chips are carefully removed from the final roof, so as to leave a safely solid mass; and the chamber is then abandoned. Every such chamber, 200 feet long by 75 feet wide and 65 feet in average height, yields about 50,000 tons of salt, mined without the use of a single stick of timbering.

Pillars 60 feet square are left between chambers. Whenever a given level shall have been worked out on this plan, it will only be necessary to sink the shaft another hundred feet and repeat the operations described.

It need scarcely be said that these great vaulted chambers, with their piers and arches of pure crystalline salt, present, especially when scintillating under the strong illumination of a calcium or electric light, a most impressive appearance, not paralleled by underground views in ordinary mines. They might easily be fancied to have been the subterranean residences of the mastodons, the bones of which are so frequently found in the overlying drift.

The first undercut of salt is well shattered by blasting and goes to the mill to be ground fine. The first and second roof blasting furnish pieces of solid rock, which is set aside under sheds, to be aerated or weathered before being shipped for "cattle"—purposes. All finer stuff is "grist;" and as, by reason of the uniform purity of the salt, no sorting or purification is required, every pound of salt mined is a pound sold.

In a properly conducted mine, two chambers should be always worked simultaneously, since one undercut alone would not supply the coarser grades. While one chamber is being undercut, the other, with its roof partly down, equalizes the proportions of the different sizes required for steady operations.

It is not necessary to describe the crushing and sizing of the product. It is all equally pure, and is subjected only to such operations as will recommend it to the various branches of trade. The coarsest crushed salt is used principally by beef and pork packers; the second and third sizes are largely employed in salting hides, in refrigerating, etc.; and there are four grades of still higher fineness, produced by grinding with emery wheels, screening and blowing, which have their several uses—the finest being table salt.

When the rock salt is impure it is purified by dissolving in water and treating the brine thus formed in the manner described below for brine from wells and springs.

Solar salt is that which is made from brine through evaporation by solar heat alone or aided by the wind. A variety known as "bay salt" is made by evaporating sea water in shallow pits, or ponds, made on the shore of the body of water from which the supply is drawn. In the evaporation the calcium sulphate, being the least soluble salt, crystallizes out first and the common salt next, while the more soluble calcium chloride, magnesium salts, sodium sulphate, bromides, and iodides which may be present remain in solution. This remaining solution is styled the mother liquor. As the magnesium salts, which are now quite concentrated, impart to it a markedly bitter taste, the residual solution is also styled "bittern." In order to effect evaporation and separation a series of ponds are prepared. The first of the series is filled by the natural flow of the water at high tide. The brine as it becomes more and more concentrated may be pumped to the other ponds by simple devices, such as an Archimedean screw actuated by a windmill. The transfer is made to the lime ponds when the brine has reached such a concentration or density that the calcium sulphate is ready to precipitate in the crystalline form known as "gypsum." The brine is allowed to remain in the lime ponds, to concentrate by evaporation, and to precipitate the gypsum and other substances present which have become insoluble at this concentration, until it reaches a density of 25° Baumé, when it is transferred to crystallizing ponds. These ponds are filled to a depth of 10 to 12 inches and the brine is allowed to remain in them until by evaporation it reaches a density of 29° Baumé when, the salt having crystallized out, the mother liquor is drawn off, and the salt gathered and taken to the dry house and mill to be ground into the desired grades. Solar salt may be obtained from salt ponds and lakes, like the Great Salt Lake, by means similar to those just described. Natural solar salt, occurring as an incrustation, may be harvested by plowing and scraping, and refined by crushing, passing over heated cylinders, grinding in roller mills, winnowing, and sifting. At Salton the salt incrustation was cut by means of cable plows into furrows 8 feet wide and 6 inches deep. Each plow harvested over 700 tons of purified salt per day, the

[1] Transactions American Institute of Mining Engineers, 1900, vol. 29, pages 462 to 474.

salt being conveyed from the field to the mill by a portable railroad.

The term "solar salt" is more particularly applied to salt as made at Syracuse, N. Y., Saginaw, Mich., and elsewhere, by evaporating brine in shallow wooden vats, or "covers." The latter term is applied to the vats because they are provided with light movable roofs which are used to protect them during a rainfall. Aprons, which are wooden troughs 15 to 20 feet wide by 2 to 3 inches deep, convey the brine from the wells to the covers. The grade of the aprons is 1 inch in 100 feet, and the brine upon them is kept at an inch in depth. Owing to the great length and width of the aprons, the slowness of flow, the shallowness of the layer of brine, and its complete exposure to the sun and wind, its evaporation and purification are greatly facilitated. Through concentration the gypsum and other bodies of similar solubility are deposited on the aprons and the brine is delivered to the covers, where the salt crystallizes out, in a saturated condition. By the use of aprons, 70 to 80 and even, at times, 92 bushels of salt are obtained per cover, or surface of 16 to 18 feet. Without the use of aprons the average yield was 50 bushels per cover. Solar salt is especially preferred for "heading" and "layer" in packing meat and fish, as the crystals, being formed slowly, are larger and harder and dissolve less readily than those produced by artificial heat.

Salt made by the boiling process is produced from brine by means of artificial heat in either kettles, open pans, vacuum pans, grainers, or superheaters using fire or steam at either high or low pressure. As the gypsum and other precipitated salts may, by covering the pipes and pans with a nonconducting coating which necessitates scaling, interfere with the process or render it more expensive, chemical reagents, such as lime, alum, barium chloride, magnesium carbonate, sodium carbonate, and others, are often employed to change the composition and characteristics of the substance in the brine. These chemicals are the subject of many of the patents that have been granted in this country. When a solution of salt is slowly evaporated the salt crystallizes out in cubes which coalesce into the form of hoppers. When the evaporation is rapid the crystals are smaller, but they unite to form a thin sheet or crust over the brine in the pan or grainer which impedes the evaporation of the brine beneath. To overcome this, butter or other grease is used in grainer work to cut the grain, as the film of grease prevents the formation of the crust. Active ebullition also effects this result and produces very small crystals. Self-rakers, used in some works, produce the same result by agitated crystallization.

The kettle system was used at Syracuse in 1788, when a potash kettle in which to boil the brine was hung over an open fire. It was next set in an arch of brickwork, then 2, and, in 1793, 4 kettles were combined forming a "block." This term has been used ever since in this industry, not only for kettles but for pans and grainers, with the same significance as "battery" in other industries. The block has increased in size until 30 and even 40 kettles have been placed in line from the fire space to the chimney. The difficulty of heating all of these kettles uniformly from a common fire is evident. This is better accomplished by the steam kettle in which the separate units are heated by high pressure steam.

The open pan is of iron, 100 feet long, 23 feet wide, and 10 inches deep. It is divided by a cross partition into a front pan 45 feet long and a back pan 55 feet long. The sides of the pan incline outward and meet draining boards which extend along its sides. The pan is set on a furnace and heated by an open fire.

Vacuum pans are closed pans heated by steam. By means of an exhaust a partial vacuum is maintained within them, thereby promoting the evaporation of the brine and reducing the temperature at which it boils.

Grainers are long vats or troughs heated by steam pipes placed near the surface of the brine. They may be made of wood with or without iron bottoms, or constructed of Portland cement. The operation of grainers at White Rock furnace, Pomeroy, Ohio, is described by Dr. Thomas M. Chatard, as follows:[1]

The characteristics of what may be called the Ohio region are cheap fuel and weak brines which, though very impure, are nevertheless practically free from gypsum. The principle of the method is the boiling of the brine in a steam chest, by which a portion of the impurities is rendered insoluble and a large supply of low pressure steam is obtained that is utilized in the further evaporation of the brine. Owing to the large amount of the very soluble "mother liquor salts" fractional crystallization must be resorted to; for, if the brine at different stages of the process be evaporated beyond certain points, the resulting product will be too impure. Hence the grainers are arranged at different levels, so that the mother liquors can be drawn from one to the other, giving a series of products of which the early ones are ready for market, the later being redissolved in the settlers. In this way the process is practically a continuous one, the concentrating brine passing from one to the other of the settlers and grainers in regulated succession, depositing, in its passage, salt of various grades, and the mother liquor, loaded with impurities, going to the bromine works, where that valuable constituent is extracted and the residue itself made into a marketable product.

In this most instructive process the aim is to have nothing but condensed water and ashes as waste; since, were it not for the by-products, many of the works would be forced to suspend operations, owing to the low price to which salt has been forced through domestic competition.

The brine, as pumped, has a specific gravity of 1.062 (9° B., 34.5° salometer), every hundred pounds of brine containing, on an average, 7.4 pounds of salt, 90.5 pounds of water, and 2.1 pounds of impurities, or in the proportion 1:12.3:0.28. As it takes 160 pounds of coal, run of mine, to make 100 pounds of salt, we have 1.6 coal=1 salt=12.3 water, or 1 coal=7.69 water evaporated, a result far in excess of the figures given above for high pressure steam. The steam has a pressure of about four pounds, and all the pipes and

[1] Seventh Annual Report, United States Geological Survey, 1885–86, pages 522 to 526, "Salt-making Processes in the United States."

connections are of wood except the grainer pipes, which are copper, and the steam is thus carried with the minimum of condensation and applied with an almost maximum effect.

The brine is pumped into a large tank, in which the small amount of petroleum that accompanies it is separated. When first pumped it is clear and colorless, but it soon turns reddish from the oxidation of the carbonate of iron in it. From the tank it flows through a trough, in which it is heated by steam pipes and is conveyed to the front of the furnace, where it enters the first division of the steam chest.

The furnace walls are built of stone, with a lining of fire brick which extends 12 to 15 inches above the stone wall, and on which the steam chest rests. The grate surface is 12 feet long by 9 feet wide, and the distance from grate to bottom of steam chest is 8 feet 4 inches. No bridge wall is used, the length of grate being sufficient to bank up the fire sufficiently high. The fire door is on the side, the front being closed with the exception of the spaces above the grate for raking down and removing clinkers. The grate bars are either of the ordinary construction or else broad bars with perforations. Chimney draught is used, together with some steam, and the fuel is either the run of mine or else the slack and top coal from the mines, at the mouth of which the works are situated. The fuel is cheap (the first costing about 3 cents a bushel, the other 2 cents), but it contains a large amount of ash and clinkers; hence the peculiar construction of the fire space and grates.

The steam chest in which the brine is boiled is in three divisions, connected by copper pipe. Each division has a cast-iron bottom 1 inch thick, made by placing together side by side 11 pans, each 10 feet long and 3 feet wide, having ends 12 inches deep and sides 8 inches deep, except the two end pans, which have each one side (the end side) 12 inches deep. By bolting these pans together we have a single pan 33 feet long, 10 feet wide, and 12 inches deep, having divisions 8 inches high running across it every 3 feet. The seams of the divisions are thoroughly calked, either with iron filings or (the better but more expensive way) with cloth dipped in white lead.

Resting on the divisions and bolted to the inside of the side plates is the side planking, 4 inches thick and 4 feet high, the seams being horizontal. The ends of the steam chest are formed by bolting to the outside of each of the end sides of the pan the so-called "damper," a cast-iron plate 1 inch thick and 2 feet high, having sides which extend back about 8 inches on the outside of side planking; the remaining portion of the ends is filled out with 4-inch planking bolted to the inside of upper edge of damper and grooved into the ends of side planking. Across the top of the tank so formed are six iron joists, let in flush with the upper edge, on which the top planks, also 4 inches thick, are laid. The tightening of the seams of the planking is effected as follows: In the center of the ends of each section of the pan is cast a lug which takes the square head of a long bolt extending upward through the end of a cap timber. These bolts are threaded, and by screwing down the nuts all horizontal seams are drawn tight. Either end of the cap has a piece bolted to the under side, so that a wedge can be driven between this projection and the outside top plank, thus drawing up all the seams of the top.

The steam chest rests on the top of the fire brick wall, and for this purpose each lower corner of each section of the bottom has a projection cast on it about 6 inches long. The space between the divisions, 30 inches, is arched with fire brick, and the connection between the divisions is made by a copper pipe opening below the surface of the brine, so that the level is the same throughout. In this steam chest the brine is boiled till it reaches 15° to 18° B., depending upon the needs of the grainers for brine, the steam pressure carried being about 4 pounds. The brine, deeply colored by suspended oxide of iron, is then drawn off and flows into the first mud settler, reaching it on the upper side of the water-tight central partition; passes to the farther end, then through a low place cut in the top of the partition back to the head of the settler, whence it goes to the second mud settler to make the same round. By this time the iron mud is deposited and the brine, already much concentrated, flows to the first or the second "draw settler," as needed, where it concentrates until ready to deposit salt, unless the grainers require it before it reaches that point, which is 23° B. (sp. gr. 1.178). From the draw settlers it goes to grainers 1 and 5, where it deposits the best salt. When the brine in No. 1 attains 24° to 25° B. it is drawn into No. 2, while that in No. 5 reaches 26° to 27° B. and then goes to No. 4. Nos. 2 and 4 give a quality of salt but little inferior to that of Nos. 1 and 5.

The mother liquor of No. 2 and No. 4 goes at 29° B. to No. 3, where, still depositing salt, though of an inferior kind (No. 2), it reaches 31° B., when it is drawn into the "peacemaker" or smaller grainer, where it concentrates to 34° to 35° B., being then transferred to a "bitter water cistern" and rising to 37° B. In each of these some salt is deposited; but it is so impure that it is redissolved in the first mud settler. The heavy mother liquor is now ready for the bromine works, where it is distilled with sulphuric acid and chlorate of potash, yielding, when properly managed, about one pound of bromine for every two barrels of salt made.

The residue of the bromine distillation is then neutralized with lime and evaporated. It deposits some agricultural salt, and the hot liquid, consisting mainly of chlorides of calcium and magnesium, is run into oil barrels, solidifies on cooling, and is sold, being employed for making the nonfreezing liquid of the Pictet ice making process.

The settlers and grainers, with the exception of the "peacemaker," are each 180 feet long and made of 4-inch lumber, pine or poplar, preferably the latter. The steam connections are all of wood, being made of pine or poplar logs with a 6-inch bore, the copper pipes being 5 inches in diameter, three-sixteenths of an inch thick, connected by goosenecks to the head logs at upper end of grainers and passing through the lower end. The condensed water runs to waste, experience having shown that no further benefit can be derived from the small amount of heat thus lost.

The absence of sulphate of lime, one of the most important points connected with this brine, permits the use of the light copper pipe to which, in great measure, the high evaporative result is due. The low pressure steam allows the use of wood in constructing the steam chest and in making the steam connections, by which we get a material of very low conducting power at a very low cost. The steam is thus delivered, with but little loss of its heat, into pipes made of a metal of high conducting power, which is not lessened, as in other brines, by the formation on the pipes of a coating of nonconducting gypsum, continually increasing in thickness and retarding evaporation in proportion.

Examination of the patents relating to this industry indicates the activity in invention of processes and apparatus for the manufacture of salt in this country. The importance of this industry is emphasized by the fact that the first patent of record granted by any government in North America was issued by Massachusetts Bay Colony in 1641 to Samuel Winslow for a method of making salt, and that the fourth patent of record was issued by the same government to John Winthrop, son of Governor Winthrop, for a method of making salt. Of the methods in use to-day, the grainer method is regarded as distinctively American.

Reference has been made in the above quotation to the salometer. This is an hydrometer which is especially graduated for salt solutions, and on which the 0° represents pure water and 100° water saturated with salt, both being determined at 60° F. In some districts the Baumé hydrometer is used, but the readings are readily convertible, as 1° Baumé is closely equivalent to 4° on the salometer.

For some purposes salt which is only partially purified is desirable. Thus in the Kanawha and Ohio river regions a salt is made containing magnesium and calcium chlorides. These chlorides tend to make the salt fine-grained, sharper in taste, and more rapidly soluble, and such salt is preferred to the harder-grained salt in curing meats in warm climates where speedy action is sought. As made in the early days, it retained iron compounds also, and became widely and favorably known as "that strong red salt from the Kanawha 'licks.'"

Salt is used as food; in the preservation of food; as a source of sodium, and for the preparation of sodium compounds, such as sodium carbonate (soda ash), crystallized sodium carbonate (sal soda, washing soda), sodium hydrogen carbonate (bicarbonate of soda, bread soda), sodium hydroxide (caustic soda, soda lye), sodium sulphate (salt cake), crystallized sodium sulphate (Glauber's salt), sodium silicate (water glass), and a large number of other substances; as a source of chlorine and for the preparation of chlorine compounds, such as hydrochloric acid (muriatic acid), sodium hypochlorite (chloride of soda), chloride of lime (bleaching powder), chloroform, and many chlorides, chlorates, and chlorine substitution compounds; in the manufacture of dyestuffs and other organic compounds, for "salting out" the sulphonic acids produced; in the manufacture of soap; in chlorination and other processes for the recovery of precious metals from their ores; in the salt glazing of tiles and pottery; in the manufacture of fertilizers; in top dressing soil for eradicating weeds; in curing hides and skins and in the alum mixture used for tawing hides; in the manufacture of fireworks; in artificial mineral waters; in freezing mixtures; in thawing ice in pipes and on pavements; for surgical purposes; and for a great variety of minor uses.

An effort has been made to ascertain the various uses to which the salt produced and imported at the census of 1905 was put, and the extent in each case. This has been accomplished in part by searching the returns of manufacturers for the materials used in the various industries. The results thus obtained are thought to be below the truth for the industries named, since, as salt is one of the lowest priced of the many materials used in many instances, the quantity is not returned, and its value is given in combination with other minor items, under the term "all other materials." This has been done to such an extent in certain industries that the amount has had to be estimated for them. It is believed, however, that these estimates are conservative and fairly reliable. The results are given in Table 12.

TABLE 12.—*Quantity of salt consumed for specific purposes: 1905.*

	Quantity (barrels)
Total domestic consumption	23,104,699
Soda products and bleaching materials	4,876,387
Miscellaneous chemicals	1,069,171
Curing and tawing hides and skins	446,542
Freezing mixtures	412,825
Muriatic acid	343,029
Soap	324,486
Chlorination	150,000
Pottery, terra cotta, and fire clay products	59,300
Dyestuffs and extracts	20,464
Fertilizers	17,186
Brick and tile	16,771
Food, preservation of food, and all other purposes	15,368,538

The amount of salt used in different articles of food varies greatly according to the nature of the articles and according as the salt is used alone or in combination with other preservatives, such as saltpeter, boric acid, etc. The amount differs for the same article according to the demands of trade. Formerly, for instance, one ounce of salt was the usual amount added to each pound of fresh butter; to-day favorite grades are made with one-half ounce and in some instances one-fourth ounce of salt to the pound. The following statement gives the average percentage of salt in a number of commonly used varieties of salted food, as reported by Dr. W. D. Bigelow, chief of the division of foods, United States Department of Agriculture:

Salt fish, all varieties	12.5
Desiccated soup and dried and smoked beef	9.0
Potted meat	6.0
Meat extract and sausage	5.0
Bacon, butter, oleomargarine, corned beef, ham and shoulder	4.0
Bread	2.5
Concentrated soup	2.0
Tripe	1.5
Soup	0.8

A future investigation may make it possible to extend this analysis of the distribution of the salt product to the dairy and packing industries, but the statistics now at command do not permit this.

The use of salt in the manufacture of food frequently serves several purposes. In the production of bread, for instance, its presence not only removes the insipid taste characteristic of unsalted bread, but modifies the chemical actions taking place in the dough, checking the tendency to lactic or butyric fermentations which might otherwise follow that alcoholic fermentation which causes the raising of the dough.

APPENDIX.

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COTTONSEED PRODUCTS

COTTONSEED PRODUCTS.

The manufacture of cottonseed products is of comparatively recent origin. While several cottonseed-oil mills had been built in the United States prior to 1840, the industry did not reach commercial importance before 1870. There were 7 of these establishments in 1860 and 26 in 1870. During the thirty-five years since 1870 the industry has grown in a most rapid manner.

Before the coming of the cottonseed-oil mill about the only value which attached to cottonseed was for planting and fertilizing purposes. The exhausted condition of the soil in the Atlantic coast states first led to its use in this country as a fertilizer. The value placed upon the seed when so used was from $6 to $9 per ton, while the average price paid by the oil mills during the census year 1905 was $15.51. In those localities where the seed was not used as a fertilizer its disposition often gave the ginner and the community great concern. The usual method of disposal was to haul the seed to a remote place to rot or to dump it into a convenient stream of running water. As the population grew, and the cotton growing industry developed, this means of disposal became a menace to health to such an extent as to call for legislation in some of the states forbidding this practice.

Table 1 is a summary for the cottonseed products industry, showing capital invested, number of employees, salaries and wages, miscellaneous expenses, cost of materials, and value of products, by states and territories, for 1890, 1900, and 1905. The statistics of 1905 are, as a rule, for the calendar year 1904, but as the fiscal year for many of the establishments does not end with December, and as the managers were given the option of making their reports for either the fiscal or the calendar, the period covered by the reports did not always coincide with the calendar year.

Reports were received from 715 establishments for 1905, 369 for 1900, and 119 for 1890. The establishments in 1905 were located in 19 states, but it is impossible to publish separate totals for 5 of the states without disclosing the operations of individual establishments. The statistics for these 5 states are therefore grouped under "all other states" in the tables and include establishments distributed as follows: Illinois, 2; New Jersey, 1; Ohio, 1; Rhode Island, 1; Virginia, 2.

The statistics of Table 1 include those for establishments engaged in the extracting and refining of oil, mixing of fertilizers and feed when conducted in connection with cottonseed-oil mills, and the manufacture of paper stock and other products from cottonseed hulls, but do not include those for establishments manufacturing cottonseed products in connection with other industries where the other products exceed in value those made from cottonseed.

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TABLE 1.—COMPARATIVE SUMMARY FOR COTTONSEED PRODUCTS,

	STATE OR TERRITORY.	Year.	Number of establishments.	CAPITAL.				
				Total.	Plant.			Cash and sundries.
					Land.	Buildings.	Machinery, tools, and implements.	
1	United States	1905	715	$73,771,407	$4,352,919	$15,091,808	$32,233,578	$22,093,102
		1900	369	34,451,461	2,155,456	7,166,721	14,511,566	10,617,718
		1890	119	12,808,996	898,345	2,733,217	5,309,452	3,867,982
2	Alabama	1905	58	5,168,939	251,324	1,653,769	2,206,742	1,657,104
		1900	28	1,609,674	106,489	383,822	782,762	336,601
		1890	9	592,408	77,391	183,259	272,192	59,566
3	Arkansas	1905	42	4,105,585	207,811	1,030,008	2,110,053	757,713
		1900	20	2,484,794	207,353	642,473	1,272,061	362,907
		1890	8	1,488,690	91,921	301,721	774,386	320,662
4	Florida	1905	3	241,904	23,648	50,057	120,202	47,997
5	Georgia	1905	112	11,527,997	937,502	1,700,948	4,179,370	4,710,177
		1900	43	4,098,668	235,853	683,532	1,428,334	1,750,949
		1890	17	992,131	92,000	253,200	467,100	179,831
6	Indian Territory	1905	14	1,454,984	75,375	353,176	718,345	308,088
		1900	6	394,850	2,850	129,000	234,860	28,140
7	Kentucky	1905	3	3,440,537	74,158	215,597	543,399	2,607,383
		1900	3	2,029,296	40,680	165,546	309,656	1,513,414
8	Louisiana	1905	51	8,686,711	378,479	1,607,765	3,268,647	3,431,820
		1900	24	4,622,569	274,093	780,819	1,671,024	1,896,633
		1890	7	1,082,752	53,900	203,200	399,300	426,352
9	Mississippi	1905	91	8,551,910	442,208	1,947,832	4,103,880	2,057,990
		1900	41	3,711,930	203,545	786,100	1,857,995	864,290
		1890	13	1,497,746	149,954	444,100	537,100	366,592
10	Missouri	1905	4	765,773	99,800	120,577	267,247	278,149
11	North Carolina	1905	43	3,118,343	211,888	708,515	1,463,283	734,657
		1900	21	1,841,856	61,831	298,044	529,248	952,733
		1890	11	748,675	34,766	172,600	322,749	213,560
12	Oklahoma	1905	10	1,135,171	67,450	248,114	508,907	310,700
		1900	6	324,503	22,003	140,236	134,268	27,996
13	South Carolina	1905	100	5,177,178	228,727	963,348	2,796,459	1,188,644
		1900	50	1,959,872	66,767	369,601	877,784	645,720
		1890	17	565,372	20,798	125,883	334,365	84,326
14	Tennessee	1905	20	2,913,999	373,297	543,176	1,178,115	819,411
		1900	17	1,996,791	349,255	425,679	850,355	371,502
		1890	15	1,833,204	178,510	273,279	827,386	554,029
15	Texas	1905	157	14,179,688	749,595	3,825,948	7,326,194	2,277,951
		1900	103	7,986,962	457,027	2,088,043	4,119,546	1,322,346
		1890	13	2,358,615	149,950	596,634	1,079,009	533,022
16	All other states	[1] 1905	7	3,302,688	231,657	722,978	1,442,735	905,318
		[2] 1900	7	1,389,696	127,710	273,826	443,673	544,487
		[3] 1890	9	1,654,403	49,155	179,341	295,865	1,130,042

[1] Includes establishments distributed as follows: Illinois, 2; New Jersey, 1; Ohio, 1; Rhode Island, 1; Virginia, 2.
[2] Includes establishments distributed as follows: Florida, 1; Illinois, 1; Kansas, 1; Missouri, 2; Ohio, 1; Rhode Island, 1.
[3] Includes establishments distributed as follows: Florida, 2; Kentucky, 2; New York, 3; Ohio 1; Rhode Island, 1.

BY STATES AND TERRITORIES: 1905, 1900, AND 1890.

Proprietors and firm members.	SALARIED EMPLOYEES.										
	Aggregate.		Officers of corporations.		Superintendents, managers, clerks, etc.						
					Total.		Men.		Women.		
	Number.	Salaries.	Number.	Salaries.	Number.	Salaries.	Number.	Salaries.	Number.	Salaries.	
63	3,229	$3,062,157	588	$815,292	2,641	$2,246,865	2,606	$2,231,215	35	$15,650	1
82	1,569	1,579,252	338	488,450	1,231	1,090,802	1,218	1,083,382	13	7,420	
.....	395	414,047	.....	.....	395	414,047	391	412,197	4	1,850	
17	281	253,904	53	72,968	228	180,936	227	180,816	1	120	2
21	106	99,020	19	18,500	87	80,520	86	80,220	1	300	
.....	43	46,985	.....	.....	43	46,985	42	46,735	1	250	
3	210	197,467	30	44,715	180	152,752	180	152,752	.....	.....	3
1	94	116,364	13	26,300	81	90,064	80	89,704	1	360	
.....	25	38,116	.....	.....	25	38,116	25	38,116	.....	.....	
.....	14	12,393	5	6,100	9	6,293	9	6,293	.....	.....	4
11	498	472,261	90	117,447	408	354,814	399	351,146	9	3,668	5
7	195	187,164	46	48,676	149	138,488	149	138,488	.....	.....	
.....	49	41,128	.....	.....	49	41,128	49	41,128	.....	.....	
.....	54	56,137	7	10,050	47	46,087	46	45,087	1	1,000	6
.....	22	24,100	9	13,100	13	11,000	13	11,000	.....	.....	
.....	55	76,240	6	37,300	49	38,940	43	36,212	6	2,728	7
.....	30	52,877	7	33,500	23	19,377	21	17,697	2	1,680	
4	307	311,673	44	86,182	263	225,491	260	223,761	3	1,730	8
5	164	159,210	31	49,135	133	110,075	131	109,275	2	800	
.....	40	41,010	.....	.....	40	41,010	38	40,410	2	600	
6	451	454,713	69	100,370	382	354,343	379	353,168	3	1,175	9
12	199	211,475	34	55,239	165	156,236	165	156,236	.....	.....	
.....	30	31,856	.....	.....	30	31,856	30	31,856	.....	.....	
.....	22	22,908	7	8,500	15	14,408	14	13,688	1	720	10
3	157	122,963	46	41,092	111	81,871	111	81,871	.....	.....	11
.....	87	68,416	28	29,220	59	39,196	59	39,196	.....	.....	
.....	19	13,376	.....	.....	19	13,376	19	13,376	.....	.....	
1	55	53,657	9	13,300	46	40,357	44	39,037	2	1,320	12
.....	19	18,718	5	6,000	14	12,718	14	12,718	.....	.....	
3	341	232,675	125	79,471	216	153,204	214	152,644	2	560	13
18	162	108,798	51	36,911	111	71,887	111	71,887	.....	.....	
.....	33	12,278	.....	.....	33	12,278	33	12,278	.....	.....	
.....	118	138,486	22	53,377	96	85,109	94	84,664	2	445	14
2	80	104,773	15	39,572	65	65,201	64	64,321	1	880	
.....	54	53,534	.....	.....	54	53,534	53	52,534	1	1,000	
15	614	577,608	68	104,671	546	472,937	541	470,753	5	2,184	15
15	376	375,013	70	107,685	306	267,328	300	263,928	6	3,400	
.....	54	54,086	.....	.....	54	54,086	54	54,086	.....	.....	
.....	52	79,072	7	39,749	45	39,323	45	39,323	.....	.....	16
1	35	53,324	10	24,612	25	28,712	25	28,712	.....	.....	
.....	48	81,678	.....	.....	48	81,678	48	81,678	.....	.....	

TABLE 1.—COMPARATIVE SUMMARY FOR COTTONSEED PRODUCTS,

	STATE OR TERRITORY.	Year.	Number of establishments.	WAGE-EARNERS AND WAGES. 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	1905	715	15,539	$4,837,694	15,496	$4,831,558	26	$4,588	17	$1,548
		1900	369	11,007	3,143,459	10,936	3,127,543	54	13,578	17	2,338
		1890	119	5,906	1,493,780	5,814	1,479,690	55	9,607	37	4,483
2	Alabama	1905	58	1,400	381,237	1,397	381,021			3	216
		1900	28	759	196,700	757	196,261	2	439		
		1890	9	490	86,363	488	86,147	1	100	1	116
3	Arkansas	1905	42	922	329,259	921	329,189			1	70
		1900	20	667	232,856	667	232,856				
		1890	8	511	158,651	511	158,651				
4	Florida	1905	3	53	16,579	53	16,579				
5	Georgia	1905	112	2,307	607,739	2,290	604,778	15	2,661	2	300
		1900	43	1,591	354,017	1,581	352,875	1	115	9	1,027
		1890	17	751	145,557	737	144,123	12	1,194	2	240
6	Indian Territory	1905	14	282	91,989	282	91,989				
		1900	6	121	38,587	120	38,331	1	256		
7	Kentucky	1905	3	306	86,400	306	86,400				
		1900	3	180	59,070	166	56,470	8	1,664	6	936
8	Louisiana	1905	51	1,605	560,819	1,594	559,237	6	1,079	5	503
		1900	24	1,317	347,051	1,308	343,889	9	3,162		
		1890	7	387	136,182	361	132,050	3	468	23	3,664
9	Mississippi	1905	91	2,499	732,165	2,494	731,366	3	500	2	299
		1900	41	1,521	461,357	1,507	458,714	13	2,493	1	150
		1890	13	891	211,139	865	205,074	26	6,065		
10	Missouri	1905	4	123	38,399	122	38,195	1	204		
11	North Carolina	1905	43	867	232,766	867	232,766				
		1900	21	564	133,195	563	133,095	1	100		
		1890	11	318	56,596	310	56,303	1	15	7	278
12	Oklahoma	1905	10	214	89,918	214	89,918				
		1900	6	101	31,463	101	31,463				
13	South Carolina	1905	100	1,282	320,218	1,281	320,158			1	60
		1900	50	734	143,932	733	143,682	1	250		
		1890	17	416	56,354	412	56,169			4	185
14	Tennessee	1905	20	701	244,790	698	244,690			3	100
		1900	17	751	204,219	747	203,470	4	749		
		1890	15	1,030	183,444	1,023	182,934	7	510		
15	Texas	1905	157	2,739	1,019,541	2,738	1,019,397	1	144		
		1900	103	2,478	830,766	2,464	826,311	13	4,230	1	225
		1890	13	866	320,140	861	318,885	5	1,255		
16	All other states	[1] 1905	7	239	85,875	239	85,875				
		[2] 1900	7	223	110,246	222	110,126	1	120		
		[3] 1890	9	246	139,354	246	139,354				

[1] Includes establishments distributed as follows: Illinois, 2; New Jersey, 1; Ohio, 1; Rhode Island, 1; Virginia, 2.
[2] Includes establishments distributed as follows: Florida, 1; Illinois, 1; Kansas, 1; Missouri, 2; Ohio, 1; Rhode Island, 1.
[3] Includes establishments distributed as follows: Florida, 2; Kentucky, 2; New York, 3; Ohio, 1; Rhode Island, 1.

BY STATES AND TERRITORIES: 1905, 1900, AND 1890—Continued.

Miscellaneous expenses.					Cost of materials used.									
						Principal materials.								
Total.	Rent of works.	Taxes, not including internal revenue.	Rent of offices, interest, etc.	Contract work.	Aggregate.	Total.	Purchased in raw state.	Purchased in partially manufactured form (including all other materials).	Fuel.	Mill supplies.	Freight.	Paid for power and heat.	Value of products.	
$4,860,157	$24,243	$515,671	$4,248,872	$71,371	$80,030,063	$77,066,239	$51,358,687	$25,707,552	$2,207,778	$488,601	$261,530	$6,815	$96,407,621	1
2,433,012	15,175	260,720	2,135,064	22,047	45,165,823	40,688,121	26,167,037	14,521,084	1,113,353	1,009,102	2,340,082	15,165	58,726,632	
1,163,586	.....	.....	.....	.....	14,303,126	.....	.....	.....	.....	.....	.....	.....	19,335,947	
367,078	4,200	33,021	329,857	.....	4,554,100	4,348,984	4,062,459	286,525	145,476	53,784	5,946	.....	5,769,061	2
194,450	1,250	15,477	171,705	6,018	2,103,708	1,881,037	1,761,911	119,126	70,646	53,592	98,493	.....	2,985,890	
87,003	.....	.....	.....	.....	945,069	.....	.....	.....	.....	.....	.....	.....	1,203,989	
307,165	2,150	29,027	275,088	.....	4,200,195	4,032,414	3,863,975	168,439	128,353	31,176	8,252	.....	4,939,919	3
160,806	.....	15,866	143,321	1,709	1,995,771	1,672,669	1,636,341	36,328	72,307	82,701	168,094	.....	3,188,812	
160,148	.....	.....	.....	.....	1,319,039	.....	.....	.....	.....	.....	.....	.....	1,881,668	
14,082	.....	1,046	13,036	.....	210,272	200,405	194,248	6,157	8,102	1,765	.....	.....	261,864	4
634,876	4,000	66,253	564,429	194	11,262,741	10,905,472	5,645,225	5,260,247	278,268	69,821	6,600	2,580	13,539,899	5
312,986	100	28,727	282,959	1,200	6,229,436	5,674,546	3,070,662	2,603,884	122,596	90,180	342,114	.....	8,064,112	
86,843	.....	.....	.....	.....	1,289,421	.....	.....	.....	.....	.....	.....	.....	1,670,196	
91,555	.....	8,311	83,244	.....	1,166,881	1,107,651	1,052,942	54,709	43,060	4,925	11,245	.....	1,505,299	6
17,523	300	2,311	14,912	.....	340,247	309,810	301,310	8,500	11,477	8,960	10,000	.....	451,650	
182,607	.....	5,750	176,857	.....	4,205,477	4,231,036	60,494	4,171,442	15,017	3,163	45,361	.....	5,697,549	7
68,032	.....	1,735	66,897	.....	4,225,390	4,093,308	.....	4,093,308	11,193	35,925	84,964	.....	4,688,343	
578,052	250	83,237	494,565	.....	11,477,219	11,072,849	4,680,659	6,392,190	289,299	47,913	67,158	.....	13,187,608	8
295,358	2,400	51,421	241,495	42	5,792,469	5,262,732	2,251,619	3,011,113	125,043	128,332	276,362	.....	7,026,452	
48,124	.....	.....	.....	.....	1,058,115	.....	.....	.....	.....	.....	.....	.....	1,573,626	
760,483	4,626	97,377	658,480	.....	10,070,457	9,614,642	8,782,149	832,493	362,531	60,753	32,531	.....	12,587,147	9
337,141	140	44,117	289,884	3,000	4,952,814	4,360,275	4,164,129	196,146	148,695	119,159	324,520	165	6,681,121	
186,754	.....	.....	.....	.....	1,757,807	.....	.....	.....	.....	.....	.....	.....	2,406,628	
25,436	.....	5,256	20,180	.....	867,832	846,448	317,112	529,336	14,016	7,368	.....	.....	999,289	10
150,320	.....	13,937	136,392	.....	2,955,646	2,812,911	2,620,015	192,296	110,483	28,304	2,658	1,200	3,748,789	11
110,161	60	7,374	102,727	.....	2,160,996	1,860,644	1,645,895	214,749	54,804	46,480	190,068	.....	2,676,871	
31,877	.....	.....	.....	.....	402,199	.....	.....	.....	.....	.....	.....	.....	523,746	
76,235	.....	7,228	69,007	.....	1,185,908	1,119,734	1,076,126	43,608	52,561	3,613	10,000	.....	1,603,584	12
14,194	60	3,369	10,765	.....	264,829	240,480	236,450	4,030	15,169	7,908	1,272	.....	422,699	
266,556	7,600	31,674	227,242	40	4,553,470	4,317,074	3,767,083	549,991	177,281	55,836	1,479	1,800	5,462,818	13
127,462	600	14,598	102,520	9,765	2,962,837	2,139,295	1,797,567	341,728	60,620	64,451	80,462	12,000	3,103,425	
59,136	.....	.....	.....	.....	740,605	.....	.....	.....	.....	.....	.....	.....	927,772	
235,611	1,100	21,573	212,878	.....	3,083,955	2,986,076	2,367,686	618,390	76,309	21,570	.....	.....	3,743,927	14
183,222	210	16,661	166,351	.....	2,277,855	1,995,156	1,851,785	143,371	63,922	58,344	157,433	3,000	2,980,041	
220,051	.....	.....	.....	.....	1,748,953	.....	.....	.....	.....	.....	.....	.....	2,504,741	
979,807	245	94,875	884,687	.....	15,804,741	15,160,500	12,437,330	2,723,170	480,936	93,607	68,781	917	18,698,815	15
550,225	2,035	50,743	495,634	1,213	10,372,753	9,287,660	7,114,018	2,173,642	333,187	258,564	493,342	.....	14,005,324	
233,070	.....	.....	.....	.....	2,531,011	.....	.....	.....	.....	.....	.....	.....	3,262,596	
189,685	12	15,606	102,930	71,137	4,341,079	4,309,143	429,684	3,879,459	26,086	4,913	1,519	318	4,662,053	16
61,692	7,420	8,357	45,885	.....	2,086,658	1,910,509	335,350	1,575,159	17,685	54,506	103,958	.....	2,456,886	
50,580	.....	.....	.....	.....	2,570,007	.....	.....	.....	.....	.....	.....	.....	3,374,085	

As shown by the figures in Table 1, the number of establishments increased from 119 in 1890 to 715 in 1905, or 500 per cent. Between 1900 and 1905 the number of establishments increased from 369 to 715, or 94 per cent. The cost of materials used increased from $14,363,126 in 1890 to $45,165,823 in 1900, and to $80,030,963 in 1905, the rate of increase being 457 per cent from 1890 to 1905, and 77 per cent from 1900 to 1905. The value of products increased from $19,335,947 in 1890 to $58,726,632 in 1900, and to $96,407,621 in 1905, a gain for 1905 over 1890 of 399 per cent, and over 1900 of 64 per cent. In 1890 the value of products exceeded the cost of materials by 34.6 per cent, while in 1905 the excess in value was only 20.5 per cent. The capital invested increased from $12,808,996 in 1890 to $73,171,407 in 1905, or 471 per cent. The average capital invested per establishment in 1890 was $107,639, compared with $102,338 in 1905.

Table 2 is a comparative summary, for 1900 and 1905, of the quantity and cost of cottonseed crushed for oil extraction, the average amount crushed per establishment, and the quantity and value of each of the products, together with the total value of all products, by states and territories.

TABLE 2.—COMPARATIVE SUMMARY OF THE QUANTITY AND COST OF SEED CRUSHED, AND QUANTITY AND VALUE OF PRODUCTS MANUFACTURED, BY STATES AND TERRITORIES: 1905 AND 1900.

STATE OR TERRITORY.	Year.	Number of active establishments.	COTTONSEED CRUSHED.			PRODUCTS.									
			Tons.	Cost.	Average consumption per mill (tons).	Total value.	Oil.		Meal and cake.		Hulls.		Linters.	
							Gallons.	Value.	Tons.	Value.	Tons.	Value.	Pounds.	Value.
United States.	1905	[1] 717	3,345,370	$51,878,604	4,666	$69,310,624	133,817,772	$31,341,912	1,360,172	$27,766,556	1,213,344	$5,588,814	117,792,969	$4,613,342
	1900	357	2,479,386	28,632,616	6,945	42,411,835	93,325,729	21,390,674	884,391	16,030,576	1,169,286	3,189,354	57,272,053	1,801,231
Alabama	1905	58	265,653	4,062,458	4,580	5,578,189	10,634,364	2,555,424	107,229	2,217,343	95,517	490,860	8,420,399	304,562
	1900	27	172,093	2,019,085	6,374	2,952,254	6,704,951	1,520,834	60,389	1,076,150	80,167	217,925	4,331,016	137,345
Arkansas	1905	42	238,227	3,863,975	5,672	4,912,819	9,557,668	2,373,600	94,263	1,853,278	84,374	343,209	8,572,572	342,732
	1900	20	190,015	2,245,710	9,501	3,188,812	7,224,971	1,644,465	65,459	1,142,102	90,683	248,770	4,613,519	153,475
Florida	1905	5	16,478	250,072	3,296	339,361	677,535	154,343	7,959	142,967	4,820	25,747	477,734	16,304
Georgia	1905	120	368,996	5,924,680	3,075	8,109,677	15,284,303	3,679,539	151,011	3,157,920	131,521	751,644	13,281,489	520,574
	1900	46	271,833	3,246,814	5,909	4,787,100	10,606,693	2,468,386	91,637	1,713,038	132,344	405,581	6,398,830	200,095
Indian Territory	1905	14	81,501	1,052,942	5,822	1,480,244	3,013,446	605,636	32,198	636,069	31,368	116,173	3,268,695	122,366
	1900	6	26,415	297,939	4,403	446,078	931,885	207,251	9,185	182,807	13,074	32,972	673,975	23,048
Louisiana	1905	49	319,704	4,721,103	6,525	6,623,523	13,158,549	2,985,670	138,301	2,812,160	103,955	414,527	10,771,905	411,166
	1900	21	250,983	2,833,767	11,952	4,397,891	9,692,640	2,222,762	91,348	1,715,424	114,446	287,650	6,133,661	172,055
Mississippi	1905	92	556,396	8,932,300	6,048	12,093,059	22,975,991	5,752,963	228,122	4,673,017	198,464	942,705	17,418,633	724,374
	1900	41	394,678	4,577,995	9,626	6,671,031	15,033,565	3,364,278	141,529	2,618,405	185,060	396,791	9,199,737	291,557
Missouri	1905	4	16,618	282,939	4,155	326,754	672,368	147,799	6,575	131,907	6,152	24,841	549,149	22,207
North Carolina	1905	44	148,097	2,650,615	3,366	3,446,709	6,269,062	1,600,950	59,787	1,376,619	53,184	268,813	4,472,965	200,327
	1900	20	107,660	1,313,663	5,383	1,880,015	4,388,277	979,637	36,088	678,973	52,139	145,928	2,149,996	75,477
Oklahoma	1905	10	86,953	1,076,126	8,695	1,599,835	3,371,527	644,407	35,219	704,762	30,896	108,239	3,901,265	142,427
	1900	6	26,425	247,520	4,404	410,063	937,021	186,761	9,481	163,785	12,424	40,897	525,550	18,620
South Carolina	1905	99	213,103	3,767,983	2,153	4,946,030	9,178,661	2,322,876	90,815	1,986,895	71,942	366,795	6,641,495	269,464
	1900	48	156,642	2,186,408	3,263	3,043,547	6,162,218	1,545,934	57,986	1,169,645	71,542	217,886	3,223,892	110,082
Tennessee	1905	20	143,479	2,367,686	7,174	3,099,247	5,760,599	1,442,643	58,477	1,169,980	53,738	232,477	5,918,496	254,147
	1900	15	168,307	1,848,829	11,220	2,737,038	5,454,173	1,363,555	59,613	1,045,795	79,858	196,105	4,058,473	131,583
Texas	1905	155	864,767	12,437,330	5,579	16,173,435	32,239,649	6,776,342	340,709	6,698,821	337,233	1,450,984	33,307,490	1,247,338
	1900	102	692,604	7,500,661	6,790	11,519,656	24,354,695	5,696,263	252,983	4,371,377	328,119	975,489	15,544,379	476,527
All other states	1905	[2] 5	25,398	488,395	5,080	581,692	1,024,050	289,720	9,507	204,818	10,180	51,800	790,682	35,354
	1900	[3] 5	21,731	254,225	4,346	378,350	834,640	190,548	8,693	153,075	9,430	23,360	419,025	11,367

[1] Includes 14 establishments engaged primarily in the manufacture of other products.
[2] Includes establishments distributed as follows: Illinois, 2; Kentucky, 1; Virginia, 2.
[3] Includes establishments distributed as follows: Florida, 1; Illinois, 1; Kansas, 1; Missouri, 2.

The number of establishments shown in Table 1 is 715, while in Table 2 the number is 717. This difference is due to two causes. Table 1 includes all establishments in which the aggregate value of products from extracting and refining oil, mixing fertilizer and feed when conducted in connection with cottonseed-oil mills, and manufacturing paper stock and other products from cottonseed hulls exceeded the value of all products not made from cottonseed. Table 2 includes all establishments which crushed any seed for oil extraction during the year, but does not include those establishments which refined oil only after it was extracted. Table 1 includes 12 establishments which are omitted from Table 2, because they only refine oil extracted by other establishments, and Table 2 contains 14 establishments which are not included in Table 1, because their products made from cottonseed are of smaller value than their other products.

The number of establishments engaged in crushing cottonseed increased 360, or 100.8 per cent, between 1900 and 1905, while the quantity of seed crushed increased from 2,479,386 tons in 1900 to 3,345,370 in 1905, or 34.9 per cent. The average "crush" of the mills reported in 1900 was 6,945 tons for the season, which compares with 4,666 tons for 1905, a decrease of 32.8 per cent. The decrease in the average quantity of seed consumed per establishment emphasizes the tendency toward the installation of smaller mills. The total value of products increased from $42,411,835 in 1900 to $69,310,624 in 1905, a gain of 63.4 per cent. The total cost of seed crushed increased from $28,632,616 in 1900 to $51,878,604 in 1905, or 81.2 per cent. As the value of the products exceeded the cost of materials by 48.1 per cent in 1900, and only 33.6 per cent in 1905, a smaller margin of profit in the industry is indicated for 1905. The value of crude oil manufactured in 1900 was $21,390,674, compared with $31,341,912 in 1905, an increase of 46.5 per cent; while the value of meal and cake increased from $16,030,576 to $27,766,556, or 73.2 per cent. The average quantity of oil obtained per ton of seed in 1900 was 37.6 gallons, compared with 40 in 1905, an increase of 6.4 per cent; while the average quantity of meal and cake obtained per ton of seed crushed increased from 713 pounds in 1900 to 813 in 1905, a gain of 14 per cent. The quantity of hulls obtained per ton of seed in 1900 was 943 pounds, compared with 725 in 1905, a loss of 23.1 per cent. The decrease in the quantity of hulls and the increase in the quantity of oil and of meal and cake obtained from a ton of cottonseed would indicate a higher economic development of the industry.

During 1904 the percentage that the seed crushed formed of the seed produced was as follows for the several states: Alabama, 38.5; Arkansas, 54.5; Florida, 43.7; Georgia, 41.1; Indian Territory, 36.3; Louisiana, 61.5; Mississippi, 66; Missouri, 68.7; North Carolina, 44.6; Oklahoma, 54.9; South Carolina, 38.9; Tennessee, 92.2; Texas, 57.5. Although the quantity of seed crushed in Tennessee amounted to 92.2 per cent of the production for the state, it should not be understood that such a proportion of the seed actually grown in the state was consumed by the oil mills. The quantity of seed crushed was made up in part by seed shipments from adjoining states.

The quantity of seed crushed during 1905 showed increase over 1900 in all the states except Tennessee, where a loss of 24,828 tons, or 14.8 per cent, was noted, notwithstanding the fact that during the same period the number of establishments had increased 33.3 per cent. This decrease in quantity was due to the falling off of shipments from other states in which newly established mills now consume a part of the supply. This decrease of shipments from other states during the five-year period is clearly brought out by the fact that in 1900 the amount of seed crushed was 66 per cent greater than the amount produced in the state; whereas in 1905 it was 7.8 per cent less.

Table 3 shows for 1900 and 1905, by states and territories, the average cost of cottonseed per ton, the average quantity and value of the several crude products obtained per ton of seed crushed, and the per cent that each forms of the total in weight and value.

TABLE 3.—AVERAGE COST OF COTTONSEED, AVERAGE QUANTITY AND VALUE OF PRODUCTS PER TON OF

	STATE OR TERRITORY.	Year.	Average cost of cottonseed per ton.	QUANTITY AND VALUE OF PRODUCTS DERIVED FROM ONE TON OF COTTONSEED.					
				Total value.	Crude oil.				
					Gallons.	Pounds.	Per cent of total weight.	Value.	Per cent of total value.
1	United States	1905	15.51	$20.72	40.0	300	15.0	$9.37	45.2
		1900	11.55	17.11	37.6	282	14.1	8.63	50.4
2	Alabama	1905	15.29	21.00	40.0	300	15.0	9.66	46.0
		1900	11.73	17.15	39.0	293	14.6	8.84	51.5
3	Arkansas	1905	16.22	20.62	40.1	301	15.1	9.96	48.3
		1900	11.82	16.78	38.0	285	14.3	8.65	51.6
4	Florida	1905	15.18	20.59	41.1	308	15.4	9.37	45.5
5	Georgia	1905	16.06	21.97	41.4	311	15.6	9.97	45.4
		1900	11.94	17.61	39.0	293	14.6	9.08	51.6
6	Indian Territory	1905	12.92	18.16	37.0	276	13.8	7.43	40.9
		1900	11.28	16.89	35.3	265	13.2	7.85	46.5
7	Louisiana	1905	14.77	20.71	41.2	309	15.5	9.34	45.1
		1900	11.29	17.52	38.6	290	14.5	8.86	50.6
8	Mississippi	1905	16.05	21.74	41.3	310	15.5	10.34	47.6
		1900	11.60	16.90	38.1	285	14.3	8.52	50.4
9	Missouri	1905	17.03	19.66	40.5	304	15.2	8.89	45.2
10	North Carolina	1905	17.90	23.27	42.3	317	15.9	10.81	46.5
		1900	12.20	17.46	40.8	306	15.3	9.10	52.1
11	Oklahoma	1905	12.38	18.40	38.8	291	14.6	7.42	40.3
		1900	9.37	15.52	35.5	266	13.3	7.07	45.5
12	South Carolina	1905	17.68	23.21	43.1	323	16.2	10.90	47.0
		1900	13.96	19.43	39.3	295	14.7	9.87	50.8
13	Tennessee	1905	16.50	21.60	40.1	301	15.1	10.06	46.6
		1900	10.98	16.26	38.4	288	14.4	8.10	49.8
14	Texas	1905	14.38	18.70	37.3	280	14.0	7.83	41.9
		1900	10.92	16.63	35.2	264	13.2	8.22	49.4
15	All other states	[1]1905	19.23	22.90	40.3	302	15.1	11.41	49.8
		[2]1900	11.70	17.41	38.4	288	14.4	8.77	50.4

[1] Includes establishments distributed as follows: Illinois, 2; Kentucky, 1; and Virginia, 2.
Includes establishments distributed as follows: Florida, 1; Illinois, 1; Kansas, 1; and Missouri, 2.

COTTONSEED CRUSHED, AND PER CENT OF EACH TO TOTAL, BY STATES AND TERRITORIES: 1905 AND 1900.

QUANTITY AND VALUE OF PRODUCTS DERIVED FROM ONE TON OF COTTONSEED—continued.												
Meal.				Hulls.				Linters.				
Pounds.	Per cent of total weight.	Value.	Per cent of total value.	Pounds.	Per cent of total weight.	Value.	Per cent of total value.	Pounds.	Per cent of total weight.	Value.	Per cent of total value.	
813	40.7	$8.30	40.1	725	36.2	$1.67	8.1	35	1.8	$1.38	6.7	1
713	35.6	6.46	37.8	943	47.1	1.29	7.5	23	1.2	0.73	4.3	
807	40.4	8.35	39.8	719	35.9	1.85	8.8	32	1.6	1.14	5.4	2
702	35.1	6.25	36.4	932	46.6	1.26	7.4	25	1.3	0.80	4.7	
791	39.5	7.78	37.7	708	35.4	1.44	7.0	36	1.8	1.44	7.0	3
689	34.4	6.01	35.8	954	47.7	1.31	7.8	24	1.2	0.81	4.8	
966	48.3	8.67	42.1	585	29.3	1.56	7.6	29	1.4	0.99	4.8	4
818	40.9	8.56	39.0	713	35.6	2.03	9.2	36	1.8	1.41	6.4	5
674	33.7	6.30	35.8	974	48.7	1.49	8.4	24	1.2	0.74	4.2	
700	39.5	7.80	43.0	770	38.5	1.43	7.9	40	2.0	1.50	8.3	6
695	34.8	6.92	41.0	990	49.5	1.25	7.4	26	1.3	0.87	5.1	
865	43.2	8.79	42.4	650	32.5	1.30	6.3	34	1.7	1.28	6.2	7
728	36.4	6.83	39.0	912	45.6	1.14	6.5	24	1.2	0.69	3.9	
820	41.0	8.40	38.6	713	35.7	1.70	7.8	31	1.5	1.30	6.0	8
717	35.8	6.63	39.2	938	46.9	1.01	6.0	23	1.1	0.74	4.4	
791	39.6	7.94	40.4	740	37.0	1.49	7.6	33	1.6	1.34	6.8	9
807	40.3	9.30	40.0	718	35.9	1.81	7.8	30	1.5	1.35	5.8	10
670	33.5	6.31	36.2	969	48.5	1.35	7.7	20	1.0	0.70	4.0	
810	40.5	8.10	44.0	710	35.5	1.24	6.7	45	2.2	1.64	8.9	11
718	35.9	6.20	40.0	940	47.0	1.55	10.0	20	1.0	0.70	4.5	
852	42.6	9.32	40.2	675	33.7	1.72	7.4	31	1.6	1.27	5.5	12
740	37.0	7.47	38.4	913	45.6	1.39	7.2	21	1.1	0.70	3.6	
815	40.7	8.15	37.7	749	37.5	1.62	7.5	41	2.0	1.77	8.2	13
708	35.4	6.21	38.2	949	47.4	1.17	7.2	24	1.2	0.78	4.8	
788	39.4	7.75	41.4	780	39.0	1.68	9.0	39	2.0	1.44	7.7	14
731	36.6	6.31	38.0	947	47.3	1.41	8.5	22	1.1	0.69	4.1	
749	37.5	8.06	35.2	802	40.1	2.04	8.0	31	1.5	1.39	6.1	15
800	40.0	7.04	40.4	868	43.4	1.08	6.2	19	1.0	0.52	3.0	

From 1900 to 1905 the average cost per ton of cottonseed consumed increased from $11.55 to $15.51, or 34.3 per cent; while the value of the products per ton increased from $17.11 to $20.72, or 21.1 per cent. In 1905 the crude oil represented 45.2 per cent of the total value of all products; the meal, 40.1 per cent; the hulls, 8.1 per cent; and the linters, 6.7 per cent. A comparison with the corresponding percentages for 1900 shows that the relative importance of the crude oil product has decreased. This is indicated by a decrease of 5.2 in the percentage which the value of this product forms of the total value. The relative importance of the other products, according to the same test, has increased. Of the total weight of the seed when received at the mill the several products formed the following proportions in 1905: Crude oil, 15 per cent; meal, 40.7 per cent; hulls, 36.2 per cent; linters, 1.8 per cent. These are increases over the corresponding percentages in 1900 for each product except hulls, for which the percentage shows a decrease of 10.9. As noted before, this decrease in the product of lower proportionate value is taken in part as an indication of the economic development of the industry.

Table 4 shows the number of establishments, the estimated seed crop, the estimated quantity and cost of the seed crushed, the per cent of seed crushed to amount produced, the average quantity crushed per establishment, the total value of the several products and quantity of each manufactured from seed of 1905.

TABLE 4.—ESTIMATED QUANTITY AND COST OF COTTONSEED CRUSHED, PERCENTAGE OF SEED CRUSHED TO AMOUNT PRODUCED, AND ESTIMATED TOTAL VALUE AND QUANTITY OF THE SEVERAL CRUDE PRODUCTS MANUFACTURED, BY STATES AND TERRITORIES: 1905.

STATE OR TERRITORY.	Number of active establishments.	Quantity of seed produced.	COTTONSEED CRUSHED.				PRODUCTS.				
			Tons.	Cost.	Per cent of seed crushed to quantity produced.	Average crush per establishment (tons).	Total value.[1]	Oil (gallons).	Meal and cake (tons).	Hulls (tons).	Linters (pounds).
United States	716	5,060,205	3,131,175	$46,769,630	61.9	4,373	$66,703,803	125,700,928	1,271,740	1,135,080	109,698,379
Alabama	64	592,500	324,772	4,757,910	54.8	5,075	6,814,721	12,990,880	131,046	116,756	10,392,714
Arkansas	42	296,388	222,854	3,342,810	75.2	5,306	4,697,766	8,936,445	88,139	78,890	8,022,743
Florida	5	33,163	18,798	300,768	56.7	3,760	427,890	772,598	9,079	5,498	545,143
Georgia	122	804,088	431,068	7,112,622	53.6	3,533	9,345,495	17,846,215	176,307	153,676	15,518,450
Indian Territory	15	167,771	98,224	1,117,789	58.5	6,548	2,016,968	3,634,288	38,798	37,816	3,928,947
Louisiana	47	245,662	180,979	2,895,664	73.7	3,851	3,956,770	7,456,335	78,273	58,818	6,153,299
Mississippi	86	573,588	482,755	7,482,703	84.2	5,613	10,411,466	19,937,782	197,930	172,102	14,965,401
Missouri	4	20,478	19,456	291,840	95.0	4,864	411,071	787,968	7,695	7,199	642,039
North Carolina	49	295,209	180,067	3,061,139	61.0	3,675	3,914,566	7,616,834	72,657	64,644	5,402,004
Oklahoma	10	156,680	75,390	918,250	48.1	7,539	1,598,908	2,925,132	30,533	26,763	3,392,550
South Carolina	94	514,704	254,872	4,396,542	49.5	2,711	5,644,320	10,984,983	108,575	86,019	7,901,030
Tennessee	17	133,400	114,508	1,751,972	85.8	6,736	2,498,407	4,591,771	46,662	42,883	4,694,813
Texas	157	1,218,784	698,604	8,907,201	57.3	4,450	14,367,982	26,057,929	275,250	272,456	27,245,568
All other states	[2]4	[3]7,790	28,828	432,420	370.1	7,207	597,473	1,161,768	10,796	11,560	[3]893,678

[1] Estimated from information as to average prices furnished by the Oil, Paint, and Drug Reporter, New York.
[2] Includes establishments distributed as follows: Illinois, 2; Kentucky, 1; Virginia, 1.
[3] Includes production of Kansas, Kentucky, and Virginia.

The Bureau of the Census does not claim accuracy for the statistics of Table 4, except for the number of establishments and the quantity of linters obtained, but presents the estimates of the other products as approximately correct and as an interesting reference in connection with the study of the cottonseed products industry. The figures for the quantity of linters saved, which are shown by states in the table, were obtained by canvassing the cottonseed-oil mills in connection with the work of securing the statistics of cotton ginned from the crop of 1905. The statistics of seed crushed and of crude products manufactured from the seed crop of 1905 are estimates, computed on the basis of the quantity of linters returned by the oil mills and upon the average quantities of products obtained per ton of seed during the census year 1905.

As shown in Table 4, the cottonseed crop grown in 1905 amounted to 5,060,205 tons, of which 3,131,175 tons, or 61.9 per cent, were crushed by the oil mills, as compared with 53.1 per cent for 1899. Estimating the average quantity for planting purposes at 2 bushels per acre, it will require 90,000 tons to plant 30,000,000 acres, leaving 1,839,030 tons to be utilized by the farmers for fertilizers in the seed form, and for other purposes. The quantity of seed annually exported is about 10,000 tons.

Cottonseed-oil mills may be divided into two classes: (1) Those of large capacity, erected at railway centers, and (2) small cooperative mills, built in towns with scanty railway facilities and depending for seed upon local supply. Each class of mills has its advantages. The larger mill has more competition in securing its seed supply, but on the other hand, it can readily draw upon other localities. The expenses incident to operation and to marketing of product are proportionally less than in the smaller establish-

ment and make it possible to employ expert operators. It can carry the processes of manufacture further, refining its oil, and conducting correlated industries.

An advantage of the small cooperative mill is that the farmers, on account of stock holdings, furnish the seed supply at reasonable prices and guarantee a ready market for the meal and hulls for fertilizing and feeding purposes. In this way freight charges are saved both on the seed and on the more bulky products, leaving only the oil and linters, which constitute but about 17 per cent of the weight of the products obtained from a ton of seed, to be shipped to remote markets.

Possibly the most difficult problem in connection with the cottonseed products industry is the proper storing and preservation of the seed. The lint is almost waterproof and is but little injured in passing from the field to the factory. But not so with the seed, which is very easily injured and reaches the mill in much worse condition relatively than the lint. In wet seasons this deterioration amounts to a large percentage of the value of the seed, and the products from such damaged seed must be sold for very inferior uses. The value of the oil especially depends upon the condition of the seed when it reaches the mill. Evidently the products manufactured from cottonseed would be more useful and more valuable if it were carefully graded and the good and bad seed kept separate. To accomplish this the cooperation of the grower, ginner, and miller are required. The present tendency to establish small cottonseed-oil mills with ginneries attached is a step in this direction, as the seed may be stored at the time it is removed from the lint.

Table 5 shows the quantity and value of cottonseed, cottonseed oil, and cake and meal exported, by countries to which exported, for the calendar year 1905.

TABLE 5.—QUANTITY AND VALUE OF EXPORTS OF COTTONSEED, COTTONSEED OIL, AND CAKE AND MEAL, BY COUNTRIES TO WHICH EXPORTED, FOR THE CALENDAR YEAR 1905.[1]

COUNTRY.	COTTONSEED.		OIL.		CAKE AND MEAL.	
	Pounds.	Value.	Gallons.	Value.	Pounds.	Value.
Total	23,769,164	$257,633	53,368,830	$15,571,852	1,214,667,922	$13,597,105
Austria-Hungary			6,722,959	1,970,501	672,000	7,400
Belgium	863,440	9,484	1,636,050	476,850	31,929,476	351,871
Denmark			554,403	154,348	494,038,692	5,419,832
France	285,003	3,558	10,282,162	2,952,022	12,381,612	136,218
Germany	7,931,757	72,271	5,153,198	1,432,883	399,213,683	4,631,313
Gibraltar			93,407	30,791		
Italy	1,550	50	4,573,350	1,490,626	23,610	255
Malta, Gozo, etc.			229,020	76,582		
Netherlands	6,358,046	56,584	11,585,847	3,480,853	59,862,982	661,211
Roumania			110,870	40,442		
Russia on Black Sea					731,040	8,000
Spain	5,140	238				
Sweden and Norway:						
Norway			283,388	84,798	2,320,415	25,774
Sweden			316,860	97,811	1,108,000	14,100
Turkey in Europe			32,000	10,420		
United Kingdom	5,235,151	51,359	3,333,852	933,418	211,006,141	2,323,391
Bermuda			120	51	13,350	176
British Honduras			38	13	21,920	248
Nova Scotia, New Brunswick, etc.			12,402	3,678	871,000	11,277
Quebec, Ontario, Manitoba, etc.			1,034,483	278,187	353,005	4,458
British Columbia			235	103		
Newfoundland and Labrador			7,854	2,416		
Costa Rica			6,639	2,406	8,048	100
Guatemala			2,841	1,424	2,240	26
Honduras			2,870	993	4,480	50
Nicaragua			3,808	1,537		
Panama			59,642	19,423		
Salvador			15,837	7,044		
Mexico	3,045,920	61,894	3,644,112	866,203	38,525	500
West Indies:						
British	4,440	372	347,107	105,059	3,500	52
Cuba	1,440	36	304,831	122,487	53,003	688
Danish			5,913	1,733		
Dutch			3,751	1,266		
French			439,505	127,612	4,000	70
Haiti			6,069	2,016		
Santo Domingo			202,173	71,405		
Argentina	2,430	174	73,632	24,778		
Bolivia			2,600	1,069		
Brazil	6,712	340	671,962	193,696		
Chile			75,518	29,316		
Colombia			11,733	3,051		
Ecuador			50	17		
Guiana:						
British			134,075	39,122		
Dutch			10,447	3,210		
French			24,571	8,794	4,500	95
Paraguay			100	53		
Peru	1,900	65	2,070	607		

[1] Compiled by Bureau of Statistics, Department of Commerce and Labor.

TABLE 5.—QUANTITY AND VALUE OF EXPORTS OF COTTONSEED, COTTONSEED OIL, AND CAKE AND MEAL, BY COUNTRIES TO WHICH EXPORTED, FOR THE CALENDAR YEAR 1905 [1]—Continued.

COUNTRY.	COTTONSEED.		OIL.		CAKE AND MEAL.	
	Pounds.	Value.	Gallons.	Value.	Pounds.	Value.
Uruguay			257,195	$87,563		
Venezuela			13,120	5,076		
Chinese Empire	100	$15	608	190		
East Indies:						
British India	135	9	1,550	510		
Straits Settlements			3,000	1,003		
Hongkong			18,522	5,215		
Japan			85,247	23,283		
Turkey in Asia			24,081	8,241		
British Australasia			70,154	20,884		
British Africa:						
West			6,330	1,841		
South	25,500	1,150	122,146	45,456		
East			3,000	1,088		
French Africa			459,837	127,775		
Madagascar			500	155		
Portuguese Africa	500	25	1,000	361		
Turkey in Africa—Egypt			241,925	77,622		
All other Africa			40,210	12,195		

[1] Compiled by Bureau of Statistics, Department of Commerce and Labor.

As shown in Table 5, the total exports of cottonseed for the calendar year 1905 was 23,769,164 pounds, or 11,885 tons of 2,000 pounds, valued at $257,633, or $21.68 per ton.

Of the oil exported during the year ending December 31, 1905, 44,913,366 gallons, or 84.2 per cent, went to Europe. France received 10,282,162 gallons, or 22.9 per cent, of the European consignment and the Netherlands 11,585,847 gallons, or 25.8 per cent, which was 21.7 per cent of the total exports. Europe received 83.3 per cent of the total exports of oil for the year ending June 30, 1900. Of this amount France took 34.8 per cent and the Netherlands 24.1 per cent.

The value of cottonseed oil as a food product was not known in the early days of its manufacture. In 1881 it was discovered that cottonseed oil mixed with animal fats made an acceptable substitute for lard. From that time the domestic demand greatly increased. In 1880 about 30 per cent of the cottonseed oil manufactured in the United States was consumed at home, while in 1905 it amounted to about 60 per cent.

The quantity of linters exported during the year 1904 was 33,105,730 pounds, equivalent to 66,211 bales of 500 pounds, valued at $1,555,653, or 4.7 cents per pound. The amount of this cotton exported during the six months period ending June 30, 1905, was 18,106,939 pounds, equivalent to 36,214 bales of 500 pounds. About 98 per cent of this cotton exported is taken by Europe, as follows: Germany, 66 per cent; Belgium, 16; Netherlands, 8; France, 4; United Kingdom, 3; and all others, 1.

Table 6 shows the quantity, value, and value per unit of cottonseed and cottonseed products exported by calendar years from 1896 to 1905, inclusive.

TABLE 6.—QUANTITY AND VALUE OF EXPORTS OF COTTONSEED AND COTTONSEED PRODUCTS, AND VALUE PER UNIT OF MEASURE, BY CALENDAR YEARS, FROM 1896 TO 1905, INCLUSIVE.[1]

CALENDAR YEAR.	COTTONSEED.			OIL.			CAKE AND MEAL.			LINTERS.		
	Tons.	Value.	Value per ton.	Gallons.	Value.	Value per gallon.	Tons.	Value.	Value per ton.	Pounds.	Value.	Value per pound.
1896	15,359	$205,032	$13.35	21,597,918	$5,735,912	$0.27	262,034	$4,873,905	$18.60	(2)		
1897	13,336	159,771	11.98	33,181,492	8,422,059	0.25	357,116	6,248,044	17.50	[3] 3,995,799	$185,318	$0.05
1898	14,866	193,211	13.00	46,730,114	11,465,357	0.25	512,196	8,778,601	17.14	15,003,113	555,307	0.04
1899	22,245	254,814	11.45	49,969,420	12,476,135	0.25	587,103	10,566,074	18.00	16,744,631	597,770	0.04
1900	23,925	382,526	15.99	44,536,867	15,051,140	0.34	568,950	11,895,712	20.91	31,901,340	1,673,479	0.05
1901	22,904	374,595	16.36	47,173,214	16,367,893	0.35	597,253	12,920,295	21.63	22,528,353	945,663	0.04
1902	29,888	591,239	19.78	34,899,620	14,151,765	0.41	567,715	13,361,199	23.54	29,464,859	975,614	0.03
1903	17,974	363,813	20.24	27,865,212	10,931,540	0.39	467,928	10,529,909	22.50	25,225,091	916,019	0.04
1904	7,483	165,622	22.13	35,368,998	11,695,656	0.33	493,571	11,115,369	22.52	33,105,730	1,555,653	0.05
1905	11,885	257,633	21.68	53,368,839	15,571,852	0.29	607,334	13,597,105	22.39	[4] 18,106,939	722,150	0.04

[1] Compiled by the Bureau of Statistics, Department of Commerce and Labor.
[2] Not stated separately prior to 1897.
[3] Six months ending December 31.
[4] Six months ending June 30, included subsequently with cotton.

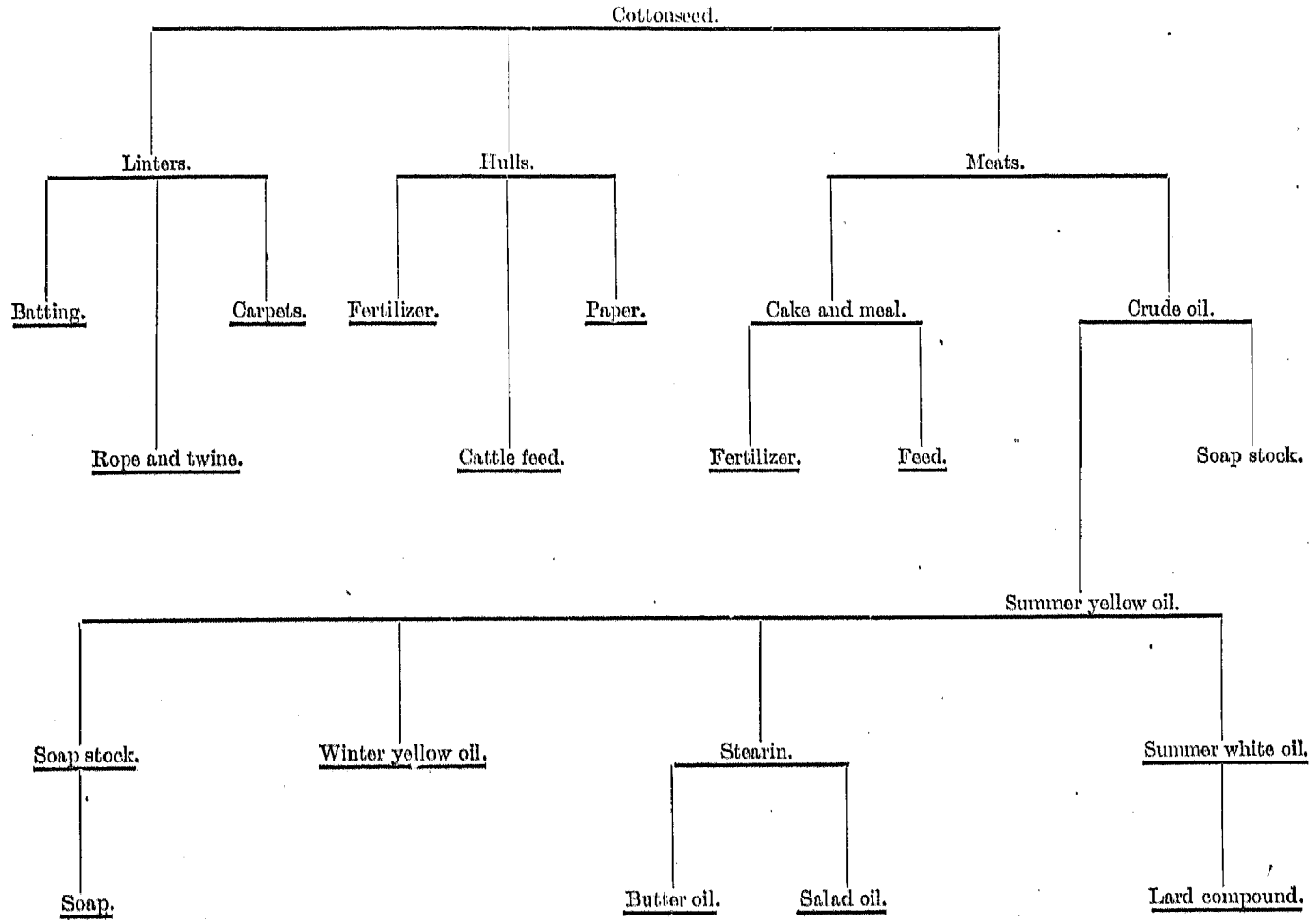
Table 6 shows a remarkable increase in the exports of cottonseed products during the decade. The quantity of oil exported increased from 21,597,918 gallons in 1896 to 53,368,839 gallons in 1905, or 147.1 per cent. The value of oil reached 41 cents per gallon in 1902, but in 1905 it was only 29 cents, or but 2 cents more than in 1896. The quantity of cake and meal exported during this period increased from 262,034 tons of 2,000 pounds each in 1896 to 607,334 tons in 1905, or 131.8 per cent; while the price increased $3.79 per ton, or 20.3 per cent. The export of linters increased from 3,995,799 pounds in 1897 to 33,105,730 pounds in 1904,

or 728.6 per cent. The variations in the value of oil per gallon may be attributed in part to the fact that its value is determined largely not by the necessity for its use as a food, but by its availability in price and quality as a substitute for certain food products. On the other hand, the gradual increase in the export price of meal and cake is due probably to its recognized merit as a feedstuff, as well as its value as a fertilizer. Exports of cottonseed hulls are insignificant, their value in 1905 amounting to only $223.

DESCRIPTION AND USES OF COTTONSEED PRODUCTS.

Since the transfer of raw material into manufactured products is always of interest, there is here presented a brief history of cottonseed from the time it reaches the oil mill until separated into products such as fertilizers, lint, cattle feed, paper stock, and oils. A graphic illustration of this development is given in the following diagram:

Diagram showing products obtainable from cottonseed.



Waste.—At the oil mill the seed is screened for the purpose of removing sand, bolls, leaves, sticks, and other foreign substances. The quantity of these foreign particles varies in different localities, according to the care used in picking the cotton and the natural condition of the seed. This quantity also varies with soils and seasons; for example, seed from cotton grown on light sandy soil carries considerable sand, especially in rainy seasons. The average waste resulting from screening was 127 pounds per ton in 1905, leaving for the further process 1,873 pounds for each 2,000 pounds of seed entering the mill.

Linters.—According to the character of the machine used in ginning and the variety of seed, more or less short cotton adheres to the seed when it comes from the ginnery. Sea-island cottonseed is entirely freed from lint by the first ginning and is therefore not reginned at the oil mill before being crushed for oil extraction. With upland cottonseed the quantity of lint which remains after the first ginning varies, some carrying considerable lint while other seed approaches very closely to the condition of the sea-island variety. The quantity of linters obtained from reginning seed during the season of 1899–1900 was 57,272,053 pounds, which was 1.3 per cent of the fiber crop of that season; for 1905–6 the quantity was 109,698,379 pounds, or 2.1 per cent of the fiber crop. This product has become an important part of the cotton crop and its uses are being rapidly extended. From it are manufactured cotton batting, carpets, cheap yarns, rope, twine, and it is also used for upholstering purposes.

Hulls.—For a long time cottonseed hulls had no value except as a fuel for the engines of the oil mills. It was soon discovered, however, that the ashes result-

ing from burning hulls had fertilizing qualities and this fact gave the ashes a commercial value. Later it was developed that a mixture of ground hulls and cottonseed meal makes one of the best feeds known to the stock raising and dairy industries. The demand for cottonseed hulls is now so great that it is doubtful whether any mill in the United States used them as a fuel during the season of 1905–6. The mixing of feed by oil mills for the purpose of utilizing hulls to the greatest advantage is not yet as extensive as the mixing of fertilizers, though several mills reported feed mixing at the census of 1905. These hulls are also used in the manufacture of paper stock and of certain household utensils.

Meal and cake.—The great demand for cottonseed meal and cake is for stock feeding purposes and as a fertilizer or in the manufacture of fertilizers. It is interesting in connection with this fact to note that, only thirty years ago, the state inspector of fertilizers for Georgia refused to certify to a fertilizer as standard because it contained cottonseed meal. It is now recognized by manufacturers of fertilizers as one of the most important sources of nitrogen. For the purpose of obtaining a maximum value for meal, many oil mills have fertilizer mixing plants attached, in which cottonseed meal is mixed with acid phosphate and kainit in such proportions as are required. The value of fertilizers mixed at cottonseed-oil mills is included in the total value of products in Table 1. The mixing of hulls and meal as a feed and the use of meal as a fertilizer has brought about the very general method of grinding the cake into meal both for domestic and foreign consumption.

The demand for cottonseed meal as a stock food is rapidly increasing in this country and abroad, and the mills in Great Britain are operated more for the meal than for the oil. Every farmer and dairyman there carries in stock a supply of cake and meal in proportion to the number of cattle, horses, and sheep owned. A mixture of cottonseed meal and corn chops makes a satisfactory feed stuff for hogs, and the meal is a good egg producing food for poultry. Some interest is now felt in the possibility of utilizing cottonseed meal for human food. It is cheaper than flour, and is very nutritious. The confectionery trade has discovered that the kernels of cottonseed when parched make a good substitute for peanuts in the manufacture of peanut brittle.

Oil.—The real advancement of the last twenty-five years in the cottonseed-oil industry has been made by the oil refinery. While there have been many improvements in the machinery of the crude-oil mills, the process is to-day practically what it was a quarter of a century ago, but tremendous strides have been made in the improvement of the refining methods, and the products obtained at this time are quite superior to those formerly produced.

The first process of refining produces from crude cottonseed oil a clear brilliant yellow oil, which, at 50 degrees centigrade, has a specific gravity of 0.92. Owing to the deterioration of the seed and to inferior methods of manufacture, the first refining of crude oil does not always produce oil of the same grade. This oil, known as "summer yellow" oil, has been classified by the trade as choice, prime, off, and soap oil, the difference in these grades being in the color and flavor. Choice oil is a light lemon-colored oil, without any appearance of red, and is mild and neutral in flavor. Prime oil is slightly darker in color and sweet in flavor. These two grades are used for edible purposes. The off and soap grades are reddish in color and the flavor is very poor. The quality and amount of oil produced depend largely upon the condition of the seed. The quantity varies from 85 to 35 per cent of choice and prime oil and from 15 to 65 per cent of off and soap oil. After being submitted to various processes, such as bleaching, to make it white, and pressing, to extract the stearin, summer yellow oil forms an important basis for a number of different products. With the improvements in refining methods made in the past few years, new uses for cottonseed oil have been developed, among the most important of which is the manufacture of lard compounds, a mixture of hog lard, oleo stearin, and refined cottonseed oil, making a most palatable and economical food. So large a percentage of our home consumption of cottonseed oil is taken by the lard compound makers that the value of the oil varies with the supply of hog lard. The home consumption of cottonseed oil is larger this year than for previous years, on account of the strong statistical position of the lard market. A very high-class food product, known as "white cottolene," is secured by mixing oleo stearin with specially refined cottonseed oil. It is also used in making salad oils and in the manufacture of the olive oil of commerce.

Cottonseed oil is sometimes used in olive growing countries in "setting" the olives, a quantity of oil being poured over the ripe fruit after it has been placed in vats. This softens the fruit, hastens the flow of oil, and materially increases the yield. Cottonseed oil is also used in packing sardines, in the oleomargarine industry, and to some extent for miner's oil, for tempering, for oiling heavy tool-cutting machines, for mixing with putty, and for rough painting. The difficulty encountered in its general use for painting purposes is its lack of drying qualities.

Soap stock is found as a settling from crude oil and as a residue in the refining processes. In addition to soaps there are manufactured from this residue glycerin, candle stock, olein, etc. It is of course impossible to elaborate upon or even to fully enumerate all of the products derivable from cottonseed oil, but the diagram on page 549 gives a general idea of what is being accomplished.

TOBACCO

TOBACCO.

In this report the manufacture of tobacco is divided into two principal groups, namely, cigars and cigarettes, and chewing and smoking tobacco and snuff. At the censuses of 1890 and 1900 the stemming and rehandling of tobacco was treated as a manufacturing industry, but in 1905 this class was excluded as not coming within the scope of a census of manufactures confined to the so-called factory system. Census statistics of the manufacture of tobacco appeared first at the census of 1810. The classifications were "American segars," "Spanish segars," and "tobacco and snuff." No totals were presented for the entire country, but the returns for Pennsylvania gave a total of 3,898,999 Spanish segars, valued at $26,550, 29,061,000 American segars, valued at $44,253, and 2,186,757 pounds of tobacco and snuff, having a value of $410,910. For Virginia were returned 2,726,713 pounds of tobacco and snuff, of a value of $469,000. At the census of 1820 various scattered items, without aggregates, were presented, by counties, in the several states in which the industry existed, the classification being "tobacco manufactured." At the census of 1840, out of 30 states and territories the manufacture of tobacco was reported for 28, the total value of products as shown in the recapitulation being $5,819,568, of which Virginia reported $2,406,671, with a capital of $1,526,080. The returns at the census of 1850 were for "tobacconists;" the value of products was reported as $13,491,147, of which $5,157,652 was from Virginia; the number of establishments in the United States was 1,418; the capital $5,008,295; the number of wage-earners 14,236, of which 1,975 were females; the cost of labor $2,420,208, and of materials $7,341,728.

THE COMBINED INDUSTRY.

In Table 1 are given the statistics of the combined industry from 1860 to 1905, with percentages of increase.

TABLE 1.—TOBACCO—COMPARATIVE SUMMARY, WITH PER CENT OF INCREASE: 1860 TO 1905.

	CENSUS.						PER CENT OF INCREASE.				
	1905	1900	1890	1880	1870	1860	1900 to 1905	1890 to 1900	1880 to 1890	1870 to 1880	1860 to 1870
Number of establishments	10,828	14,959	11,351	7,022	5,204	2,104	12.5	31.8	48.9	46.5	147.3
Capital	$323,983,501	$111,517,318	$90,359,143	$38,905,950	$24,024,330	$12,529,960	190.5	23.4	132.3	56.1	98.9
Salaried officials, clerks, etc., number	9,236	7,830	[1] 12,633	(2)	(2)	(2)	17.9	[3] 38.0	.....	.....	.....
Salaries	$8,800,434	$8,593,077	[1] $9,913,842	(2)	(2)	(2)	2.4	[3] 13.3	.....	.....	.....
Wage-earners, average number	159,408	132,526	116,700	86,053	47,848	26,856	20.3	13.5	35.7	79.8	78.2
Total wages	$62,640,303	$47,975,331	$43,422,218	$24,883,586	$14,315,342	$6,102,648	30.6	10.5	74.5	73.8	134.6
Men 16 years and over	85,691	76,218	74,394	54,985	31,997	23,135	12.4	2.5	35.3	71.8	38.3
Wages	$42,410,703	$34,317,025	$33,449,587	(2)	(2)	(2)	23.6	2.6	.....	.....	.....
Women 16 years and over	66,301	49,330	34,778	19,884	7,794	3,721	34.4	41.8	74.9	155.2	109.5
Wages	$19,130,982	$12,888,356	$9,215,305	(2)	(2)	(2)	48.4	39.8	.....	.....	.....
Children under 16 years	7,416	6,978	7,618	11,184	8,057	(2)	6.3	[3] 8.4	[3] 31.9	38.8	.....
Wages	$1,098,618	$769,950	$757,266	(2)	(2)	(2)	42.7	1.7	.....	.....	.....
Miscellaneous expenses	$80,145,016	$78,915,203	$37,136,812	(4)	(4)	(4)	1.6	112.5	.....	.....	.....
Cost of materials used	$120,088,608	$92,806,542	$79,491,209	$63,974,905	$34,656,607	$16,536,300	35.8	16.8	24.3	84.6	109.6
Value of products	$331,117,681	$263,713,173	$195,536,862	$116,772,631	$71,702,044	$30,880,313	25.6	34.9	67.5	62.7	132.3

[1] Includes proprietors and firm members, with their salaries; number only reported in 1900 and 1905, but not included in this table.
[2] Not reported separately.
[3] Decrease.
[4] Not reported.

There has been an absolute increase in all important particulars at every census since 1860. During the forty-five years the value of products has increased $300,228,368, or nearly tenfold. It will be observed that the increase in cost of materials used between 1900 and 1905 was much greater than in value of products. This is attributable in part to a reduced production of tobacco. According to statistics of the Department of Agriculture the average farm price per pound during 1900 was 6.6 cents; in 1904 it was 8.1 cents, an increase of 1.5 cents over 1900. The increase was specially marked in Connecticut, Massachusetts, Pennsylvania, New York, North Carolina, Virginia, and South Carolina. The average price in Tennessee, and a few other states, however, showed a considerable decrease.

The large increase in capital between 1900 and 1905 occurs principally in the item of live capital, which includes materials and products on hand, cash and sundries, etc. Important changes were made in the ownership of some of the principal establishments between the two censuses, and it is possible that under the reorganization larger quantities of materials and products were on hand at the time of making reports for the census of 1905, or there was a change in the method of reporting this item at the two enumerations.

The decrease in the number shown for salaried officials, clerks, etc., and in their salaries, between 1890 and 1900 was not actual, because proprietors and firm members were included in 1890 and excluded in 1900. If the proprietors and firm members reported in 1900

were to be added to the salaried officials, clerks, etc., the total would show a large increase over 1890. The only other decrease was in average number of children wage-earners; this occurred between 1880 and 1890 and again between 1890 and 1900.

Table 2 presents the principal statistics of tobacco manufactures for the two branches of the industry and for each part of each branch separately, as reported at the census of 1905.

TABLE 2.—TOBACCO—SUMMARY, BY INDUSTRIES, WITH PER CENT OF AGGREGATE: 1905.

	Aggregate.	CIGARS AND CIGARETTES.			CHEWING AND SMOKING TOBACCO AND SNUFF.			PER CENT OF AGGREGATE.	
		Total.	Cigars.	Cigarettes.	Total.	Chewing and smoking tobacco.	Snuff.	Cigars and cigarettes.	Chewing and smoking tobacco and snuff.
Number of establishments	16,828	16,395	16,240	155	433	392	41	97.4	2.6
Capital	$323,983,501	$145,135,945	$123,166,997	$21,968,948	$178,847,556	$154,913,703	$23,933,853	44.8	55.2
Salaried officials, clerks, etc., number	9,236	7,129	6,816	313	2,107	2,001	106	77.2	22.8
Salaries	$8,800,434	$6,343,682	$6,062,742	$280,940	$2,456,752	$2,303,381	$153,371	72.1	27.9
Wage-earners, average number	159,408	135,418	130,949	4,469	23,990	23,044	946	85.0	15.0
Total wages	$62,640,303	$55,864,978	$54,494,682	$1,370,296	$6,775,325	$6,389,730	$385,595	89.2	10.8
Men 16 years and over	85,691	72,970	71,374	1,596	12,721	12,119	602	85.2	14.8
Wages	$42,410,703	$38,198,064	$37,586,110	$611,954	$4,212,639	$3,924,695	$287,944	90.1	9.9
Women 16 years and over	66,301	57,174	54,426	2,748	9,127	8,812	315	86.2	13.8
Wages	$19,130,982	$16,889,901	$16,153,659	$736,242	$2,241,081	$2,148,469	$92,612	88.3	11.7
Children under 16 years	7,416	5,274	5,149	125	2,142	2,113	29	71.1	28.9
Wages	$1,098,618	$777,013	$754,913	$22,100	$321,605	$316,566	$5,039	70.7	29.3
Miscellaneous expenses	$80,145,016	$41,591,222	$35,913,039	$5,678,183	$38,553,794	$36,389,655	$2,164,139	51.9	48.1
Cost of materials used	$126,088,608	$81,134,561	$74,801,482	$6,333,079	$44,954,047	$42,787,242	$2,166,805	64.3	35.7
Value of products, total	$331,117,681	$214,350,051	$197,543,775	$16,806,276	$116,767,630	$109,998,550	$6,769,080	64.7	35.3
Cigars [1]	$198,186,372	$198,185,222	$197,353,977	$831,245	$1,150	.....	$1,150	100.0	(2)
Cigarettes	$16,354,803	$15,523,772	$94,692	$15,429,080	$831,031	$831,031	.....	94.9	5.1
Chewing and smoking tobacco	$110,090,940	$634,261	$93,180	$541,081	$109,456,679	$109,147,576	$309,103	0.6	99.4
Snuff	$6,473,225	$1,926	$1,926	.....	$6,471,299	$12,472	$6,458,827	(2)	100.0
All other products	$12,341	$4,870	.....	$4,870	$7,471	$7,471	.....	39.5	60.5

[1] Includes value of stems and clippings sold as such.

[2] Less than one-tenth of 1 per cent.

Of the aggregate value of products, cigars and cigarettes formed 64.7 per cent and chewing and smoking tobacco and snuff 35.3 per cent.

The segregation of the products into their various kinds, whether principal or subsidiary, discloses the fact that while all but the merest fraction in value of the cigars were manufactured in shops classified under "tobacco, cigars and cigarettes," 5.1 per cent in value of the cigarettes were produced by establishments making chewing and smoking tobacco and snuff as their principal products. A few establishments reported cigars with cigarettes, or snuff with chewing and smoking tobacco, in such a way that the values of the different products can not be segregated. The establishments so reporting, however, were so insignificant both in number and size that their inclusion in one class or the other does not affect the total to any appreciable degree.

The great but natural difference in the number of establishments reported for the two branches of the industry was due in part to the fact that cigars and cigarettes were to a considerable extent manufactured in small establishments, whereas chewing and smoking tobacco and snuff were more largely made in factories of considerable size. As may be computed from the statistics, the average capital invested per establishment for the cigar and cigarette branch of the industry was only $8,852, while for the other branch it was $413,043. The average number of wage-earners per establishment was 8 for those manufacturing cigars and cigarettes and 55 for those manufacturing chewing and smoking tobacco and snuff.

The cost of materials used in the combined industry, as reported at the census of 1905, and divided into raw and partially manufactured, is shown in Table 3, with the percentage each item is of the total. Materials purchased in raw state represent leaf tobacco; those purchased in partially manufactured form include snuff flour, scraps, licorice, sugar, "all other materials" (boxes, cartons, labels, paste, etc.), and "mill supplies."

TABLE 3.—*Tobacco—cost of materials used, by kind and industry, with per cent of total: 1905.*

KIND.	CIGARS AND CIGARETTES.		CHEWING AND SMOKING TOBACCO AND SNUFF.	
	Amount.	Per cent of total.	Amount.	Per cent of total.
Total	$81,134,561	100.0	$44,954,047	100.0
Purchased in raw state	69,291,011	85.4	31,347,252	69.7
Purchased in partially manufactured form [1]	11,073,719	13.7	12,943,787	28.8
Fuel	324,996	0.4	444,243	1.0
Rent of power and heat	117,761	0.1	26,144	0.1
Freight	327,074	0.4	192,621	0.4

[1] Includes "all other materials" and "mill supplies." These are shown separately in Tables 12 and 13.

That the proportion of cost of materials "purchased in raw state" of total cost was greater for cigars and

cigarettes than for chewing and smoking tobacco and snuff is due to the licorice, sugar, and other partially manufactured materials used in the preparation of chewing tobacco.

The following tabular statement gives the acreage and production of tobacco for the years 1900 to 1904, as compiled from figures presented in the reports of the Department of Agriculture:

Acreage and quantity of tobacco grown: 1900 to 1904.

[Compiled from Yearbook of the Department of Agriculture.]

CALENDAR YEAR.	Acres.	Pounds.
1904	806,400	660,460,739
1903	1,037,735	815,972,425
1902	1,030,734	821,823,063
1901	1,039,199	818,953,373
1900	1,046,427	814,345,341

The acreage for 1904 shows a large decrease from the figures for the preceding years, and the production a corresponding decrease. As a result of this falling off in production, the price of the commodity has risen considerably, so that the aggregate value of the crop of 1904 was approximately as large as in the preceding year.

Table 4, prepared from the report of the Commissioner of Internal Revenue, shows for each calendar year from 1900 to 1904 the quantity of leaf tobacco used in the manufacture of cigars, of cigarettes, and of chewing and smoking tobacco and snuff.

TABLE 4.—*Quantity of leaf tobacco used in manufactures: 1900 to 1904.*

[From the report of the Commissioner of Internal Revenue, 1905.]

	QUANTITY, IN POUNDS, FOR CALENDAR YEAR—				
	1904	1903	1902	1901	1900
Total	448,511,583	443,353,679	427,553,964	398,039,646	379,162,884
Cigars	127,669,253	130,055,898	117,389,167	116,388,262	105,395,189
Cigarettes	13,350,776	12,539,571	11,816,159	11,079,704	13,084,037
Tobacco and snuff	307,491,554	300,758,210	298,348,638	270,571,680	260,683,658

The increase in the quantity used between 1900 and 1904 for all branches of the tobacco industry was 18.3 per cent; that for cigars was 21.1 per cent; for cigarettes, 2 per cent; and for tobacco and snuff, 18 per cent.

Table 5 is a compilation of imports and exports of tobacco, manufactured and unmanufactured, by quantity and value, for each of the fiscal years from 1900 to 1905.

TABLE 5.—TOBACCO—IMPORTS AND EXPORTS OF DOMESTIC AND FOREIGN: 1900 TO 1905.[1]

	FOR YEAR ENDING JUNE 30—					
	1905		1904		1903	
	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.
Imports:						
Unmanufactured	33,288,378	$18,038,677	31,162,636	$16,939,487	34,016,956	$17,234,915
Manufactured—						
Cigars, cigarettes, and cheroots	807,621	4,028,107	684,498	3,054,011	588,395	3,271,956
All other	.....	79,002	.....	79,848	.....	72,249
Exports:						
Domestic—						
Unmanufactured	334,302,091	20,800,816	311,971,831	20,640,812	368,184,084	35,250,893
Manufactured—						
Cigars (thousands)	2,118	59,653	1,953	36,545	1,966	46,902
Cigarettes (thousands)	1,837,803	2,934,376	1,528,406	2,320,112	1,456,452	2,281,531
Chewing and smoking tobacco and snuff	.....	2,696,174	.....	2,686,062	.....	2,865,303
Foreign—						
Unmanufactured	3,680,016	1,600,360	5,525,835	2,121,176	3,734,840	1,722,517
Manufactured—						
Cigars, cigarettes, and cheroots	14,018	31,099	13,963	27,076	14,054	28,281
All other	.....	1,636	.....	1,171	.....	4,668

	FOR YEAR ENDING JUNE 30—					
	1902		1901		1900	
	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.
Imports:						
Unmanufactured	29,428,837	$15,211,671	26,851,253	$16,290,387	19,619,627	$13,297,223
Manufactured—						
Cigars, cigarettes, and cheroots	450,675	2,411,783	481,371	2,401,273	460,559	2,299,923
All other	.....	83,039	.....	78,866	.....	64,214
Exports:						
Domestic—						
Unmanufactured	301,007,365	27,103,906	315,787,782	27,656,475	344,655,697	29,422,371
Manufactured—						
Cigars (thousands)	1,795	34,632	1,998	53,174	2,579	74,623
Cigarettes (thousands)	1,273,614	2,104,893	1,052,390	1,877,255	1,164,356	2,290,876
Chewing and smoking tobacco and snuff	.....	3,529,328	.....	3,162,174	.....	3,644,642
Foreign—						
Unmanufactured	2,191,152	1,272,262	1,978,383	1,179,364	1,903,011	1,016,683
Manufactured—						
Cigars, cigarettes, and cheroots	15,869	20,059	30,021	36,364	11,510	27,326
All other	.....	4,219	.....	34,697	.....	5,078

[1] Bureau of Statistics, Department of Commerce and Labor, "Commerce and Navigation of the United States."

The imports of unmanufactured tobacco for 1905—that is, leaf and stems and trimmings—increased over 1900 in quantity 13,668,751 pounds, or 69.7 per cent; and in value $4,741,454, or 35.7 per cent. The reexports of unmanufactured increased in quantity 1,777,005 pounds, or 93.4 per cent; and in value $583,677, or 57.4 per cent. The increase in the importation of cigars, cigarettes, and cheroots from 1900 to 1905 was in pounds 347,062, or 75.4 per cent; and in value $1,728,184, or 75.1 per cent. The reexports increased in pounds 2,508, or 21.8 per cent; and in value $3,773, or 13.8 per cent.

Of the exports, unmanufactured tobacco decreased slightly in quantity, but increased slightly in value. For cigars and chewing and smoking tobacco and snuff, a considerable decrease is shown, but the exports of cigarettes increased in thousands 673,447, or 57.8 per cent; and in value $643,500, or 28.1 per cent.

Of the leaf imported in 1905 suitable for cigar wrappers, 6,764,861 pounds, or 95.2 per cent, were credited to the Netherlands, having been grown principally on the island of Sumatra. Cuba furnished about 80 per cent of the other leaf, or almost double that in 1900, the remainder coming mostly from Turkey—due to the popularity of Turkish tobacco for cigarettes—and from Germany. In 1900 the imports from European and Asiatic Turkey amounted to 831,189 pounds, which in 1905 had increased to 2,353,266, or nearly twofold.

Of the total exports of unmanufactured tobacco for 1905, the United Kingdom received 101,785,290 pounds, valued at $9,526,582. The other countries receiving large quantities of unmanufactured American tobacco were Germany, with 47,766,984 pounds, valued at $4,869,483; France, with 40,534,487 pounds, valued at $2,914,420; Italy, with 30,446,427 pounds, valued at $2,513,651; Belgium, with 24,000,379 pounds, valued at $1,977,552; and the Netherlands, with 21,473,876 pounds, valued at $1,411,638. Spain also received a large quantity of unmanufactured American tobacco, and small amounts were exported to various other European countries.

Of the 18,723,329 pounds of the unmanufactured staple exported to foreign countries in North America, Canada received 12,981,550. A comparatively small amount of tobacco leaf grown in the United States was sent to the South American republics, principally Argentina and British Guiana. Japan and the Chinese Empire furnished practically the only markets in Asia for unmanufactured American tobacco during 1905. The exports to Japan during that year amounted to 6,629,017 pounds, valued at $940,079, which is more than double the amount for 1900. During the five-year period the exports to the Chinese Empire increased from 459,469 pounds, valued at $44,473, to 3,198,436 pounds, valued at $459,859. The quantity increased about sixfold, and the value more than ninefold. Considerable quantities of leaf were also sent to British Australasia, the only division of Oceania which imported American tobacco in 1905. African ports received, during 1905, 11,814,328 pounds, of which British Africa imported 7,486,600 pounds, valued at $702,554; and French Africa, 2,685,718 pounds, valued at $206,711.

CIGARS AND CIGARETTES.

Table 6 is a comparative summary of the statistics for the manufacture of cigars and cigarettes for the census years 1860 to 1905, with percentages of increase.

TABLE 6.—CIGARS AND CIGARETTES—COMPARATIVE SUMMARY, WITH PER CENT OF INCREASE: 1860 TO 1905.

	CENSUS.						PER CENT OF INCREASE.				
	1905	1900	1890	1880	1870	1860	1900 to 1905	1890 to 1900	1880 to 1890	1870 to 1880	1860 to 1870
Number of establishments	16,395	14,522	10,956	7,145	4,631	1,478	12.9	32.5	53.3	54.3	213.3
Capital	$145,135,945	$67,660,748	$59,517,827	$21,698,549	$11,368,516	$3,035,555	114.5	13.8	174.3	90.9	274.5
Salaried officials, clerks, etc., number	7,129	4,468	[1] 11,156	(2)	(2)	(2)	60.0	[3] 59.9			
Salaries	$6,343,682	$4,709,006	[1] $8,292,929	(2)	(2)	(2)	34.7	[3] 43.2			
Wage-earners, average number	135,418	103,365	87,000	53,297	26,049	7,997	31.0	18.8	63.2	104.6	225.7
Total wages	$55,864,978	$40,865,510	$36,475,000	$18,464,502	$9,098,709	$2,531,354	36.7	12.0	97.5	102.9	259.4
Men 16 years and over	72,970	62,094	59,452	40,099	21,409	7,266	17.5	4.4	48.3	87.3	194.6
Wages	$38,198,064	$29,908,987	$28,866,765	(2)	(2)	(2)	27.7	3.6			
Women 16 years and over	57,174	37,740	24,214	9,108	2,615	731	51.5	55.9	165.9	248.3	257.7
Wages	$16,889,991	$10,499,436	$7,174,765	(2)	(2)	(2)	60.9	46.3			
Children under 16 years	5,274	3,531	3,334	4,090	2,025	(2)	49.4	5.9	[3] 18.5	102.0	
Wages	$777,013	$457,087	$433,530	(2)	(2)	(2)	70.0	5.4			
Miscellaneous expenses	$41,591,222	$31,381,588	$17,673,063	(4)	(4)	(4)	32.5	77.6			
Cost of materials used	$81,134,561	$57,828,255	$50,298,900	$29,577,833	$13,047,370	$3,511,312	40.3	15.0	70.1	126.7	271.6
Value of products	$214,350,051	$159,958,811	$129,693,275	$63,979,575	$33,373,685	$9,068,778	34.0	23.3	102.7	91.7	268.0

[1] Includes proprietors and firm members with their salaries; number only reported in 1900 and 1905, but not included in this table.
[2] Not reported separately.
[3] Decrease.
[4] Not reported.

The great development of the cigar and cigarette manufacturing industry appears from the figures shown in Table 6. In the forty-five years since the census of 1860 the value of products has increased from $9,068,778 to $214,350,051, an average annual increase of over $4,500,000. The returns of the various censuses indicate correspondingly rapid increases in nearly all of the various comparable items.

Table 7 presents comparative statistics for cigars and cigarettes as returned at the censuses of 1900 and 1905, by states, territories, and geographic divisions.

TABLE 7.—CIGARS AND CIGARETTES—COMPARATIVE SUMMARY, BY STATES, TERRITORIES, AND GEOGRAPHIC DIVISIONS: 1905 AND 1900.

STATE OR TERRITORY.	Census.	Number of establishments.	Capital.	SALARIED OFFICIALS, CLERKS, ETC.		WAGE-EARNERS AND WAGES.		Miscellaneous expenses.	Cost of materials used.	Value of products.
				Number.	Salaries.	Average number.	Wages.			
United States	1905	16,395	$145,135,945	7,129	$6,343,682	135,418	$55,864,978	$41,591,222	$81,134,561	$214,350,051
	1900	14,522	67,660,748	4,468	4,709,006	103,365	40,865,510	31,381,588	57,828,255	159,958,811
North Atlantic division	1905	7,537	83,869,718	3,786	3,449,697	75,104	29,959,122	23,879,891	45,748,601	118,467,020
	1900	6,903	39,548,786	2,372	2,617,675	57,197	22,911,626	18,457,906	33,049,646	91,447,044
Maine	1905	64	136,675	8	5,276	244	122,810	55,757	181,524	449,563
	1900	54	134,076	10	5,630	182	86,161	37,053	98,643	284,817
New Hampshire	1905	45	202,508	3	1,800	342	198,235	71,571	261,102	569,980
	1900	42	147,199	4	2,150	284	146,342	46,314	275,569	549,698
Vermont	1905	23	48,449	3	2,652	77	39,715	19,679	45,591	127,492
	1900	21	42,941	2	1,728	52	26,226	11,369	30,700	86,222
Massachusetts	1905	348	2,342,002	164	199,851	3,575	2,331,446	912,247	2,491,623	6,577,810
	1900	331	2,358,501	133	153,576	2,752	1,749,676	594,410	1,910,617	5,298,390
Rhode Island	1905	38	183,910	4	5,616	217	128,817	50,246	135,019	358,124
	1900	34	121,321	14	11,700	159	65,515	37,466	92,054	292,872
Connecticut	1905	226	1,173,806	73	70,268	1,267	765,542	290,775	852,251	2,349,710
	1900	216	863,591	26	28,955	1,032	570,841	207,841	672,340	1,775,829
New York	1905	3,475	45,760,207	1,073	1,888,359	32,989	14,228,994	12,753,625	23,431,395	60,623,617
	1900	3,055	20,733,667	1,259	1,503,367	26,051	11,157,020	10,655,023	17,380,949	49,028,479
New Jersey	1905	544	11,939,680	234	231,184	6,073	1,864,763	1,915,733	3,071,130	8,331,611
	1900	486	1,311,122	38	30,574	1,640	705,158	419,720	1,017,886	2,647,595
Pennsylvania	1905	2,774	22,082,481	1,324	1,044,682	30,320	10,278,800	7,810,258	15,278,966	39,079,122
	1900	2,664	13,836,368	886	819,995	25,045	8,404,687	6,448,701	11,570,888	31,483,141
South Atlantic division	1905	826	30,740,816	1,238	1,158,036	19,582	8,631,470	6,816,514	12,127,858	32,435,381
	1900	778	8,347,316	601	695,076	12,662	4,969,531	4,055,689	7,429,987	20,096,337
Delaware	1905	19	99,522	4	2,610	113	42,747	28,799	62,604	160,676
	1900	25	77,229	1	624	106	39,786	20,331	38,302	121,872
Maryland	1905	340	5,017,841	166	124,573	2,844	1,033,703	1,130,004	1,634,305	4,648,063
	1900	381	1,518,861	155	105,809	2,308	741,355	457,747	1,038,952	2,840,319
District of Columbia	1905	25	77,034	2	1,050	60	30,413	13,779	32,853	98,318
	1900	28	44,678	.....	.....	58	27,566	14,747	42,287	108,101
Virginia	1905	95	12,480,175	171	140,657	4,043	984,233	2,323,487	1,977,069	6,105,936
	1900	80	780,261	126	106,092	2,595	586,115	2,480,961	1,192,583	4,843,641
West Virginia	1905	79	541,970	31	26,186	1,194	580,541	382,806	405,424	1,505,429
	1900	72	351,017	23	15,602	910	332,223	334,628	250,490	1,060,126
North Carolina	1905	16	4,048,017	65	58,000	970	227,291	445,442	1,187,579	2,599,248
	1900	16	169,980	22	16,830	180	37,734	68,309	82,053	229,844
South Carolina	1905	7	699,206	25	22,874	446	74,113	64,806	108,289	257,078
	1900	6	12,510	1	900	29	9,400	4,614	9,647	31,550
Georgia	1905	37	302,908	28	15,823	255	81,323	60,588	124,180	296,417
	1900	34	55,673	7	2,795	106	35,438	19,830	51,418	125,058
Florida	1905	208	7,383,963	746	765,354	9,657	5,577,106	2,366,743	6,595,555	16,764,276
	1900	127	5,337,107	266	356,424	6,370	3,159,914	1,254,513	4,724,255	10,735,826
North Central division	1905	6,824	24,243,811	1,733	1,440,380	34,178	14,365,645	9,186,570	19,249,598	52,565,625
	1900	5,969	16,373,146	1,261	1,157,004	28,237	10,903,561	7,102,405	14,523,846	40,811,745
Ohio	1905	1,311	8,154,358	504	417,309	10,175	3,541,820	2,726,413	4,753,047	13,241,230
	1900	1,129	4,579,159	372	363,170	9,046	3,016,072	2,013,678	3,717,825	11,239,824
Indiana	1905	536	1,368,000	100	74,956	2,521	988,393	542,063	1,497,856	3,637,078
	1900	474	808,889	60	53,042	1,910	694,786	395,975	918,360	2,537,077
Illinois	1905	1,788	5,157,197	333	262,540	6,675	3,403,018	1,795,083	4,109,626	11,669,485
	1900	1,489	3,200,934	219	187,366	5,221	2,452,674	1,242,252	3,116,597	8,741,483
Michigan	1905	696	2,402,314	282	231,448	5,401	2,160,501	1,516,429	3,067,010	7,995,230
	1900	599	1,931,035	206	195,541	4,169	1,446,238	999,027	1,956,781	5,498,982
Wisconsin	1905	757	2,072,889	131	107,625	2,505	1,086,203	695,448	1,617,341	4,372,139
	1900	622	1,597,914	98	75,569	1,969	799,281	436,842	1,224,417	3,255,676
Minnesota	1905	340	1,461,508	115	119,626	1,779	836,968	601,720	1,097,278	3,200,933
	1900	305	1,218,805	91	83,848	1,559	660,444	338,043	949,616	2,457,942
Iowa	1905	440	1,489,923	137	117,883	2,040	838,690	556,129	1,199,642	3,187,522
	1900	408	1,264,697	126	117,006	1,856	700,777	412,818	948,991	2,576,384
Missouri	1905	544	1,035,807	87	72,061	1,085	871,447	421,721	1,072,429	3,047,760
	1900	580	960,758	78	59,107	1,511	694,655	397,776	1,026,984	2,745,986
North Dakota	1905	27	34,672	.....	.....	30	16,019	11,097	29,200	76,443
	1900	26	23,536	.....	.....	33	16,932	9,259	25,982	69,419
South Dakota	1905	47	124,674	5	4,620	167	86,936	48,933	127,336	327,817
	1900	27	84,460	9	5,355	129	59,894	26,076	68,924	197,155
Nebraska	1905	157	370,172	16	15,216	516	237,531	132,415	338,183	899,867
	1900	141	264,873	9	6,536	399	171,109	99,690	285,561	702,037
Kansas	1905	172	512,237	23	17,066	594	238,110	139,119	340,650	910,121
	1900	169	408,086	14	9,504	495	190,699	128,509	283,808	789,780

TABLE 7.—CIGARS AND CIGARETTES—COMPARATIVE SUMMARY, BY STATES, TERRITORIES, AND GEOGRAPHIC DIVISIONS: 1905 AND 1900—Continued.

STATE OR TERRITORY.	Census.	Number of establishments.	Capital.	SALARIED OFFICIALS, CLERKS, ETC.		WAGE-EARNERS AND WAGES.		Miscellaneous expenses.	Cost of materials used.	Value of products.
				Number.	Salaries.	Average number.	Wages.			
South Central division	1905	432	$4,056,670	248	$175,933	3,459	$1,221,011	$769,841	$1,831,643	$4,759,407
	1900	390	2,091,182	154	151,997	3,271	1,125,475	669,679	1,486,319	4,126,530
Kentucky	1905	184	1,422,335	75	70,966	1,258	465,823	307,506	713,881	1,796,049
	1900	180	1,105,303	81	67,677	1,349	388,064	296,081	514,943	1,506,559
Tennessee	1905	40	134,267	11	9,196	234	127,546	63,439	134,622	404,241
	1900	35	90,547	5	4,360	161	80,228	35,708	118,738	290,647
Alabama	1905	32	128,101	13	10,370	169	77,263	32,803	74,354	244,370
	1900	26	116,145	18	13,530	186	88,395	36,049	94,227	278,044
Mississippi [1]	1905	4	6,175	1	225	6	2,648	1,369	3,707	9,310
Louisiana	1905	22	2,025,645	136	68,594	1,335	329,648	244,283	569,854	1,427,803
	1900	34	510,433	27	48,240	1,260	407,087	213,588	506,258	1,407,083
Arkansas	1905	20	23,053	2	1,028	55	35,184	25,230	85,142	227,234
	1900	19	20,241	1	600	37	15,648	10,486	26,565	67,400
Indian Territory [2]	1905	8	6,905	.....	.....	7	2,958	2,065	5,487	14,375
Oklahoma	1905	39	48,622	.....	.....	59	24,543	16,217	48,231	116,094
	1900	17	21,338	.....	.....	35	12,700	7,101	22,382	50,838
Texas	1905	83	261,567	10	15,554	336	155,398	76,929	196,365	519,931
	1900	79	227,175	22	17,590	303	133,353	70,666	203,206	525,959
Western division	1905	776	2,224,930	124	119,636	3,095	1,687,730	938,406	2,176,861	6,122,609
	1900	479	1,297,998	80	87,254	1,994	953,412	494,683	1,334,837	3,467,555
Montana	1905	44	71,124	1	1,200	95	66,017	40,335	105,032	271,281
	1900	30	68,594	.....	.....	72	47,650	18,674	69,578	173,739
Idaho	1905	17	35,986	3	1,320	42	29,736	11,816	42,532	104,471
	1900	6	11,543	.....	.....	9	5,285	3,111	9,026	22,684
Wyoming	1905	12	27,796	1	400	27	15,534	6,096	14,664	49,105
	1900	5	14,675	.....	.....	16	8,370	4,463	12,123	31,783
Colorado	1905	117	299,467	23	27,740	481	308,327	116,932	336,305	979,051
	1900	86	199,656	23	19,980	337	223,316	72,523	234,094	679,947
New Mexico	1905	7	22,245	.....	.....	18	10,703	4,697	12,442	36,731
	1900	4	11,800	1	400	9	5,352	2,498	6,786	18,850
Arizona	1905	11	78,045	5	8,480	73	45,520	28,104	37,869	144,970
	1900	7	42,726	4	7,000	44	29,810	18,904	25,354	88,264
Utah	1905	27	106,388	9	6,925	140	108,533	32,506	110,722	297,918
	1900	15	46,123	.....	.....	68	38,499	13,479	49,928	124,487
Nevada [2]	1905	5	23,952	1	180	13	11,760	6,352	12,198	41,076
Washington	[3] 1905	103	191,806	4	3,900	258	176,725	82,353	228,730	610,078
	1900	57	88,724	4	2,820	133	68,855	38,936	126,910	293,839
Oregon	1905	54	123,476	5	3,950	163	92,242	51,548	179,173	395,597
	1900	38	58,655	1	1,200	71	32,961	19,312	60,019	146,401
California	1905	379	1,244,645	72	65,541	1,785	822,633	557,667	1,097,194	3,192,331
	1900	231	755,502	47	54,954	1,235	493,314	302,783	741,019	1,887,561
Not distributed by states or divisions	[4] 1900	3	2,320	.....	.....	4	1,905	1,226	3,620	9,600

[1] No establishments reported in 1900.
[2] Included in "not distributed by states or divisions" in 1900.
[3] Includes 1 establishment in Alaska.
[4] Includes establishments distributed as follows: Indian Territory, 1; Nevada, 2.

At the census of 1905 every state and territory except Alaska reported three or more establishments engaged in the manufacture of cigars and cigarettes. The territory named reported but one establishment, the statistics for which are included with those for the state of Washington to avoid disclosing individual operations. In 1900 the state of Mississippi and the territory of Alaska were not represented in this industry, and the statistics for Indian Territory and Nevada, reporting less than three establishments each, were combined under "not distributed by states or divisions."

A noteworthy feature of the table is that in nearly every state and territory there was an increase in the number of establishments. The exceptions are Delaware, Maryland, District of Columbia, Louisiana, and Missouri, in all of which the number decreased, and North Carolina, where it remained stationary. This increase is contrary to the general trend of manufacturing industries, which is toward centralization, and is accounted for by the neighborhood character of the industry.

The North Atlantic division led with value of products equal to 55.3 per cent of the total for the country. The next in importance was the North Central division, which produced 24.5 per cent of the total. The South Atlantic, Western, and South Central divisions produced, respectively, 15.1 per cent, 2.9 per cent, and 2.2 per cent of the total of all cigar and cigarette manufactures. Each one of the divisions shows large increases since 1900.

With the exception of Alabama, the District of Columbia, and Texas all the states and territories show increases in value of products since 1900. In

1905 there were 5 states reporting products valued at $10,000,000 and over. In the order of importance these states and the values of their products were: New York, $60,623,617, an increase since 1900 of $11,595,138, or 23.6 per cent; Pennsylvania, $39,079,122, an increase of $7,595,981, or 24.1 per cent; Florida, $16,764,276, an increase of $6,028,450, or 56.2 per cent; Ohio, $13,241,230, an increase of $2,001,406, or 17.8 per cent; and Illinois, $11,669,485, an increase of $2,928,002, or 33.5 per cent. The same states led in 1900, and with the exception of Ohio and Florida their relative standing has not changed.

A noteworthy increase since 1900 is shown in New Jersey, where the products increased in value $5,684,016, or 214.7 per cent. This was due chiefly to the establishment of a number of large cigar factories, most of which were owned by one corporation. Owing to this remarkable increase New Jersey advanced from twelfth place in 1900 to sixth at the census of 1905. Michigan, Massachusetts, and Virginia were, respectively, seventh, eighth, and ninth in rank. The combined products of the 9 leading states at the census of 1905 were valued at $170,388,317, or 79.5 per cent of the total for the country.

Table 8 shows, by states and territories, the quantity of tobacco used and the number of each kind of cigars and cigarettes manufactured in the calendar year 1904.

TABLE 8.—CIGARS AND CIGARETTES—QUANTITY OF MATERIALS AND PRODUCTS, BY STATES AND TERRITORIES: 1904.

[Compiled from the annual report of the Commissioner of Internal Revenue, 1905.]

STATE OR TERRITORY.	Tobacco used in both cigars and cigarettes (pounds).	Cigars and cigarettes manufactured (number).	CIGARS.				CIGARETTES.			
			Weighing more than 3 pounds per thousand.		Weighing not more than 3 pounds per thousand.		Weighing more than 3 pounds per thousand.		Weighing not more than 3 pounds per thousand.	
			Tobacco used (pounds).	Number.	Tobacco used (pounds).	Number.	Tobacco used (pounds).	Number.	Tobacco used (pounds).	Number.
United States	141,020,029	10,810,663,164	124,623,057	6,640,482,483	3,046,196	736,187,259	53,494	7,103,193	13,297,282	3,426,890,229
Alabama	116,621	6,577,782	116,621	6,577,782						
Alaska	3,550	168,800	3,550	168,800						
Arkansas	59,467	2,746,305	59,467	2,746,305						
Arizona	45,939	2,312,074	45,939	2,312,074						
California	1,615,376	144,217,233	1,442,400	71,937,398	175	60,000	46	5,300	172,755	72,214,535
Colorado	419,476	20,667,475	419,436	20,653,875						
Connecticut	1,058,613	58,216,018	1,040,812	52,844,698	2,124	458,450			40	13,600
Delaware	112,961	6,093,527	112,961	6,093,527					15,677	4,912,870
District of Columbia	45,620	2,289,088	45,620	2,289,088						
Florida	5,581,979	279,450,949	5,565,729	275,940,549	118	23,650				
Georgia	232,274	11,535,705	231,443	11,276,205					16,132	3,486,750
Hawaii	4,556	194,014	4,556	194,014					831	259,500
Idaho	53,587	2,487,113	53,587	2,487,113						
Illinois	5,983,123	321,852,767	5,954,402	314,637,477	2,382	508,000	31	1,900	26,308	6,705,390
Indian Territory	12,757	604,525	12,757	604,525						
Indiana	2,268,664	115,516,671	2,268,664	115,516,671						
Iowa	1,863,001	94,287,146	1,861,727	94,032,346	1,274	254,800				
Kansas	476,063	25,619,207	476,063	25,619,207						
Kentucky	1,218,294	62,108,746	1,217,391	61,880,746	903	228,000				
Louisiana	1,642,686	320,212,875	754,039	40,944,955	10	2,000			888,637	279,265,920
Maine	201,241	10,695,425	201,241	10,695,425						
Maryland	3,342,561	386,487,346	2,283,716	122,701,846	1,058,336	263,643,700			509	141,800
Massachusetts	3,346,476	180,671,648	3,289,963	165,541,328	33	11,300	5,434	416,830	51,046	14,702,190
Michigan	4,857,595	252,954,096	4,857,554	252,926,396	41	27,700				
Minnesota	1,438,136	72,711,917	1,436,605	72,406,417			35	5,000	1,496	300,500
Mississippi	8,529	397,450	8,529	397,450						
Missouri	1,650,174	85,054,725	1,647,115	84,315,555	75	15,000	10	1,000	2,974	723,170
Montana	102,246	4,783,776	102,246	4,783,776						
Nebraska	492,048	25,637,804	492,048	25,637,804						
Nevada	12,340	643,033	12,340	643,033						
New Hampshire	220,622	11,984,896	220,622	11,984,896						
New Jersey	9,772,053	429,297,042	9,704,247	413,481,947	62,501	14,097,100			5,305	1,717,995
New Mexico	17,869	1,363,495	16,994	822,875					875	540,620
New York	32,858,082	3,565,910,253	24,719,942	1,320,633,477	385,773	98,399,289	47,127	6,507,653	7,705,240	2,140,369,834
North Carolina	475,290	75,940,290	298,581	14,751,790					176,709	61,188,500
North Dakota	41,674	2,018,920	41,674	2,018,920						
Ohio	11,014,957	617,686,027	10,974,658	609,391,597	40,164	8,081,230			135	213,200
Oklahoma	60,340	2,902,160	60,340	2,902,160						
Oregon	163,486	7,973,171	163,483	7,972,171	3	1,000				
Pennsylvania	33,310,787	1,945,585,045	33,065,697	1,892,274,290	4,698	1,342,600	811	165,510	239,581	51,802,645
Rhode Island	176,307	9,702,273	176,307	9,702,273						
South Carolina	347,690	15,372,380	347,675	15,369,380	15	3,000				
South Dakota	159,480	8,268,759	159,480	8,268,759						
Tennessee	183,026	10,263,650	183,026	10,263,650						
Texas	259,901	14,387,490	259,046	13,861,700					855	525,790
Utah	108,676	4,833,190	108,676	4,833,190						
Vermont	60,305	3,307,380	60,305	3,307,380						
Virginia	9,098,685	1,338,285,179	3,619,002	201,468,819	1,487,541	349,023,940			3,992,142	787,792,420
Washington	232,844	11,473,855	232,814	11,467,355	30	6,500				
West Virginia	1,883,340	118,789,802	1,883,340	118,789,802						
Wisconsin	2,288,864	117,141,180	2,288,829	117,128,180					35	13,000
Wyoming	19,798	981,487	19,798	981,487						

The tobacco used during 1904 exceeded in quantity that used in 1900 by 22,540,803 pounds, and the number of cigars and cigarettes produced was more by 1,375,350,438.

For internal revenue taxation, cigars and cigarettes are divided into two classes according to weight, those weighing not more than 3 pounds per thousand being subject to a lower rate of taxation than those weighing more. During the period covered by this report the tax rates were $3 per thousand for cigars or cigarettes weighing over 3 pounds per thousand, 54 cents per thousand for cigars weighing not more than 3 pounds per thousand, and $1.08 per thousand for cigarettes weighing not more than 3 pounds per thousand (more than $2 value per thousand). By far the greater number of cigars manufactured weigh over 3 pounds per thousand, while the reverse is true of cigarettes. Of the 141,020,029 pounds of tobacco used in the manufacture of cigars and cigarettes during 1904, 127,669,253 pounds were consumed in the production of 7,376,669,742 cigars and 13,350,776 pounds in the production of 3,433,993,422 cigarettes, an average of 17.3 pounds per thousand for cigars and 3.9 pounds per thousand for cigarettes. Eliminating from the calculations the little cigars, which are a distinct type, the average quantity of tobacco required to produce 1,000 cigars was 18.8 pounds. Pennsylvania led in the number of large cigars manufactured, while New York stood second, Ohio third, New Jersey fourth, Illinois fifth, and Florida sixth.

The states of Maryland and Virginia produced 83.2 per cent of all little cigars made during the calendar year 1904, while 85.5 per cent of the cigarettes were made in New York and Virginia.

The following tabular statement, prepared from the reports of the Commissioner of Internal Revenue, gives the numbers of cigars and cigarettes withdrawn from warehouses for consumption and tax paid for each of the fiscal years from 1900 to 1905:

Cigars and cigarettes—number withdrawn for consumption: 1900 to 1905.

[Compiled from the reports of the Commissioner of Internal Revenue.]

YEAR ENDING JUNE 30—	Total (number).	Cigars (number).	Cigarettes (number).
1905	10,965,970,880	7,589,337,207	3,376,633,673
1904	10,639,420,641	7,404,316,770	3,235,103,871
1903	10,468,464,071	7,426,890,403	3,041,573,668
1902	9,516,118,432	6,864,499,635	2,651,618,797
1901	8,732,508,237	6,455,438,419	2,277,069,818
1900	8,602,070,166	5,963,170,381	2,639,899,785

The consumption of cigars and cigarettes has increased 2,362,900,714, or 27.5 per cent, since 1900. Of this increase, that of cigars was 1,626,166,826, or 27.3 per cent; and of cigarettes, 736,733,888, or 27.9 per cent. The number of cigars consumed increased steadily, as shown by the reports of the Commissioner of Internal Revenue, from 991,535,934 in 1869 to 7,589,337,207 in 1905, or nearly sevenfold, while the total population of the country increased during the same period only a little over twofold.

CHEWING AND SMOKING TOBACCO AND SNUFF.

The statistics shown in the following tables embrace the manufacture of plug, fine cut, and scrap chewing tobacco, pipe and other smoking tobacco, and snuff. The main statistics, as presented at each census from 1860 to 1905, with percentages of increase, are shown in Table 9.

TABLE 9.—CHEWING AND SMOKING TOBACCO AND SNUFF—COMPARATIVE SUMMARY, WITH PER CENT OF INCREASE: 1860 TO 1905.

	CENSUS.						PER CENT OF INCREASE.				
	1905	1900	1890	1880	1870	1860	1900 to 1905	1890 to 1900	1880 to 1890	1870 to 1880	1860 to 1870
Number of establishments	433	437	395	477	573	626	[1]0.9	10.6	[1]17.2	[1]16.8	[1]8.5
Capital	$178,847,556	$43,856,570	$30,841,316	$17,207,401	$13,555,814	$9,494,405	307.8	42.2	79.2	26.9	42.8
Salaried officials, clerks, etc., number	2,107	3,368	[2]1,477	(3)	(3)	(3)	[1]37.4	128.0	.....	.....	.....
Salaries	$2,456,752	$3,884,071	[2]$1,620,913	(3)	(3)	(3)	[1]36.7	139.6	.....	.....	.....
Wage-earners, average number	23,990	29,161	29,790	32,756	21,799	18,859	[1]17.7	[1]2.1	[1]9.1	50.3	15.6
Total wages	$6,775,325	$7,109,821	$6,947,158	$6,419,024	$5,216,633	$3,571,294	[1]4.7	2.3	8.2	23.0	46.1
Men 16 years and over	12,721	14,124	14,942	14,886	10,588	15,869	[1]9.9	[1]5.5	0.4	40.6	[1]33.3
Wages	$4,212,639	$4,408,038	$4,582,822	(3)	(3)	(3)	[1]4.4	[1]3.8	.....	.....	.....
Women 16 years and over	9,127	11,590	10,564	10,776	5,179	2,990	[1]21.3	9.7	[1]2.0	108.1	73.2
Wages	$2,241,081	$2,388,920	$2,040,600	(3)	(3)	(3)	[1]6.2	17.1	.....	.....	.....
Children under 16 years	2,142	3,447	4,284	7,094	6,032	(3)	[1]37.9	[1]19.5	[1]39.6	17.6	.....
Wages	$321,605	$312,863	$323,736	(3)	(3)	(3)	2.8	[1]3.4	.....	.....	.....
Miscellaneous expenses	$38,553,794	$47,533,705	$19,463,749	(4)	(4)	(4)	[1]18.9	144.2	.....	.....	.....
Cost of materials used	$44,954,047	$35,038,287	$29,192,249	$34,397,072	$21,609,237	$13,024,988	28.3	20.0	[1]15.1	59.2	65.9
Value of products	$116,767,630	$103,754,362	$65,843,587	$52,793,056	$38,388,359	$21,820,535	12.5	57.6	24.7	37.5	75.9

[1] Decrease.
[2] Includes proprietors and firm members, with their salaries; number only reported in 1900 and 1905, but not included in this table.
[3] Not reported separately.
[4] Not reported.

Following the general trend of concentration, the number of establishments in this branch of the tobacco industry has slightly decreased since 1900. There are decreases, likewise, in all particulars except capital, the wages of children, the cost of materials used, and value of products. As in the case of the cigar and cigarette branch of the industry, the very large increase indicated in capital from 1900 to 1905 is almost entirely due to increase in "cash and sundries," which may be attributed to difference in the methods of reporting this item at the two censuses.

The decrease shown in average number of wage-earners may be attributable to several causes. One large plant in Jersey City and a number of smaller establishments elsewhere have been closed since 1900. Improved methods of manufacture and of administra-

tion may have led in part to the diminution in average number of wage-earners, and therefore in wages paid; while a more careful attention to details in the collection of statistics at the census of 1905 may have resulted in the ascertainment of a truer average number. It is noteworthy that the relative decrease in number of women and children was greater than in number of men.

During the forty-five years shown in Table 9 the capital and products have steadily increased, but since 1880 the total average number of wage-earners has steadily declined. There was, however, an increase from 1890 to 1900 in average number of women. Since 1870 the decrease in average number of children has been 3,890, or 64.5 per cent.

The decrease in the total for miscellaneous expenses is due, in part, to the reduction in the internal revenue tax since 1900.

Table 10 presents comparative statistics for 1900 and 1905 of establishments engaged in the manufacture of chewing and smoking tobacco and snuff, by states and territories and by geographic divisions.

TABLE 10.—CHEWING AND SMOKING TOBACCO AND SNUFF—COMPARATIVE SUMMARY, BY STATES, TERRITORIES, AND GEOGRAPHIC DIVISIONS: 1905 AND 1900.

STATE OR TERRITORY.	Census.	Number of establishments.	Capital.	SALARIED OFFICIALS, CLERKS, ETC.		WAGE-EARNERS AND WAGES.		Miscellaneous expenses.	Cost of materials used.	Value of products.
				Number.	Salaries.	Average number.	Wages.			
United States	1905	433	$178,847,556	2,107	$2,456,752	23,990	$6,775,325	$38,553,794	$44,954,047	$116,767,630
	1900	437	43,856,570	3,368	3,884,071	29,161	7,109,821	47,533,705	35,038,287	103,754,362
North Atlantic division	1905	112	17,906,324	191	207,030	1,820	653,077	3,084,710	3,204,152	9,448,326
	1900	74	10,215,207	376	426,508	3,232	975,294	5,197,110	4,581,425	13,067,877
New York	1905	68	8,034,743	93	84,848	957	317,513	1,642,599	1,808,923	4,973,314
	1900	42	1,757,687	137	188,629	1,020	345,704	2,032,836	1,734,072	4,632,101
New Jersey	1905	10	8,582,781	44	50,002	435	176,366	930,401	737,323	2,656,798
	1900	12	6,692,041	204	197,814	1,955	527,195	2,713,031	2,424,108	7,788,370
Pennsylvania	1905	34	1,288,800	54	72,156	428	159,198	511,620	657,996	1,818,214
	1900	20	1,765,539	35	40,065	257	102,395	451,243	423,245	1,247,397
South Atlantic division	1905	98	64,981,744	955	1,057,514	11,645	2,551,816	14,966,228	17,074,503	44,539,302
	1900	158	16,062,651	1,148	1,371,925	14,784	2,595,433	14,154,924	11,285,700	32,745,719
Maryland[1]	1900	5	1,805,611	120	259,624	2,002	564,272	3,233,312	2,496,107	7,054,159
Virginia	1905	48	10,997,474	350	378,598	3,888	845,006	3,186,481	4,086,516	10,062,208
	1900	69	5,728,357	509	486,135	6,061	1,082,226	4,060,746	4,082,291	10,707,766
West Virginia[1]	1900	4	2,253,775	50	49,118	318	79,765	659,763	477,253	1,302,978
North Carolina	1905	39	32,028,980	469	525,888	6,323	1,230,088	9,174,247	8,961,772	25,488,721
	1900	80	6,874,908	469	577,048	6,403	869,170	6,192,103	4,230,049	13,620,816
Not distributed by states	[2] 1905	11	21,955,200	130	153,028	1,434	476,722	2,605,500	3,426,215	8,388,313
North Central division	1905	118	66,228,008	620	757,757	6,793	2,556,087	14,510,501	18,037,970	45,767,206
	1900	103	11,761,845	1,100	1,377,714	7,008	2,453,063	10,907,862	12,953,427	39,571,775
Ohio	1905	18	7,402,386	118	115,049	1,000	370,596	2,381,568	2,746,892	7,247,292
	1900	19	2,081,858	102	242,606	1,087	389,881	3,001,133	1,917,219	5,752,853
Indiana	1905	16	118,005	24	21,188	147	51,054	95,466	83,125	267,543
	1900	11	17,100	4	1,500	28	8,490	23,054	16,078	58,230
Illinois	1905	37	3,945,235	38	52,037	796	275,310	1,853,588	1,885,172	4,392,352
	1900	30	968,481	87	127,728	671	217,034	1,540,724	1,072,500	3,167,552
Michigan	1905	10	1,684,501	123	143,508	937	306,615	1,328,739	1,780,476	3,868,720
	1900	8	804,400	156	202,689	1,173	322,817	1,935,032	1,174,030	3,746,045
Wisconsin	1905	10	1,080,367	78	93,596	305	109,545	843,120	598,907	1,973,775
	1900	6	717,732	30	53,420	300	103,958	845,656	472,735	1,032,354
Minnesota	1905	3	7,691	.....	.....	1	485	800	1,044	4,421
	1900	3	5,895	1	600	3	1,434	1,447	4,527	13,700
Iowa[3]	1905	4	108,841	19	8,628	32	8,449	43,385	80,082	171,502
Missouri	1905	17	51,784,817	220	322,401	3,574	1,434,021	7,901,304	10,880,403	27,836,422
	1900	22	7,020,479	742	741,201	3,720	1,402,549	12,511,008	8,255,857	25,101,449
Not distributed by states	[4] 1905	3	6,705	.....	.....	1	312	2,531	2,869	5,170
	[5] 1900	4	115,810	8	7,880	26	6,900	40,808	40,472	99,595
South Central division	1905	94	26,951,375	307	384,230	3,376	923,072	5,425,099	6,016,320	15,502,236
	1900	97	5,119,082	633	678,224	4,086	1,073,081	8,200,059	6,159,134	17,573,191
Kentucky	1905	54	21,208,822	222	300,357	2,711	760,063	4,637,741	5,200,595	13,117,009
	1900	59	3,485,793	493	524,758	3,187	850,018	7,182,022	5,221,257	14,948,192
Tennessee	1905	37	5,659,448	85	83,873	654	159,884	781,349	801,364	2,355,514
	1900	35	1,318,414	106	108,241	615	152,043	557,149	516,369	1,541,475
Louisiana[6]	1900	3	314,875	34	45,225	284	71,620	460,888	421,508	1,083,524
Texas[7]	1905	3	23,105	.....	.....	11	3,125	6,009	14,361	20,722
Not distributed by states or divisions	[8] 1905	11	2,780,105	34	50,215	356	90,373	567,256	621,102	1,510,560
	[9] 1900	5	97,725	21	29,700	51	12,350	73,750	58,001	195,800

[1] Included in "not distributed by states" in 1905.
[2] Includes establishments distributed as follows: Delaware, 1; Florida, 1; Georgia, 1; Maryland, 5; West Virginia, 3.
[3] Included in "not distributed by states" in 1900.
[4] Includes establishments distributed as follows: Kansas, 2; Nebraska, 1.
[5] Includes establishments distributed as follows: Iowa, 2; Nebraska, 2.
[6] Included in "not distributed by states or divisions" in 1905.
[7] No establishments reported in 1900.
[8] Includes establishments distributed as follows: Arizona, 3; California, 2; Colorado, 2; Louisiana, 3; Massachusetts, 1.
[9] Includes establishments distributed as follows: Alabama, 1; California, 1; Colorado, 2; Massachusetts, 1.

Increases in value of products of 36 per cent and 15.7 per cent, respectively, are shown for the South Atlantic and the North Central divisions. There was a notable increase in North Carolina, $11,867,905, or 87.1 per cent. Of the states for which separate figures are given for both census years in these two divisions, Virginia and Minnesota alone reported decreases.

The North Atlantic division shows a large decrease in value of products, and a slight decrease is also shown in the South Central division. The large decline in production in the North Atlantic group took place entirely in New Jersey, which decreased from $7,788,379 in 1900 to $2,656,798 at the census of 1905, due to the closing of one very large factory in Jersey City. In the South Central division a decrease was reported from Kentucky. The statistics for three establishments in Louisiana were shown for 1900, but for 1905 they are necessarily included in the group of establishments "not distributed by states or divisions" to avoid disclosure of individual operations. This change accounts for a considerable portion of the apparent net decrease in the division.

The reports of the Commissioner of Internal Revenue present information concerning the kinds and quantities of materials used in this industry, and the amount of chewing and smoking tobacco and snuff produced. From these reports Table 11 has been compiled for the calendar year 1904.

TABLE 11.—CHEWING AND SMOKING TOBACCO AND SNUFF—QUANTITY OF MATERIALS AND PRODUCTS, BY STATES AND TERRITORIES: 1904.

[Compiled from the annual report of the Commissioner of Internal Revenue, 1905.]

MATERIALS.

STATE OR TERRITORY.	Total.	Unstemmed leaf.	Stemmed leaf.	Scraps.	In process.	Stems.	Licorice.	Sugar.	Other materials.
	Pounds.	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*
United States	393,672,980	190,863,894	75,283,716	32,607,967	1,127,749	8,735,977	37,039,094	30,108,536	17,906,047
Arizona	23,017	9,069	10,169	3,779					
Arkansas	1,357	55		1,155	147				
California	220,876	150,586	2,340	29,145	15,289	200	8,144	4,184	10,988
Colorado	65,455			65,455					
Connecticut	33,824	739	670	32,209	68			3	135
Delaware	5,926,406	5,233,581				692,825			
District of Columbia	2,626			1,888		738			
Florida	26,014	185	60	25,769					
Georgia	4,409	227		3,018	175				989
Idaho	1,774			1,774					
Illinois	15,308,824	9,027,642	1,331,649	829,802	39,035	306,040	931,993	2,021,008	821,655
Indiana	1,302,829	949,055	17,285	272,436	384	1,505	14,610	33,124	14,430
Iowa	806,833	374,358	65	298,485	595	28,376	11,047	61,514	32,393
Kansas	69,922	2,257		67,363			144	134	24
Kentucky	44,173,041	18,404,782	10,798,089	595,009	41,298	9,463	6,980,442	4,554,784	2,789,174
Louisiana	2,870,036	1,068,507	1,496,436	136,047	3,603		29,840	58,726	76,877
Maryland	16,643,653	8,041,576	3,601,507	1,610,879	41,458	1,269,384	350,467	663,011	1,065,371
Massachusetts	170,932	131,882		15,846	3,700	19,498		3	3
Michigan	15,883,078	6,676,327	362,093	3,896,800	38,343	20,110	1,735,967	2,184,148	969,290
Minnesota	176,384	4,993	641	169,089	1,661				
Missouri	69,919,540	10,405,669	31,544,356	1,849,269	13,747	1,818,467	13,501,502	7,620,408	3,166,122
Montana	14,028	54		13,974					
Nebraska	94,500	2,302		92,198					
New Hampshire	1,642	189		1,228	225				
New Jersey	28,626,670	9,359,082	7,721,606	2,616,807	10,083	2,065,021	2,920,426	2,112,992	1,820,653
New Mexico	2,773			2,773					
New York	15,324,977	9,506,832	1,288,834	2,315,872	94,697	349,072	877,946	397,553	494,171
North Carolina	87,440,484	73,380,456	3,519,536	1,686,585	98,252	305,495	3,396,562	2,440,476	2,613,122
North Dakota	850			850					
Ohio	26,326,085	1,459,805	5,542,905	9,962,250	18,409	252,035	3,024,317	5,291,900	774,464
Oklahoma	2,867			2,867					
Oregon	12,568			12,568					
Pennsylvania	6,031,698	4,205,959	7,700	972,927	88,566	1,827	156,883	128,331	469,505
Rhode Island	10,538	10,538							
South Carolina	1,269	1,189						80	
South Dakota	9,459			9,459					
Tennessee	10,115,252	8,204,038	161,554	67,392	426,452	814,676	281,677	107,651	51,812
Texas	93,607	52,509	622	36,584	3,274	210	408		
Utah	2,125		220	1,905					
Vermont	2,100			2,100					
Virginia	33,590,103	18,877,619	7,848,986	501,197	170,751	36,100	2,367,724	2,019,818	1,767,908
Washington	9,957			9,957					
West Virginia	5,390,524	1,916	100	4,080,648	354	2,862	300,435	203,101	801,108
Wisconsin	6,934,868	5,319,916	26,293	309,403	17,183	742,073	148,560	205,587	165,853
Wyoming	3,206			3,206					

TABLE 11.—CHEWING AND SMOKING TOBACCO AND SNUFF—QUANTITY OF MATERIALS AND PRODUCTS, BY STATES AND TERRITORIES: 1904—Continued.

PRODUCTS.

STATE OR TERRITORY.	Total.	Plug.	Twist and other forms of leaf.	Fine cut.	Smoking.	Snuff.
	Pounds.	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*
United States	353,686,574	163,379,270	8,783,211	12,151,003	149,151,690	20,221,400
Arizona	22,765				22,765	
Arkansas	1,350		47		1,303	
California	225,843	28,246			197,597	
Colorado	65,331				65,331	
Connecticut	33,780				33,403	377
Delaware	4,386,897				27	4,386,870
District of Columbia	2,957				2,957	
Florida	25,412				25,412	
Georgia	4,218				4,218	
Idaho	1,774				1,774	
Illinois	15,328,656	305,200	512,348	5,572,234	8,566,794	372,080
Indiana	1,220,091	4,338	859,121	400	360,884	4,348
Iowa	798,317			92,640	705,434	243
Kansas	69,238		1,632		67,606	
Kentucky	40,766,729	31,884,941	1,266,247	185,420	7,430,121	
Louisiana	2,539,525		31,200		2,482,605	25,720
Maryland	14,691,050				11,119,390	3,571,660
Massachusetts	172,657				50,136	122,521
Michigan	14,975,665	3,143,161	56,637	1,354,616	10,349,290	71,961
Minnesota	183,034				178,362	4,672
Missouri	68,329,714	56,963,591	4,266,031		7,090,361	9,731
Montana	14,028				14,028	
Nebraska	94,500				94,500	
New Hampshire	1,576				1,366	210
New Jersey	26,435,413	6,659,186		2,127,460	11,601,354	6,047,413
New Mexico	2,773				2,773	
New York	15,099,995	38,470	3,070	2,290,699	12,635,927	131,799
North Carolina	68,502,499	34,387,689	73,413		34,041,397	
North Dakota	850				850	
Ohio	26,219,406	6,613,247	398,538	8,595	19,198,669	357
Oklahoma	2,867				2,867	
Oregon	12,568				12,568	
Pennsylvania	5,592,708	5,405		56,850	4,571,102	959,351
Rhode Island	7,866				7,866	
South Carolina	881	625			256	
South Dakota	9,454				9,454	
Tennessee	7,112,363	1,571,652	1,242,469	4,282	398,834	3,895,126
Texas	93,290				93,290	
Utah	2,125				2,125	
Vermont	2,100				2,100	
Virginia	28,983,362	21,773,519	69,508	34,531	7,105,804	
Washington	9,936				9,936	
West Virginia	4,956,902		50		4,949,788	7,064
Wisconsin	6,671,927		2,900	423,276	6,235,860	9,891
Wyoming	3,206				3,206	

According to these statistics, North Carolina led in the production of this class of tobacco and was closely followed by Missouri. Kentucky came third, followed by Virginia, New Jersey, and Ohio, in the order named. The combined production of the 6 leading states named was 259,237,123 pounds, or 73.3 per cent of all tobacco in this class.

The aggregate quantity of tax-paid chewing and smoking tobacco and snuff withdrawn for consumption for each fiscal year from 1900 to 1905, as shown by the reports of the Commissioner of Internal Revenue, is given in the following tabular statement:

Chewing and smoking tobacco and snuff—quantity withdrawn for consumption: 1900 to 1905.

[From the reports of the Commissioner of Internal Revenue.]

YEAR ENDING JUNE 30—	Pounds.
1905	355,620,971
1904	348,808,290
1903	320,495,380
1902	315,719,475
1901	310,703,559
1900	293,894,453

Tables 12 and 13 are detailed summaries for cigars and cigarettes, and chewing and smoking tobacco and snuff, respectively, by states and territories, for the census of 1905.

TABLE 12.—CIGARS AND CIGARETTES—DETAILED

		United States.	Alabama.	Arizona.	Arkansas.	California.
1	Number of establishments	16,395	32	11	20	379
2	Capital, total	$145,135,945	$128,101	$78,045	$23,053	$1,244,645
3	Land	$4,453,980	$11,997	$2,100	$225	$43,180
4	Buildings	$8,924,218	$13,345	$7,700	$689	$32,260
5	Machinery, tools, and implements	$6,665,282	$3,301	$2,017	$1,121	$53,757
6	Cash and sundries	$125,092,465	$99,458	$66,228	$21,018	$1,115,448
7	Proprietors and firm members	18,586	37	13	24	695
	Salaried officials, clerks, etc.:					
8	Total number	7,129	13	5	2	72
9	Total salaries	$6,343,682	$10,370	$8,480	$1,028	$65,541
	Officers of corporations—					
10	Number	506	2	1	.....	10
11	Salaries	$1,085,236	$3,300	$3,600	.....	$15,500
	General superintendents, managers, clerks, etc.—					
12	Total number	6,623	11	4	2	62
13	Total salaries	$5,258,446	$7,070	$4,880	$1,028	$50,041
	Men—					
14	Number	5,612	11	4	2	52
15	Salaries	$4,852,067	$7,070	$4,880	$1,028	$45,212
	Women—					
16	Number	1,011	.....	.....	.....	10
17	Salaries	$406,379	.....	.....	.....	$4,829
	Wage-earners, including pieceworkers, and total wages:					
18	Greatest number employed at any one time during the year	163,982	211	90	67	2,199
19	Least number employed at any one time during the year	115,218	149	66	47	1,517
20	Average number	135,418	169	73	55	1,785
21	Total wages	$55,864,978	$77,263	$45,520	$35,184	$822,633
	Men 16 years and over—					
22	Average number	72,970	152	57	43	1,423
23	Wages	$38,198,064	$74,532	$41,793	$32,619	$713,050
	Women 16 years and over—					
24	Average number	57,174	9	11	1	310
25	Wages	$16,889,901	$1,785	$2,825	$520	$97,387
	Children under 16 years—					
26	Average number	5,274	8	5	11	52
27	Wages	$777,013	$946	$902	$2,045	$12,196
	Average number of wage-earners, including pieceworkers, employed during each month:					
	Men 16 years and over—					
28	January	69,308	138	52	43	1,414
29	February	69,977	155	53	43	1,385
30	March	71,186	149	53	44	1,398
31	April	71,849	156	54	43	1,394
32	May	72,343	156	55	45	1,428
33	June	72,104	155	53	45	1,416
34	July	72,299	152	59	46	1,370
35	August	72,755	143	61	42	1,416
36	September	74,387	148	59	42	1,435
37	October	76,274	157	65	43	1,471
38	November	76,997	157	60	41	1,491
39	December	76,161	158	60	39	1,458
	Women 16 years and over—					
40	January	56,398	9	11	1	313
41	February	56,730	12	10	1	319
42	March	56,843	12	10	1	309
43	April	54,330	12	10	1	303
44	May	55,396	9	10	1	303
45	June	56,327	8	10	1	297
46	July	57,313	9	12	1	292
47	August	57,021	9	12	1	313
48	September	58,087	7	12	1	307
49	October	59,292	7	12	1	313
50	November	59,626	6	11	1	323
51	December	58,725	8	12	1	328
	Children under 16 years—					
52	January	5,111	7	4	10	50
53	February	5,129	9	4	10	52
54	March	5,092	8	4	10	52
55	April	4,890	8	4	10	51
56	May	4,816	7	4	11	53
57	June	5,141	7	4	12	53
58	July	5,413	10	6	11	45
59	August	5,556	10	6	10	54
60	September	5,518	7	6	12	50
61	October	5,533	8	6	12	56
62	November	5,592	8	6	12	55
63	December	5,497	7	6	12	53
64	Miscellaneous expenses, total	$41,591,222	$32,803	$28,104	$25,230	$557,667
65	Rent of works	$2,555,016	$5,461	$1,750	$2,184	$82,000
66	Taxes, not including internal revenue	$333,098	$868	$501	$141	$5,707
67	Rent of offices, interest, insurance, internal revenue taxes, and all other sundry expenses not hitherto included.	$38,470,299	$26,424	$25,853	$22,905	$469,710
68	Contract work	$232,809	$50	.....	.....	$250
69	Materials used, aggregate cost	$81,134,561	$74,354	$37,869	$85,142	$1,097,194
70	Principal materials, total cost	$69,914,255	$63,467	$31,250	$74,346	$928,526
71	Purchased in raw state	$69,291,011	$62,518	$31,250	$74,346	$928,511
72	Purchased in partially manufactured form	$623,244	$949	.....	.....	$15
73	Fuel	$324,996	$157	$25	$157	$938
74	Rent of power and heat	$117,761	$49	.....	$25	$1,558
75	Mill supplies	$17,593	$15	.....	$10	$123
76	All other materials	$10,432,882	$10,112	$5,606	$10,134	$158,858
77	Freight	$327,074	$554	$898	$470	$7,191
78	Products, total value	$214,350,051	$244,370	$144,970	$227,234	$3,192,331

SUMMARY, BY STATES AND TERRITORIES: 1905.

Colorado.	Connecticut.	Delaware.	District of Columbia.	Florida.	Georgia.	Idaho.	Illinois.	Indian Territory.	Indiana.	Iowa.	Kansas.	
117	226	19	25	208	37	17	1,788	8	536	440	172	1
$209,467	$1,173,806	$99,522	$77,034	$7,383,963	$392,998	$35,986	$5,157,197	$6,905	$1,368,000	$1,489,923	$512,237	2
$12,640	$38,235	$1,100	$28,100	$134,894	$1,250	$1,700	$552,015	$1,000	$115,238	$81,440	$24,095	3
$24,550	$100,179	$5,100	$17,900	$371,480	$3,050	$6,000	$812,660	$1,000	$188,069	$187,644	$81,850	4
$14,949	$28,792	$2,575	$1,960	$137,579	$22,301	$2,215	$196,244	$893	$54,911	$63,592	$26,236	5
$247,328	$1,006,600	$90,747	$29,074	$6,740,010	$365,797	$26,071	$3,595,378	$4,012	$1,009,782	$1,157,247	$380,056	6
128	253	21	25	284	45	10	1,993	9	609	499	206	7
23	73	4	2	746	28	3	333	.....	100	137	23	8
$27,740	$70,268	$2,610	$1,050	$765,354	$15,823	$1,320	$262,540	.....	$74,956	$117,883	$17,066	9
6	4	.....	.....	56	.....	2	30	.....	7	18	1	10
$8,400	$5,200	.....	.....	$173,405	.....	$780	$45,955	.....	$11,080	$21,384	$900	11
17	69	4	2	690	28	1	303	.....	93	119	22	12
$19,250	$65,068	$2,610	$1,050	$591,859	$15,823	$540	$216,585	.....	$63,876	$96,499	$16,166	13
14	64	4	2	618	27	1	244	.....	76	108	20	14
$18,080	$62,340	$2,610	$1,050	$577,065	$15,589	$540	$195,287	.....	$56,982	$91,363	$15,316	15
3	5	.....	.....	72	1	.....	59	.....	17	11	2	16
$1,170	$2,728	.....	.....	$14,794	$234	.....	$21,208	.....	$6,894	$5,136	$850	17
566	1,402	263	84	13,487	352	61	8,292	12	3,125	2,588	713	18
421	1,193	156	38	7,081	184	44	5,844	8	2,311	1,771	546	19
481	1,267	113	60	9,057	255	42	6,675	7	2,521	2,040	594	20
$308,327	$765,542	$42,747	$30,413	$5,577,106	$81,323	$20,736	$3,463,018	$2,958	$988,393	$838,699	$238,110	21
380	1,018	56	58	7,938	83	34	5,085	5	1,411	1,266	364	22
$267,703	$689,942	$24,624	$29,986	$5,057,648	$40,247	$27,244	$2,950,313	$2,574	$752,906	$636,669	$176,799	23
90	226	50	1	1,700	160	4	1,329	2	941	676	188	24
$38,146	$71,552	$17,075	$375	$516,599	$39,631	$1,305	$472,405	$384	$214,625	$188,335	$55,075	25
11	23	7	1	19	12	4	261	.....	169	98	42	26
$2,418	$4,048	$1,048	$52	$2,859	$1,445	$1,187	$40,300	.....	$20,862	$13,695	$6,236	27
357	966	96	60	7,325	82	24	4,925	4	1,341	1,225	345	28
366	977	93	63	7,368	79	24	4,886	5	1,341	1,223	343	29
374	978	91	63	7,619	88	24	4,894	5	1,338	1,188	355	30
363	995	75	63	7,715	86	25	5,102	5	1,386	1,219	365	31
365	997	38	55	7,742	80	35	5,090	5	1,415	1,260	370	32
357	1,021	41	50	6,922	77	36	4,981	5	1,441	1,270	368	33
366	1,041	32	47	7,857	69	41	4,875	5	1,438	1,275	367	34
373	1,033	36	50	8,075	72	45	5,019	5	1,423	1,282	367	35
393	1,030	39	56	8,255	78	45	5,107	6	1,435	1,298	370	36
404	1,051	40	54	8,708	82	38	5,322	5	1,430	1,310	374	37
415	1,060	45	66	8,992	98	37	5,387	5	1,467	1,323	375	38
421	1,067	46	69	8,618	105	34	5,432	5	1,468	1,319	369	39
84	232	130	1	1,504	171	3	1,311	2	997	643	171	40
86	221	132	1	1,598	160	3	1,278	2	985	657	184	41
88	220	128	1	1,673	165	3	1,246	2	855	595	185	42
87	223	92	1	1,596	172	3	1,316	2	862	627	191	43
85	228	13	1	1,623	170	4	1,328	2	841	636	194	44
86	230	15	1	1,482	174	4	1,306	2	864	642	183	45
87	227	13	1	1,691	155	4	1,251	2	966	655	182	46
91	225	13	1	1,726	140	5	1,283	2	925	647	193	47
95	226	11	1	1,749	147	5	1,325	2	992	698	194	48
98	225	13	1	1,912	147	4	1,408	2	1,008	740	193	49
97	230	14	1	1,992	158	5	1,448	2	1,004	780	195	50
96	225	17	1	1,854	152	5	1,448	2	993	792	191	51
11	22	7	1	17	14	4	243	.....	170	96	41	52
11	22	8	1	20	13	4	242	.....	169	94	41	53
11	22	8	1	20	13	4	249	.....	123	94	42	54
11	22	7	1	18	11	4	253	.....	125	97	42	55
11	21	8	1	18	20	4	257	.....	127	92	41	56
11	21	7	1	19	16	4	262	.....	128	100	41	57
11	23	5	1	17	12	4	267	.....	175	101	41	58
11	23	7	1	19	11	4	268	.....	185	95	42	59
11	24	7	1	20	10	4	270	.....	202	102	44	60
11	25	8	1	19	8	4	272	.....	210	102	42	61
11	26	6	1	21	8	4	275	.....	210	101	44	62
11	25	6	1	20	8	4	274	.....	204	102	43	63
$110,032	$290,775	$28,799	$13,779	$2,366,743	$60,588	$11,816	$1,795,083	$2,065	$542,063	$556,120	$139,119	64
$18,583	$33,915	$3,414	$2,560	$49,008	$3,504	$1,080	$217,586	$482	$43,695	$57,065	$18,743	65
$2,097	$2,000	$207	$610	$15,008	$2,286	$286	$24,303	$117	$10,030	$10,882	$3,504	66
$95,720	$253,600	$25,178	$10,609	$2,301,980	$54,798	$9,550	$1,552,504	$1,466	$488,243	$487,574	$116,828	67
$532	$270	.....	.....	$087	.....	.....	$600	.....	$95	$608	$44	68
$336,305	$852,251	$62,004	$32,853	$6,595,555	$124,180	$42,532	$4,100,026	$5,487	$1,497,886	$1,199,642	$340,050	69
$287,482	$764,166	$53,530	$28,166	$5,950,283	$105,619	$35,500	$3,527,638	$4,533	$1,300,123	$1,052,246	$294,446	70
$287,482	$763,278	$53,513	$28,156	$5,932,305	$105,619	$35,500	$3,514,204	$4,533	$1,299,712	$1,052,238	$293,333	71
.....	$888	$17	$10	$17,078	.....	.....	$13,434	.....	$411	$8	$1,113	72
$684	$5,853	$330	$226	$574	$70	$74	$37,041	$49	$7,281	$6,289	$2,079	73
$275	$1,405	$277	$35	$1,504	$600	$41	$4,829	.....	$2,037	$951	$190	74
.....	$7	.....	.....	.....	$15	.....	$276	.....	$198	$25	$39	75
$45,043	$74,810	$7,789	$3,945	$604,998	$17,500	$5,566	$524,390	$905	$182,912	$132,068	$40,656	76
$2,821	$6,010	$678	$481	$38,196	$286	$1,351	$14,852	.....	$5,305	$8,063	$2,640	77
$970,051	$2,349,710	$100,676	$98,318	$16,704,276	$296,417	$104,471	$11,660,485	$14,375	$3,637,078	$3,187,522	$910,121	78

TABLE 12.—CIGARS AND CIGARETTES—DETAILED

		United States.	Alabama.	Arizona.	Arkansas.	California.
	Power:					
79	Number of establishments reporting	325				3
80	Total horsepower	6,862				22
	Owned—					
	Engines—					
	Steam—					
81	Number	94				
82	Horsepower	4,087				
	Gas and gasoline—					
83	Number	52				
84	Horsepower	411				
	Water motors—					
85	Number	3				
86	Horsepower	3				
	Electric motors—					
87	Number	74				
88	Horsepower	793				
	Rented—					
	Electric motors—					
89	Number	277				3
90	Horsepower	1,388				16
91	Other kind, horsepower	180				6

SUMMARY, BY STATES AND TERRITORIES: 1905—Continued.

Colorado.	Connecticut.	Delaware.	District of Columbia.	Florida.	Georgia.	Idaho.	Illinois.	Indian Territory.	Indiana.	Iowa.	Kansas.	
	6			6	1		10		5	6	2	79
	24			23	32		155		99	23	17	80
	1						2		1			81
	2						115		80			82
										1	1	83
										5	16	84
												85
												86
							2					87
							3					88
	5			6	2		7		4	6	1	89
	20			23	32		12		19	18	1	90
	2						25					91

TABLE 12.—CIGARS AND CIGARETTES—DETAILED

		Kentucky.	Louisiana.	Maine.	Maryland.	Massachusetts.
1	Number of establishments	184	22	64	340	348
2	Capital, total	$1,422,335	$2,025,645	$136,675	$5,017,841	$2,342,002
3	Land	$149,410	$19,320	$3,160	$80,475	$63,406
4	Buildings	$79,420	$104,135	$10,250	$424,241	$99,955
5	Machinery, tools, and implements	$48,465	$78,384	$10,424	$359,147	$96,583
6	Cash and sundries	$1,145,040	$1,823,806	$112,841	$4,153,978	$2,082,058
7	Proprietors and firm members	193	17	75	386	392
	Salaried officials, clerks, etc.:					
8	Total number	75	136	8	166	164
9	Total salaries	$70,966	$68,594	$5,276	$124,573	$199,851
	Officers of corporations—					
10	Number	14	7	.....	6	21
11	Salaries	$21,137	$17,085	.....	$10,500	$44,993
	General superintendents, managers, clerks, etc.—					
12	Total number	61	129	8	160	143
13	Total salaries	$49,829	$51,509	$5,276	$114,073	$154,858
	Men—					
14	Number	53	81	6	141	110
15	Salaries	$46,855	$41,527	$4,308	$105,175	$137,867
	Women—					
16	Number	8	48	2	19	33
17	Salaries	$2,974	$9,982	$968	$8,898	$16,991
	Wage-earners, including pieceworkers, and total wages:					
18	Greatest number employed at any one time during the year	1,545	1,669	319	3,630	4,190
19	Least number employed at any one time during the year	1,094	1,132	209	1,986	3,017
20	Average number	1,258	1,335	244	2,844	3,575
21	Total wages	$465,823	$320,648	$122,810	$1,033,703	$2,331,446
	Men 16 years and over—					
22	Average number	645	293	189	1,402	2,519
23	Wages	$324,625	$105,273	$109,143	$621,440	$1,939,739
	Women 16 years and over—					
24	Average number	491	930	55	1,283	1,033
25	Wages	$123,691	$203,007	$13,667	$388,048	$387,481
	Children under 16 years—					
26	Average number	122	112	.....	159	23
27	Wages	$17,507	$21,368	.....	$24,215	$4,226
	Average number of wage-earners, including pieceworkers, employed during each month:					
	Men 16 years and over—					
28	January	626	208	177	1,267	2,264
29	February	616	284	174	1,283	2,404
30	March	627	282	172	1,403	2,425
31	April	650	243	180	1,436	2,447
32	May	642	235	183	1,418	2,498
33	June	653	305	191	1,431	2,533
34	July	649	287	205	1,403	2,620
35	August	649	296	205	1,406	2,634
36	September	648	306	199	1,435	2,704
37	October	663	304	197	1,443	2,622
38	November	669	337	192	1,460	2,600
39	December	648	339	193	1,430	2,477
	Women 16 years and over—					
40	January	511	960	62	1,301	947
41	February	458	1,008	60	1,309	1,003
42	March	446	998	60	1,528	1,101
43	April	433	833	58	1,507	1,070
44	May	447	789	58	1,381	1,024
45	June	483	895	56	1,384	956
46	July	502	892	48	1,298	1,024
47	August	503	918	51	1,160	1,039
48	September	511	937	47	1,108	1,088
49	October	538	951	50	1,100	1,102
50	November	550	1,005	54	1,169	1,042
51	December	510	974	56	1,151	1,000
	Children under 16 years—					
52	January	126	94	.....	160	21
53	February	112	108	.....	165	22
54	March	106	117	.....	195	22
55	April	107	92	.....	193	25
56	May	112	107	.....	175	23
57	June	131	103	.....	178	24
58	July	137	113	.....	168	24
59	August	135	115	.....	144	22
60	September	126	126	.....	136	25
61	October	130	126	.....	124	25
62	November	122	122	.....	137	24
63	December	120	121	.....	133	19
64	Miscellaneous expenses, total	$307,566	$244,283	$55,757	$1,130,004	$912,247
65	Rent of works	$23,381	$9,421	$7,845	$45,108	$92,436
66	Taxes, not including internal revenue	$6,434	$7,203	$804	$12,952	$16,154
67	Rent of offices, interest, insurance, internal revenue taxes, and all other sundry expenses not hitherto included.	$277,691	$227,659	$47,108	$1,068,370	$799,158
68	Contract work	.....	.....	.....	$3,574	$4,499
69	Materials used, aggregate cost	$713,881	$509,854	$181,524	$1,634,305	$2,491,623
70	Principal materials, total cost	$620,728	$495,060	$156,714	$1,340,373	$2,238,422
71	Purchased in raw state	$618,023	$495,060	$156,714	$1,337,919	$2,234,455
72	Purchased in partially manufactured form	$2,705	.....	.....	$2,454	$3,967
73	Fuel	$1,690	$524	$1,196	$5,508	$7,461
74	Rent of power and heat	$1,444	$1,342	$501	$6,650	$3,039
75	Mill supplies	$41	.....	.....	$240	$74
76	All other materials	$88,984	$71,702	$22,238	$278,754	$232,028
77	Freight	$985	$1,217	$875	$2,762	$10,599
78	Products, total value	$1,706,049	$1,427,803	$449,503	$4,648,003	$6,577,810

SUMMARY, BY STATES AND TERRITORIES: 1905—Continued.

Michigan.	Minnesota.	Mississippi.	Missouri.	Montana.	Nebraska.	Nevada.	New Hampshire.	New Jersey.	New Mexico.	New York.	North Carolina.	
696	349	4	544	44	157	5	45	544	7	3,475	16	1
$2,462,314	$1,461,568	$6,175	$1,035,807	$71,124	$370,172	$23,952	$202,508	$11,939,680	$22,245	$45,760,207	$4,048,017	2
$101,547	$83,010	$300	$68,969	$6,500	$31,525	.....	$3,715	$169,688	$1,000	$1,026,935	$6,300	3
$194,996	$164,168	$200	$125,075	$12,550	$44,815	.....	$12,100	$413,393	$200	$1,597,083	$16,350	4
$128,340	$56,361	$425	$37,261	$4,205	$16,746	$200	$5,031	$733,684	$720	$1,823,636	$173,631	5
$2,037,431	$1,158,029	$5,250	$804,502	$47,869	$277,086	$23,752	$181,662	$10,622,915	$20,325	$41,311,653	$3,851,736	6
782	390	5	606	46	176	5	53	562	10	3,843	18	7
282	115	1	87	1	16	1	3	234	.....	1,973	65	8
$231,448	$119,626	$225	$72,091	$1,200	$15,216	$180	$1,809	$231,184	.....	$1,888,359	$58,009	9
40	12	.....	22	.....	1	.....	.....	16	.....	98	5	10
$54,866	$17,750	.....	$22,677	.....	$1,200	.....	.....	$39,071	.....	$294,267	$6,724	11
242	103	1	65	1	15	1	3	218	.....	1,875	60	12
$176,582	$101,876	$225	$40,414	$1,200	$14,016	$180	$1,809	$192,113	.....	$1,594,092	$52,185	13
198	78	1	60	1	13	1	3	191	.....	1,586	55	14
$164,011	$91,050	$225	$47,722	$1,200	$13,300	$180	$1,809	$178,946	.....	$1,459,912	$49,755	15
44	25	.....	5	.....	2	.....	.....	27	.....	289	5	16
$12,571	$10,826	.....	$1,692	.....	$716	.....	.....	$13,167	.....	$134,180	$2,430	17
6,639	2,145	18	2,024	122	616	23	396	7,062	29	38,102	1,100	18
4,667	1,549	16	1,497	89	475	10	292	5,076	14	27,665	895	19
5,491	1,779	6	1,685	95	516	13	342	6,073	18	32,989	970	20
$2,160,501	$836,968	$2,648	$871,447	$66,017	$237,531	$11,760	$198,235	$1,864,763	$10,703	$14,228,994	$227,201	21
2,358	1,296	4	1,368	86	396	12	282	1,745	17	17,495	285	22
$1,279,215	$694,697	$2,466	$792,998	$63,924	$197,878	$11,552	$177,822	$837,970	$10,547	$8,784,590	$87,029	23
2,690	459	2	169	1	110	.....	58	3,077	.....	15,248	530	24
$829,074	$139,081	$182	$54,084	$200	$33,640	.....	$20,049	$976,116	.....	$5,400,410	$115,993	25
443	24	.....	148	8	40	1	2	351	1	246	155	26
$52,212	$3,190	.....	$24,365	$1,893	$6,013	$208	$364	$50,677	$156	$43,994	$24,269	27
2,267	1,214	3	1,248	71	355	14	247	1,726	12	16,499	283	28
2,288	1,251	3	1,270	68	355	13	242	1,720	15	16,717	289	29
2,290	1,246	3	1,312	71	360	12	250	1,736	24	17,260	284	30
2,323	1,278	3	1,342	70	366	12	270	1,728	26	17,226	270	31
2,412	1,266	3	1,392	91	365	12	284	1,750	26	17,436	264	32
2,467	1,328	3	1,397	93	365	12	290	1,763	11	17,646	275	33
2,398	1,323	3	1,398	98	369	11	314	1,745	13	17,013	277	34
2,367	1,310	3	1,376	98	371	10	311	1,735	15	17,123	286	35
2,390	1,332	2	1,399	87	373	12	307	1,735	15	17,804	303	36
2,405	1,332	8	1,448	92	376	12	297	1,762	11	18,300	294	37
2,347	1,343	7	1,420	92	371	12	286	1,780	21	18,491	296	38
2,342	1,329	7	1,405	92	366	12	286	1,760	15	18,425	299	39
2,579	451	.....	166	1	108	.....	49	4,306	.....	14,501	517	40
2,604	448	.....	169	1	109	.....	49	4,237	.....	14,551	529	41
2,560	442	.....	163	1	109	.....	50	4,163	.....	14,947	514	42
2,540	441	.....	167	1	109	.....	54	3,411	.....	14,579	503	43
2,552	440	.....	167	1	109	.....	54	3,266	.....	14,816	499	44
2,639	448	.....	169	1	109	.....	54	3,788	.....	15,403	524	45
2,660	443	.....	172	1	110	.....	64	4,108	.....	15,326	522	46
2,679	452	.....	171	1	111	.....	64	4,081	.....	15,351	528	47
2,810	469	.....	170	1	110	.....	65	4,061	.....	15,639	550	48
2,881	485	8	175	1	112	.....	65	4,118	.....	15,946	548	49
2,869	496	8	175	1	113	.....	64	4,105	.....	15,990	562	50
2,898	493	8	164	1	111	.....	64	4,080	.....	15,927	564	51
443	22	.....	140	8	38	1	2	376	1	218	150	52
444	22	.....	143	8	39	1	2	372	1	228	156	53
430	23	.....	143	8	39	1	2	375	1	237	154	54
394	24	.....	143	8	40	1	2	308	1	229	156	55
378	25	.....	148	8	38	1	2	292	1	233	135	56
382	25	.....	149	8	39	1	2	323	1	254	152	57
470	25	.....	152	8	40	1	2	346	1	254	154	58
470	25	.....	154	8	43	1	2	358	1	265	157	59
486	25	.....	153	8	41	1	2	358	1	251	164	60
403	24	.....	148	8	42	1	2	348	1	259	160	61
482	24	.....	150	8	40	1	2	379	1	261	157	62
474	24	.....	144	8	41	1	2	377	1	263	165	63
$1,516,420	$601,720	$1,369	$421,721	$40,335	$132,415	$6,352	$71,571	$1,915,733	$4,097	$12,753,625	$445,442	64
$90,105	$43,621	$365	$04,827	$5,930	$17,089	$2,256	$5,807	$88,925	$1,540	$867,797	$8,300	65
$20,205	$7,820	$6	$6,583	$949	$3,003	$349	$651	$10,951	$06	$47,184	$5,588	66
$1,394,907	$550,279	$998	$349,891	$33,456	$111,723	$3,747	$64,888	$1,815,757	$3,061	$11,703,779	$431,455	67
$11,212	.....	.....	$420	.....	.....	.....	$225	$100	.....	$134,865	.....	68
$3,067,010	$1,097,278	$3,707	$1,072,420	$105,032	$338,183	$12,198	$261,102	$3,071,130	$12,442	$23,431,395	$1,187,570	69
$2,093,604	$919,328	$3,137	$953,507	$91,173	$288,261	$9,481	$241,512	$2,577,305	$10,591	$20,338,896	$839,792	70
$2,090,719	$916,053	$3,137	$921,997	$91,173	$287,347	$9,481	$241,512	$2,575,884	$10,591	$19,956,007	$751,094	71
$2,885	$2,375	.....	$31,000	.....	$914	.....	.....	$1,421	.....	$382,889	$88,698	72
$13,940	$7,744	$10	$3,966	$477	$3,763	$105	$477	$23,642	.....	$71,134	$930	73
$4,391	$3,791	.....	$426	$283	$894	.....	$171	$8,136	.....	$30,326	$5,116	74
$753	$100	$60	$519	.....	.....	.....	$25	$737	$75	$5,983	$2,904	75
$343,737	$158,415	$500	$100,837	$10,959	$42,172	$2,432	$18,253	$459,659	$1,455	$2,944,212	$329,431	76
$10,585	$7,900	.....	$4,084	$2,140	$3,183	$180	$664	$2,251	$321	$40,844	$9,406	77
$7,095,230	$3,200,933	$9,310	$3,047,760	$271,281	$899,867	$41,076	$569,980	$8,331,611	$36,731	$60,623,617	$2,599,248	78

TABLE 12.—CIGARS AND CIGARETTES—DETAILED

		Kentucky.	Louisiana.	Maine.	Maryland.	Massachusetts.
	Power:					
79	Number of establishments reporting	3	2	.....	3	16
80	Total horsepower	50	82	.....	163	28
	Owned—					
	Engines—					
	Steam—					
81	Number	1	1	.....	1	.....
82	Horsepower	20	50	.....	35	.....
	Gas and gasoline—					
83	Number	.....	.....	.....	1	2
84	Horsepower	.....	.....	.....	4	8
	Water motors—					
85	Number	.....	.....	.....	.....	2
86	Horsepower	.....	.....	.....	.....	2
	Electric motors—					
87	Number	.....	.....	.....	.....	.....
88	Horsepower	.....	.....	.....	.....	.....
	Rented—					
	Electric motors—					
89	Number	1	1	.....	17	12
90	Horsepower	5	7	.....	124	18
91	Other kind, horsepower	25	25	.....	.....	.....

SUMMARY, BY STATES AND TERRITORIES: 1905—Continued.

Michigan.	Minnesota.	Mississippi.	Missouri.	Montana.	Nebraska.	Nevada.	New Hampshire.	New Jersey.	New Mexico.	New York.	North Carolina.	
10	6							12		88	4	79
80	20							1,113		1,405	161	80
								7		28	2	81
								825		930	30	82
	2									13		83
	7									80		84
												85
												86
								22		2		87
								183		65		88
14	6							11		67	13	89
80	13							99		277	131	90
								6		44		91

TABLE 12.—CIGARS AND CIGARETTES—DETAILED

		North Dakota.	Ohio.	Oklahoma.	Oregon.	Pennsylvania.
1	Number of establishments	27	1,311	39	54	2,774
2	Capital, total	$34,672	$8,154,358	$48,922	$123,476	$22,082,481
3	Land	$5,100	$228,730	$13,850	$6,900	$964,762
4	Buildings	$9,050	$439,115	$7,120	$8,250	$2,240,682
5	Machinery, tools, and implements	$2,035	$351,176	$3,056	$11,948	$1,033,877
6	Cash and sundries	$18,487	$7,135,337	$24,596	$96,378	$17,843,160
7	Proprietors and firm members	30	1,471	47	65	3,096
	Salaried officials, clerks, etc.:					
8	Total number		504		5	1,324
9	Total salaries		$417,309		$3,950	$1,044,682
	Officers of corporations—					
10	Number		32		1	64
11	Salaries		$56,288		$1,000	$166,035
	General superintendents, managers, clerks, etc.—					
12	Total number		472		4	1,260
13	Total salaries		$361,021		$2,950	$878,647
	Men—					
14	Number		388		3	1,059
15	Salaries		$330,327		$2,650	$792,114
	Women—					
16	Number		84		1	201
17	Salaries		$30,694		$300	$86,533
	Wage-earners, including pieceworkers, and total wages:					
18	Greatest number employed at any one time during the year	44	12,755	85	191	35,918
19	Least number employed at any one time during the year	27	8,755	56	135	26,731
20	Average number	30	10,175	59	163	30,320
21	Total wages	$16,019	$3,541,820	$24,543	$92,242	$10,278,800
	Men 16 years and over—					
22	Average number	27	3,775	48	120	14,387
23	Wages	$15,734	$1,873,526	$22,698	$76,743	$6,095,798
	Women 16 years and over—					
24	Average number	1	5,994	3	33	14,336
25	Wages	$150	$1,609,141	$706	$13,276	$3,956,441
	Children under 16 years—					
26	Average number	2	406	8	10	1,597
27	Wages	$135	$59,153	$1,139	$2,223	$226,561
	Average number of wage-earners, including pieceworkers, employed during each month:					
	Men 16 years and over—					
28	January	20	3,646	50	120	13,643
29	February	22	3,680	50	120	13,887
30	March	23	3,678	50	122	13,960
31	April	24	3,742	45	122	14,157
32	May	22	3,742	48	121	14,176
33	June	27	3,658	47	117	14,384
34	July	26	3,762	46	117	14,323
35	August	28	3,712	45	120	14,385
36	September	30	3,822	47	124	14,660
37	October	35	3,948	46	119	14,938
38	November	34	3,935	49	119	15,177
39	December	33	3,975	53	119	14,954
	Women 16 years and over—					
40	January	1	6,066	2	25	13,844
41	February	1	6,088	3	26	13,934
42	March	1	5,710	3	26	14,002
43	April	1	5,330	3	40	13,626
44	May	1	5,494	4	40	14,799
45	June	1	5,656	4	41	14,404
46	July	1	5,956	3	41	14,664
47	August	1	6,036	3	41	14,390
48	September	1	6,240	3	41	14,592
49	October	1	6,522	3	25	14,606
50	November	1	6,506	3	25	14,737
51	December	1	6,324	2	25	14,434
	Children under 16 years—					
52	January	2	376	8	8	1,540
53	February	2	366	8	8	1,531
54	March	2	348	8	9	1,522
55	April	2	284	8	11	1,494
56	May	2	290	8	10	1,473
57	June	2	368	8	11	1,605
58	July	2	406	8	11	1,651
59	August	3	436	8	12	1,756
60	September	2	448	8	12	1,654
61	October	1	504	8	9	1,658
62	November	3	538	8	9	1,652
63	December	1	508	8	10	1,628
64	Miscellaneous expenses, total	$11,097	$2,726,413	$16,217	$51,548	$7,810,258
65	Rent of works	$1,620	$170,569	$2,343	$8,239	$329,621
66	Taxes, not including internal revenue	$423	$31,609	$456	$792	$38,618
67	Rent of offices, interest, insurance, internal revenue taxes, and all other sundry expenses not hitherto included.	$9,054	$2,505,011	$13,418	$42,517	$7,387,749
68	Contract work		$19,224			$54,270
69	Materials used, aggregate cost	$29,200	$4,753,047	$48,231	$179,173	$15,278,966
70	Principal materials, total cost	$24,622	$4,087,023	$40,149	$160,140	$12,958,908
71	Purchased in raw state	$24,622	$4,077,842	$40,149	$159,740	$12,955,416
72	Purchased in partially manufactured form		$9,181		$400	$3,492
73	Fuel	$408	$20,936	$783	$900	$66,384
74	Rent of power and heat	$72	$9,430	$35		$20,274
75	Mill supplies		$597	$60	$125	$2,157
76	All other materials	$3,761	$621,869	$6,536	$15,520	$2,162,710
77	Freight	$337	$13,192	$668	$2,488	$68,533
78	Products, total value	$76,443	$13,241,230	$116,094	$395,597	$39,079,122

[1] Includes 1 establishment in Alaska.

SUMMARY, BY STATES AND TERRITORIES: 1905—Continued.

Rhode Island.	South Carolina.	South Dakota.	Tennessee.	Texas.	Utah.	Vermont.	Virginia.	Washington.[1]	West Virginia.	Wisconsin.	Wyoming.	
38	7	47	40	83	27	23	95	103	79	757	12	1
$183,910	$699,296	$124,674	$134,267	$261,567	$106,388	$48,449	$12,480,175	$191,806	$541,970	$2,072,889	$27,796	2
$11,884	.....	$14,350	$9,750	$21,025	$1,300	$800	$52,690	$19,625	$49,700	$137,745	$400	3
$28,950	.....	$8,225	$22,400	$54,860	$1,800	$3,000	$502,374	$24,960	$85,375	$332,650	$1,500	4
$6,439	$90,663	$7,704	$4,724	$12,286	$3,845	$2,343	$846,068	$9,435	$13,900	$77,652	$1,545	5
$136,637	$608,633	$94,395	$97,393	$173,396	$99,443	$42,306	$11,078,143	$137,786	$392,995	$1,474,842	$24,351	6
43	5	55	46	96	33	26	104	115	81	840	14	7
4	25	5	11	10	9	3	171	4	31	131	1	8
$5,616	$22,874	$4,620	$9,196	$15,554	$6,925	$2,652	$140,657	$3,900	$26,186	$107,625	$400	9
2	1	.....	.....	.....	.....	.....	13	.....	5	9	.....	10
$3,650	$1,215	.....	.....	.....	.....	.....	$19,974	.....	$5,920	$11,200	.....	11
2	24	5	11	10	9	3	158	4	26	122	1	12
$1,966	$21,659	$4,620	$9,196	$15,554	$6,925	$2,652	$120,683	$3,900	$20,266	$96,425	$400	13
2	18	5	10	10	9	3	144	4	23	108	1	14
$1,966	$19,910	$4,620	$8,776	$15,554	$6,925	$2,652	$113,888	$3,900	$18,969	$91,162	$400	15
.....	6	.....	1	.....	.....	.....	14	.....	3	14	.....	16
.....	$1,749	.....	$420	.....	.....	.....	$6,795	.....	$1,297	$5,203	.....	17
248	515	205	261	440	190	94	5,224	326	1,311	2,970	34	18
174	382	152	197	314	125	66	3,419	234	1,070	2,300	22	19
217	446	167	234	336	140	77	4,043	258	1,194	2,505	27	20
$128,817	$74,113	$86,036	$127,546	$155,398	$108,533	$39,715	$984,233	$176,725	$580,541	$1,086,203	$15,534	21
158	39	143	200	228	116	72	1,080	231	722	1,867	22	22
$107,836	$9,199	$81,614	$120,039	$131,807	$102,528	$38,170	$348,458	$167,475	$482,937	$949,550	$14,335	23
58	358	15	13	90	13	3	2,688	26	340	467	2	24
$20,825	$58,797	$3,585	$4,694	$20,975	$3,514	$805	$588,815	$8,990	$82,106	$113,554	$780	25
1	49	9	21	18	11	2	275	1	132	171	3	26
$156	$6,117	$1,737	$2,813	$2,616	$2,491	$740	$46,960	$200	$15,498	$23,099	$419	27
142	38	132	212	226	119	61	1,196	228	700	1,790	17	28
143	45	130	211	227	109	63	1,132	223	713	1,808	18	29
147	37	135	204	227	108	64	1,212	221	709	1,852	19	30
152	37	137	198	221	112	69	1,055	220	717	1,893	23	31
154	35	143	193	222	114	71	1,004	221	724	1,915	25	32
157	39	137	184	212	118	77	1,045	225	719	1,934	23	33
171	38	157	191	219	118	74	1,051	223	713	1,881	23	34
173	38	151	182	227	119	76	1,011	232	710	1,887	22	35
173	39	144	187	230	115	79	1,007	233	745	1,875	24	36
160	41	152	198	229	123	81	1,106	247	749	1,883	24	37
165	40	150	213	241	118	75	1,075	249	742	1,840	23	38
153	41	148	227	255	119	74	1,066	250	723	1,846	23	39
55	399	12	13	100	14	3	2,998	26	337	450	2	40
55	393	13	13	99	14	3	3,069	26	353	454	2	41
57	356	14	12	88	14	3	3,147	26	339	468	2	42
56	330	14	14	86	12	3	2,772	27	350	460	2	43
51	337	14	13	80	12	3	2,652	25	343	460	2	44
53	314	16	12	82	10	3	2,706	25	332	452	2	45
60	399	15	11	89	11	3	2,493	26	336	476	2	46
62	410	16	12	79	12	3	2,437	25	320	468	2	47
61	356	16	13	73	12	3	2,488	27	345	476	2	48
62	371	17	14	90	15	3	2,552	27	342	476	2	49
64	305	17	14	101	15	3	2,516	27	336	484	2	50
60	326	16	15	107	15	3	2,426	25	338	480	2	51
1	51	10	21	19	9	2	274	1	125	155	3	52
1	51	8	23	18	9	2	286	1	126	163	3	53
1	52	9	22	18	11	2	287	1	123	161	2	54
1	51	9	20	18	11	2	284	1	134	170	3	55
1	50	7	20	18	9	2	272	1	134	163	3	56
1	52	7	20	17	11	2	271	1	135	169	3	57
1	49	10	20	19	12	2	276	1	136	181	4	58
1	50	9	21	20	14	2	292	1	136	176	3	59
1	48	11	21	20	11	2	267	1	160	175	4	60
1	47	9	21	16	12	2	274	1	145	178	2	61
1	43	10	21	16	11	2	273	1	123	180	3	62
1	44	9	22	17	12	2	274	1	107	181	3	63
$50,246	$64,806	$48,933	$63,439	$76,020	$32,506	$19,679	$2,323,487	$82,353	$382,806	$695,448	$6,096	64
$2,906	$3,570	$6,954	$5,380	$7,598	$4,021	$5,189	$12,520	$12,098	$12,769	$50,178	$1,099	65
$2,978	$525	$718	$726	$1,667	$502	$376	$10,552	$1,702	$3,359	$11,543	$113	66
$44,362	$60,771	$41,056	$57,095	$67,613	$27,083	$14,114	$2,300,415	$68,403	$366,678	$632,937	$4,884	67
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	$790	.....	68
.....	.....	$205	$238	$51	.....	.....	.....	.....	$405,424	$1,617,341	$14,664	69
$135,019	$108,289	$127,336	$134,622	$196,365	$110,722	$45,591	$1,977,069	$228,730	$190,803	$344,555	$1,387,207	$12,134	70
$120,507	$85,742	$112,073	$118,648	$165,811	$96,839	$39,093	$1,605,558	$190,543	$344,555	$1,385,914	$12,134	71
$112,479	$85,742	$111,353	$118,648	$165,811	$96,839	$39,093	$44,899	$350	.....	$1,353	.....	72
$8,118	.....	$720	.....	.....	.....	.....	$10,422	$1,684	$1,202	$13,910	.....	73
$906	$30	$683	$650	$373	$155	$687	$1,078	.....	$740	$3,388	.....	74
$35	$1,156	$136	$80	$2	$90	$50	$2,200	$30	$88	.....	.....	75
$15	$5	.....	.....	$28	.....	.....	$310,282	$29,568	$31,064	$202,814	$2,374	76
$13,379	$21,346	$13,253	$14,252	$26,808	$11,733	$5,463	$1,670	$6,555	$27,085	$9,962	$156	77
$297	$10	$1,191	$992	$3,343	$1,905	$298	$6,105,936	$610,078	$1,505,429	$4,372,139	$49,105	78
$358,124	$257,078	$327,817	$404,241	$519,931	$297,918	$127,492						

TABLE 12.—CIGARS AND CIGARETTES—DETAILED

		North Dakota.	Ohio.	Oklahoma.	Oregon.	Pennsylvania.
	Power:					
79	Number of establishments reporting		38		1	82
80	Total horsepower		535		3	1,327
	Owned—					
	Engines—					
	Steam—					
81	Number		5			32
82	Horsepower		145			702
	Gas and gasoline—					
83	Number		13		1	15
84	Horsepower		112		3	146
	Water motors—					
85	Number					1
86	Horsepower					1
	Electric motors—					
87	Number		3			15
88	Horsepower		125			97
	Rented—					
	Electric motors—					
89	Number		25			62
90	Horsepower		128			279
91	Other kind, horsepower		25			12

SUMMARY, BY STATES AND TERRITORIES: 1905—Continued.

Rhode Island.	South Carolina.	South Dakota.	Tennessee.	Texas.	Utah.	Vermont.	Virginia.	Washington.	West Virginia.	Wisconsin.	Wyoming.	
2	2						9		3	5		79
3	44						1,380		55	18		80
1							11		1			81
2							1,032		20			82
									1	2		83
									25	5		84
												85
												86
							30					87
							320					88
1	6						4			3		89
1	44						28			13		90
									10			91

TABLE 13.—CHEWING AND SMOKING TOBACCO AND SNUFF—

		United States.	Arizona.	Illinois.	Indiana.	Iowa.	Kentucky.	Michigan.
1	Number of establishments	433	3	37	16	4	54	10
2	Capital, total	$178,847,556	$4,025	$3,945,235	$118,065	$108,841	$21,268,822	$1,684,501
3	Land	$2,040,974	.....	$70,777	$1,653	$5,200	$178,500	$69,052
4	Buildings	$7,871,103	.....	$87,914	$3,737	$16,800	$877,218	$209,068
5	Machinery, tools, and implements	$6,255,770	$725	$185,450	$6,260	$5,339	$925,779	$187,414
6	Cash and sundries	$162,679,709	$3,300	$3,601,094	$106,415	$81,502	$19,287,325	$1,218,967
7	Proprietors and firm members	426	3	39	13	7	50	4
	Salaried officials, clerks, etc.:							
8	Total number	2,107	.....	38	24	19	222	123
9	Total salaries	$2,456,752	.....	$52,637	$21,188	$8,628	$300,357	$143,568
	Officers of corporations—							
10	Number	189	.....	6	6	.....	24	16
11	Salaries	$530,555	.....	$19,767	$7,600	.....	$77,630	$45,640
	General superintendents, managers, clerks, etc.—							
12	Total number	1,918	.....	32	18	19	198	107
13	Total salaries	$1,926,197	.....	$32,870	$13,588	$8,628	$222,727	$97,928
	Men—							
14	Number	1,745	.....	27	11	19	170	102
15	Salaries	$1,852,946	.....	$30,144	$11,516	$8,628	$208,602	$96,138
	Women—							
16	Number	173	.....	5	7	.....	28	5
17	Salaries	$73,251	.....	$2,726	$2,072	.....	$14,125	$1,790
	Wage-earners, including pieceworkers, and total wages:							
18	Greatest number employed at any one time during the year	29,494	2	873	172	38	3,427	1,126
19	Least number employed at any one time during th year	19,187	2	698	128	25	2,288	791
20	Average number	23,990	2	796	147	32	2,711	937
21	Total wages	$6,775,325	$1,032	$275,310	$51,654	$8,449	$760,063	$306,615
	Men 16 years and over—							
22	Average number	12,721	2	240	74	9	1,748	292
23	Wages	$4,212,639	$1,032	$128,667	$38,383	$3,967	$575,210	$138,824
	Women 16 years and over—							
24	Average number	9,127	.....	549	59	23	725	620
25	Wages	$2,241,081	.....	$145,426	$10,917	$4,482	$156,247	$163,041
	Children under 16 years—							
26	Average number	2,142	.....	7	14	.....	238	25
27	Wages	$321,605	.....	$1,217	$2,354	.....	$28,606	$4,750
	Average number of wage-earners, including pieceworkers, employed during each month:							
	Men 16 years and over—							
28	January	11,450	2	226	79	8	1,366	289
29	February	12,312	2	224	77	8	1,838	285
30	March	12,776	2	223	76	8	1,886	291
31	April	12,749	2	249	77	8	1,774	300
32	May	13,042	2	249	75	8	1,789	319
33	June	13,217	2	255	65	9	1,810	347
34	July	12,606	2	250	65	9	1,703	268
35	August	12,753	2	238	67	10	1,749	283
36	September	13,179	2	237	77	10	1,817	284
37	October	12,943	2	236	77	10	1,800	281
38	November	13,070	2	248	78	10	1,798	276
39	December	12,555	2	245	75	10	1,646	281
	Women 16 years and over—							
40	January	8,184	.....	511	59	20	617	635
41	February	8,786	.....	498	59	21	728	626
42	March	9,128	.....	478	58	21	711	637
43	April	9,289	.....	548	64	24	720	646
44	May	9,505	.....	581	59	21	758	676
45	June	9,671	.....	583	55	24	765	706
46	July	9,003	.....	570	52	22	727	558
47	August	9,184	.....	543	56	23	751	576
48	September	9,441	.....	556	65	25	772	587
49	October	9,069	.....	560	61	26	735	591
50	November	9,242	.....	586	60	27	746	587
51	December	9,022	.....	574	60	22	670	615
	Children under 16 years—							
52	January	1,825	.....	7	19	.....	195	27
53	February	2,007	.....	6	19	.....	204	26
54	March	2,118	.....	8	14	.....	238	27
55	April	2,180	.....	7	14	.....	231	28
56	May	2,309	.....	8	14	.....	253	27
57	June	2,410	.....	6	9	.....	271	27
58	July	2,247	.....	7	9	.....	259	21
59	August	2,208	.....	7	9	.....	273	22
60	September	2,215	.....	7	14	.....	267	24
61	October	2,090	.....	8	14	.....	229	23
62	November	2,098	.....	7	14	.....	233	23
63	December	1,997	.....	6	19	.....	203	25
64	Miscellaneous expenses, total	$38,553,794	$2,170	$1,853,588	$95,466	$43,385	$4,637,741	$1,328,739
65	Rent of works	$157,182	$300	$24,606	$1,321	$234	$8,766	$11,350
66	Taxes, not including internal revenue	$281,961	.....	$7,225	$350	$486	$18,111	$14,818
67	Rent of offices, interest, insurance, internal revenue taxes, and all other sundry expenses not hitherto included.	$38,083,259	$1,645	$1,821,757	$93,795	$42,665	$4,605,481	$1,302,571
68	Contract work	$31,392	$225	.....	.....	.....	$5,383	.....
69	Materials used, aggregate cost	$44,954,047	$2,862	$1,885,172	$83,125	$80,082	$5,200,595	$1,780,476
70	Principal materials, total cost	$37,743,969	$1,905	$1,465,059	$80,992	$76,984	$4,478,753	$1,276,239
71	Purchased in raw state	$31,347,252	$1,905	$1,145,887	$68,127	$58,712	$3,641,189	$769,825
72	Purchased in partially manufactured form	$6,396,717	.....	$319,172	$12,865	$18,272	$837,564	$506,414
73	Fuel	$444,243	.....	$14,758	$567	$610	$53,955	$16,635
74	Rent of power and heat	$26,144	.....	$8,258	$161	$10	$187	$357
75	Mill supplies	$37,937	.....	$1,754	$99	$23	$5,416	$1,630
76	All other materials	$6,509,133	$817	$394,709	$648	$552	$648,301	$399,574
77	Freight	$192,621	$140	$634	$658	$1,903	$13,983	$86,041
78	Products, total value	$116,767,630	$8,200	$4,392,352	$267,543	$171,502	$13,117,000	$3,868,729

[1] Includes establishments distributed as follows: California, 2; Colorado, 2; Delaware, 1; Florida, 1; Georgia, 1; Kansas, 2; Louisiana, 3; Maryland, 5; Massachusetts, 1; Nebraska, 1; West Virginia, 3.

DETAILED SUMMARY, BY STATES AND TERRITORIES: 1905.

Minnesota.	Missouri.	New Jersey.	New York.	North Carolina.	Ohio.	Pennsylvania.	Tennessee.	Texas.	Virginia.	Wisconsin.	All other states.[1]	
3	17	10	68	39	18	34	37	3	48	10	22	1
$7,091	$51,784,817	$8,582,781	$8,034,743	$32,028,980	$7,492,386	$1,288,800	$5,659,448	$23,105	$10,997,474	$1,080,367	$24,738,075	2
$500	$389,151	$127,361	$173,379	$309,750	$49,643	$180,550	$44,811	$5,000	$129,029	$650	$305,968	3
$1,100	$2,271,453	$287,025	$293,554	$1,470,005	$325,268	$368,201	$204,766	$8,000	$400,773	$1,000	$1,045,221	4
$200	$913,641	$215,241	$214,811	$1,121,208	$274,009	$159,652	$156,662	$2,750	$937,811	$107,420	$841,398	5
$5,291	$48,210,572	$7,953,154	$7,352,999	$29,128,017	$6,843,466	$580,397	$5,253,209	$7,355	$9,529,861	$971,297	$22,545,488	6
3	11	8	69	54	12	43	39	4	41	9	17	7
.....	220	44	93	469	118	54	85	.....	350	78	170	8
.....	$322,491	$50,062	$84,818	$525,888	$115,649	$72,156	$83,873	.....	$378,598	$93,596	$203,243	9
.....	11	5	10	14	18	2	18	.....	38	10	11	10
.....	$53,000	$11,700	$14,969	$63,996	$32,918	$4,200	$29,747	.....	$99,140	$31,892	$38,356	11
.....	209	39	83	455	100	52	67	.....	312	68	159	12
.....	$269,491	$38,362	$69,849	$461,892	$82,731	$67,956	$54,126	.....	$279,458	$61,704	$164,887	13
.....	201	38	76	417	82	45	61	.....	289	65	142	14
.....	$264,526	$38,102	$65,702	$449,740	$77,900	$63,056	$51,951	.....	$269,624	$59,364	$157,953	15
.....	8	1	7	38	18	7	6	.....	23	3	17	16
.....	$4,965	$260	$4,147	$12,152	$4,831	$4,900	$2,175	.....	$9,834	$2,340	$6,934	17
2	4,111	466	1,098	7,879	1,211	464	997	11	5,246	338	2,033	18
2	3,250	400	843	4,415	601	414	675	11	2,968	252	1,424	19
1	3,574	435	957	6,323	1,000	428	654	11	3,888	305	1,789	20
$485	$1,434,021	$176,366	$317,513	$1,230,088	$370,596	$159,198	$159,884	$3,125	$845,006	$109,545	$566,375	21
1	1,915	297	394	3,416	494	125	369	4	2,302	161	878	22
$485	$818,330	$137,978	$175,716	$816,980	$191,833	$76,166	$109,216	$1,600	$587,895	$76,252	$334,105	23
.....	1,446	128	561	1,773	505	286	244	6	1,212	133	857	24
.....	$534,921	$36,038	$141,355	$272,712	$178,555	$79,912	$46,438	$1,350	$214,947	$30,592	$224,148	25
.....	213	10	2	1,134	1	17	41	1	374	11	54	26
.....	$80,770	$2,350	$442	$140,396	$208	$3,120	$4,230	$175	$42,164	$2,701	$8,122	27
1	1,908	289	377	2,936	346	120	376	4	2,171	154	798	28
1	1,902	308	382	3,362	336	120	388	4	2,101	150	824	29
1	1,925	307	398	3,480	507	120	387	4	2,142	160	859	30
.....	1,920	308	385	3,462	453	120	382	4	2,289	164	852	31
.....	1,935	290	404	3,567	458	118	382	4	2,427	168	847	32
.....	1,934	289	408	3,615	508	120	366	4	2,481	166	838	33
1	1,874	283	393	3,471	533	127	387	4	2,236	166	834	34
1	1,918	278	396	3,403	532	127	376	4	2,304	160	905	35
1	1,914	290	402	3,361	619	135	352	4	2,548	162	964	36
2	1,981	304	395	3,424	495	132	313	4	2,393	157	937	37
2	1,983	319	404	3,445	550	131	374	4	2,335	163	948	38
2	1,786	299	384	3,466	591	130	345	4	2,197	162	930	39
.....	1,327	126	534	1,465	382	286	254	6	1,035	124	803	40
.....	1,316	123	539	1,780	388	290	271	6	1,155	129	857	41
.....	1,463	125	543	1,846	464	289	265	6	1,180	143	899	42
.....	1,485	126	548	1,843	476	289	238	6	1,249	139	888	43
.....	1,515	126	544	1,915	476	289	247	6	1,265	143	884	44
.....	1,522	128	557	1,953	500	291	240	6	1,332	146	863	45
.....	1,398	122	545	1,870	525	293	234	6	1,122	143	816	46
.....	1,476	126	607	1,714	522	240	272	6	1,263	139	870	47
.....	1,497	128	590	1,755	606	290	259	6	1,315	128	862	48
.....	1,454	140	591	1,675	535	290	188	6	1,242	125	850	49
.....	1,548	132	578	1,729	568	290	238	6	1,169	121	857	50
.....	1,351	134	556	1,731	618	295	222	6	1,217	116	835	51
.....	202	6	1	927	1	17	40	1	322	13	47	52
.....	201	7	1	1,094	1	17	40	1	328	12	50	53
.....	211	8	1	1,150	1	17	45	1	335	11	51	54
.....	221	12	1	1,169	1	17	40	1	374	11	53	55
.....	228	11	1	1,237	1	17	44	1	403	11	53	56
.....	216	11	1	1,266	1	17	49	1	467	11	57	57
.....	215	12	3	1,204	1	17	59	1	374	11	54	58
.....	215	11	3	1,154	1	17	46	1	384	12	53	59
.....	216	11	3	1,139	1	17	32	1	421	11	51	60
.....	213	11	3	1,096	1	17	30	1	376	10	58	61
.....	215	10	3	1,108	1	17	37	1	359	10	60	62
.....	203	10	3	1,064	1	17	30	1	345	9	61	63
$800	$7,961,304	$930,491	$1,642,599	$9,174,247	$2,381,568	$511,620	$781,349	$6,009	$3,186,481	$843,120	$3,173,117	64
$150	$4,648	$5,130	$33,576	$1,782	$11,915	$4,759	$4,252	$72	$23,194	$16,630	$4,497	65
$24	$67,035	$6,966	$9,179	$62,590	$21,852	$7,390	$5,786	$250	$30,323	$3,076	$26,500	66
$626	$7,889,621	$918,395	$1,599,784	$9,088,950	$2,347,801	$494,847	$771,136	$5,687	$3,132,964	$823,414	$3,142,120	67
.....	.....	.....	$60	$20,925	.....	$4,624	$175	.....	.....	.....	.....	68
$1,044	$10,889,403	$737,323	$1,808,923	$8,961,772	$2,746,892	$657,906	$801,364	$14,361	$4,686,516	$568,907	$4,047,324	69
$777	$9,792,859	$439,831	$1,383,140	$7,505,608	$2,512,456	$610,747	$605,159	$12,863	$3,839,502	$502,890	$3,158,205	70
$777	$8,113,053	$368,344	$1,203,767	$6,367,009	$2,024,671	$519,209	$552,248	$12,863	$3,374,968	$485,272	$2,639,426	71
.....	$1,679,806	$71,487	$179,373	$1,138,599	$487,785	$91,538	$52,911	.....	$464,534	$17,618	$518,779	72
.....	$88,405	$13,795	$12,097	$85,483	$18,615	$4,728	$17,109	.....	$57,922	$7,527	$52,037	73
.....	.....	$44	$7,386	$1,076	$4,197	$903	$105	$50	$532	$1,886	$992	74
.....	$2,845	$1,612	$1,243	$7,203	$768	$1,685	$1,062	.....	$4,787	$2,707	$5,103	75
$267	$1,003,663	$279,567	$396,913	$1,358,886	$176,230	$23,239	$167,425	$1,448	$773,413	$53,850	$829,131	76
.....	$1,631	$2,474	$8,144	$3,516	$34,626	$16,604	$10,004	.....	$10,360	$47	$1,856	77
$4,421	$27,836,422	$2,656,798	$4,973,314	$25,488,721	$7,247,292	$1,818,214	$2,355,514	$29,722	$10,662,268	$1,973,775	$9,895,843	78

TABLE 13.—CHEWING AND SMOKING TOBACCO AND SNUFF—

		United States.	Arizona.	Illinois.	Indiana.	Iowa.	Kentucky.	Michigan.
	Power:							
79	Number of establishments reporting	229	.....	17	4	2	28	9
80	Total horsepower	22,316	.....	710	46	27	3,086	1,357
	Owned—							
	Engines—							
	Steam—							
81	Number	251	.....	10	3	1	34	12
82	Horsepower	16,068	.....	314	34	25	2,810	1,030
	Gas and gasoline—							
83	Number	14	.....	5	.....	.....	.....	2
84	Horsepower	182	.....	86	.....	.....	.....	37
	Water wheels—							
85	Number	9	.....	.....	.....	.....	.....	.....
86	Horsepower	244	.....	.....	.....	.....	.....	.....
	Water motors—							
87	Number	1	.....	.....	.....	.....	.....	.....
88	Horsepower	10	.....	.....	.....	.....	.....	.....
	Electric motors—							
89	Number	347	.....	25	.....	.....	20	33
90	Horsepower	3,781	.....	244	.....	.....	261	281
91	Other power, horsepower	1,258	.....	3	.....	.....	.....	.....
	Rented—							
	Electric motors—							
92	Number	72	.....	11	1	1	1	5
93	Horsepower	553	.....	58	12	2	15	9
94	Other kind, horsepower	220	.....	5	.....	.....	.....	.....
95	Furnished to other establishments, horsepower	319	.....	10	.....	.....	.....	.....

DETAILED SUMMARY, BY STATES AND TERRITORIES: 1905—Continued.

Minnesota.	Missouri.	New Jersey.	New York.	North Carolina.	Ohio.	Pennsylvania.	Tennessee.	Texas.	Virginia.	Wisconsin.	All other states.	
	8	6	23	26	12	13	21	1	38	6	15	79
	4,929	869	373	2,672	607	725	1,060	7	2,387	447	3,014	80
	16	13	12	37	9	5	27		44	4	24	81
	2,415	822	281	1,793	441	350	1,040		2,284	383	2,046	82
			1			2			3		1	83
			6			6			27		20	84
		2	1								6	85
		44	20								180	86
				1								87
				10								88
	115	2		65	1	43	1		3	1	38	89
	1,259	2		816	6	241	20		62	8	581	90
	1,255											91
		1	10	3	7	7		1	3	5	16	92
		1	61	53	50	28		7	14	56	187	93
			5		110	100						94
				163	6						140	95