Issued November 9, 1912.

U. S. DEPARTMENT OF AGRICULTURE,
BUREAU OF STATISTICS—BULLETIN 94.
VICTOR H. OLMSTED, Chief of Bureau.

SUPPLY OF FARM LABOR.

BY

GEORGE K. HOLMES,
Chief of Division of Production and Distribution.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1912.

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LETTER OF TRANSMITTAL.

U. S. Department of Agriculture,
Bureau of Statistics,
Washington, D. C., June 30, 1912.

Sir: I have the honor to transmit herewith the results of an examination of the farm labor situation in respect to the supply of such labor, presented with a large collection of information bearing on this subject. This is the first comprehensive treatment of farm labor in the aspect of supply that has been published, and is a survey of the situation that should be illuminating to the public.

It is respectfully recommended that this report be published as Bulletin 94 of this bureau.

Very respectfully,

Victor H. Olmsted,
Chief of Bureau.

Hon. James Wilson,
Secretary of Agriculture.

Additional copies of this publication may be procured from the Superintendent of Documents, Government Printing Office, Washington, D. C., at 10 cents per copy

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Farm labor in this country has presented the problem of a diminishing supply relative to population since the days of original settlement. It is the old familiar feature of the industrial nations of the world. Until recent years, the problem was almost entirely confined to the quantity of the supply, but, during the last decade or two it has assumed a new phase in which not only the amount of the supply relatively has almost critically declined, but the quality has almost absolutely declined, or has failed in an important degree to keep pace with the need for labor, more skill, and more intelligence.

The United States is in the class of industrial nations whose agriculture is still relatively important. To this class belong France, Germany, the Netherlands, and Switzerland. From the census statistics of this and many other countries it is not possible to determine directly and fully the fraction of the entire population that is agricultural. The nonworking members of agricultural families are not included in the count.

The census enumerators of the various countries report the number of persons employed in the adopted classifications of occupations with varying restrictions or liberality in admitting the persons to occupational enrollment. In consequence of differences of practice in census-taking countries the number of persons recorded as being engaged in agriculture constitute percentages of the entire populations of the various countries, which are not fairly comparable because of the varying elements of qualification to admission to the occupational list. If, however, the entire population be excluded from consideration and attention be restricted to the occupational list, the persons reported engaged in agriculture may be represented as a percentage of all persons having occupations with a considerable degree of comparability among the various countries.

Table 1 has been prepared to exhibit the percentage of persons in all occupations who are engaged in agriculture, forest work, and

fishing, in various countries for which census statistics are available, and for as many censuses as possible for each country. A rough comparison of countries may be permissible in this table, but a more trustworthy comparison is justified in the case of each country in its series of censuses. From the earliest to the latest census there is a trend in the percentage of the number of persons of all occupations who are engaged in agriculture, forest work, and fishing, and this trend, with hardly an exception, is toward smaller percentages.

In the United States in 1870 47.8 per cent of all persons having gainful occupations were employed in agriculture, forest work, and fishing; in 1880 the percentage had declined to 44.6; in 1890 to 37.9, and in 1900 to 35.9. These percentages are probably a little too low, especially the earlier ones, for the reason that enumerators have often reported agricultural laborers merely as laborers and thus prevented their inclusion in the agricultural occupations.

The persons in Germany included in these three general classes of occupations in 1882 were 43.4 per cent of the total number of persons in all occupations; the percentage had fallen to 37.5 in 1895, and by 1907 it dropped to 35.2 per cent. For France the figures are 44 per cent for 1891; 44.3 per cent for 1896, and 41.8 per cent for 1901, the decline being slightly arrested in the second year mentioned. A decrease in the percentage is observable also for the Netherlands; from 1889 to 1899 the fraction of these three groups of occupations fell from 32.7 per cent to 30.7 per cent.

Much smaller percentages and also declining ones are found in the United Kingdom, except in Ireland. In England and Wales, in 1881, the persons counted as belonging to these three groups of occupations were only 12.4 per cent of the number of persons in all occupations; the percentage fell to 10.4 in 1891, and to 8 in 1901. These are percentages for a country where industrialism has overshadowed agriculture in a greater degree than in any other country.

Details for the various countries may be observed in Table 1. The relative decline of agriculture, forest work, and fisheries, as occupational elements, is observable in all of these countries except in Ireland and Italy, and possibly in the case of Italy the increase of percentage is due to a change of definition and census practice.

In the rough comparison that may be made among the countries, it appears that in the latest year given the percentage standing for these three groups of occupations was 35.9 per cent for the United States; for Germany it was 35.2 per cent; for France, 41.8 per cent; for the Netherlands, 30.7 per cent; for Switzerland, 31.2 per cent. Among the higher percentages are 60.9 per cent for Austria, 69.7 per cent for Hungary, 67.2 per cent for the Indian Empire, 59.4 per cent for Italy, 49.8 per cent for Sweden.

EVENTUAL EQUILIBRIUM.

The agricultural element in populations has declined, and still the people are provided with food and raiment. Some of the countries have food and fiber to sell and other countries need to buy; but, it is logical that the relative decline of the agricultural element must eventually reach a point at which it is at equilibrium with industrialism. Increasing production per acre and increasing efficiency of human labor, promoted largely by implements and machinery, permit a reduction of the agricultural element in the population relatively to a lower point than could be reached and sustained by a crude agriculture.

TABLE 1.—*Total of agriculture, forest work, and fisheries as an element of all occupations, in specified countries.*

[Census of British Empire for 1901 for Australia, Indian Empire, New Zealand, United Kingdom, England and Wales, Scotland, and Ireland for 1901. Census of England and Wales for England and Wales for 1881 and 1891. Census of Scotland for Scotland for 1881 and 1891. Census of Ireland for Ireland for 1881 and 1891. Bureau of the Census for the United States. Statistisches Jahrbuch für das Deutche Reich for all other countries mentioned.]

Country and year.	Percentage of persons in all occupations engaged in agriculture, forest work, and fishing.	Country and year.	Percentage of persons in all occupations engaged in agriculture, forest work, and fishing.
Australia:		Sweden:	
1901	25.5	1890	54.0
Austria:		1900	49.8
1890	64.4	Switzerland:	
1900	60.9	1888	37.4
Belgium:		1900	31.2
1890	22.9	United Kingdom:	
1900	21.1	1881	17.5
France:		1891	15.0
1891	44.0	1901	12.4
1896	44.3	England and Wales—	
1901	41.8	1881	12.4
Germany:		1891	10.4
1882	43.4	1901	8.0
1895	37.5	Scotland—	
1907	35.2	1881	16.8
Hungary:		1891	14.0
1890	71.0	1901	12.0
1900	69.7	Ireland—	
Indian Empire:		1881	41.8
1901	67.2	1891	43.7
Italy:		1901	44.6
1881	56.7	United States:	
1901	59.4	1870	47.8
Netherlands:		1880	44.6
1889	32.7	1890	37.9
1899	30.7	1900	35.9
New Zealand:			
1901	28.0		
Norway:			
1891	49.6		
1900	41.0		

THE UNITED STATES.

It was necessary to combine with agricultural occupations those devoted to forest work and fishing for the United States, for the purposes of Table 1, because these three groups of occupations were

combined for other countries. It is not necessary, however, to do this for the United States considered alone, and hereafter in the consideration of this topic the agricultural occupations will stand by themselves. In the census publications the total for agricultural occupations includes lumbermen and raftsmen, woodchoppers and turpentine farmers. These occupations are excluded from the totals for agriculture as hereafter used in this bulletin. In this country only the persons who work in gainful occupations have been counted as having occupations, and in recent years persons less than 10 years old have been excluded; the age limit varied in former years.

AGRICULTURE AS A PERCENTAGE.

Table 2 has been prepared from census reports to exhibit the number and percentage of persons 10 years old and over employed in all gainful occupations and in agriculture with totals for all races, for negroes, and for the sexes.

It appears in this table that 83.1 per cent of all persons reported as having gainful occupations were employed in agriculture in 1820. The fraction declined to 77.5 per cent in 1840, to 47.3 per cent in 1870, to 44.1 per cent in 1880, to 37.2 per cent in 1890, and to 35.3 per cent in 1900, or about one-third of the persons having gainful occupations. During the 80 years from 1820 to 1900, the agricultural fraction declined from 83.1 to 35.3 per cent, and thus suffered a loss of 47.8 per cent.

NUMBER OF PERSONS IN AGRICULTURAL OCCUPATIONS.

While the percentage has declined, the absolute number of persons 10 years of age and over engaged in agriculture has increased to a large figure. The number was 2,068,958 in 1820 and was about five times as large in 1900, or 10,249,651 persons. The census indicates the general rule that one person employed in 1900 supports 2.6 persons, including himself. If this rule is applicable to the agricultural occupations, then it may be computed that the agricultural population of this country in 1910 was about 35,000,000.

AGRICULTURAL LABORERS.

Agricultural laborers are persons who work on farms for hire and supply most of the manual labor of the farm that is not supplied by the farmer and members of his family who do not receive wages.

It was reported in 1870 that the number of agricultural laborers was 2,885,996, and in 1900 that it was 4,410,877, an increase of over 50 per cent.

It may be observed in Table 2 to what extent the fraction of all persons employed in agriculture who worked for hire has changed.

The fraction for 1870 was 48.7 per cent, or nearly one-half of all persons employed in agriculture; the fraction declined to 43.4 per cent in 1880, and to 43 per cent in 1900. In 1890, however, the fraction declined to 35.5 per cent; perhaps the smallness of this percentage was due to the then recent acquisition of an enormous number of new farms by men unable to hire labor.

NEGROES.

It was reported in the census of 1900 that 2,108,980 negroes 10 years old and over had agricultural occupations, and these negroes were 52.8 per cent of all negroes in all gainful occupations. The corresponding percentage of the preceding census in 1890 was 55.5, so that negroes, as well as whites, had drifted away from agriculture relative to all gainful occupations. If the entire number of all persons having gainful occupations be taken into account, the agricultural element in 1900 was 35.3 per cent; if the negroes are considered by themselves their agricultural element in 1900 was 52.8 per cent.

The negro agricultural laborers increased from 1,106,728 in 1890 to 1,344,116 in 1900; but, although the number increased absolutely, it diminished relative to the total number of negroes having agricultural occupations, or from 64.9 per cent of the negroes of all agricultural occupations in 1890, to 63.7 per cent in 1900. Agricultural laborers, for negroes as well as for whites, have declined relative to those in all agricultural occupations.

In 1900 the agricultural laborers of all races were 43 per cent of the persons of all races employed in agriculture. For negroes the percentage in the same year was 63.7.

In comparing negroes with the total of all races it appears that in 1900, 20.6 per cent of all persons employed in agriculture were negroes, or an increase of 0.5 of 1 per cent in the percentage in 10 years.

Negro agricultural laborers, as an element of the total number of laborers of all races having agricultural occupations, are represented by 36.8 per cent in 1890 and 30.5 per cent in 1900, a decline in 10 years of 6.3 in the percentage. This accords with the generally accepted conclusion that a smaller fraction of the cotton crop is raised by negro labor year by year.

OUTDOOR LABOR OF WOMEN.

The outdoor labor of women on farms received the attention of the census as far back as 1870. In that year 6.7 per cent of all persons 10 years old and over having agricultural occupations were women and the percentage steadily increased to 9.5 in 1900.

An accurate report of the women employed as agricultural laborers could hardly be expected of census enumerators, but, subject to the probability of error, the census reports indicate that 12.9 per cent of all persons employed as agricultural laborers in 1870 were women. In 1880 the number was 16.1 per cent; in 1890, 14.9 per cent; and in 1900, 15 per cent. So it appears that about one agricultural laborer in 7 is a woman in the general average for the United States.

The census reports permit an analysis of this matter of relative sex employment by giving a separate statement of facts for negroes. In 1890, 25.1 per cent of all negroes employed in agriculture were women, and the percentage rose to 27.6 in 1900.

The fraction that negro women are of negro agricultural laborers increased from 34.1 per cent in 1890 to 37.9 per cent in 1900. That this indicated relative increase was real may be doubted; the enumerators of 1900 did more thorough work than those of 1890.

TABLE 2.—*Number and percentage of persons 10 years old and over employed in all gainful occupations and in agriculture, for all races and for negroes, by sex, for specified censuses.*

Race, sex, and group of occupations.	1820	1840	1870	1880	1890	1900
ALL RACES.						
Number.						
Both sexes:						
All occupations	2,490,770	4,798,869	12,505,923	17,392,099	22,735,661	29,073,233
Agricultural [1]	2,068,958	3,719,951	5,919,993	7,663,043	8,466,363	10,249,651
Agricultural laborers			2,885,996	3,323,876	3,004,061	4,410,877
Males:						
All occupations			10,669,635	14,744,942	18,821,090	23,753,836
Agricultural [1]			5,523,209	7,068,658	7,787,539	9,272,315
Agricultural laborers			2,512,664	2,788,976	2,556,957	3,747,668
Percentage for each group.						
Both sexes:						
All occupations			100.0	100.0	100.0	100.0
Agricultural of all occupations [1]	83.1	77.5	47.3	44.1	37.2	35.3
Agricultural laborers of all agricultural occupations			48.7	43.4	35.5	43.0
Males:						
All occupations			100.0	100.0	100.0	100.0
Agricultural of all occupations [1]			51.8	47.9	41.4	39.0
Agricultural laborers of all agricultural occupations			45.5	39.5	32.8	40.4
NEGROES.						
Number.						
Both sexes:						
All occupations					3,073,164	3,992,337
Agricultural [1]					1,704,904	2,108,980
Agricultural laborers					1,106,728	1,344,116
Males:						
All occupations					2,101,379	2,675,497
Agricultural [1]					1,277,494	1,526,979
Agricultural laborers					729,197	834,438

[1] Not including lumbermen and raftsmen, wood choppers, and turpentine farmers.

TABLE 2.—*Number and percentage of persons 10 years old and over employed in all gainful occupations and in agriculture, for all races and for negroes, by sex, for specified censuses*—Continued.

Race, sex, and group of occupations.	1820	1840	1870	1880	1890	1900
NEGROES—continued.						
Percentage for each group.						
Both sexes:						
All occupations of negroes	.....	.....	.....	.....	100.0	100.0
Agricultural of all occupations of negroes [1]	.....	.....	.....	.....	55.5	52.8
Agricultural laborers of all agricultural occupations of negroes	.....	.....	.....	.....	64.9	63.7
Males:						
All occupations of negroes	.....	.....	.....	.....	100.0	100.0
Agricultural of all occupations of negroes [1]	.....	.....	.....	.....	60.2	57.1
Agricultural laborers of all agricultural occupations of negroes	.....	.....	.....	.....	56.6	54.6
PERCENTAGE OF NEGROES OF ALL RACES, FOR EACH GROUP.						
Both sexes:						
All occupations	.....	.....	.....	.....	13.5	13.7
Agricultural [1]	.....	.....	.....	.....	20.1	20.6
Agricultural laborers	.....	.....	.....	.....	36.8	30.5
Males:						
All occupations	.....	.....	.....	.....	11.2	11.3
Agricultural [1]	.....	.....	.....	.....	16.4	16.5
Agricultural laborers	.....	.....	.....	.....	28.5	22.3
PERCENTAGE OF FEMALES OF BOTH SEXES, FOR EACH GROUP.						
All races:						
All occupations	.....	.....	14.7	15.2	17.2	18.3
Agricultural [1]	.....	.....	6.7	7.8	8.0	9.5
Agricultural laborers	.....	.....	12.9	16.1	14.9	15.0
Negroes:						
All occupations	.....	.....	.....	.....	31.6	33.0
Agricultural [1]	.....	.....	.....	.....	25.1	27.6
Agricultural laborers	.....	.....	.....	.....	34.1	37.9

[1] Not including lumbermen and raftsmen, wood choppers, and turpentine farmers.

GEOGRAPHIC DIVISIONS.

Analysis of the agricultural element of the population that is employed may be pursued with details by States and by geographic groups of States. In Table 3 will be found the number of persons 10 years old and over employed in agriculture, with totals for all races and separate statements for negroes and for the sexes. Census analysis permits this statement to be made as far back as 1880, but the corresponding facts for 1910 have not been tabulated by the Bureau of the Census in time for inclusion in this bulletin. Extended comment on this table is not necessary.

Among the features of larger importance, it is observed that about one-third of the persons employed in agriculture in 1900 lived in the northern division of the Mississippi Valley and about one-third in the southern, or two-thirds within the entire valley, and that about one-third of the persons lived in the Atlantic divisions.

WOMEN AND NEGROES IN AGRICULTURE.

In 1900 there were 977,336 women having gainful occupations in agriculture, more than one-half of whom lived in the South Central States, and about one-third of whom lived in the South Atlantic; that is to say, about 85 per cent of those women lived in the Southern States.

Likewise the negroes employed in agriculture are found mostly in the Southern States. In 1900 about two-fifths of them were in the South Atlantic States and over one-half in the South Central. Only 1,114 negro women having gainful occupations in agriculture were found in 1900 outside of the South.

AGRICULTURAL LABORERS.

The agricultural laborers of 1900 were distributed, 159,629 to the Western division of States, 414,683 to the North Atlantic States, 1,223,143 to the North Central States, 1,047,591 to the South Atlantic States, 1,565,831 to the South Central States, and 2,613,422, or about three-fifths, to the Southern States.

Nearly the entire number of women who were agricultural laborers in 1900 were found in the South Atlantic and South Central States and 76.8 per cent of these were negroes. The number of white women in the United States who were agricultural laborers in 1900 was 153,531.

TABLE 3.—*Number of persons 10 years old and over employed in agriculture, for all races and for negroes, by sex, and by States and geographic divisions, censuses of 1880, 1890, and 1900.*[1]

AGRICULTURAL OCCUPATIONS.[2]

State and geographic division.	All races.					
	Both sexes.			Male.		
	1880	1890	1900	1880	1890	1900
Maine	82,130	78,507	74,780	81,887	77,045	71,648
New Hampshire	44,490	41,310	37,625	44,299	40,690	36,067
Vermont	55,251	53,346	49,338	55,037	52,698	47,870
Massachusetts	64,973	69,108	65,692	64,746	68,178	63,810
Rhode Island	10,945	11,559	10,796	10,910	11,375	10,512
Connecticut	44,026	45,115	44,234	43,936	44,349	42,685
New York	377,458	394,704	373,651	375,211	386,114	361,280
New Jersey	59,214	68,164	68,492	58,819	66,754	66,646
Pennsylvania	301,109	316,186	331,705	299,806	310,131	321,112
Delaware	17,849	18,107	19,002	17,609	17,801	18,494
Maryland	90,926	90,728	94,980	89,175	88,021	91,440
District of Columbia	1,464	1,725	1,488	1,445	1,668	1,440
Virginia	254,097	257,496	298,543	238,949	240,827	275,869
West Virginia	107,578	118,681	149,265	106,980	115,433	143,685
North Carolina	358,493	367,999	455,276	311,848	312,399	381,157
South Carolina	292,245	325,480	390,990	206,333	237,039	275,911
Georgia	430,106	413,848	508,225	327,775	343,344	407,907
Florida	58,456	63,326	78,376	47,197	53,558	65,296
Ohio	397,490	398,817	413,361	396,115	388,640	398,608
Indiana	331,227	320,603	341,631	329,601	312,256	331,738
Illinois	436,371	430,385	461,388	433,796	417,479	449,221
Michigan	240,319	274,040	302,989	239,346	267,943	294,086
Wisconsin	195,901	229,849	264,064	194,380	223,922	255,507
Minnesota	131,535	188,237	253,657	130,817	184,417	246,842
Iowa	303,557	321,566	370,957	302,171	313,484	362,825
Missouri	355,297	387,727	460,281	351,681	375,331	444,303
North Dakota	28,508	43,845	71,626	28,368	43,021	69,849
South Dakota		68,139	82,714		66,729	80,553
Nebraska	90,507	169,987	186,397	89,881	166,531	182,148
Kansas	206,080	250,474	271,029	205,234	243,766	264,395
Kentucky	320,571	318,737	405,905	315,445	306,868	387,946
Tennessee	294,153	328,906	410,034	275,620	305,093	376,071
Alabama	380,629	369,786	509,389	291,476	288,814	380,887
Mississippi	339,690	358,572	486,610	252,095	269,208	358,579
Louisiana	205,305	236,551	291,209	147,537	181,101	223,378
Texas	359,317	428,528	641,800	330,125	394,355	582,560
Oklahoma	.....	13,898	186,849	.....	13,587	177,907
Arkansas	216,655	253,869	341,000	195,002	225,947	293,662
Montana	4,513	13,698	27,531	4,504	13,506	26,987
Wyoming	1,639	7,914	13,109	1,635	7,845	12,879
Colorado	13,539	36,821	44,302	13,462	36,134	43,145
New Mexico	14,139	23,236	26,888	14,025	22,816	25,947
Arizona	3,435	6,577	15,743	3,423	6,477	13,473
Utah	14,550	20,007	29,248	14,470	19,437	28,235
Nevada	4,180	5,146	5,743	4,146	5,056	5,606
Idaho	3,858	13,223	26,788	3,847	13,022	26,079
Washington	12,781	37,547	52,832	12,709	36,937	50,878
Oregon	27,091	44,574	55,811	27,000	43,682	54,251
California	79,396	129,715	145,808	78,785	126,711	140,941
Geographic division:						
North Atlantic	1,039,596	1,077,999	1,056,313	1,034,651	1,057,334	1,021,630
South Atlantic	1,611,214	1,657,390	1,996,145	1,347,311	1,410,090	1,661,199
North Central	2,716,792	3,083,669	3,480,094	2,701,390	3,003,519	3,380,075
South Central	2,116,320	2,308,847	3,273,296	1,807,300	1,984,973	2,780,990
Western	179,121	338,458	443,803	178,006	331,623	428,421
United States	7,663,043	8,466,363	10,249,651	7,068,658	7,787,539	9,272,315

[1] The grouping of States by geographic divisions is as follows: North Atlantic: Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, and Pennsylvania. South Atlantic: Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, and Florida. North Central: Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, and Kansas. South Central: Kentucky, Tennessee, Alabama, Mississippi, Louisiana, Texas, Oklahoma, and Arkansas. Western: Montana, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada, Idaho, Washington, Oregon, and California.

[2] Not including lumbermen and raftsmen, wood choppers, and turpentine farmers.

TABLE 3.—*Number of persons 10 years old and over employed in agricultur , for all races and for negroes, by sex, and by States and geographic divisions, censuses of 1880, 1890, and 1900*—Continued.

AGRICULTURAL OCCUPATIONS—Continued.

State and geographic division.	All races.			Negroes.		
	Female.			Both sexes.	Male.	Female.
	1880	1890	1900	1900	1900	1900
Maine	243	1,462	3,132	50	46	4
New Hampshire	191	620	1,558	43	42	1
Vermont	214	648	1,468	86	84	2
Massachusetts	227	930	1,882	668	662	6
Rhode Island	35	184	284	344	338	6
Connecticut	90	766	1,549	793	784	9
New York	2,247	8,590	12,371	2,529	2,493	36
New Jersey	395	1,410	1,846	4,662	4,615	47
Pennsylvania	1,303	6,055	10,593	3,659	3,619	40
Delaware	240	306	508	4,024	3,952	72
Maryland	1,751	2,707	3,540	27,078	26,246	832
District of Columbia	19	57	48	400	394	6
Virginia	15,148	16,669	22,674	102,769	90,591	12,178
West Virginia	598	3,248	5,580	2,110	2,059	51
North Carolina	46,645	55,600	74,119	158,010	117,011	40,999
South Carolina	85,912	88,441	115,079	265,346	171,298	94,048
Georgia	102,331	70,504	100,318	265,660	189,092	76,568
Florida	11,259	9,768	13,080	35,042	25,293	9,749
Ohio	1,375	10,177	14,753	5,055	4,918	137
Indiana	1,626	8,347	9,893	2,637	2,574	63
Illinois	2,575	12,906	12,167	3,930	3,813	117
Michigan	973	6,097	8,903	1,284	1,251	33
Wisconsin	1,521	5,927	8,557	127	121	6
Minnesota	718	3,820	6,815	2,223	2,221	2
Iowa	1,386	8,082	8,132	491	479	12
Missouri	3,616	12,396	15,978	13,989	13,546	443
North Dakota	140	824	1,777	38	35	3
South Dakota		1,410	2,161	43	42	1
Nebraska	626	3,456	4,249	156	142	14
Kansas	846	6,708	6,634	3,717	3,620	97
Kentucky	5,126	11,869	17,959	38,112	36,919	1,193
Tennessee	18,533	23,813	33,963	89,857	73,527	16,330
Alabama	89,153	80,972	129,002	276,050	177,344	98,706
Mississippi	87,595	89,364	128,031	335,775	224,185	111,590
Louisiana	57,768	55,450	67,831	187,371	128,751	58,620
Texas	29,192	34,173	59,240	144,743	116,369	28,374
Oklahoma	----------	311	8,942	12,305	11,099	1,206
Arkansas	21,653	27,922	47,338	116,801	86,436	30,365
Montana	9	192	544	61	58	3
Wyoming	4	69	230	71	70	1
Colorado	77	687	1,157	122	117	5
New Mexico	114	420	941	46	45	1
Arizona	12	100	2,270	55	53	2
Utah	80	570	1,013	21	21	----------
Nevada	34	90	137	14	14	----------
Idaho	11	201	709	20	20	----------
Washington	72	610	1,954	92	89	3
Oregon	91	892	1,560	43	40	3
California	611	3,004	4,867	458	441	17
Geographic divisions:						
North Atlantic	4,945	20,665	34,683	12,834	12,683	151
South Atlantic	263,903	247,300	334,946	860,439	625,936	234,503
North Central	15,402	80,150	100,019	33,690	32,762	928
South Central	309,020	323,874	492,306	1,201,014	854,630	346,384
Western	1,115	6,835	15,382	1,003	968	35
United States	594,385	678,824	977,336	2,108,980	1,526,979	582,001

TABLE 3.—*Number of persons 10 years old and over employed in agriculture, for all races and for negroes, by sex, and by States and geographic divisions, censuses of 1880, 1890, and 1900*—Continued.

AGRICULTURAL LABORERS.

State and geographic division.	All races.					
	Both sexes.			Male.		
	1880	1890	1900	1880	1890	1900
Maine	21,868	17,058	21,976	21,771	16,965	21,837
New Hampshire	13,893	11,578	12,714	13,839	11,527	12,644
Vermont	19,215	18,090	18,443	19,141	18,012	18,323
Massachusetts	22,553	27,488	31,515	22,490	27,359	31,301
Rhode Island	3,913	4,842	5,304	3,910	4,801	5,222
Connecticut	15,704	15,193	19,847	15,682	15,131	19,715
New York	125,685	132,596	148,456	125,248	131,967	146,990
New Jersey	22,672	28,686	33,220	22,524	28,528	32,741
Pennsylvania	100,381	100,326	123,208	99,907	99,290	122,083
Delaware	8,793	8,004	9,126	8,676	7,951	8,941
Maryland	51,236	45,611	50,134	49,974	44,570	48,958
District of Columbia	410	582	618	408	567	614
Virginia	132,820	117,692	138,613	120,185	108,008	128,147
West Virginia	41,767	35,066	58,796	41,517	34,587	58,107
North Carolina	201,774	171,796	233,288	159,642	129,448	175,316
South Carolina	198,147	195,267	237,326	116,695	116,952	135,848
Georgia	284,060	214,030	282,347	187,275	154,541	196,565
Florida	32,259	23,562	37,343	22,279	16,783	27,577
Ohio	131,387	107,691	138,066	130,990	106,932	136,764
Indiana	118,807	84,638	118,498	118,221	84,074	117,629
Illinois	150,907	125,964	184,959	150,190	125,137	183,272
Michigan	70,845	72,369	97,527	70,641	71,818	96,578
Wisconsin	56,170	60,983	93,718	55,643	60,400	92,073
Minnesota	33,993	52,158	94,195	33,852	51,701	92,889
Iowa	88,399	74,156	133,450	88,045	73,753	132,290
Missouri	115,325	92,441	162,916	114,524	91,666	160,972
North Dakota	5,306	12,273	24,193	5,287	12,157	23,774
South Dakota		12,373	26,749		12,256	26,149
Nebraska	19,058	34,771	59,601	18,848	34,596	58,760
Kansas	54,902	48,199	89,271	54,725	47,965	88,462
Kentucky	147,247	105,007	165,432	144,246	103,136	161,232
Tennessee	138,185	120,009	182,905	122,478	107,388	163,495
Alabama	235,777	186,607	286,195	151,565	118,798	177,761
Mississippi	215,472	180,520	259,668	133,122	107,368	151,914
Louisiana	145,735	146,096	173,510	90,547	97,041	114,458
Texas	143,812	129,553	273,188	119,295	111,469	233,628
Oklahoma		1,067	68,478		1,057	64,617
Arkansas	107,479	87,678	156,455	87,917	69,803	122,365
Montana	926	3,217	8,979	922	3,210	8,946
Wyoming	443	1,142	3,318	442	1,139	3,301
Colorado	2,540	9,981	14,825	2,525	9,926	14,722
New Mexico	4,009	5,991	7,578	4,000	5,946	7,463
Arizona	596	1,516	3,393	594	1,502	3,055
Utah	4,137	4,462	8,698	4,114	4,430	8,624
Nevada	1,188	2,242	2,760	1,170	2,229	2,729
Idaho	593	2,862	7,814	591	2,847	7,758
Washington	3,034	8,224	17,455	3,019	8,173	16,848
Oregon	6,598	10,605	17,316	6,578	10,521	17,180
California	23,856	51,799	67,493	23,722	51,532	67,031
Geographic division:						
North Atlantic	345,884	355,857	414,683	344,512	353,580	410,856
South Atlantic	951,266	811,610	1,047,591	706,651	613,407	780,073
North Central	845,099	778,016	1,223,143	840,966	772,455	1,209,612
South Central	1,133,707	956,537	1,565,831	849,170	716,060	1,189,470
Western	47,920	102,041	159,629	47,677	101,455	157,657
United States	3,323,876	3,004,061	4,410,877	2,788,976	2,556,957	3,747,668

TABLE 3.—*Number of persons 10 years old and over employed in agriculture, for all races and for negroes, by sex, and by States and geographic divisions, censuses of 1880, 1890, and 1900*—Continued.

AGRICULTURAL LABORERS—Continued.

State and geographic division.	All races.			Negroes.		
	Female.			Both sexes.	Male.	Female.
	1880	1890	1900	1900	1900	1900
Maine	97	93	139	25	25	.....
New Hampshire	54	51	70	29	29	.....
Vermont	74	78	120	73	72	1
Massachusetts	63	129	214	576	575	1
Rhode Island	3	41	82	292	292	.....
Connecticut	22	62	132	676	676	.....
New York	437	629	1,466	2,092	2,075	17
New Jersey	148	158	479	4,031	4,001	30
Pennsylvania	474	1,036	1,125	3,037	3,019	18
Delaware	117	53	185	3,176	3,129	47
Maryland	1,262	1,041	1,176	21,443	20,883	560
District of Columbia	2	15	4	282	282	.....
Virginia	12,635	9,684	10,466	61,285	52,848	8,437
West Virginia	250	479	689	1,363	1,356	7
North Carolina	42,132	42,348	57,972	104,046	67,330	36,716
South Carolina	81,452	78,315	101,478	180,354	95,352	85,002
Georgia	96,785	59,489	85,782	181,565	111,173	70,392
Florida	9,980	6,779	9,766	21,021	13,032	7,989
Ohio	397	759	1,302	2,910	2,892	18
Indiana	586	564	869	1,599	1,587	12
Illinois	717	827	1,687	2,268	2,227	41
Michigan	204	551	949	603	600	3
Wisconsin	527	583	1,645	64	62	2
Minnesota	141	457	1,306	41	41	.....
Iowa	354	403	1,160	270	266	4
Missouri	801	775	1,944	8,742	8,604	138
North Dakota	19	116	419	21	19	2
South Dakota		117	600	15	15	.....
Nebraska	210	175	841	70	65	5
Kansas	177	234	809	1,754	1,738	16
Kentucky	3,001	1,871	4,200	26,100	25,512	588
Tennessee	15,707	12,621	19,410	54,724	40,800	13,924
Alabama	84,212	67,809	108,434	180,864	94,301	86,563
Mississippi	82,350	73,152	107,754	199,077	101,925	97,152
Louisiana	55,188	49,055	59,052	128,517	75,277	53,240
Texas	24,517	18,084	39,560	78,098	55,514	22,584
Oklahoma	.....	10	3,861	5,450	4,780	670
Arkansas	19,562	17,875	34,090	67,079	41,586	25,493
Montana	4	7	33	22	22	.....
Wyoming	1	3	17	16	16	.....
Colorado	15	55	103	35	35	.....
New Mexico	9	45	115	12	12	.....
Arizona	2	14	338	6	6	.....
Utah	23	32	74	10	10	.....
Nevada	18	13	31	7	7	.....
Idaho	2	15	56	9	9	.....
Washington	15	51	607	46	45	1
Oregon	20	84	136	21	20	1
California	134	267	462	300	296	4
Geographic division:						
North Atlantic	1,372	2,277	3,827	10,831	10,764	67
South Atlantic	244,615	198,203	267,518	574,535	365,385	209,150
North Central	4,133	5,561	13,531	18,357	18,116	241
South Central	284,537	240,477	376,361	739,909	439,695	300,214
Western	243	586	1,972	484	478	6
United States	534,900	447,104	663,209	1,344,116	834,438	509,678

AGRICULTURAL OCCUPATIONS AS PERCENTAGES.

In Table 4 the numbers of persons 10 years of age and over in agriculture have been converted into percentages to determine the relation of agricultural to all occupations and of agricultural laborers

to all agricultural occupations for all races and for negroes, with separation of sexes. Percentages for the totals for the United States have been brought together in Table 2 and have already received attention. Details by geographic divisions and by States add to the interest of this subject and these may be found in Table 4.

Agriculture is relatively more general in the South Central States than in any other group; in this division 62.83 per cent of all persons gainfully employed were employed in agriculture in 1900, or almost exactly five-eighths. In the South Atlantic division almost exactly one-half of all persons having gainful occupations were engaged in agriculture, in the North Central States nearly three-eighths, in the Western States a little over one-fourth, while in the North Atlantic division the agricultural element in 1900 was almost exactly one-eighth, or about the same as in the United Kingdom. The average for all divisions is 35.25 per cent.

PERCENTAGE OF NEGROES IN AGRICULTURE.

The agricultural element in the negroes who have gainful occupations varies from that of the whites in the different geographic divisions in 1900. In the North Atlantic States the negro agricultural element in the negroes who have gainful occupations is about one-half of that of the whites who have gainful occupations; in the North Central division the negro agricultural element is about two-fifths of that of the whites; in the Western division about one-fourth; in the South Atlantic and in the South Central divisions a little more than that of the whites.

PERCENTAGE OF AGRICULTURAL LABORERS.

The agricultural laborers as an element in the agricultural population, or rather that portion of the population having gainful occupations, are represented by fractions that are not very far apart when the different geographic divisions are compared. In the South Atlantic States the agricultural laborers in 1900 were 52.48 per cent of all persons employed in agriculture and in the South Central States 47.84 per cent. The percentages for the three northern divisions of States are somewhat lower, the percentage for the North Atlantic division being 39.26; for the North Central, 35.15; and for the Western, 35.97. The average for the United States is 43.03.

In every geographic division the negro agricultural laborers are relatively a larger element of the total negroes employed in agriculture than the white agricultural laborers. The highest percentage for the negroes, 84.39 per cent, is found in the North Atlantic States, and next in order is 66.77 per cent in the South Atlantic; third in order is 61.61 per cent for the South Central States, after which

follows the North Central States with 54.49 per cent, and the Western States with 48.26 per cent.

PERCENTAGE OF NEGROES AS A RACIAL ELEMENT.

The negroes as constituting a racial element in agricultural population may next be considered. In the total for all gainful occupations in 1900 the negroes were 13.73 per cent; in the total of all agricultural occupations the negroes were 20.58 per cent; and in the total of agricultural laborers they were 30.47 per cent, these percentages being averages for the United States. The conclusion is plain that negroes are more generally found in agricultural than in other gainful occupations and more generally found as agricultural laborers than in other agricultural occupations.

In 1900 only 0.23 of 1 per cent of all persons employed in agriculture in the Western division of States were negroes; only 0.97 of 1 per cent in the North Central States; only 1.21 per cent in the North Atlantic States; while in the South Atlantic and South Central States, respectively, the percentages were 43.11 and 36.69.

The negro element among agricultural laborers is found to be somewhat over one-half in the South Atlantic States; a little under one-half in the South Central States; and 2.61 per cent of all agricultural laborers in the North Atlantic States; 1.50 per cent in the North Central States; and 0.30 of 1 per cent in the Western States.

PERCENTAGE OF WOMEN.

Women as an element in that portion of the population that has agricultural occupations are represented by small percentages in the three northern divisions of States, with a range from 2.87 per cent of the total for both sexes in 1900 in the North Central States to 3.47 per cent for the Western States. For the South Atlantic States the percentage representing women engaged in agriculture is 16.78 per cent; in the South Central States 15.04 per cent. The foregoing percentages cover all races. If attention is confined to the negroes alone, the percentage of women employed in agriculture is found to be much larger than among the whites, and this is because negro women are such a large element of negro agricultural laborers.

TABLE 4.—*Relation, by percentages, of agricultural to all gainful occupations, and of agricultural laborers to all agricultural occupations, in number of persons 10 years old and over employed, for all races and for negroes, by sex, and by States and geographic divisions, censuses of 1880, 1890, and 1900.*

PERCENTAGE OF PERSONS IN ALL GAINFUL OCCUPATIONS WHO ARE ENGAGED IN AGRICULTURE [1]—WITHIN EACH GROUP.

State and geographic division.	All races.						Negroes.	
	Both sexes.			Male.			Both sexes.	Male.
	1880	1890	1900	1880	1890	1900	1900	1900
Maine	35.40	30.54	27.02	41.26	36.34	31.87	7.99	10.11
New Hampshire	31.23	25.08	21.05	39.43	31.83	26.33	10.80	17.36
Vermont	46.59	41.43	36.56	53.74	48.34	42.67	20.98	27.54
Massachusetts	9.01	7.03	5.44	11.85	9.48	7.26	4.02	6.09
Rhode Island	9.36	7.42	5.63	12.52	10.05	7.52	7.01	11.34
Connecticut	18.24	14.23	11.47	22.80	18.06	14.37	9.95	15.93
New York	20.03	16.20	12.47	24.62	20.09	15.54	4.43	7.33
New Jersey	14.92	11.94	9.04	17.82	14.53	11.05	12.86	20.03
Pennsylvania	20.68	16.14	13.55	24.20	18.97	15.92	4.55	6.49
Delaware	32.70	28.17	26.03	37.75	33.00	30.81	29.53	40.48
Maryland	28.03	23.07	20.70	33.57	28.53	28.51	25.45	37.11
District of Columbia	2.20	1.71	1.17	3.08	2.42	1.68	.82	1.57
Virginia	51.41	46.66	45.07	58.13	54.06	51.38	38.35	48.26
West Virginia	61.05	53.03	45.83	64.96	57.12	48.79	10.19	11.82
North Carolina	74.66	68.48	63.52	79.31	74.00	68.48	59.33	65.32
South Carolina	74.53	73.83	68.48	75.85	76.12	70.81	73.07	76.28
Georgia	71.94	61.89	58.79	73.57	67.48	63.15	57.03	62.49
Florida	63.86	46.28	38.88	63.99	48.51	39.82	34.57	33.94
Ohio	39.97	31.33	26.74	44.92	35.70	30.66	11.59	14.82
Indiana	52.16	44.28	38.00	56.47	48.85	42.41	9.99	13.16
Illinois	43.65	31.80	25.58	48.54	36.20	29.76	9.47	12.01
Michigan	42.22	36.08	33.44	46.55	40.38	38.08	17.86	22.70
Wisconsin	46.93	39.88	36.05	52.38	45.22	41.45	10.13	11.87
Minnesota	51.56	40.13	39.27	56.87	45.71	44.97	79.62	99.87
Iowa	57.46	50.89	46.99	62.50	56.85	53.16	8.34	9.98
Missouri	51.27	43.84	41.05	55.82	48.65	45.95	19.02	25.90
North Dakota	49.28	64.70	60.89	51.58	71.75	67.46	24.20	27.56
South Dakota		59.72	60.31		65.02	66.29	17.06	21.32
Nebraska	59.30	46.18	49.84	63.23	51.18	55.64	4.57	5.66
Kansas	63.94	55.37	53.38	67.75	59.92	58.47	18.29	22.78
Kentucky	61.67	53.99	53.94	67.77	60.53	59.97	30.62	42.07
Tennessee	65.66	59.40	56.36	70.39	64.48	61.51	42.43	50.36
Alabama	77.24	68.28	66.81	79.05	70.16	67.63	67.87	69.15
Mississippi	81.75	77.49	75.43	82.63	79.66	76.82	78.83	81.25
Louisiana	56.52	55.91	54.32	55.01	57.62	55.13	63.46	66.23
Texas	68.82	61.55	62.13	71.27	64.63	65.26	59.54	66.35
Oklahoma		66.48	70.14		68.45	72.93	60.32	65.86
Arkansas	83.11	73.12	70.19	84.76	75.56	71.98	71.60	74.13
Montana	20.28	18.97	23.98	20.71	19.98	25.74	6.69	8.29
Wyoming	18.45	25.84	29.61	19.42	27.30	31.21	12.31	13.41
Colorado	13.37	19.18	20.30	13.95	20.91	22.67	2.64	3.57
New Mexico	34.64	42.91	40.73	36.37	45.43	43.46	4.78	5.40
Arizona	15.42	24.90	29.50	15.70	26.07	28.92	4.10	4.51
Utah	36.33	29.91	34.57	38.93	32.49	38.24	4.70	5.59
Nevada	12.97	21.98	28.99	13.49	23.42	31.48	18.67	24.14
Idaho	24.77	37.60	42.74	25.17	39.13	44.83	12.12	14.81
Washington	42.43	22.80	23.44	43.74	24.05	24.87	6.11	6.90
Oregon	40.23	35.16	32.90	41.82	37.66	35.88	5.91	7.04
California	21.09	23.84	22.63	22.62	26.20	25.33	8.72	11.30
Geographic division:								
North Atlantic	19.58	15.46	12.31	23.88	19.08	15.16	6.27	9.56
South Atlantic	60.17	53.15	49.90	63.57	57.99	53.71	52.02	57.34
North Central	48.30	40.18	36.32	53.09	45.09	41.31	14.88	19.38
South Central	70.03	63.50	62.83	72.52	66.77	65.62	63.52	67.33
Western	23.65	25.32	26.06	25.00	27.36	28.41	6.05	7.54
United States	44.06	37.24	35.25	47.94	41.38	39.04	52.83	57.07

[1] Not including lumbermen and raftsmen, woodchoppers, and turpentine farmers.

TABLE 4.—*Relation, by percentages, of agricultural to all gainful occupations, and of agricultural laborers to all agricultural occupations, in number of persons 10 years old and over, employed, for all races and for negroes, by sex, and by States and geographic divisions, censuses of 1880, 1890, and 1900*—Continued.

PERCENTAGE OF PERSONS IN ALL AGRICULTURAL OCCUPATIONS[1] WHO ARE AGRICULTURAL LABORERS, WITHIN EACH GROUP.

State and geographic division.	All races.						Negroes.	
	Both sexes.			Male.			Both sexes.	Male.
	1880	1890	1900	1880	1890	1900	1900	1900
Maine	26.63	21.73	29.39	26.59	22.02	30.48	50.00	54.35
New Hampshire	31.23	28.03	33.79	31.24	28.33	35.06	67.44	69.05
Vermont	34.78	33.91	37.38	34.78	34.18	38.28	84.88	85.71
Massachusetts	34.71	39.78	47.97	34.74	40.13	49.05	86.23	86.86
Rhode Island	35.75	41.89	49.13	35.84	42.21	49.67	84.88	86.39
Connecticut	35.67	33.68	44.87	35.69	34.12	46.19	85.25	86.22
New York	33.30	33.59	39.73	33.38	34.18	40.69	82.72	83.23
New Jersey	38.29	42.08	48.50	38.29	42.74	49.13	86.47	86.70
Pennsylvania	33.34	31.73	37.14	33.32	32.02	38.01	83.00	83.42
Delaware	49.26	44.20	48.03	49.27	44.67	48.35	78.93	79.18
Maryland	56.35	50.27	52.78	56.04	50.64	53.54	79.19	79.57
District of Columbia	28.01	33.74	41.53	28.24	33.99	42.64	70.50	71.57
Virginia	52.27	45.71	46.43	50.30	44.85	46.45	59.62	58.34
West Virginia	38.82	29.55	39.39	38.81	29.96	40.44	64.60	65.86
North Carolina	56.28	46.68	51.24	51.19	41.44	46.00	65.85	57.54
South Carolina	67.80	59.99	60.70	56.56	49.34	49.24	67.97	55.66
Georgia	66.04	51.72	55.56	57.14	45.01	48.19	68.34	58.79
Florida	55.19	37.21	47.65	47.20	31.34	42.23	59.99	51.52
Ohio	33.05	27.00	33.40	33.07	27.51	34.31	57.57	58.80
Indiana	35.87	26.40	34.69	35.87	26.92	35.46	60.64	61.66
Illinois	34.58	29.27	40.09	34.62	29.97	40.80	57.71	58.41
Michigan	29.48	26.41	32.19	29.51	26.80	32.84	46.96	47.96
Wisconsin	28.67	26.53	35.49	28.63	26.97	36.04	50.39	51.24
Minnesota	25.84	27.71	37.13	25.88	28.03	37.63	1.84	1.85
Iowa	29.12	23.06	35.97	29.14	23.53	36.46	54.99	55.53
Missouri	32.46	23.84	35.39	32.56	24.42	36.23	62.49	63.52
North Dakota	18.61	27.99	33.78	18.64	28.26	34.04	55.26	54.29
South Dakota		18.16	32.34		18.37	32.46	34.88	35.71
Nebraska	21.06	20.46	31.98	20.97	20.77	32.26	44.87	55.77
Kansas	26.64	19.24	32.94	26.66	19.68	33.46	47.19	48.01
Kentucky	45.93	32.94	40.76	45.73	33.61	41.56	68.48	69.10
Tennessee	46.98	36.49	44.61	44.44	35.20	43.47	60.90	55.49
Alabama	61.94	50.46	56.13	52.00	41.13	46.67	65.52	53.17
Mississippi	63.43	50.34	53.36	52.81	39.88	42.37	59.29	45.46
Louisiana	70.98	61.76	59.58	61.37	53.58	51.24	68.59	58.47
Texas	40.02	30.23	42.57	36.14	28.27	40.10	53.96	47.71
Oklahoma	.....	7.68	36.65	.....	7.78	36.32	44.29	43.07
Arkansas	49.61	34.54	45.88	45.09	30.89	41.67	57.43	48.11
Montana	20.52	23.49	32.61	20.47	23.77	33.15	36.07	37.93
Wyoming	27.03	14.43	25.31	27.03	14.52	25.63	22.54	22.86
Colorado	18.76	27.11	33.46	18.76	27.47	34.12	28.69	29.91
New Mexico	28.35	25.78	28.18	28.52	26.06	28.76	26.09	26.67
Arizona	17.35	23.05	21.55	17.35	23.19	22.67	10.91	11.32
Utah	28.43	22.30	29.74	28.43	22.79	30.54	47.62	47.62
Nevada	28.42	43.57	48.06	28.22	44.09	48.68	50.00	50.00
Idaho	15.37	21.64	29.17	15.34	21.86	29.75	45.00	45.00
Washington	23.74	21.90	33.04	23.75	22.13	33.11	50.00	50.56
Oregon	24.35	23.79	31.03	24.36	24.09	31.67	48.84	50.00
California	30.05	39.93	42.29	30.11	40.66	47.56	65.50	67.12
Geographic division:								
North Atlantic	33.27	33.01	39.26	33.30	33.44	40.22	84.39	84.87
South Atlantic	59.04	48.97	52.48	52.45	43.51	46.96	66.77	58.37
North Central	31.11	25.23	35.15	31.13	25.72	35.79	54.49	55.30
South Central	53.57	41.43	47.84	46.99	36.07	42.77	61.61	51.45
Western	26.75	30.15	35.97	26.78	30.59	36.80	48.26	49.38
United States	43.38	35.48	43.03	39.46	32.83	40.42	63.73	54.65

[1] Not including lumbermen and raftsmen, wood choppers, and turpentine farmers.

TABLE 4.—*Relation, by percentages, of agricultural to all gainful occupations, and of agricultural laborers to all agricultural occupations, in number of persons 10 years old and over employed, for all races and for negroes, by sex, and by States and geographic divisions, censuses of 1880, 1890, and 1900*—Continued.

PERCENTAGE OF NEGROES OF ALL RACES WITHIN EACH GROUP.

State and geographic division.	All gainful occupations.		Agricultural occupations.[1]		Agricultural laborers.	
	Both sexes, 1900.	Males 1900.	Both sexes, 1900.	Males, 1900.	Both sexes, 1900.	Males, 1900.
Maine	0.23	0.20	0.07	0.06	0.11	0.11
New Hampshire	.22	.18	.11	.12	.23	.23
Vermont	.30	.27	.17	.18	.40	.39
Massachusetts	1.37	1.24	1.02	1.04	1.83	1.84
Rhode Island	2.56	2.13	3.19	3.22	5.51	5.59
Connecticut	2.07	1.66	1.79	1.84	3.41	3.43
New York	1.90	1.46	.68	.69	1.41	1.41
New Jersey	4.78	3.82	6.81	6.92	12.13	12.22
Pennsylvania	3.28	2.77	1.10	1.13	2.46	2.47
Delaware	18.67	16.27	21.18	21.37	34.80	35.00
Maryland	23.19	19.66	28.51	28.70	42.77	42.65
District of Columbia	38.26	29.28	26.88	27.36	45.63	45.93
Virginia	40.46	34.97	34.42	32.84	44.21	41.24
West Virginia	6.36	5.92	1.41	1.43	2.32	2.33
North Carolina	37.16	32.19	34.71	30.70	44.60	38.40
South Carolina	63.59	57.63	67.87	62.08	75.99	70.19
Georgia	53.89	46.85	52.27	46.36	64.31	56.56
Florida	50.29	45.45	44.71	38.74	56.29	47.26
Ohio	2.82	2.55	1.22	1.23	2.11	2.11
Indiana	2.94	2.50	.77	.78	1.35	1.35
Illinois	2.30	2.10	.85	.85	1.23	1.22
Michigan	.79	.71	.42	.43	.62	.62
Wisconsin	.17	.17	.05	.05	.07	.07
Minnesota	.43	.41	.88	.90	.04	.04
Iowa	.75	.70	.13	.13	.20	.20
Missouri	6.56	5.41	3.04	3.05	5.37	5.35
North Dakota	.13	.12	.05	.05	.09	.08
South Dakota	.18	.16	.05	.05	.06	.06
Nebraska	.91	.77	.08	.08	.12	.11
Kansas	4.00	3.51	1.37	1.37	1.96	1.96
Kentucky	16.54	13.57	9.39	9.52	15.78	15.82
Tennessee	29.10	23.88	21.91	19.55	29.92	24.95
Alabama	53.30	45.54	54.14	46.56	63.20	53.05
Mississippi	66.03	59.11	69.00	62.52	76.67	67.09
Louisiana	55.08	47.97	64.34	57.64	74.07	65.77
Texas	23.53	19.65	22.55	19.98	28.59	23.76
Oklahoma	7.66	6.91	6.59	6.24	7.96	7.40
Arkansas	33.58	28.58	34.25	29.43	42.87	33.99
Montana	.79	.67	.22	.21	.25	.25
Wyoming	1.30	1.27	.54	.54	.48	.48
Colorado	2.12	1.72	.28	.27	.24	.24
New Mexico	1.46	1.40	.17	.17	.16	.16
Arizona	2.51	2.52	.35	.39	.18	.20
Utah	.53	.51	.07	.07	.11	.12
Nevada	.38	.33	.24	.25	.25	.26
Idaho	.26	.23	.07	.08	.12	.12
Washington	.67	.63	.17	.17	.26	.27
Oregon	.43	.38	.08	.07	.12	.12
California	.82	.70	.31	.31	.44	.44
Geographic division:						
North Atlantic	2.39	1.97	1.21	1.24	2.61	2.62
South Atlantic	41.34	35.29	43.11	37.68	54.84	46.84
North Central	2.36	2.07	.97	.97	1.50	1.50
South Central	36.29	29.95	36.69	30.73	47.25	36.97
Western	.97	.85	.23	.23	.30	.30
United States	13.73	11.30	20.58	16.47	30.47	22.27

[1] Not including lumbermen, wood choppers, and turpentine farmers.

TABLE 4.—*Relation, by percentages, of agricultural to all gainful occupations, and of agricultural laborers to all agricultural occupations, in number of persons 10 years old and over employed, for all races and for negroes, by sex, and by States and geographic divisions, censuses of 1880, 1890, and 1900*—Continued.

PERCENTAGE OF FEMALES OF BOTH SEXES WITHIN EACH GROUP.

State and geographic division.	All gainful occupations.				Agricultural occupations.				Agricultural laborers.			
	All races.			Negroes, 1900.	All races.			Negroes, 1900.	All races.			Negroes, 1900.
	1880	1890	1900		1880	1890	1900		1880	1890	1900	
Maine	14.45	17.53	18.76	27.32	0.30	1.86	4.19	8.00	0.44	0.55	0.63	.....
New Hampshire	21.15	22.38	23.37	39.20	.43	1.50	4.14	2.33	.39	.44	.55	.....
Vermont	13.63	15.51	16.86	25.61	.39	1.21	2.98	2.33	.39	.43	.65	1.37
Massachusetts	24.17	26.80	27.23	34.60	.35	1.35	2.86	.90	.28	.47	.68	.17
Rhode Island	25.53	27.40	27.14	39.30	.32	1.59	2.63	1.74	.08	.85	1.55	.....
Connecticut	20.17	22.52	22.99	38.23	.20	1.70	3.50	1.13	.14	.41	.67	.....
New York	19.12	21.10	22.43	40.40	.60	2.18	3.31	1.42	.35	.47	.99	.81
New Jersey	16.83	19.50	20.39	36.45	.67	2.07	2.70	1.01	.65	.55	1.44	.74
Pennsylvania	14.90	16.54	17.62	30.62	.43	1.92	3.19	1.09	.47	1.03	.91	.59
Delaware	14.53	16.10	17.77	28.35	1.34	1.69	2.67	1.79	1.33	.66	2.03	1.48
Maryland	18.12	21.55	21.58	33.52	1.93	2.98	3.73	3.07	2.46	2.28	2.35	2.61
District of Columbia	29.51	31.77	32.43	48.28	1.30	3.30	3.23	1.50	.49	2.58	.65	.....
Virginia	16.83	19.27	18.95	29.94	5.96	6.47	7.59	11.85	9.51	8.23	7.55	13.77
West Virginia	6.53	9.70	9.57	15.81	.56	2.74	3.74	2.42	.60	1.37	1.17	.51
North Carolina	18.11	21.44	22.35	32.73	13.01	15.11	16.28	25.95	20.88	24.65	24.85	35.29
South Carolina	30.63	29.36	31.76	38.16	29.40	27.17	29.43	35.44	41.11	40.11	42.76	47.13
Georgia	25.48	23.92	25.28	35.04	23.79	17.04	19.74	28.82	34.07	27.79	30.38	38.77
Florida	19.43	19.31	18.64	26.48	19.26	15.42	16.69	27.82	30.94	28.77	26.15	38.00
Ohio	11.33	14.47	15.92	23.95	.35	2.55	3.57	2.71	.30	.70	.94	.62
Indiana	8.10	11.73	12.98	25.90	.49	2.60	2.90	2.39	.49	.67	.73	.75
Illinois	10.61	14.80	16.33	23.44	.59	3.00	2.64	2.98	.48	.66	.91	1.81
Michigan	9.66	12.63	14.76	23.34	.40	2.22	2.94	2.57	.29	.76	.97	.50
Wisconsin	11.11	14.07	15.86	18.74	.78	2.58	3.24	4.72	.94	.96	1.76	3.12
Minnesota	9.83	13.99	15.01	20.34	.55	2.03	2.69	.09	.41	.88	1.39	.....
Iowa	8.49	12.73	13.54	18.41	.46	2.51	2.19	2.44	.40	.54	.87	1.48
Missouri	9.08	12.76	13.78	28.92	1.02	3.20	3.47	3.17	.69	.84	1.19	1.58
North Dakota	4.93	11.53	11.98	19.11	.49	1.88	2.48	7.89	.36	.95	1.73	9.52
South Dakota		10.04	11.41	21.83		2.07	2.61	2.33		.95	2.24	
Nebraska	6.85	11.59	12.47	26.47	.69	2.03	2.28	8.97	1.10	.50	1.41	7.14
Kansas	6.00	10.06	10.94	21.80	.41	2.68	2.45	2.61	.32	.49	.91	.91
Kentucky	10.47	14.12	14.04	29.49	1.60	3.72	4.42	3.13	2.04	1.78	2.54	2.25
Tennessee	12.59	14.55	15.97	31.05	6.30	7.24	8.28	18.17	11.37	10.52	10.61	25.44
Alabama	25.17	24.00	26.21	36.95	23.42	21.90	25.30	35.76	35.72	36.34	37.89	47.86
Mississippi	26.57	26.97	27.65	35.22	25.79	24.92	26.31	33.23	38.22	40.52	41.50	48.80
Louisiana	26.17	25.71	24.42	34.17	28.14	23.44	23.29	31.29	37.87	33.58	34.03	41.43
Texas	11.29	12.35	13.59	27.85	8.12	7.97	9.23	19.60	17.05	13.96	14.48	28.92
Oklahoma	.....	5.06	8.44	17.38	.....	2.24	4.79	9.80	.....	.94	5.64	12.29
Arkansas	11.74	13.87	16.03	28.53	9.99	11.00	13.88	26.00	18.20	20.39	21.79	38.00
Montana	2.28	6.42	8.54	23.25	.20	1.40	1.98	4.92	.43	.22	.37	.....
Wyoming	5.22	6.18	6.79	9.53	.24	.87	1.75	1.41	.23	.26	.51	.....
Colorado	4.72	9.98	12.81	29.11	.57	1.87	2.61	4.10	.59	.55	.69	.....
New Mexico	5.54	7.26	9.56	13.41	.81	1.81	3.50	2.17	.22	.75	1.52	.....
Arizona	2.11	5.94	12.72	12.44	.35	1.52	14.42	3.64	.34	.92	9.96	.....
Utah	7.21	10.58	12.72	15.88	.55	2.85	3.46	.....	.56	.72	.85	.....
Nevada	4.66	7.79	10.10	22.67	.81	1.75	2.39	.....	1.52	.58	1.12	.....
Idaho	1.87	5.38	7.20	18.18	.29	1.52	2.65	.....	.34	.52	.72	.....
Washington	3.53	6.75	9.22	14.35	.56	1.62	3.70	3.26	.49	.62	3.48	2.17
Oregon	4.13	8.51	10.87	21.87	.34	2.00	2.80	6.98	.30	.79	.79	4.76
California	7.49	11.13	13.65	25.69	.77	2.32	3.34	3.71	.56	.52	.68	1.33
Geographic division:												
North Atlantic	18.39	20.49	21.50	35.20	.48	1.92	3.28	1.18	.40	.64	.92	.62
South Atlantic	20.85	22.01	22.68	34.00	16.38	14.92	16.78	27.25	25.71	24.42	25.54	36.40
North Central	9.55	13.20	14.59	25.30	.57	2.60	2.87	2.75	.49	.71	1.11	1.31
South Central	17.53	18.23	18.65	32.87	14.60	14.03	15.04	28.84	25.10	25.14	24.04	40.57
Western	5.97	9.31	11.64	22.61	.62	2.02	3.47	3.49	.51	.57	1.24	1.24
United States	15.22	17.22	18.30	32.98	7.76	8.02	9.54	27.60	16.09	14.88	15.04	37.92

DECLINE OF WOMEN'S WORK SINCE 1871.

CONDITIONS OF HALF A CENTURY AGO.

The outdoor labor of women on farms has undergone immense reduction within a generation or two. In 1871 this department investigated the subject in all parts of the country, with results that may be found in the report of the Commissioner of Agriculture for 1871. The summary of that investigation is reprinted below:

In New England very little regular labor in the fields is performed by women. The variety of indoor employments is such as to furnish work of a light and varied character, requiring every degree of skill. Yet in haying, laborers being scarce, the wives and daughters of farmers sometimes aid in spreading and raking hay. In planting, in a few cases girls are wont to aid in "dropping" corn or other seeds planted in hills or drills.

Women sometimes assist in milking, but not so generally as in former generations. In the care of poultry they still have by far greater share. One report states that in some districts in Vermont one-twentieth of the farm work is done by women. In Lincoln County, in Maine, the correspondent writes that "female outdoor labor is unknown—incompatible with New England institutions."

Girls are almost exclusively employed in hop picking wherever hops are grown, their nimble fingers rendering them superior to men or boys; but they usually receive but one-fourth the wages of men in the hopyard. In Barnstable County, Mass., the work of setting out cranberry vines, weeding them, and picking the fruit is mostly done by women, and they obtain for setting and weeding 10 to 12 cents per hour, the same rate paid to men, and 1½ to 2 cents per quart for picking, in which they average 1½ bushels per day. Women are more efficient than men at this labor.

Canadian women, and occasionally Irish, hire out or work on shares in different parts of New England, though the number employed is not large, and they will undertake nearly all kinds of farm work. "Many of them are as smart as the men," but as a rule they are less efficient and receive proportionately less pay.

Similar customs prevail in New York, comparatively little outdoor service being rendered by American-born women. In tying hopvines and picking hops, in which celerity in digital manipulation is a winning accomplishment—an occupation that is substantially an industrial picnic—they are universally preferred and are paid "by the job," or according to the measure of work done. In picking grapes and other fruit, and in packing fruit for market, they excel, and in some districts find agreeable employment in such service.

Most of the berries of New Jersey, grown so extensively for the markets of New York and Philadelphia, are picked by girls and women, at a given rate per quart, and they often make more than men at the same employment.

In many districts in Pennsylvania very little outdoor employment is undertaken by women, while in others, especially in those less improved, or with a large foreign element in the population, much and various farm work is done by women. In Butler County, which has a large immigrant element, "the women assist in every outdoor operation in which they can make themselves useful, so far as their spare time from the kitchen and dairy will permit, while their comfortable homes show that they do not neglect their household duty." These immigrants "not only do not lose their habits of industry, but are stimulated by the prospect of being able to accumulate enough to educate their children and for sickness and old age." Agricultural machinery is reducing the proportion of female labor required in harvesting, yet a woman may occasionally be seen driving the teams which are the motive power in reaping and mowing, and one who can bind or gather grain with celerity and skill is not difficult to find.

The assistance of women in outdoor work is enjoyed to some extent in Delaware, especially in "saving corn fodder," which is much used as a substitute for hay, and in picking peaches for market. The wages paid to women is said to be three-fourths of the rate allowed to men, and "their efficiency is in the same ratio."

Among the poorer classes of whites in some counties in Maryland, the Germans especially, the women assist in such labor as planting, hoeing corn, weeding tobacco, and raking grain. Sometimes they obtain men's wages, but usually about three-fourths as much. In such work they are often quite as efficient as men. Negro women have been accustomed to all kinds of farm labor, though generally employed in the lighter branches.

Women assist in farm labor to a very limited extent in Virginia. Since the war, negro women object to field work. Very generally, however, the "small farmers" have occasional assistance from wives and daughters in most of the branches of service enumerated in the record of woman's work in other States. They are especially useful in "worming, suckering, and stripping tobacco," often more efficient than men, but receiving only one-half to two-thirds as much pay. In some counties full wages are paid for work in planting and gathering corn; full pay is often given binders in the wheat harvest who can keep up with the reaper. In Nelson County, "some are expert at crating and seem pleased with it, regarding it as more or less of a frolic."

Throughout the Southern States a large portion of the females among the negroes were accustomed to general farm labor, most of whom now decline it, appearing to regard it as a relic of slavery and not "suited to ladies." It is stated of some States that not more than a fourth part as many do outdoor work as formerly.

White women in North Carolina, to a limited extent, render assistance to husbands and fathers who do their own farm work. In some districts of South Carolina it is said that "20 per cent of the farm labor is performed by women, black and white. On an average they are not paid more than half the wages of men, and their efficiency is in the same ratio.

Very little farm work is done by women in Georgia, never hiring out, except in some instances at cotton picking. Yet there are instances reported, as in Cherokee, in which "a few widows manage their farm without any adult males to help; and they plow, hoe, harvest, bind, and gather their crops, shear sheep, and carry on all farming operations." Similar cases are found in all the Gulf States. In the harvesting of the cane, and in the operations of sugar making, female labor is found efficient; while, in another State, a crusty bachelor maliciously hints that the agricultural occupation preferred by women in his section is "raising Cain."

A large portion of the gardening of Duval County, Fla., is done by women. In Louisiana, Mississippi, and Alabama, white women upon small farms assist in field occupations more than formerly. Picking cotton is preferred, and when employed for wages, pay is proportionate to the work accomplished. Occasional aid in the light work of the farm, as cotton seeding, or cotton picking, is given in Texas, Arkansas, and Tennessee.

Among the rich lands and large farms of Kentucky very little outdoor work is done by women, either white or black; but in the less opulent hill regions white women do more farm work, and black women less, than formerly. In Missouri, where the same general statement holds good, it is said that "one woman in a garden or at the sorghum kettle is considered equal to two men."

Very little farm work is done by native Americans in all the States of the Ohio Valley and the Lakes, that little being casual assistance in emergencies, as a matter of convenience and sometimes of necessity, as is reported of all other sections of the country. Gardening and fruit picking are preferred, and hop picking, where hops are grown. Immigrants do more outdoor work, "especially for a few years after coming here. As they become Americanized they work less on the farm." "They do all kinds of farm work," says a correspondent in Wisconsin, "and many kinds as well as

the men." As hop pickers in the Northwest they are preferred to men and secure the same pay, but for most farm work do not receive more than one-half or two-thirds of the wages of men.

In Minnesota female immigrants work extensively in all branches of farming. "In binding and shocking grain, some of them are equal to the best of men." Some of them, in times of scarcity of labor and high rates of wages, have received $2.50 to $3 per day, when male laborers obtained $3 to $3.50.

In Kansas the kitchen garden is generally in charge of the mistress of the farmhouse. But when employed for wages, women get about the same as men for the same amount of work, though this is not invariably the case. In some counties of Nebraska no outdoor work of women is reported; in others much is done in haying and harvesting, some can bind as much wheat as men, "though they can not bind it so tightly," in which cases they get the same pay for it. A correspondent says, "the day is passed in progressive Nebraska for the 'weaker vessel' to get less pay than men for the same work." In Utah it is claimed that women do not generally work out of doors. One report admits that women assist occasionally at harvest, and that they receive half the rate of wages paid to men. Less farm work is done by women in the Pacific States and in the Territories than elsewhere, on account of their comparative paucity of numbers.

REDUCTION OF WOMEN'S WORK TO DOMESTIC AFFAIRS.

With regard to very recent years census statistics of female agricultural labor afford no satisfactory conclusions. A general knowledge of farming conditions throughout the country, past and present, is more definite. The outdoor work of white women on the farms of medium and better sort has very greatly declined from early days, and the decline was more especially marked after the Civil War. Farmers' wives and daughters no longer milk the cows and work in the field and care for the live stock. They do not work in the kitchen garden as much as before, nor assist so much in fruit and berry harvest; they are making less butter, and cheese making on the farm has become a lost art. They may care for the poultry and the bees, do housework and gather vegetables for the table, and cook and keep the dwelling in order. Their domestic work is substantially the limit of their work on the farm.

CHANGES IN GEOGRAPHIC DISTRIBUTION.

Changes in the geographic distribution of agricultural laborers from 1870 to 1900 are indicated in Table 5. In 1900, 11 per cent of all male agricultural laborers in the United States were found in the North Atlantic division of States, 20.8 per cent in the South Atlantic States, 32.3 per cent in the North Central States, 31.7 per cent in the South Central States, and 4.2 per cent in the Western States. In the Southern States were found 52.5 per cent of the Nation's male agricultural laborers.

Since 1870 the geographic divisions have undergone changes in relative importance with respect to the number of these laborers. In the former year the South Central States had more of these laborers than any other division of States, the South Atlantic division

was next in order, and the North Central division third, while it is now first.

During the 30 years under review, the North Central States gained from 25.2 per cent of the total agricultural laborers to 32.3 per cent, the South Central States gained slightly, while the South Atlantic States lost from 30.4 per cent in 1870 to 20.8 per cent in 1900. The percentage for the North Atlantic States declined slightly to 11 per cent in 1900, while the percentage for the Western States grew to 4.2 per cent in 1900.

TABLE 5.—*Relative importance of geographic divisions in number of agricultural laborers, census of 1870; of male agricultural laborers, censuses of 1880, 1890, and 1900.*

Geographic division.	Percentage of United States total.			
	Agricultural laborers, 1870	Male agricultural laborers.		
		1880	1890	1900
North Atlantic	12.2	12.4	13.8	11.0
South Atlantic	30.4	25.3	24.0	20.8
North Central	25.2	30.2	30.2	32.3
South Central	30.8	30.4	28.0	31.7
Western	1.4	1.7	4.0	4.2
United States	100.0	100.0	100.0	100.0

ELEMENT OF FOREIGN BORN IN TOTAL WHITE LABORERS.

The rapidity of the agricultural development of this country owes a great deal to the immigrants who came here to do hard work, live cheaply, and save out of their thrift. They began as farm laborers, eventually bought farms by giving mortgages to secure a portion of the purchase money, and eventually paid off the mortgages.

It is possible to discover how large relatively the foreign-born element was in the white agricultural laborers of 1890 and 1900. The approaching exhaustion of the supply of cheap public land had caused a diminution of the foreign-born element in white agricultural laborers by 1900. In that year the foreign-born white agricultural laborers were 8.51 per cent of all white agricultural laborers, whereas the percentage was 13.10 in 1890.

In the great agricultural region embraced within the North Central division the percentage of white agricultural laborers who were foreign born declined from 19.65 per cent in 1890 to 11.83 per cent in 1900. The decline in the Western States was from 27.29 per cent to 20.86 per cent, and in the remaining divisions the decline was perceptible.

Table 6 has been prepared to show the total number of white agricultural laborers in 1890 and 1900, number of the foreign born among these, and the fraction that the foreign born were of the total.

TABLE 6.—*Number of white and of white foreign-born agricultural laborers and percentage of white foreign born of total white, by States and geographic divisions, censuses of 1890 and 1900.*

State and geographic division.	White agricultural laborers.					
	Total.		Foreign born.		Percentage of foreign of total.	
	1890	1900	1890	1900	1890	1900
Maine	16,923	21,945	1,651	2,325	9.76	10.59
New Hampshire	11,533	12,614	1,536	1,759	13.32	13.94
Vermont	18,009	18,370	2,352	1,979	13.06	10.77
Massachusetts	26,936	30,915	9,574	12,254	35.54	39.64
Rhode Island	4,606	4,929	1,648	1,932	35.78	39.20
Connecticut	14,457	19,024	4,374	6,284	30.26	33.03
New York	129,718	145,831	23,401	23,726	18.04	16.27
New Jersey	25,176	29,163	5,203	6,259	20.67	21.46
Pennsylvania	97,458	119,994	5,827	6,467	5.98	5.39
Delaware	4,782	5,948	230	175	4.81	2.94
Maryland	24,141	28,689	1,903	1,627	7.88	5.67
District of Columbia	274	332	61	48	22.26	14.46
Virginia	53,021	77,316	279	320	.53	.41
West Virginia	33,235	57,433	227	173	.68	.30
North Carolina	77,004	127,979	82	90	.11	.07
South Carolina	42,180	56,956	97	60	.23	.11
Georgia	65,279	100,779	99	104	.15	.10
Florida	7,462	16,318	325	222	4.36	1.36
Ohio	104,682	135,154	7,027	5,823	6.71	4.31
Indiana	82,830	116,876	3,221	2,607	3.89	2.23
Illinois	124,196	182,687	22,316	17,986	17.97	9.85
Michigan	71,555	96,760	15,520	15,490	21.69	16.01
Wisconsin	60,831	93,468	19,074	17,741	31.36	18.98
Minnesota	52,105	94,041	26,231	27,601	50.34	29.35
Iowa	73,965	133,174	19,714	17,999	26.65	13.52
Missouri	83,827	154,172	4,322	3,619	5.16	2.35
North Dakota	12,259	23,996	8,346	11,405	68.08	47.53
South Dakota	12,355	26,580	5,775	6,534	46.74	24.58
Nebraska	34,531	59,441	11,092	9,777	32.12	16.45
Kansas	46,828	87,474	6,686	5,812	14.28	6.64
Kentucky	78,293	139,323	1,082	805	1.38	.58
Tennessee	70,189	128,165	310	307	.44	.24
Alabama	52,226	105,323	167	175	.32	.17
Mississippi	31,729	60,203	223	197	.70	.33
Louisiana	28,053	44,872	2,226	4,202	7.93	9.36
Texas	78,216	194,983	9,258	13,920	11.84	7.14
Oklahoma	1,011	58,549	52	973	5.14	1.66
Arkansas	41,241	89,374	525	557	1.27	.62
Montana	3,173	8,652	885	2,150	27.89	24.85
Wyoming	1,137	3,219	247	403	21.72	12.52
Colorado	9,931	14,685	1,773	2,060	17.85	14.03
New Mexico	5,469	7,056	358	540	6.55	7.65
Arizona	1,434	2,056	600	543	41.84	26.41
Utah	4,409	8,459	983	1,086	22.30	12.84
Nevada	1,865	2,194	773	750	41.45	34.18
Idaho	2,825	7,435	534	950	18.90	12.78
Washington	7,934	15,846	2,187	3,020	27.56	19.06
Oregon	10,314	16,761	1,772	2,127	17.18	12.69
California	41,503	53,371	14,446	15,516	34.81	29.07
Geographic division:						
North Atlantic	344,816	402,785	55,566	62,985	16.11	15.64
South Atlantic	307,378	471,750	3,303	2,819	1.07	.60
North Central	759,964	1,203,823	149,324	142,394	19.65	11.83
South Cenrtal	380,958	820,792	13,843	21,136	3.63	2.58
Western	89,994	139,734	24,558	29,145	27.29	20.86
United States	1,883,110	3,038,884	246,594	258,479	13.10	8.51

NUMBER OF LABORERS WITH FOREIGN PARENTAGE.

In continuation of a study of the contributions of foreign countries to the agricultural labor of this country, Table 7 has been compiled from the census report of occupations for 1900. It presents in detail the number of agricultural laborers that were of foreign parentage, of both sexes, in 1900, with classification of these laborers

according to the countries of parent nativity. Of the 4,410,877 agricultural laborers in the United States in 1900, 765,555 had foreign parentage. Details may be found by States and geographic divisions and by countries of parentage in Table 7.

TABLE 7.—*Number of agricultural laborers of both sexes with foreign parentage, by principal foreign countries, and by States and geographic divisions, census of 1900.*

State and geographic division.	Aggregate agricultural laborers, 1900.	Agricultural laborers with foreign parentage, 1900.					
		Total.	Having either both parents born as specified, or one parent born as specified and one parent native.				
			Austria-Hungary.	Canada-English.	Canada-French.	Germany.	Great Britain.
Maine	21,976	4,794	1	2,619	879	41	299
New Hampshire	12,714	3,028	8	937	754	50	366
Vermont	18,443	5,585	9	1,189	2,132	84	572
Massachusetts	31,515	17,694	123	2,711	1,920	663	1,602
Rhode Island	5,304	2,546	3	89	337	61	250
Connecticut	19,847	9,418	360	202	445	1,230	769
New York	148,456	55,620	621	3,351	2,146	15,981	8,058
New Jersey	33,220	10,222	494	43	20	3,376	913
Pennsylvania	123,208	17,240	336	221	39	6,924	2,239
Delaware	9,126	515	2	7	.....	105	108
Maryland	50,134	3,768	171	41	4	2,302	254
District of Columbia	618	107	.....	1	1	44	24
Virginia	138,613	1,058	74	35	.....	300	265
West Virginia	58,796	1,262	8	18	.....	506	203
North Carolina	233,288	352	3	15	1	75	123
South Carolina	237,326	371	5	2	1	139	44
Georgia	282,347	557	8	23	.....	112	108
Florida	37,343	729	3	24	3	134	145
Ohio	138,066	27,382	336	391	84	17,206	3,114
Indiana	118,498	17,167	124	266	118	11,290	1,019
Illinois	184,959	64,578	389	965	617	34,030	5,842
Michigan	97,527	50,632	250	11,102	2,002	15,796	5,685
Wisconsin	93,718	72,163	2,523	1,666	874	35,457	3,753
Minnesota	94,195	80,033	2,882	2,218	1,554	13,893	1,952
Iowa	133,450	66,293	2,138	2,011	269	29,408	5,222
Missouri	162,916	22,430	364	624	112	14,262	1,879
North Dakota	24,193	19,566	655	2,116	462	2,590	895
South Dakota	26,749	19,259	779	747	205	4,644	964
Nebraska	59,601	32,135	3,176	949	187	13,581	2,164
Kansas	89,271	25,941	1,115	1,084	324	9,003	3,384
Kentucky	165,432	4,213	31	45	3	2,375	324
Tennessee	182,905	1,444	10	53	9	424	228
Alabama	286,195	1,006	9	29	.....	465	148
Mississippi	259,668	966	6	41	3	164	168
Louisiana	173,510	5,796	32	54	33	507	196
Texas	273,188	36,001	4,694	173	30	12,375	1,252
Oklahoma	68,478	4,417	278	331	55	1,496	608
Arkansas	156,455	2,579	108	108	15	1,082	313
Montana	8,979	4,274	48	478	236	762	723
Wyoming	3,318	1,144	4	88	14	229	337
Colorado	14,825	4,762	99	302	70	1,220	891
New Mexico	7,578	976	4	15	2	67	65
Arizona	3,393	1,013	.....	35	3	49	99
Utah	8,698	5,842	1	63	19	98	2,932
Nevada	2,760	1,382	11	55	21	224	179
Idaho	7,814	3,392	26	135	24	408	1,228
Washington	17,455	6,930	125	613	133	1,477	1,018
Oregon	17,316	5,813	109	398	113	1,640	878
California	67,493	41,160	303	1,372	214	4,678	3,213
Geographic division:							
North Atlantic	414,683	126,147	1,955	11,362	8,672	28,410	15,068
South Atlantic	1,047,591	8,719	274	166	10	3,717	1,274
North Central	1,223,143	497,579	14,731	24,139	6,808	201,160	35,873
South central	1,565,831	56,422	5,168	834	148	18,888	3,237
Western	159,629	76,088	730	3,554	849	10,852	11,563
United States	4,410,877	765,555	22,858	40,055	16,487	263,027	67,015

TABLE 7.—*Number of agricultural laborers of both sexes with foreign parentage, by principal foreign countries, and by States and geographic divisions, census of 1900*—Con.

State and geographic division.	Agricultural laborers with foreign parentage, 1900.						
	Having either both parents born as specified, or one parent born as specified and one parent native.						Mixed foreign parentage.
	Ireland.	Italy.	Poland.	Russia.	Scandinavia.	Other countries	
Maine	396	12	1	4	268	42	232
New Hampshire	503	18	38	59	83	46	166
Vermont	1,135	8	33	18	48	82	275
Massachusetts	6,238	267	1,279	294	678	1,344	575
Rhode Island	709	221	6	8	292	510	60
Connecticut	3,030	493	1,046	287	1,004	315	237
New York	15,844	836	2,195	506	1,209	2,700	2,173
New Jersey	2,731	627	510	323	268	630	287
Pennsylvania	4,920	322	290	158	564	671	556
Delaware	218	14	3	3	7	28	20
Maryland	543	15	108	68	15	146	101
District of Columbia	27	.....	.....	.....	1	7	2
Virginia	196	12	1	13	29	72	61
West Virginia	373	15	1	.....	4	93	41
North Carolina	57	25	1	.....	12	32	8
South Carolina	96	3	2	.....	10	63	6
Georgia	144	6	.....	1	20	112	23
Florida	52	11	2	4	35	294	22
Ohio	2,766	62	116	29	222	2,226	830
Indiana	1,656	17	248	14	502	1,434	479
Illinois	8,245	69	737	234	7,977	3,459	2,014
Michigan	3,768	18	1,089	67	2,076	4,342	4,437
Wisconsin	5,087	41	2,305	83	14,102	3,602	2,670
Minnesota	14,459	12	1,331	502	35,892	2,314	3,024
Iowa	7,747	11	42	46	13,084	3,755	2,560
Missouri	2,191	96	87	27	594	1,404	790
North Dakota	805	2	182	1,401	8,934	309	1,215
South Dakota	927	5	108	2,189	7,004	798	889
Nebraska	2,453	18	448	754	5,776	993	1,636
Kansas	2,717	23	70	1,825	3,611	1,354	1,431
Kentucky	960	22	3	2	21	315	112
Tennessee	306	86	1	13	64	201	49
Alabama	161	14	1	2	40	101	36
Mississippi	263	101	.....	.....	44	144	32
Louisiana	174	3,761	1	7	43	893	95
Texas	935	433	808	147	1,040	13,368	746
Oklahoma	479	5	18	397	191	313	246
Arkansas	265	101	71	6	114	284	112
Montana	598	54	4	15	719	329	308
Wyoming	139	3	1	1	164	52	112
Colorado	512	167	5	156	728	306	306
New Mexico	30	13	1	3	17	736	23
Arizona	34	5	.....	.....	53	713	22
Utah	50	17	.....	.....	1,618	310	734
Nevada	197	213	.....	3	140	252	87
Idaho	195	20	.....	11	792	260	293
Washington	679	126	14	139	1,150	1,007	449
Oregon	451	120	10	103	574	1,014	403
California	3,943	3,257	21	114	1,857	20,677	1,511
Geographic division:							
North Atlantic	35,506	2,804	5,398	1,657	4,414	6,340	4,561
South Atlantic	1,706	101	118	89	133	847	284
North Central	52,821	374	6,763	7,171	99,774	25,990	21,975
South Central	3,543	4,523	903	574	1,557	15,619	1,428
Western	6,828	3,995	56	545	7,812	25,656	4,248
United States	100,404	11,797	13,238	10,036	113,690	74,452	32,496

PERCENTAGE OF LABORERS WITH FOREIGN PARENTAGE.

From Table 7 percentages have been computed to be presented in Table 8 to express the relative importance of each foreign country in contributing agricultural laborers to this country as appeared in the census of 1900. Of the total number of agricultural laborers, 17.36 per cent had foreign parentage, but the percentage varies enormously among the geographic divisions. In the Western division, 48.04 per cent of the agricultural laborers had foreign parentage; in the North Central division, 40.68 per cent; in the North Atlantic division, 30.42 per cent; in the South Central division, 3.60 per cent; and in the South Atlantic division, 0.83 of 1 per cent.

RELATIVE CONTRIBUTIONS OF PRINCIPAL COUNTRIES.

The country that contributed the largest fraction to the agricultural laborers was Germany, for which the percentage was 5.96 in the total number of such laborers in the United States. In the North Central division the percentage expressing German nativity was 16.45; in the North Atlantic division, 6.85; and in the Western division, 6.80. Neither Ireland nor Scandinavia equals the German contribution to the agricultural laborers of this country.

The contribution of Scandinavia to the agricultural laborers of the United States in 1900 was 2.58 per cent of all agricultural laborers, and this percentage places Scandinavia second to Germany in importance. The Scandinavian contribution to the North Central division was 8.16 per cent and to the Western division 4.89 per cent.

Ireland stands third as a contributor to the agricultural laborers of this country as found in 1900. The Irish contribution is 2.27 per cent of all agricultural laborers; the figures for the North Atlantic division being 8.56 per cent; for the North Central division, 4.32 per cent; and for the Western division, 4.28 per cent.

Great Britain stands fourth in importance as a contributor, with 1.52 per cent for the United States, 7.24 per cent for the Western division, 3.63 per cent for the North Atlantic division, and 2.93 per cent for the North Central division.

TABLE 8.—*Percentage of agricultural laborers of both sexes with foreign parentage of the total agricultural laborers, by principal foreign countries, and by States and geographic divisions, census of 1900.*

State and geographic division.	Agricultural laborers with foreign parentage, 1900.												
	Total.	Having either both parents born as specified or one parent born as specified and one parent native.											Mixed foreign parentage.
		Austria - Hungary.	Canada, English.	Canada, French.	Germany.	Great Britain.	Ireland.	Italy.	Poland.	Russia.	Scandinavia.	Other countries.	
Maine	21.81	.....	11.92	4.00	0.19	1.36	1.80	0.05	.....	0.02	1.22	0.19	1.06
New Hampshire	23.95	0.06	7.41	5.96	.40	2.90	3.98	.14	0.30	.47	.66	.36	1.31
Vermont	30.28	.05	6.45	11.56	.46	3.10	6.15	.04	.18	.10	.26	.44	1.49
Massachusetts	56.14	.39	8.60	6.09	2.10	5.08	19.80	.85	4.06	.93	2.15	4.26	1.83
Rhode Island	48.76	.06	1.70	6.45	1.17	4.79	13.58	4.23	.12	.15	5.59	9.77	1.15
Connecticut	47.77	1.83	1.02	2.26	6.24	3.90	15.37	2.50	5.30	1.46	5.09	1.60	1.20
New York	37.47	.42	2.26	1.45	10.77	5.43	10.67	.56	1.48	.34	.81	1.82	1.46
New Jersey	30.77	1.49	.13	.06	10.16	2.75	8.22	1.89	1.53	.97	.81	1.90	.86
Pennsylvania	13.99	.27	.18	.03	5.62	1.82	3.99	.26	.24	.13	.46	.54	.45
Delaware	5.64	.02	.08	.....	1.15	1.18	2.39	.15	.03	.03	.08	.31	.22
Maryland	7.52	.34	.08	.01	4.59	.51	1.08	.03	.22	.14	.03	.29	.20
District of Columbia	17.43	.....	.16	.16	7.17	3.91	4.40	.....	.....	.....	.16	1.14	.33
Virginia	.76	.05	.03	.....	.22	.19	.14	.01	.....	.01	.02	.05	.04
West Virginia	2.15	.01	.03	.....	.86	.35	.63	.03	.....	.....	.01	.16	.07
North Carolina	.15	.....	.01	.....	.03	.05	.03	.01	.....	.....	.01	.01	.....
South Carolina	.15	.....	.....	.....	.06	.02	.04	.....	.....	.....	.....	.03	.....
Georgia	.20	.....	.01	.....	.04	.04	.05	.....	.....	.....	.01	.04	.01
Florida	1.95	.01	.06	.01	.36	.39	.14	.03	.01	.01	.09	.78	.06
Ohio	19.83	.24	.28	.06	12.46	2.26	2.00	.05	.09	.02	.16	1.61	.60
Indiana	14.49	.11	.23	.10	9.53	.86	1.40	.01	.21	.01	.42	1.21	.40
Illinois	34.92	.21	.52	.33	18.40	3.16	4.46	.04	.40	.13	4.31	1.87	1.09
Michigan	51.92	.26	11.38	2.05	16.20	5.83	3.86	.02	1.12	.07	2.13	4.45	4.55
Wisconsin	77.00	2.69	1.78	.93	37.84	4.00	5.43	.04	2.46	.09	15.05	3.84	2.85
Minnesota	84.97	3.06	2.36	1.65	14.75	2.07	15.35	.01	1.41	.53	38.11	2.46	3.21
Iowa	49.67	1.60	1.51	.20	22.04	3.91	5.81	.01	.03	.03	9.80	2.81	1.92
Missouri	13.77	.22	.38	.07	8.76	1.15	1.35	.06	.05	.02	.37	.86	.48
North Dakota	80.87	2.71	8.75	1.91	10.71	3.70	3.32	.....	.75	5.79	36.93	1.28	5.02
South Dakota	72.00	2.91	2.79	.77	17.36	3.60	3.47	.02	.41	8.18	26.19	2.98	3.32
Nebraska	53.92	5.33	1.59	.31	22.79	3.63	4.12	.03	.75	1.27	9.69	1.67	2.74
Kansas	29.06	1.25	1.21	.36	10.09	3.79	3.04	.03	.08	2.04	4.05	1.52	1.60
Kentucky	2.55	.02	.03	.....	1.44	.20	.58	.01	.....	.....	.01	.19	.07
Tennessee	.79	.01	.03	.....	.23	.12	.17	.05	.....	.01	.03	.11	.03
Alabama	.35	.....	.01	.....	.16	.06	.06	.....	.....	.....	.01	.04	.01
Mississippi	.37	.....	.02	.....	.06	.06	.10	.04	.....	.....	.02	.06	.01
Louisiana	3.34	.02	.03	.02	.29	.11	.10	2.17	.....	.....	.03	.51	.06
Texas	13.18	1.72	.06	.01	4.53	.46	.34	.16	.30	.06	.38	4.89	.27
Oklahoma	6.45	.41	.48	.08	2.18	.89	.70	.....	.03	.58	.28	.46	.36
Arkansas	1.65	.07	.07	.01	.69	.20	.17	.07	.05	.....	.07	.18	.07
Montana	47.78	.54	5.34	2.64	8.52	8.08	6.69	.60	.04	.17	8.04	3.68	3.44
Wyoming	34.66	.12	2.67	.42	6.94	10.21	4.21	.09	.03	.03	4.97	1.58	3.39
Colorado	32.35	.67	2.05	.48	8.29	6.05	3.48	1.13	.03	1.06	4.95	2.08	2.08
New Mexico	12.88	.05	.20	.03	.88	.86	.40	.17	.01	.04	.22	9.71	.31
Arizona	29.85	.....	1.03	.09	1.44	2.92	1.00	.15	.....	.....	1.56	21.01	.65
Utah	67.74	.01	.73	.22	1.14	34.00	.58	.20	.....	.....	18.76	3.59	8.51
Nevada	50.64	.40	2.01	.77	8.21	6.56	7.22	7.81	.....	.11	5.13	9.23	3.19
Idaho	43.72	.33	1.74	.31	5.26	15.83	2.51	.26	.....	.14	10.21	3.35	3.78
Washington	39.70	.71	3.51	.76	8.46	5.83	3.89	.72	.08	.80	6.59	5.78	2.57
Oregon	33.57	.63	2.30	.65	9.47	5.07	2.60	.69	.06	.59	3.32	5.86	2.33
California	60.98	.45	2.02	.32	6.93	4.76	5.84	4.83	.03	.17	2.75	30.64	2.24
Geographic division:													
North Atlantic	30.42	.47	2.74	2.09	6.85	3.63	8.56	.68	1.30	.40	1.07	1.53	1.10
South Atlantic	.83	.03	.02	.....	.35	.12	.16	.01	.01	.01	.01	.08	.03
North Central	40.68	1.20	1.97	.56	16.45	2.93	4.32	.03	.55	.59	8.16	2.12	1.80
South Central	3.60	.33	.05	.01	1.20	.21	.22	.29	.06	.04	.10	1.00	.09
Western	48.04	.46	2.23	.53	6.80	7.24	4.28	2.50	.04	.34	4.89	16.07	2.66
United States	17.36	.52	.91	.37	5.96	1.52	2.27	.27	.30	.23	2.58	1.69	.74

SUPPLY BY IMMIGRATION AT LOW EBB.

PLACING IMMIGRANTS ON THE LAND.

The long period of cheap and fertile public land available to the immigrant has expired. The rich contributions of Germans and Scandinavians and Celts to the agriculture of the Nation have apparently nearly ceased. Land in private ownership at moderate prices is still available, but the immigrant does not seek it. Immigration is to the city and to nonagricultural employment. Efforts to divert the immigrant to the land have been made and some of them are now in operation, but the success is not perceptible. The immigrant will not come.

An attempt was made a few years ago by a Southern State to induce immigration to agricultural land, but without results. Indeed, much of the South is averse to immigration. Some foreign nations maintain at several principal ports at which immigrants land offices through which agricultural laborers may be obtained, but the number of laborers so procured is small.

BY THE BUREAU OF IMMIGRATION AND NATURALIZATION.

The Division of Information in the Bureau of Immigration and Naturalization maintains a service through which employment is found for immigrants. A portion of the record of the work of that office is expressed in Table 9. In the first place, it is well to bear in mind that the population figures of immigration are to some extent and sometimes largely deceptive for the reason that the contrary flow of former immigrants back to their native countries always exists in proportions that are at least considerable. For instance, in the fiscal year 1908 over 750,000 immigrants were admitted to this country, and in the year 1911 more than 1,000,000, but during each of these years the immigrant departures were 50 per cent of the admissions. Although 750,000 immigrants arrived in 1909, the departures of immigrants during that year were 30 per cent of that number, and the departures of 1910 were 17 per cent of more than 1,000,000 immigrant arrivals.

The record of the Division of Information of the Bureau of Immigration and Naturalization shows that during the 15 months ending June 30, 1909, 2,636 immigrants were placed in agricultural work through the services of that office, a number which was 53 per cent of all persons for whom employment was found. The number of persons in the fiscal year 1910 for whom employment was found in agriculture was 2,761, or 64 per cent of all persons for whom employment was found. The number for 1911 was 3,087, and the percentage 60.

NEW YORK'S FARM EMPLOYMENT OFFICE.

As a sample of what some of the States are doing to direct laborers to the farm, New York is selected. The Department of Agriculture of the State of New York maintains at Albany an employment bureau for supplying labor to farmers, and the public record of that office may be found in Table 10. Through the efforts of that office in the year ending September 30, 1906, 4,171 persons were placed on farms in response to demands for labor, and, in 1907, 4,624 persons, some of these persons in each year being family members, not doing farm work. In 1908 the services of the employment office of the New York Department of Agriculture secured for farmers 3,295 single farm hands and 80 families containing 320 members, or 3,615 persons in all. The number was increased in 1909 and very much increased in 1910, in which year the number of single farm hands for whom employment was found was 4,576 and the number of families 122, with 368 members, or a total of 4,944 persons.

AGRICULTURAL COLONIES.

It is to be borne in mind that some immigrants are now going into agriculture in this country without passing through employment offices, but the number is comparatively small. In recent years there have been several movements to establish farming colonies. The Jewish Agricultural and Industrial Aid Society of New York City has placed a considerable number of agricultural colonies of Jewish immigrants at various points in New England and New Jersey. The Salvation Army has established two farming colonies, in Ohio and Colorado; and several Italian agricultural colonies have been established, usually with specialization in horticulture and viticulture.

TABLE 9.—*Immigration and its distribution to agriculture by the Bureau of Immigration and Naturalization.*

Year ending June 30—	Immigrant aliens.			
	Admitted.	Departed.	Remaining.	Percentage remaining.
1908	782,870	395,073	387,797	50
1909	751,786	225,802	525,984	70
1910	1,041,570	177,982	863,588	83
1911	1,030,300	518,215	512,085	50

Period.	Occupations found.						
	Number of persons.						Percentage in agriculture.
	Farm workers.	Florists.	Ranchmen.	Settlers.	Total agriculture.	Total all occupations.	
15 months ending June 30, 1909	2,565	39	1	31	2,636	5,008	53
12 months ending June 30, 1910	2,747	7	2	5	2,761	4,283	64
12 months ending June 30, 1911	3,083	1	.....	3	3,087	5,176	60

TABLE 10.—*Labor sent to farmers by the New York Department of Agriculture.*

Year ending September 30—	Total persons.	Single farm hands.	Families.	
			Number.	Persons.
1906	[1] 4,171	.....	.....	.....
1907	[1] 4,624	.....	.....	.....
1908	3,615	3,295	80	320
1909	3,883	3,635	82	248
1910	4,944	4,576	122	368

[1] Including a fair percentage of families.

NEARBY CITIES AS AFFECTING FARM WAGE RATES.

OPPOSITE EFFECTS DISCOVERED.

When employments are competitive, their wage rates must be competitive. Many an agricultural laborer can become the conductor or motorman of a street, surburban, or interurban electric car; he can find employment in numerous directions in the nearby town or city, or shop or factory. If the farm does not meet the competition of other employments, it must suffer the loss of some of its laborers. This in fact is what has happened in this country. The farm has lost laborers and has been unable to obtain laborers because it has not met the wages of competitive employments. The effort of the farm to meet the competition for its labor is often apparent within a rim of country surrounding cities of considerable size. In the nineteenth investigation of the wages of farm labor made by this bureau, details of which are given in Bulletin 99, the farm wage rates of counties containing cities of more than 25,000 population are compared with wage rates in the rest of the State, with results that may be found in Table 11.

The difference between the farm wages of such counties and the rest of the State is sometimes small and is often higher in such counties, but not everywhere so. In case of a lower wage rate in a county containing a city of 25,000 persons or more than in the rest of the State, it may be that the sort of labor required by the farms in such county is not of as high an order as that required by farms in the rest of the State.

It is unnecessary to review in detail the testimony of Table 11. The contrast of city counties with the rest of each State presents a large amount of details which need explanation varying in accordance with the conditions prevailing in each State.

GLAMOUR OF THE CITY.

In spite of all that the farmer has done or been able to do, there has been a drift of labor from farm to city and industry, and the potential supply of farm labor has been diverted from the farm. The

movement of farm labor to town and city, and to industry and transportation, is to be accounted for quite as much by the student of psychology as by the student of economics. To the farm laborer who has been in the city little if at all, there is a glamour in city life which has a powerful influence upon his volition. The case is similar to that of the boy who runs away from home to hunt Indians. When this is joined to the greater nominal rate of wages that can be earned in the city, the combination of a little reasoning with a good deal of imagination is likely to rob the farmer of his hired man.

TABLE 11.—*Average wage rates of outdoor labor of men on farms, by States, 1909—Comparison of counties containing cities of more than 25,000 population with rest of State.*

State.	Rate per month, in hiring by the year.				Rate per month, in hiring by the season.			
	Without board.		With board.		Without board.		With board.	
	City counties.	Rest of State.	City counties.	Rest of State.	City counties.	Rest of State.	City counties.	Rest of State.
Maine	$29.67	$33.68	$24.62	$22.98	$40.00	$38.34	$27.88	$27.57
New Hampshire	37.50	35.12	21.00	22.53	40.00	38.82	25.00	26.47
Vermont	.....	34.62	.....	24.03	.....	37.44	.....	26.86
Massachusetts	37.78	37.50	22.56	23.67	44.29	43.75	29.71	28.33
Rhode Island	42.50	30.00	24.50	19.25	51.25	36.00	31.50	21.25
Connecticut	33.75	35.00	20.90	23.00	39.00	38.33	24.38	28.00
New York	31.07	30.49	22.09	22.08	35.81	34.84	26.11	25.98
New Jersey	32.76	29.30	18.62	18.88	35.92	32.79	21.75	22.14
Pennsylvania	27.46	27.07	17.21	17.75	30.90	30.44	20.23	20.92
Delaware	26.45	22.94	16.67	14.42	28.55	23.25	18.54	16.41
Maryland	27.24	22.05	16.47	14.90	32.41	22.80	18.27	16.56
Virginia	22.75	19.36	14.88	13.46	22.25	22.25	15.50	16.02
West Virginia	30.00	25.57	19.25	17.92	37.50	28.66	22.00	20.99
North Carolina	.....	17.94	.....	12.50	.....	20.21	.....	14.69
South Carolina	15.67	14.72	9.50	10.92	13.00	16.39	10.38	12.68
Georgia	17.50	17.30	15.17	12.28	18.00	18.92	16.00	13.71
Florida	27.50	24.91	16.33	15.94	40.00	27.03	25.00	18.32
Ohio	28.95	26.45	19.86	19.10	32.56	29.25	22.79	22.03
Indiana	27.33	25.50	18.92	19.39	30.63	28.69	23.05	22.10
Illinois	32.27	29.83	23.59	22.82	34.05	31.57	26.32	24.98
Michigan	31.29	29.18	21.94	21.54	35.96	33.73	25.73	25.05
Wisconsin	32.50	33.07	23.96	24.42	36.45	38.34	28.59	28.57
Minnesota	40.00	34.77	27.70	23.94	50.00	39.70	32.12	29.23
Iowa	35.17	34.31	25.64	25.63	37.41	36.72	29.50	28.88
Missouri	29.91	26.04	20.85	18.78	33.34	28.05	22.95	21.05
North Dakota	.....	40.86	.....	27.01	.....	46.93	.....	33.34
South Dakota	.....	37.66	.....	26.06	.....	41.52	.....	31.46
Nebraska	33.33	35.94	24.29	25.07	35.00	38.82	27.02	28.32
Kansas	31.96	32.85	22.61	23.01	35.00	35.34	25.25	25.84
Kentucky	23.23	20.12	17.11	15.03	31.00	23.14	22.07	17.89
Tennessee	18.19	18.84	12.80	13.32	19.88	21.06	15.35	15.72
Alabama	21.50	17.06	14.58	11.83	17.72	19.36	13.09	13.81
Mississippi	.....	18.56	.....	12.92	.....	20.37	.....	14.82
Louisiana	18.89	18.74	13.40	13.04	19.26	19.97	13.83	14.38
Texas	25.70	23.16	17.02	16.64	28.61	25.66	20.66	19.00
Oklahoma	.....	27.32	.....	18.69	.....	29.05	.....	21.42
Arkansas	22.67	20.66	16.17	14.49	22.50	23.26	16.80	16.82
Montana	55.00	47.50	35.00	35.00	60.00	53.85	40.00	39.23
Wyoming	.....	41.25	.....	30.75	.....	44.75	.....	35.60
Colorado	40.00	42.41	24.72	28.37	47.50	46.60	27.82	32.79
New Mexico	.....	32.24	.....	23.79	.....	34.68	.....	26.11
Arizona	.....	44.95	.....	31.76	.....	49.01	.....	36.10
Utah	60.00	46.25	35.00	35.50	60.00	56.40	45.00	41.00
Nevada	.....	48.25	.....	37.50	.....	56.23	.....	40.83
Idaho	.....	47.08	.....	34.49	.....	52.64	.....	40.45
Washington	42.09	44.93	28.89	31.62	46.64	49.74	33.64	36.89
Oregon	40.00	40.68	27.50	29.49	46.75	44.69	34.75	34.02
California	43.18	46.29	30.12	31.94	46.39	48.09	34.02	35.03

TABLE 11.—*Average wage rates of outdoor labor of men on farms, by States, 1909—Comparison of counties containing cities of more than 25,000 population with rest of State*—Continued.

State.	Rate per day, harvest work.				Rate per day, other than harvest work.			
	Without board.		With board.		Without board.		With board.	
	City counties.	Rest of State.	City counties.	Rest of State.	City counties.	Rest of State.	City counties.	Rest of State.
Maine	$1.62	$2.05	$1.42	$1.65	$1.50	$1.60	$1.25	$1.29
New Hampshire	2.00	2.13	1.62	1.72	1.50	1.72	1.38	1.30
Vermont	.....	2.14	.....	1.73	.....	1.54	.....	1.21
Massachusetts	2.01	2.08	1.54	1.81	1.67	1.75	1.08	.75
Rhode Island	2.25	1.62	1.75	1.00	1.70	1.50	1.18	1.00
Connecticut	1.85	1.85	1.44	1.44	1.53	1.54	1.06	1.21
New York	2.08	2.06	1.76	1.78	1.56	1.59	1.24	1.27
New Jersey	2.02	2.10	1.68	1.71	1.47	1.46	1.04	1.10
Pennsylvania	1.77	1.83	1.42	1.42	1.40	1.41	1.05	1.03
Delaware	1.95	1.37	1.59	1.19	1.28	1.05	1.04	.86
Maryland	1.63	1.52	1.30	1.31	1.33	1.14	.97	.89
Virginia	1.19	1.37	1.09	1.12	.96	.96	.85	.74
West Virginia	1.75	1.53	1.38	1.21	1.75	1.18	1.06	.89
North Carolina	.....	1.20	.....	1.01	.....	.89	.....	.70
South Carolina	.62	1.07	.50	.94	.58	.71	.50	.60
Georgia	1.00	1.12	.94	.89	.82	.91	.76	.71
Florida	1.38	1.46	1.17	1.06	1.17	1.21	.83	.86
Ohio	2.08	2.01	1.72	1.67	1.60	1.46	1.28	1.17
Indiana	2.11	1.97	1.82	1.65	1.45	1.38	1.22	1.13
Illinois	2.21	2.10	1.89	1.83	1.69	1.54	1.39	1.32
Michigan	2.10	2.14	1.74	1.75	1.60	1.62	1.28	1.26
Wisconsin	2.08	2.20	1.75	1.79	1.66	1.71	1.32	1.35
Minnesota	2.25	2.59	2.12	2.23	1.75	1.88	1.62	1.53
Iowa	2.49	2.43	2.06	2.08	1.87	1.82	1.53	1.53
Missouri	2.12	1.80	1.77	1.49	1.46	1.27	1.16	.99
North Dakota	.....	3.17	.....	2.58	.....	2.14	.....	1.66
South Dakota	.....	2.82	.....	2.38	.....	2.19	.....	1.69
Nebraska	2.38	2.60	2.05	2.23	1.67	1.95	1.47	1.58
Kansas	2.45	2.43	2.14	2.17	1.69	1.74	1.31	1.44
Kentucky	1.82	1.55	1.50	1.31	1.29	.99	1.03	.81
Tennessee	1.24	1.35	1.06	1.11	.88	.92	.80	.74
Alabama	.93	1.13	.86	.89	.93	.87	.79	.68
Mississippi	.....	1.13	.....	.89	.....	.96	.....	.75
Louisiana	1.07	1.16	1.03	.91	.87	1.01	.75	.79
Texas	1.58	1.44	1.35	1.20	1.28	1.15	.99	.93
Oklahoma	.....	1.81	.....	1.61	.....	1.37	.....	1.12
Arkansas	1.33	1.37	1.00	1.11	1.00	1.05	.80	.83
Montana	3.00	2.38	2.00	2.25	3.00	2.08	2.00	1.65
Wyoming	.....	2.33	.....	1.99	.....	2.04	.....	1.54
Colorado	2.00	2.26	1.60	1.81	1.75	1.88	1.18	1.45
New Mexico	.....	1.62	.....	1.28	.....	1.39	.....	1.06
Arizona	.....	2.13	.....	1.73	.....	1.74	.....	1.35
Utah	2.50	2.36	2.00	2.00	1.75	2.12	1.50	1.62
Nevada	.....	2.40	.....	2.04	.....	.....	.....	1.42
Idaho	.....	2.72	.....	2.17	.....	2.22	.....	1.70
Washington	2.48	2.60	2.16	2.37	2.19	2.26	1.57	1.67
Oregon	2.62	2.28	2.12	2.06	2.12	1.77	1.56	1.42
California	2.31	2.30	1.93	2.02	1.88	1.95	1.37	1.43

EFFECT OF INDUSTRIAL, URBAN, AND PRODUCTIVE CONDITIONS.

In continuation of the subject of competitive wages, which quite generally confronts the farmer, Table 12 has been prepared. This table presents the average wage rates of the outdoor labor of men on farms per month in hiring by the season and per day for day labor other than harvest work, both with board, in 1899, 1902, and 1909, contained in Bulletin 99, and compares with these wage rates the industrial, urban, and productive conditions in 1900, as ascertained by the census. The purpose is to discover the character of the con-

ditions covered by the table that are associated with high and low wage rates for farm labor within each State and each geographic division of States. Conditions in the western group of States are of such a nature that they do not lend themselves to a comparison with wage rates in a way that would justify conclusions with regard to relationship between them, and it may be that in the other divisions a relationship of cause and effect may not be fully inferred. However, the table is presented for such value as it may have.

NONAGRICULTURAL EMPLOYMENTS NOT DECISIVE.

THE PROBLEM HAS OTHER ELEMENTS.

If the Western States are omitted, the highest wage rates for agricultural labor are found in the North Central division, and the North Atlantic division stands second. In the North Central division the percentage of the population 10 years of age and over engaged in manufacturing, mining, mechanical pursuits, fishing, trading, and transportation is 16.33, while in the North Atlantic division it is 25.52, or much larger in a region where the agricultural wage rates are somewhat lower. The percentage of the occupational population 10 years of age and over engaged in agriculture in the North Central States is three times the corresponding percentage in the North Atlantic States. In comparison between these two divisions of States, it does not appear that the more general devotion of the people to nonagricultural employments brings the higher wages in agricultural employments.

If the North Atlantic and North Central groups of States are compared with the South Atlantic and South Central groups, the contrary result is indicated, as may be observed on referring to Table 12.

The factors that go to make and sustain farm wage rates are numerous and variable, and, as this table indicates, differences in relative prevalence of nonagricultural employments are not decisive.

THE URBAN PROBLEM.

The percentage of persons living in municipalities of 2,500 persons and over is expressed in Table 12 for the purpose of comparing with farm wage rates, and the results of the comparison are quite similar to those already observable with regard to nonagricultural employments.

The foregoing comparisons are based on the extensive regions covered by the adopted geographic divisions of States and are not sustained in all cases when the individual States are examined. Probably in both cases, and more especially in the case of the geographic divisions, the area is so large that numerous factors other than those considered enter to cause variations in their results.

The comparison of counties containing cities of more than 25,000 population with the rest of each State in the matter of wage rates for farm labor, in Table 11, is more decisive probably because the areas are more restricted, but, even in that table, in some States unconsidered factors are so influential as to prevent uniformity of conclusions.

WAGES RELATED TO THE PRODUCT.

Competition between agricultural and other employments in determining wage rates and the flow of labor confronts the farmer almost everywhere in this country. Hence, it is important to the success of farming operations that they should produce commodities whose prices are high enough to sustain competitive wages on the farm.

As bearing upon this subject, the average value of farm products per agricultural worker in 1900 has been computed for Table 12. It will be observed upon examining the geographic divisions that there is at least association, if not the relationship of cause and effect, between high and low farm wage rates, respectively, and high and low average value of product per worker. From lowest to highest wage rates and from lowest to highest average values of agricultural products the geographic divisions maintain the same order. Whether the higher average value of products per worker causes the higher average wage rates, or only makes possible their existence, is a matter for argument which does not enter into the scope of this bulletin.

TABLE 12.—*Comparison of average wage rates of outdoor labor of men on farms, per month in hiring by the year and season, and per day for day labor other than harvest work, with board, 1899, 1902, and 1909, with industrial, urban, and productive conditions in 1900, by States and geographic divisions.*

State and geographic division.	Wage rate with board.						Percentage of population 10 years of age and over engaged in—		Percentage of urban of total population.[2]		Value of farm products per agricultural worker, 1900.[1]
	Per month in hiring by the year and season.			Per day for day labor other than harvest work.			Manufacturing, mining, mechanical pursuits, fishing, trade, and transportation, 1900.	Agriculture, 1900.[1]	1900	1910	
	1899	1902	1909	1899	1902	1909					
Maine	$18.00	$20.84	$26.71	$1.03	$1.12	$1.28	18.97	25.89	48.6	51.4	$496.34
New Hampshire	18.48	20.42	25.18	1.05	1.11	1.31	22.80	20.18	55.0	59.2	582.90
Vermont	18.74	21.40	25.93	1.00	1.07	1.21	16.97	3.55	40.5	47.5	680.43
Massachusetts	18.32	19.36	26.52	1.08	1.14	1.04	28.79	5.28	91.5	92.8	643.89
Rhode Island	18.35	18.25	24.62	1.00	1.07	1.12	29.84	5.48	95.1	96.7	586.69
Connecticut	17.52	18.85	24.61	1.06	1.05	1.14	27.16	11.07	87.2	89.7	639.26
New York	17.52	19.65	24.78	.98	1.05	1.26	24.91	12.06	72.9	78.8	656.42
New Jersey	15.19	16.90	20.50	.95	1.02	1.09	27.33	8.80	70.6	75.2	637.43
Pennsylvania	14.32	16.09	19.69	.84	.93	1.04	25.06	13.11	54.7	60.4	626.77
Delaware	11.98	13.81	17.12	.68	.81	.95	19.98	25.34	46.4	48.0	491.03
Maryland	11.53	12.67	15.96	.64	.71	.90	20.18	19.93	49.8	50.8	461.41
District of Columbia							23.20	1.13	100.0	100.0	588.40
Virginia	10.43	11.29	15.00	.51	.57	.74	11.98	41.65	18.3	23.1	289.90
West Virginia	13.55	15.59	20.33	.65	.74	.89	14.07	44.12	13.1	18.7	299.94
North Carolina	8.56	9.61	14.05	.46	.50	.70	8.04	53.18	9.9	14.4	196.17
South Carolina	7.34	8.24	11.96	.42	.45	.60	7.48	48.32	12.8	14.8	174.61
Georgia	8.05	9.30	13.21	.46	.51	.71	8.51	47.19	15.6	20.6	205.28
Florida	11.32	12.68	17.86	.60	.69	.86	13.22	32.39	20.3	29.1	233.83
Ohio	15.27	17.26	21.35	.90	1.00	1.18	19.48	25.78	48.1	55.9	621.89
Indiana	15.45	16.98	21.40	.84	.92	1.13	15.33	36.90	34.3	42.4	598.46
Illinois	17.76	19.18	24.52	.97	1.05	1.33	20.16	24.90	54.3	61.7	749.16
Michigan	16.95	20.06	24.36	.97	1.09	1.26	16.84	32.46	39.3	47.2	483.69
Wisconsin	19.20	22.17	27.52	1.06	1.14	1.35	15.35	34.88	38.2	43.0	596.27
Minnesota	19.98	22.79	28.30	1.18	1.31	1.53	15.52	38.22	34.1	41.0	635.59
Iowa	19.32	22.14	28.14	1.11	1.24	1.53	12.95	45.96	25.6	30.6	985.05
Missouri	14.57	15.74	20.56	.71	.79	1.00	15.30	39.62	36.3	42.5	476.45
North Dakota	21.82	25.05	32.33	1.18	1.30	1.66	9.43	59.38	7.3	11.0	897.42
South Dakota	20.41	23.55	30.38	1.26	1.36	1.69	9.09	58.73	10.2	13.1	798.93
Nebraska	18.87	20.83	27.50	1.06	1.17	1.58	12.17	48.71	23.7	26.1	872.85
Kansas	17.46	18.63	25.21	.98	1.04	1.44	11.24	52.07	22.5	29.2	774.44
Kentucky	12.24	12.76	17.13	.60	.61	.82	10.32	51.55	21.8	24.3	303.69
Tennessee	10.33	10.81	14.98	.54	.56	.74	9.70	51.69	16.2	20.2	258.93
Alabama	8.63	9.79	13.19	.48	.54	.68	9.04	49.91	11.9	17.3	179.25
Mississippi	9.27	10.36	14.21	.53	.57	.75	5.46	55.58	7.7	11.5	210.65
Louisiana	10.30	12.74	13.94	.60	.75	.79	10.07	41.67	26.5	30.0	249.57
Texas	12.94	14.03	18.47	.68	.77	.93	8.15	56.39	17.1	24.1	373.68
Oklahoma	14.52	15.80	20.87	.77	.88	1.12	6.99	66.78	7.4	19.3	391.51
Arkansas	10.54	12.49	16.31	.57	.70	.83	7.12	60.45	8.5	12.9	233.58
Montana	32.12	32.00	38.05	1.41	1.39	1.68	28.56	23.51	34.7	35.5	1,039.44
Wyoming	29.64	31.21	34.53	1.33	1.44	1.54	25.24	29.09	28.8	29.6	908.34
Colorado	23.23	25.22	31.53	1.12	1.17	1.44	25.62	19.77	48.3	50.7	745.98
New Mexico	18.45	20.45	25.62	.75	.93	1.06	11.10	39.30	14.0	14.2	377.71
Arizona	28.23	28.99	35.28	1.21	1.13	1.35	22.85	25.24	15.9	31.0	444.49
Utah	25.72	29.45	40.77	1.22	1.28	1.61	15.61	33.37	38.1	46.3	564.23
Nevada	31.76	34.14	40.30	1.27	1.36	1.42	21.40	28.30	17.0	16.3	1,176.80
Idaho	28.13	29.79	39.38	1.21	1.26	1.70	17.19	41.60	6.2	21.5	673.87
Washington	25.06	28.35	35.43	1.17	1.29	1.66	23.46	22.57	40.8	53.0	659.32
Oregon	22.89	25.98	33.11	1.00	1.13	1.42	17.74	31.98	32.2	45.6	682.52
California	25.64	29.38	34.17	1.10	1.20	1.43	22.08	21.88	52.4	61.8	903.23
Geographic division:											
North Atlantic	16.60	18.47	20.73	.95	1.03	1.16	25.52	11.91	69.1	74.1	330.84
South Atlantic	9.26	10.41	13.10	.50	.55	.73	11.75	41.52	21.4	25.4	233.23
North Central	17.36	19.41	25.42	.97	1.06	1.32	16.33	35.28	38.6	45.1	678.16
South Central	10.97	12.14	16.57	.59	.66	.82	8.57	53.38	15.5	20.5	271.48
Western	25.19	28.20	35.32	1.11	1.20	1.48	21.70	25.16	40.7	48.8	758.59
United States	13.90	15.51	20.80	.75	.83	1.03	17.32	31.89	40.5	46.3	460.25

[1] Not including lumbermen and raftsmen, wood choppers, and turpentine farmers.
[2] "Urban" population living in municipalities of 2,500 population and over.

MOVEMENT OF PRICES OF FARM PRODUCTS.

UPWARD MOVEMENT OF WAGES MORE STEADY.

The farmer has hardly been able to attract labor to the farm; the most that he has been able to do has been to hold labor with varying degrees of failure. Competition has forced him to raise the level of wages since the Civil War, with some retrogressions in periods of severe industrial depression. A diminishing cost of production of farm products may have sustained farmers in paying higher wage rates, but practically nothing is known with precision with regard to the trend of the cost of products. An increased value of production per worker would help to sustain higher wage rates, and this is shown in Table 12. An increased value of product per worker may be due to higher production of concrete commodities per worker or to higher prices of commodities produced or to both of these causes.

Table 13 has been constructed to present the average prices of farm products as ascertained by this bureau as far back as 1866, and the 46 years covered by the table have been condensed to various periods for which mean prices have been computed.

Table 13 has been converted into index numbers, with results that may be found in Table 14. For the purpose of constructing this table the mean price for the 10 years 1900–1909 is regarded as being represented by 100. The mean prices for the other periods have been converted into terms of this base number.

The extreme depression of farm prices of farm products from 1890 to 1899, during which time there was a severe industrial depression, is a conspicuous feature of this table. It is also at once apparent that prices of crops suffered a sharp decline from the first period to 1890–1899. There was some recovery during the 10 years 1900–1909 and a continuation of the upward movement of the prices in 1910 and 1911.

With regard to farm animals the trend of prices is somewhat different since the first period 1866–1869. The period during which the prices of animals were lowest was 1890–1899, as in the case of crops, but the mean prices of that period were not preceded by the uniform decline observable in the case of crops, and in recent years the advance in prices has been relatively greater than in the case of crops.

The import of Tables 13 and 14 is that farm wage rates have persisted in upward movement in spite of a downward price movement as well as during an upward price movement, although not in as great a degree as when prices were moving upward.

TABLE 13.—*Prices index numbers and average farm prices of farm products and animals, total for the United States, 1866–1909.*

[All prices are in gold.]

Year.	Wholesale prices index numbers (United States Bureau of Labor).	Farm price, Dec. 1.						
		Corn (per bushel).	Wheat (per bushel).	Oats (per bushel).	Barley (per bushel).	Rye (per bushel).	Buckwheat (per bushel).	Potatoes (per bushel).
		Cents.	*Cents.*	*Cents.*	*Cents.*	*Cents.*	*Cents.*	*Cents.*
1866	.....	47.4	152.7	35.1	70.2	82.2	67.6	47.3
1867	.....	57.0	145.2	44.5	70.1	100.4	78.7	65.9
1868	.....	46.8	108.5	41.7	109.0	94.9	78.0	59.3
1869	.....	59.8	76.5	38.0	70.8	77.0	71.9	42.9
1870	.....	49.4	94.4	39.0	79.1	73.2	70.5	65.0
1871	.....	43.4	114.5	36.2	75.8	71.1	74.5	53.9
1872	.....	35.3	111.4	29.9	68.6	67.6	73.5	53.5
1873	.....	44.2	106.9	34.6	86.7	70.3	75.0	65.2
1874	.....	58.4	86.3	47.1	86.0	77.4	72.9	61.5
1875	.....	36.7	89.5	32.0	74.1	67.1	62.0	34.4
1876	.....	34.0	96.3	32.4	63.0	61.4	66.6	61.9
1877	.....	34.8	105.7	28.4	62.8	57.6	66.9	43.7
1878	.....	31.7	77.6	24.6	57.9	52.5	52.6	58.7
1879	.....	37.5	110.8	33.1	58.9	65.6	59.8	43.6
1880	.....	39.6	95.1	36.0	66.6	75.6	59.4	48.3
1881	.....	63.6	119.2	46.4	82.3	93.3	86.5	91.0
1882	.....	48.5	88.4	37.5	62.9	61.5	73.0	55.7
1883	.....	42.4	91.1	32.7	58.7	58.1	82.2	42.2
1884	.....	35.7	64.5	27.7	48.7	51.9	58.9	39.6
1885	.....	32.8	77.1	28.5	56.3	57.9	55.9	44.7
1886	.....	36.6	68.7	29.8	53.6	53.8	54.5	46.7
1887	.....	44.4	68.1	30.4	51.9	54.5	56.5	68.2
1888	.....	34.1	92.6	27.8	59.0	58.8	63.3	40.2
1889	.....	28.3	69.8	22.9	41.6	42.3	50.5	35.4
1890	112.9	50.6	83.8	42.4	62.7	62.9	57.4	75.8
1891	111.7	40.6	83.9	31.5	52.4	77.4	57.0	35.8
1892	106.1	39.4	62.4	31.7	47.5	54.2	51.8	66.1
1893	105.6	36.5	53.8	29.4	41.1	51.3	58.3	59.4
1894	96.1	45.7	49.1	32.4	44.2	50.1	55.6	53.6
1895	93.6	25.3	50.9	19.9	33.7	44.0	45.2	26.6
1896	90.4	21.5	72.6	18.7	32.3	40.9	39.2	28.6
1897	89.7	26.3	80.8	21.2	37.7	44.7	42.1	54.7
1898	93.4	28.7	58.2	25.5	41.3	46.3	45.0	41.4
1899	101.7	30.3	58.4	24.9	40.3	51.0	55.7	39.0
1900	110.5	35.7	61.9	25.8	40.9	51.2	55.8	43.1
1901	108.5	60.5	62.4	39.9	45.2	55.7	56.3	76.7
1902	112.9	40.3	63.0	30.7	45.9	50.8	59.6	47.1
1903	113.6	42.5	69.5	34.1	45.6	54.5	60.7	61.4
1904	113.0	44.1	92.4	31.3	42.0	68.8	62.2	45.3
1905	115.9	41.2	74.8	29.1	40.3	61.1	58.7	61.7
1906	122.5	39.9	66.7	31.7	41.5	58.9	59.6	51.1
1907	129.5	51.6	87.4	44.3	66.6	73.1	69.8	61.8
1908	122.8	60.6	92.8	47.2	55.4	73.6	75.6	70.6
1909	126.5	57.9	98.6	40.2	54.0	71.8	70.1	54.1
1910	131.6	48.0	88.3	34.4	57.8	71.5	66.1	55.7
1911	129.3	61.8	87.4	45.0	86.9	83.2	72.6	79.9
Mean:								
1866–1869	.....	52.8	120.7	39.8	80.0	88.6	74.0	53.8
1870–1879	.....	40.5	99.3	33.7	71.3	66.4	67.4	54.1
1880–1889	.....	40.6	83.5	32.0	58.2	60.8	64.1	51.2
1890–1899	100.1	34.5	65.4	27.8	43.3	52.3	50.7	48.1
1900–1909	117.6	47.6	77.0	35.5	47.9	62.2	62.8	57.4

TABLE 13.—*Prices index numbers and average farm prices of farm products and animals, total for the United States, 1866–1909*—Continued.

Year.	Farm price, Dec. 1.		Farm price per head, all ages, Jan. 1, year following.					
	Hay (per ton).	Tobacco (per pound).	Horses.	Mules.	Milch cows.	Other cattle.	Sheep.	Swine.
	Dollars.	*Cents.*	*Dollars.*	*Dollars.*	*Dollars.*	*Dollars.*	*Dollars.*	*Dollars.*
1866	10.14	9.6	59.05	66.94	28.74	15.79	2.50	4.03
1867	10.21	9.4	54.27	56.04	26.56	15.06	1.82	3.29
1868	10.08	9.3	62.57	79.23	29.15	18.73	1.64	4.65
1869	10.18	9.3	67.43	90.42	32.70	18.87	1.96	5.80
1870	12.47	9.6	71.14	91.98	33.89	20.78	2.14	5.61
1871	14.30	8.8	67.41	87.14	29.45	18.12	2.61	4.01
1872	12.94	9.2	66.39	85.15	26.72	18.06	2.71	3.67
1873	12.53	7.6	65.15	81.35	25.63	17.55	2.43	3.98
1874	11.94	11.8	61.10	71.89	25.74	16.91	2.55	4.80
1875	10.78	6.9	57.29	66.46	25.61	17.00	2.37	6.00
1876	8.97	6.8	55.83	64.07	25.47	15.99	2.13	5.66
1877	8.37	.....	56.63	62.03	25.74	16.72	2.21	4.85
1878	7.20	5.6	52.36	56.00	21.71	15.38	2.07	3.18
1879	9.32	5.8	54.75	61.26	23.27	16.10	2.21	4.28
1880	11.65	8.2	58.44	69.79	23.95	17.33	2.39	4.70
1881	11.82	9.6	58.53	71.35	25.89	19.89	2.37	5.97
1882	9.73	8.4	70.59	79.49	30.21	21.81	2.53	6.75
1883	8.19	9.0	74.64	84.22	31.37	23.52	2.37	5.57
1884	8.17	8.2	73.70	82.38	29.70	23.25	2.14	5.02
1885	8.71	7.7	71.27	79.60	27.40	21.17	1.91	4.26
1886	8.46	7.4	72.15	78.91	26.08	19.79	2.01	4.48
1887	9.97	10.6	71.82	79.78	24.65	17.79	2.05	4.98
1888	8.76	7.7	71.89	79.49	23.94	17.05	2.13	5.79
1889	7.04	6.6	68.84	78.25	22.14	15.21	2.27	4.72
1890	7.87	8.3	67.00	77.88	21.62	14.76	2.50	4.15
1891	8.12	8.5	65.01	75.55	21.40	15.16	2.58	4.60
1892	8.20	9.4	61.22	70.68	21.75	15.24	2.66	6.41
1893	8.68	8.1	47.83	62.17	21.77	14.66	1.98	5.98
1894	8.54	6.8	36.29	47.55	21.97	14.06	1.58	4.97
1895	8.35	7.2	33.07	45.29	22.55	15.86	1.70	4.35
1896	6.55	6.0	31.51	41.66	23.16	16.65	1.82	4.10
1897	6.62	.....	34.26	43.88	27.45	20.92	2.46	4.39
1898	6.00	.....	37.40	44.96	29.66	22.79	2.75	4.40
1899	7.27	6.6	44.61	53.55	31.60	24.97	2.93	5.00
1900	8.89	6.6	52.86	63.97	30.00	19.93	2.98	6.20
1901	10.01	7.1	58.61	67.61	29.23	18.76	2.65	7.03
1902	9.06	7.0	62.25	72.49	30.21	18.45	2.63	7.78
1903	9.08	6.8	67.93	78.88	29.21	16.32	2.59	6.15
1904	8.72	8.1	70.37	87.18	27.44	15.15	2.82	5.99
1905	8.52	8.5	80.72	98.31	29.44	15.85	3.54	6.18
1906	10.37	10.0	93.51	112.16	31.00	17.10	3.84	7.62
1907	11.68	10.2	93.41	107.76	30.67	16.89	3.88	6.05
1908	8.98	10.3	95.64	107.84	32.26	17.49	3.43	6.55
1909	10.62	10.1	108.19	119.84	35.79	19.41	4.08	9.14
1910	12.26	9.3	111.46	125.92	39.97	20.54	3.91	9.37
1911	14.64	9.4	105.94	120.51	39.39	21.20	3.46	8.00
Mean:								
1866–1869	10.15	9.4	60.83	73.16	29.29	17.11	1.98	4.44
1870–1879	10.88	.....	60.80	72.73	26.32	17.26	2.34	4.60
1880–1889	9.25	8.3	69.19	78.33	26.53	19.68	2.22	5.22
1890–1899	7.62	.....	45.82	56.32	24.29	17.51	2.30	4.84
1900–1909	9.59	8.5	78.35	91.60	30.54	17.54	3.24	6.87

TABLE 14.—*Comparative prices index numbers, and comparative average farm prices of farm products and animals, total for the United States, 1866–1909.*

[100.0=mean for 1900–1909.]

Year.	Wholesale prices index numbers (United States Bureau of Labor).	Farm prices, Dec. 1.						
		Corn.	Wheat.	Oats.	Barley.	Rye.	Buckwheat.	Potatoes.
		Per bush.	*Per bush.*	*Per bush.*	*Per bush.*	*Per bush.*	*Per bush.*	*Per bush.*
1866	.....	100.0	198.3	99.2	147.2	132.6	107.6	82.5
1867	.....	120.3	188.6	125.7	147.0	161.9	125.3	115.0
1868	.....	98.7	140.9	117.8	228.5	153.1	124.2	103.5
1869	.....	126.2	99.4	107.3	148.4	124.2	114.5	74.9
1870	.....	104.2	122.6	110.2	165.8	118.1	112.3	113.4
1871	.....	91.6	148.7	102.3	158.9	114.7	118 6	94.1
1872	.....	74.5	144.7	84.5	143.8	109.0	117.0	93.4
1873	.....	93.2	138.8	97.7	181.8	113.4	119.4	113.8
1874	.....	123.2	112.1	133.1	180.3	124.8	116.1	107.3
1875	.....	77.4	116.2	90.4	155.3	108.2	98.7	60.0
1876	.....	71.7	125.1	91.5	132.1	99.0	106.1	108.0
1877	.....	73.4	137.3	80.2	131.7	92.9	106.5	76.3
1878	.....	66.9	100.8	69.5	121.4	84.7	83.8	102.4
1879	.....	79.1	143.9	93.5	123.5	105.8	95.2	76.1
1880	.....	83.5	123.5	101.7	139.6	121.9	94.6	84.3
1881	.....	134.2	154.8	131.1	172.5	150.5	137.7	158.8
1882	.....	102.3	114.8	105.9	131.9	99.2	116.2	97.2
1883	.....	89.5	118.3	92.4	123.1	93.7	130.9	73.6
1884	.....	75.3	83.8	78.2	102.1	83.7	93.8	69.1
1885	.....	69.2	100.1	80.5	118.0	93.4	89.0	78.0
1886	.....	77.2	89.2	84.2	112.4	86.8	86.8	81.5
1887	.....	93.7	88.4	85.9	108.8	87.9	90.0	119.0
1888	.....	71.9	120.3	78.5	123.7	94.8	100.8	70.2
1889	.....	59.7	90.6	64.7	87.2	68.2	80.4	61.8
1890	96.0	106.8	108.8	119.8	131.4	101.5	91.4	132.3
1891	95.0	85.7	109.0	89.0	109.9	124.8	90.8	62.5
1892	90.2	83.1	81.0	89.5	99.6	87.4	82.5	115.4
1893	89.8	77.0	69.9	83.1	86.2	82.7	92.8	103.7
1894	81.7	96.4	63.8	91.5	92.7	80.8	88.5	93.5
1895	79.6	53.4	66.1	56.2	70.6	71.0	72.0	46.4
1896	76.9	45.4	94.3	52.8	67.7	66.0	62.4	49.9
1897	76.3	55.5	104.9	59.9	79.0	72.1	67.0	95.5
1898	79.4	60.5	75.6	72.0	86.6	74.7	71.7	72.3
1899	86.5	63.9	75.8	70.3	84.5	82.3	88.7	68.1
1900	94.0	75.3	80.4	72.8	85.7	82.6	88.8	75.2
1901	92.3	127.6	81.1	112.7	94.7	89.9	89.6	133.9
1902	96.0	85.0	81.8	86.7	96.2	82.0	94.9	82.2
1903	96.6	89.7	90.3	96.3	95.5	87.9	96.7	107.2
1904	96.1	93.0	120.0	88.4	88.0	111.0	99.0	79.1
1905	98.6	86.9	97.2	82.2	84.5	98.6	93.5	107.7
1906	104.2	84.2	86.6	89.5	87.0	95.0	94.9	89.2
1907	110.1	108.9	113.5	125.1	139.6	117.9	111.1	107.9
1908	104.4	127.8	120.5	133.3	116.1	118.8	120.4	123.2
1909	107.6	122.1	128.1	113.5	113.2	115.8	111.6	94.4
1910	111.9	101.3	114.7	97.2	121.2	115.3	105.3	97.2
1911	109.9	130.4	113.5	127.1	182.2	134.2	115.6	139.4
Mean:								
1866–1869	.....	111.3	156.8	112.5	167.8	143.0	117.9	94.0
1870–1879	.....	85.5	129.0	95.3	149.5	107.1	107.4	94.5
1880–1889	.....	85.6	108.4	90.3	121.9	98.0	102.0	89.4
1890–1899	85.1	72.8	84.9	78.4	90.8	84.3	80.8	84.0
1900–1909	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.00

TABLE 14.—*Comparative prices index numbers, and comparative average farm prices of farm products and animals, total for the United States, 1866–1909*—Continued.

Year.	Farm price, Dec. 1.		Farm price per head, all ages, Jan. 1, year following.					
	Hay.	Tobacco.	Horses.	Mules.	Milch cows.	Other cattle.	Sheep.	Swine.
	Per ton.	*Per lb.*	*Dollars.*	*Dollars.*	*Dollars.*	*Dollars.*	*Dollars.*	*Dollars.*
1866	105.7	112.9	75.4	73.1	94.1	90.0	77.2	58.7
1867	106.5	110.6	69.3	61.2	87.0	85.9	56.2	47.9
1868	105.1	109.4	79.9	86.5	95.4	106.8	50.6	67.7
1869	106.2	109.4	86.1	98.7	107.1	107.6	60.5	84.4
1870	130.0	112.9	90.8	100.4	111.0	118.5	66.0	81.7
1871	149.1	103.5	86.0	95.1	96.4	103.3	80.6	58.4
1872	134.9	111.8	84.7	93.0	87.5	103.0	83.6	53.4
1873	130.7	89.4	83.2	88.8	83.9	100.1	75.0	57.9
1874	124.5	138.8	78.0	78.5	84.3	96.4	78.7	69.9
1875	112.4	81.2	73.1	72.6	83.9	96.9	73.1	87.3
1876	93.5	80.0	71.3	69.9	83.4	91.2	65.7	82.4
1877	87.3	.....	72.3	67.7	84.3	95.3	68.2	70.6
1878	75.1	65.9	66.8	61.1	71.1	87.7	63.9	46.3
1879	97.2	68.2	69.9	66.9	76.2	91.8	68.2	62.3
1880	121.5	96.5	74.6	76.2	78.4	98.8	73.8	68.4
1881	123.3	112.9	74.7	77.9	84.8	113.4	73.1	86.9
1882	101.5	98.8	90.1	86.8	98.9	124.3	78.1	98.3
1883	85.4	105.9	95.3	91.9	102.7	134.1	73.1	81.1
1884	85.2	96.5	94.1	89.9	97.2	132.6	66.0	73.1
1885	90.8	90.6	91.0	86.9	89.7	120.7	59.0	62.0
1886	88.2	87.1	92.1	86.1	85.4	112.8	62.0	65.2
1887	104.0	124.7	91.7	87.1	80.7	101.4	63.3	72.5
1888	91.3	90.6	91.8	86.8	78.4	97.2	65.7	84.3
1889	73.4	77.6	87.9	85.4	72.5	86.7	70.1	68.7
1890	82.1	97.6	85.5	85.0	70.8	84.2	77.2	60.4
1891	84.7	100.0	83.0	82.5	70.1	86.4	79.6	67.0
1892	85.5	110.6	78.1	77.2	71.2	86.9	82.1	93.3
1893	90.5	95.3	61.0	67.9	71.3	83.6	61.1	87.0
1894	89.1	80.0	46.3	51.9	71.9	80.2	48.8	72.3
1895	87.1	84.7	42.2	49.4	73.8	90.4	52.5	63.3
1896	68.3	70.6	40.2	45.5	75.8	94.9	56.2	59.7
1897	69.0	.....	43.7	47.9	89.9	119.3	75.9	63.9
1898	62.6	.....	47.7	49.1	97.1	129.9	84.9	64.0
1899	75.8	77.6	56.9	58.5	103.5	142.4	90.4	72.8
1900	92.7	77.6	67.5	69.8	98.2	113.6	92.0	90.2
1901	104.4	85.3	74.8	73.8	95.7	107.0	81.8	102.3
1902	94.5	82.4	79.5	79.1	98.9	105.2	81.2	113.2
1903	94.7	80.0	86.7	86.1	95.6	93.0	79.9	89.5
1904	90.9	95.3	89.8	95.2	89.8	86.4	87.0	87.2
1905	88.8	100.0	103.0	107.3	96.4	90.4	109.3	90.0
1906	108.1	117.6	119.3	122.4	101.5	97.5	118.5	110.9
1907	121.8	120.0	119.2	117.6	100.4	96.3	119.8	88.1
1908	93.6	121.2	122.1	117.7	106.0	99.7	105.9	95.3
1909	110.7	118.8	138.1	130.8	117.2	110.7	125.9	133.0
1910	127.8	109.4	142.3	137.5	130.9	117.1	120.7	136.4
1911	152.7	110.6	135.2	131.6	129.0	120.9	106.8	116.4
Mean:								
1866–1869	105.8	110.6	77.6	79.9	95.9	97.5	61.1	64.6
1870–1879	113.5	.....	77.6	79.4	86.2	98.4	72.2	67.0
1880–1889	96.5	97.6	88.3	85.5	86.9	112.2	68.5	76.0
1890–1899	79.5	.....	58.5	61.5	79.5	99.8	71.0	70.5
1900–1909	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

PRODUCTIVITY OF LABOR.

LAND AREA AND THE WORKER.

RELATIVE IMPORTANCE OF FARMS OF SPECIFIED ACREAGES.

It does not necessarily follow from the fact of the increase of prices of farm products that there has been a corresponding increase of net profit. The cost of production may have increased; perhaps a larger value of production per worker has been the main factor of increasing farm wages.

In the period of nearly half a century under consideration, during which farm labor passed from abundance to scarcity, relative to the demand for it, there have been some changes in the areas of farm holdings and it may be worth while to examine these in connection with the relative diminishing labor supply. Theoretically, the tendency is toward confinement to the labor of the operating family.

The census reports of the number of farms in various classifications of acreage were first made in 1880. Table 15 has been made by converting the number of farms in each class of acreage into a percentage of the total number of farms. By so doing, it is possible to discover changes in the relative importance of the number of farms in each class of acreage.

In the North Atlantic States from 1880 to 1910 there was a relative increase in the number of farms containing less than 50 acres, and a relative decrease in the number of farms containing 50 and under 500 acres. The same general statement with small exceptions, applies to the western group of States.

In the North Central States there is no decisive tendency with regard to the relative number of farms containing less than 50 acres, but the decline in the relative number of farms containing 50 and under 100 acres is marked; and there is an increase in the relative number of farms containing 100 acres and over.

Difficulties have been encountered in census work with regard to preserving the individuality of tenant farms in the cotton belt, and it may be that not as many farms were reported in the early censuses embraced in Table 15 as should have been. However that may be, it appears that in the South Atlantic States the number of farms containing less than 50 acres relatively increased steadily from 1880 to 1910, and the same is true of the class of farms containing 50 and under 100 acres. The contrary tendency is also observable for classes containing 100 acres and over.

Relative increase in the number of farms containing less than 100 acres is observable in the South Central division of States with a steady contrary tendency in the case of farms containing 100 acres and more. The two southern divisions of States are characterized by the same tendencies.

In the average for the United States, the increase in the relative number of farms containing less than 50 acres, during the 30 years covered by the census, is fairly established. On the contrary, farms containing 50 and under 100 acres have declined in relative importance. There was an increase of relative importance in farms containing 100 and under 500 acres from 1880 to 1890, after which there was a decline. The very large farms appear to be slightly increasing in relative importance, but these farms are hardly 3 per cent of the total number. On the other hand, the very small farms, or those

containing less than 50 acres, are increasing in importance and now comprise more than one-third of the Nation's farms. The intermediate farms, or those containing 50 and under 500 acres, have declined in relative number.

TABLE 15.—*Percentage of farms classified according to the total of improved and unimproved acreage, censuses of 1880–1910, by States and geographic divisions.*

State, geographic division, and year.	Percentage.[1]					State, geographic division, and year.	Percentage.[1]				
	Under 50 acres.	50 and under 100 acres.	100 and under 500 acres.	500 and under 1,000 acres.	1,000 acres and over.		Under 50 acres.	50 and under 100 acres.	100 and under 500 acres.	500 and under 1,000 acres.	1,000 acres and over.
Maine:						Virginia:					
1880	26.1	34.3	38.9	0.6	0.2	1880	30.5	18.7	44.8	4.7	1.3
1890	25.9	32.7	40.7	.6	.2	1890	32.6	19.3	43.0	4.0	1.1
1900	24.6	31.4	42.9	.9	.2	1900	40.8	20.2	35.9	2.5	.7
1910	27.7	29.8	41.5	.8	.2	1910	44.6	20.8	32.1	1.9	.5
New Hampshire:						West Virginia:					
1880	29.6	27.1	41.8	1.2	.3	1880	23.6	23.1	48.3	3.6	1.4
1890	28.1	25.2	44.8	1.5	.4	1890	25.8	27.3	43.6	2.4	1.0
1900	29.9	24.3	43.5	1.7	.6	1900	34.9	27.5	35.4	1.6	.7
1910	33.7	23.1	40.7	1.9	.6	1910	36.9	27.7	33.5	1.4	.5
Vermont:						North Carolina:					
1880	20.4	22.0	55.7	1.6	.3	1880	34.9	21.6	39.2	3.2	1.1
1890	19.8	21.5	57.4	1.2	.2	1890	36.4	22.6	37.6	2.5	.8
1900	20.5	19.7	57.9	1.6	.3	1900	41.5	24.5	32.2	1.5	.4
1910	24.6	18.1	55.1	1.9	.4	1910	46.8	24.5	27.3	1.1	.3
Massachusetts:						South Carolina:					
1880	41.6	27.6	30.2	.6	.1	1880	50.2	14.5	29.5	3.9	1.7
1890	42.1	26.0	31.0	.7	.1	1890	55.1	15.6	25.5	2.7	1.2
1900	47.1	23.6	28.2	.9	.2	1900	56.3	19.3	22.3	1.5	.6
1910	62.8	21.6	24.5	.9	.3	1910	61.5	18.8	18.1	1.1	.5
Rhode Island:						Georgia:					
1880	39.1	27.4	32.6	.8	.1	1880	34.9	18.8	38.7	5.1	2.5
1890	41.2	26.1	31.8	.7	.1	1890	41.3	18.9	34.7	3.5	1.6
1900	47.0	22.8	29.1	.8	.3	1900	41.3	23.3	32.5	2.1	.8
1910	47.6	23.9	27.1	1.0	.5	1910	50.6	23.5	24.0	1.4	.5
Connecticut:						Florida:					
1880	41.9	26.5	31.1	.4	.1	1880	48.9	18.7	28.0	2.8	1.6
1890	40.0	26.5	33.0	.4	.1	1890	51.5	18.6	27.4	1.7	.9
1900	42.1	25.8	31.3	.7	.1	1900	48.9	19.3	29.5	1.5	.7
1910	46.0	24.7	28.4	.7	.1	1910	52.4	20.0	25.4	1.3	.7
New York:						Ohio:					
1880	30.1	29.3	39.9	.5	.1	1880	30.2	31.6	37.5	.5	.1
1890	29.1	30.0	40.4	.4	.1	1890	31.3	32.8	35.4	.4	.1
1900	29.9	28.1	41.4	.5	.1	1900	33.7	32.4	33.6	.3	.1
1910	30.3	26.4	42.8	.5	.1	1910	32.8	32.4	34.5	.3	(2)
New Jersey:						Indiana:					
1880	40.2	28.0	31.1	.4	.2	1880	29.0	33.0	37.2	.7	.1
1890	38.0	28.7	33.0	.3	.1	1890	29.0	32.9	37.2	.7	.1
1900	43.9	25.6	29.9	.3	.2	1900	31.1	32.0	36.3	.5	.1
1910	46.8	24.5	28.2	.3	.2	1910	29.5	31.2	38.7	.4	.1
Pennsylvania:						Illinois:					
1880	32.6	29.9	36.9	.4	.1	1880	23.1	29.7	45.6	1.3	.3
1890	32.7	31.5	35.4	.3	.1	1890	20.6	28.6	49.7	1.0	.2
1900	34.2	31.1	34.4	.3	.1	1900	23.0	24.9	51.2	.8	.1
1910	35.8	30.0	33.9	.3	.1	1910	21.3	23.0	54.9	.7	.1
Delaware:						Michigan:					
1880	22.9	23.3	52.9	.8	.1	1880	33.9	36.2	29.5	.3	.1
1890	25.2	25.1	48.9	.8	(2)	1890	36.1	35.6	28.0	.3	.1
1900	25.2	26.9	47.0	.7	.1	1900	35.7	34.9	29.0	.3	.1
1910	32.5	27.5	39.5	.5	.1	1910	31.2	35.6	32.7	.3	.1
Maryland:						Wisconsin:					
1880	30.0	19.2	48.8	1.8	.2	1880	21.2	33.3	44.9	.5	.1
1890	30.8	19.6	47.9	1.5	.2	1890	20.4	32.9	46.1	.6	.1
1900	34.4	20.2	43.9	1.3	.2	1900	20.6	31.0	47.7	.6	.1
1910	38.5	20.3	39.9	1.0	.2	1910	19.3	30.5	49.6	.5	.1
District of Columbia:						Minnesota:					
1880	71.0	15.4	13.1	.5	.....	1880	10.4	27.6	61.0	.8	.2
1890	81.4	12.3	6.3	.....	.....	1890	10.0	22.4	65.9	1.4	.2
1900	83.6	11.5	4.1	.7	.....	1900	11.7	20.0	66.1	1.9	.2
1910	86.2	7.8	6.0	.....	.....	1900	11.3	17.0	69.3	2.2	.2

[1] Adjusted to add to not less than 99.7 nor more than 100.2.
[2] Less than 0.05 of 1 per cent.

TABLE 15.—*Percentage of farms classified according to the total of improved and unimproved acreage, censuses of 1880–1910, by States and geographic divisions*—Continued.

State, geographic division, and year.	Percentage.				
	Under 50 acres.	50 and under 100 acres.	100 and under 500 acres.	500 and under 1,000 acres.	1,000 acres and over.
Iowa:					
1880	15.7	31.6	51.3	1.2	0.2
1890	11.8	26.4	59.9	1.6	.2
1900	14.5	21.7	62.4	1.2	.1
1910	13.5	17.8	67.4	1.1	.1
Missouri:					
1880	26.0	26.9	45.2	1.6	.3
1890	23.2	27.1	47.9	1.5	.3
1900	26.7	27.7	44.3	1.1	.2
1910	24.3	26.8	47.6	1.2	.2
North Dakota:					
1880[1]	1.8	3.1	93.2	1.4	.4
1890	.5	1.8	91.2	5.0	1.4
1900	2.9	1.6	81.2	11.3	3.0
1910	.9	1.6	77.2	17.0	3.2
South Dakota:					
1880[1]					
1890	1.3	3.5	91.8	3.0	.4
1900	3.3	4.2	75.1	13.4	3.9
1910	2.5	3.1	79.1	12.5	2.8
Nebraska:					
1880	6.9	26.3	65.5	1.1	.2
1890	3.6	17.5	76.4	2.0	.5
1900	7.2	14.8	71.1	5.0	1.9
1910	6.9	9.7	70.3	10.1	3.0
Kansas:					
1880	8.9	22.4	67.7	.8	.2
1890	7.3	20.9	69.0	2.3	.6
1900	11.2	18.5	63.1	5.1	2.1
1910	10.5	14.7	67.0	5.9	1.9
Kentucky:					
1880	30.8	24.4	41.7	2.3	.7
1890	30.1	25.8	41.7	1.9	.5
1900	40.4	25.8	32.6	1.1	.2
1910	44.0	25.4	29.6	.8	.2
Tennessee:					
1880	35.1	23.9	38.2	2.1	.7
1890	33.9	24.8	39.0	1.7	.5
1900	43.7	25.5	29.7	.9	.3
1910	48.6	24.4	26.0	.8	.2
Alabama:					
1880	43.2	19.5	32.6	3.4	1.4
1890	43.7	19.3	33.4	2.6	1.0
1900	50.3	21.4	26.6	1.2	.4
1910	56.5	21.1	21.2	.9	.3
Mississippi:					
1880	40.5	19.0	34.9	3.8	1.8
1890	48.0	18.1	30.3	2.5	1.1
1900	58.1	17.9	22.6	1.1	.4
1910	65.5	16.3	17.2	.8	.3
Louisiana:					
1880	44.0	17.6	31.1	4.5	2.7
1890	50.0	16.3	29.0	2.9	1.8
1900	60.7	15.7	21.3	1.4	.9
1910	62.8	16.8	18.3	1.3	2.8
Texas:					
1880	36.8	17.0	40.7	3.4	2.2
1890	35.1	20.5	38.2	3.8	3.4
1900	36.0	25.1	32.8	2.9	2.2
1910	30.7	26.9	36.8	3.1	.7
Oklahoma:					
1880					
1890	.3	2.2	93.9	3.4	.2
1900	24.2	15.1	57.6	1.8	1.3
1910	20.4	20.5	57.3	1.4	.5
Arkansas:					
1880	34.1	23.1	40.2	1.9	.7
1890	33.4	22.6	42.1	1.3	.5
1900	44.8	21.6	32.7	.7	.2
1910	51.8	21.1	26.3	.5	.2
Montana:					
1880	5.8	4.1	82.7	6.1	1.3
1890	1.4	3.4	81.0	9.2	5.0
1900	7.9	4.2	68.9	9.4	9.6
1910	6.5	4.8	72.1	9.0	7.6
Wyoming:					
1880	16.9	8.8	63.0	8.3	3.1
1890	2.0	2.6	79.8	8.8	6.8
1900	9.5	4.2	59.4	11.9	15.0
1910	6.9	5.9	67.8	9.0	10.5
Colorado:					
1880	10.5	14.6	67.1	5.2	2.5
1890	5.8	6.8	79.9	4.8	2.8
1900	20.3	10.2	58.6	5.9	5.0
1910	19.3	9.5	62.4	5.3	3.4
New Mexico:					
1880	70.3	9.6	18.2	1.1	.9
1890	52.9	8.5	35.2	1.4	1.9
1900	58.9	7.8	28.1	2.5	2.6
1910	27.2	5.1	63.8	2.3	1.6
Arizona:					
1880	14.1	13.6	68.8	2.2	1.3
1890	20.8	12.6	63.5	2.2	.9
1900	51.0	11.6	34.3	1.9	1.2
1910	52.3	8.9	36.3	1.8	.8
Utah:					
1880	57.5	21.8	20.3	.4	.1
1890	52.8	19.9	26.0	1.0	.4
1900	48.8	19.3	28.7	1.9	1.3
1910	47.1	19.2	29.3	2.5	1.8
Nevada:					
1880	14.9	13.2	55.5	10.4	6.0
1890	9.5	6.6	49.6	16.4	17.9
1900	21.3	9.9	41.8	12.0	15.0
1910	22.0	15.3	40.7	9.2	12.8
Idaho:					
1880	12.7	14.7	70.0	2.1	.4
1890	6.3	8.2	81.3	3.4	.7
1900	13.1	13.2	70.3	2.5	1.0
1910	19.7	18.9	57.6	3.0	.8
Washington:					
1880	5.6	9.4	80.2	3.9	.9
1890	6.8	9.5	77.0	4.9	1.7
1900	21.9	13.2	56.0	6.1	2.8
1910	37.0	12.6	41.1	6.2	3.1
Oregon:					
1880	6.6	10.6	72.7	7.9	2.2
1890	9.9	10.3	70.1	7.1	2.6
1900	20.0	13.0	56.6	6.8	3.6
1910	28.3	14.9	46.9	6.0	3.8
California:					
1880	17.1	11.0	56.3	8.6	7.0
1890	27.4	11.0	46.4	8.3	6.9
1900	38.9	11.1	36.1	7.3	6.5
1910	48.9	12.1	27.9	5.8	5.3
Geographic division:					
North Atlantic—					
1880	31.7	29.2	38.4	.6	.1
1890	31.1	29.7	38.6	.5	.1
1900	32.7	28.3	38.3	.6	.2
1910	34.6	26.9	37.8	.6	.2
South Atlantic—					
1880	35.3	19.3	40.0	3.9	1.5
1890	39.0	20.3	36.8	2.9	1.1
1900	42.9	22.5	32.2	1.8	.6
1910	48.7	22.7	26.9	1.3	.5

[1] South Dakota combined with North Dakota.

TABLE 15.—*Percentage of farms classified according to the total of improved and unimproved acreage, censuses of 1880–1910, by States and geographic divisions*—Continued.

State, geographic division, and year.	Percentage.					State, geographic division, and year.	Percentage.				
	Under 50 acres.	50 and under 100 acres.	100 and under 500 acres.	500 and under 1,000 acres.	1,000 acres and over.		Under 50 acres.	50 and under 100 acres.	100 and under 500 acres.	500 and under 1,000 acres.	1,000 acres and over.
Geographic division—Contd.						Geographic division—Contd.					
North Central—						Western—					
1880	22.5	30.0	46.4	0.9	0.2	1880	21.2	12.1	56.5	6.3	3.9
1890	20.1	27.4	51.1	1.2	.2	1890	19.3	10.1	60.1	6.4	4.1
1900	22.3	25.6	49.7	1.9	.5	1900	29.5	11.7	48.0	6.1	4.8
1910	20.1	23.4	53.1	2.7	.6	1910	32.1	11.8	47.0	5.3	3.9
South Central—						United States:					
1880	36.9	20.9	37.9	2.9	1.3	1880	29.3	25.8	42.3	1.9	.7
1890	37.5	21.4	37.5	2.5	1.1	1890	28.9	24.6	44.0	1.8	.7
1900	44.4	22.1	30.9	1.5	1.0	1900	33.7	23.8	39.9	1.8	.8
1910	46.5	22.3	29.3	1.3	.8	1910	35.6	22.6	39.2	2.0	.8

AVERAGE WORKERS PER FARM AND ACRES PER WORKER.

Comparison may now be made between the number of agricultural workers and the improved area of farms for the census years 1880, 1890, and 1900. This is a comparison between the land worked and the persons doing the work. For this purpose Table 16 is presented.

The average number of acres of improved land per farm for the three years mentioned are 71, 78, and 72, respectively, and for the work upon this average acreage there were 1.912, 1.855, and 1.786 persons, respectively. Stated in another form for the three years mentioned, 37.1, 42.2, and 40.5 acres, respectively, were worked by by one person included in the census of agricultural occupations. It should be remembered that the census included persons 10 years of age and over who had gainful occupations.

It is interesting to turn to the great agricultural region in the North Central States. Improved area of farms in those States gained in average area from 80.59 acres in 1880 to 101.21 acres in 1900, but the average number of agricultural workers per farm remained about the same, while the average number of acres per agricultural worker increased from 50.4 acres in 1880 to 59.8 acres in 1890 and 63.9 acres in 1900.

Increase of improved acreage per worker is observable also in the South Central division from 1880 to 1890. There was an increase also in the South Atlantic division from 1880 to 1890, followed by a contrary tendency. In the North Atlantic and Western divisions there has been a marked tendency toward a smaller acreage per worker.

TABLE 16.—*Ratio of agricultural workers to improved area of farms, 1880, 1890, and 1900, by States and geographic divisions.*

State and geographic division.	Average number of improved acres per farm.			Average number of persons 10 years old and over gainfully employed in agriculture per farm.			Average number of acres of improved land per person 10 years old and over gainfully employed in agriculture.		
	1880	1890	1900	1880	1890	1900	1880	1890	1900
Maine	54.19	49.10	40.25	1.277	1.266	1.261	42.4	38.8	31.9
New Hampshire	71.72	59.26	36.72	1.382	1.417	1.283	51.9	41.8	28.6
Vermont	92.52	81.54	64.24	1.555	1.638	1.490	59.5	49.8	43.1
Massachusetts	55.42	48.21	34.26	1.692	2.010	1.742	32.8	24.0	19.7
Rhode Island	48.02	49.91	34.08	1.761	2.102	1.964	27.3	23.7	17.4
Connecticut	53.67	52.35	39.50	1.439	1.712	1.641	37.3	30.6	24.1
New York	73.50	72.45	68.81	1.566	1.745	1.648	46.9	41.5	41.8
New Jersey	61.10	64.85	57.06	1.726	2.211	1.977	35.4	29.3	28.9
Pennsylvania	62.86	62.44	58.90	1.410	1.495	1.479	44.6	41.8	39.8
Delaware	85.38	81.30	77.84	2.040	1.930	1.962	41.9	42.1	39.7
Maryland	82.50	83.65	76.42	2.244	2.224	2.064	36.8	37.6	37.0
District of Columbia	29.04	25.91	22.06	3.366	4.516	5.532	8.6	5.7	4.0
Virginia	71.80	71.52	60.13	2.144	2.018	1.778	33.5	35.4	33.8
West Virginia	60.51	62.58	59.21	1.716	1.631	1.607	35.3	38.4	36.8
North Carolina	41.12	43.89	37.07	2.275	2.063	2.027	18.1	21.3	18.3
South Carolina	44.02	45.69	37.18	3.113	2.830	2.517	14.1	16.1	14.8
Georgia	59.19	56.02	47.25	3.103	2.419	2.262	19.1	23.2	20.9
Florida	40.43	33.47	37.04	2.494	1.850	1.920	16.2	18.1	19.3
Ohio	73.15	72.94	69.55	1.608	1.586	1.494	45.5	46.0	46.6
Indiana	71.82	76.24	75.17	1.707	1.618	1.540	42.1	47.1	48.8
Illinois	102.12	106.65	104.86	1.706	1.788	1.747	59.9	59.6	60.0
Michigan	53.87	57.24	58.05	1.560	1.590	1.491	34.5	36.0	38.9
Wisconsin	68.21	66.89	66.24	1.458	1.570	1.555	46.8	42.6	42.6
Minnesota	78.44	95.23	119.25	1.424	1.611	1.640	55.1	59.1	72.7
Iowa	107.18	125.95	130.77	1.638	1.593	1.623	65.4	79.1	80.6
Missouri	77.68	83.15	80.38	1.648	1.629	1.616	47.1	51.0	49.7
North Dakota	65.98	168.70	212.75	1.635	1.588	1.580	40.4	106.2	134.7
South Dakota		138.75	214.47		1.358	1.572		102.2	136.4
Nebraska	86.84	134.21	151.68	1.428	1.496	1.534	60.8	89.7	98.9
Kansas	77.51	133.86	144.66	1.487	1.503	1.566	52.1	89.1	92.4
Kentucky	64.47	65.93	58.56	1.926	1.778	1.730	33.5	37.0	33.8
Tennessee	51.29	53.68	45.61	1.776	1.886	1.825	28.9	28.5	25.0
Alabama	46.93	48.79	38.77	2.802	2.344	2.284	16.7	20.8	17.0
Mississippi	51.26	47.46	34.39	3.338	2.485	2.204	15.4	19.1	15.6
Louisiana	56.74	54.47	40.24	4.251	3.414	2.511	13.3	16.0	16.0
Texas	72.63	90.94	55.58	2.063	1.878	1.822	35.2	48.4	30.5
Oklahoma	.....	63.87	79.39	.....	1.575	1.730	.....	40.6	45.9
Arkansas	38.08	43.88	38.91	2.294	2.035	1.908	16.6	21.6	20.4
Montana	172.88	163.40	129.90	2.971	2.445	2.059	58.2	66.8	63.1
Wyoming	181.89	152.59	130.00	3.586	2.532	2.151	50.7	60.3	60.4
Colorado	136.74	111.26	92.06	3.005	2.247	1.794	45.5	49.5	51.3
New Mexico	46.98	59.02	26.55	2.798	5.212	2.184	16.8	11.3	12.2
Arizona	73.10	73.02	43.81	4.478	4.612	2.710	16.3	15.8	16.2
Utah	44.02	52.13	53.24	1.539	1.902	1.509	28.6	27.4	35.3
Nevada	245.32	566.21	262.34	2.977	4.030	2.630	82.4	140.5	99.7
Idaho	104.73	91.83	80.88	2.047	2.003	1.533	51.2	45.8	52.8
Washington	74.18	100.84	104.39	1.958	2.079	1.591	37.9	48.5	65.6
Oregon	135.58	137.72	92.87	1.671	1.746	1.557	81.1	78.9	59.6
California	296.92	231.08	164.85	2.209	2.452	2.010	134.4	94.2	82.0
Geographic division:									
North Atlantic	66.63	64.29	57.45	1.493	1.637	1.559	44.6	39.3	36.9
South Atlantic	56.13	55.60	47.91	2.500	2.211	2.075	22.5	25.1	23.1
North Central	80.59	95.79	101.21	1.600	1.603	1.584	50.4	59.8	63.9
South Central	56.17	61.00	48.25	2.387	2.124	1.974	23.5	28.7	24.4
Western	185.92	157.81	111.79	2.139	2.320	1.827	86.9	68.0	61.2
United States	71.03	78.34	72.25	1.912	1.855	1.786	37.1	42.2	40.5

MACHINERY AS A SUBSTITUTE FOR LABOR.

INCREASE OF VALUE.

Farm implements and machinery, in the use of which animal labor is employed, as well as that of men and women, have been the means by which the agricultural labor of the United States has enormously increased its productivity, and so made possible higher rates

of wages. The census ascertained the value of implements and machinery on farms from 1880 to 1910, and the census reports have been utilized to construct Table 17. The average value of implements and machinery per farm and the average value of implements and machinery per person 10 years old and over employed in agriculture have been computed, except that it is not possible to compute this average for 1910, for the reason that the Bureau of the Census has not published the report on occupations for 1910 at the time when this bulletin is prepared.

The value of implements and machinery on farms increased from $406,520,055 in 1880 to $1,265,149,783 in 1910, and each intermediate census recorded an increase over the preceding one. It is true that the increase of value of implements and machinery on farms is not an accurate measure of increase in their number, for the reason that prices change, but it is a fact that the implements and machinery used in agriculture have steadily increased in efficiency and have constantly made human and animal labor applied to agriculture more productive. If prices have increased, the increased investment of farms in implements and machinery implies an increasing dependence on these aids to labor and is an evidence of their economic gain in production.

AVERAGE VALUE PER FARM.

The average value of implements and machinery per farm was $101 in 1880, it increased to $108 in 1890, in 1900 there was a marked increase to $131, and an enormous increase to $199 in 1910.

AVERAGE VALUE PER WORKER.

Increase likewise is general in the average value of implements and machinery per person 10 years old and over employed in agriculture. This average was $122 in 1880; it rose to $165 in 1890, and to $170 in 1900. It will be observed that the rate of increase in the total value of implements and machinery from 1890 to 1900 and in the average value per farm was much greater than the rate of increase of value per agricultural worker.

The North Atlantic States, with their more varied agriculture and greater dependence on crop rotation and smaller farms than in the North Central States, possessed in 1900 implements and machinery with an average value per farm and per worker much above the averages of the North Central division of States; and it will be noticed that the western division of States is close below the North Atlantic States in its averages. The averages of the South Central States are above those of the South Atlantic States and both of those divisions are far below the three northern divisions of States.

TABLE 17.—*Value of implements and machinery on farms, as ascertained by the census, and average per farm and per agricultural worker, 1880–1910, by States and geographic divisions.*

State, geographic division, and year.	Value of implements and machinery on farms.	Average value per farm.	Average value per person 10 years old and over gainfully employed in agriculture.
Maine:			
1880	$4,948,048	$77	$226
1890	5,499,413	89	322
1900	8,802,720	148	401
1910	14,490,535	241	.....
New Hampshire:			
1880	3,069,240	95	221
1890	3,594,850	123	310
1900	5,163,090	176	406
1910	5,877,657	217	.....
Vermont:			
1880	4,879,285	137	254
1890	4,733,560	145	262
1900	7,538,490	228	409
1910	10,168,687	311	.....
Massachusetts:			
1880	5,134,537	134	228
1890	5,938,940	173	216
1900	8,828,950	234	280
1910	11,563,894	313	.....
Rhode Island:			
1880	902,825	145	231
1890	941,030	171	194
1900	1,270,270	231	239
1910	1,781,407	337	.....
Connecticut:			
1880	3,162,628	103	201
1890	3,075,495	117	202
1900	4,948,300	184	249
1910	6,916,648	258	.....
New York:			
1880	42,592,741	177	339
1890	46,659,465	206	352
1900	56,006,000	247	377
1910	83,644,822	388	.....
New Jersey:			
1880	6,921,085	202	305
1890	7,378,644	239	257
1900	9,330,030	269	281
1910	13,109,507	391	.....
Pennsylvania:			
1880	35,473,037	166	353
1890	39,046,855	185	389
1900	50,917,240	227	413
1910	70,726,055	323	.....
Delaware:			
1880	1,504,567	172	172
1890	1,835,570	196	229
1900	2,150,560	222	236
1910	3,206,095	296	.....
Maryland:			
1880	5,788,197	143	113
1890	6,540,090	160	143
1900	8,611,220	187	172
1910	11,859,771	242	.....
District of Columbia:			
1880	36,798	85	90
1890	79,760	209	137
1900	136,060	506	223
1910	92,350	426	.....
Virginia:			
1880	5,495,114	46	41
1890	6,593,688	52	56
1900	9,911,040	59	72
1910	18,115,883	98	.....
West Virginia:			
1880	2,699,163	43	65
1890	3,116,420	43	89
1900	5,040,420	54	86
1910	7,011,513	73	.....
North Carolina:			
1880	$6,078,476	$39	$30
1890	7,183,210	40	42
1900	9,072,600	40	39
1910	18,441,619	73	.....
South Carolina:			
1880	3,202,710	34	16
1890	4,172,262	36	21
1900	6,629,770	43	28
1910	14,108,853	80	.....
Georgia:			
1880	5,317,416	38	19
1890	5,764,978	34	27
1900	9,804,010	44	35
1910	20,948,056	72	.....
Florida:			
1880	689,666	29	21
1890	1,158,040	34	49
1900	1,963,210	48	53
1910	4,446,007	89	.....
Ohio:			
1880	30,521,180	123	232
1890	29,475,346	117	274
1900	36,354,150	132	263
1910	51,210,071	188	.....
Indiana:			
1880	20,476,988	106	172
1890	21,172,255	107	250
1900	27,330,370	123	231
1910	40,999,541	190	.....
Illinois:			
1880	33,739,951	132	224
1890	34,456,938	143	274
1900	44,977,310	170	243
1910	73,724,074	293	.....
Michigan:			
1880	19,419,360	126	274
1890	22,182,600	129	307
1900	28,795,380	141	295
1910	49,916,285	241	.....
Wisconsin:			
1880	15,647,196	116	279
1890	19,167,010	131	314
1900	29,237,010	172	312
1910	52,956,579	299	.....
Minnesota:			
1880	13,089,783	142	385
1890	16,916,473	145	324
1900	30,099,230	195	320
1910	52,329,165	335	.....
Iowa:			
1880	29,371,884	158	332
1890	36,665,315	182	495
1900	57,960,660	253	434
1910	95,477,948	440	.....
Missouri:			
1880	18,103,074	84	157
1890	21,830,719	92	236
1900	28,602,680	100	176
1910	50,873,994	183	.....
North Dakota:			
1880	[1] 2,390,091	[1] 137	[1] 450
1890	6,648,180	241	542
1900	14,055,560	310	581
1910	43,907,595	590	.....
South Dakota:			
1880	(1)	(1)	(1)
1890	8,371,712	167	677
1900	12,218,680	232	457
1910	33,786,973	435	.....

[1] South Dakota combined with North Dakota.

TABLE 17.—*Value of implements and machinery on farms, as ascertained by the census, and average per farm and per agricultural worker, 1880–1910, by States and geographic divisions*—Continued.

State, geographic division, and year.	Value of implements and machinery on farms.	Average value per farm.	Average value per person 10 years old and over gainfully employed in agriculture.
Nebraska:			
1880	$7,820,917	$123	$410
1890	16,468,977	145	474
1900	24,940,450	205	418
1910	44,249,708	341	.....
Kansas:			
1880	15,652,848	113	285
1890	18,869,790	113	391
1900	29,490,580	170	330
1910	48,310,161	272	.....
Kentucky:			
1880	9,734,634	58	66
1890	10,906,506	61	104
1900	15,301,860	65	92
1910	20,851,846	80	.....
Tennessee:			
1880	9,054,863	55	66
1890	9,936,880	57	83
1900	15,232,670	68	83
1910	21,292,171	87	.....
Alabama:			
1880	3,788,978	28	16
1890	4,511,645	29	24
1900	8,675,900	39	30
1910	16,290,004	62	.....
Mississippi:			
1880	4,885,636	48	23
1890	5,968,865	41	33
1900	9,556,805	44	37
1910	16,905,312	62	.....
Louisiana:			
1880	5,435,525	113	37
1890	7,167,355	103	49
1900	28,536,790	246	164
1910	18,977,053	157	.....
Texas:			
1880	9,051,491	52	63
1890	13,746,541	60	106
1900	30,125,705	85	110
1910	56,790,260	136	.....
Oklahoma:			
1880	.....	.....	.....
1890	433,580	49	406
1900	10,512,495	97	154
1910	27,088,866	142	.....
Arkansas:			
1880	4,637,497	49	43
1890	5,672,400	45	65
1900	8,750,060	49	56
1910	16,864,198	79	.....
Montana:			
1880	401,185	264	433
1890	1,356,010	242	421
1900	3,671,900	275	409
1910	10,539,653	402	.....
Wyoming:			
1880	95,482	209	216
1890	522,250	167	457
1900	1,366,000	224	412
1910	3,668,294	334	.....
Colorado:			
1880	910,085	202	358
1890	2,728,850	167	273
1900	4,746,755	192	320
1910	12,791,601	277	.....
New Mexico:			
1880	255,162	50	64
1890	291,140	65	49
1900	1,151,610	93	150
1910	4,122,312	116	.....
Arizona:			
1880	$88,811	$116	$149
1890	196,580	138	129
1900	765,200	132	226
1910	1,787,790	194	.....
Utah:			
1880	946,753	100	229
1890	1,164,660	111	261
1900	2,922,550	151	336
1910	4,468,178	206	.....
Nevada:			
1880	378,788	270	319
1890	537,480	421	240
1900	888,560	407	322
1910	1,576,096	586	.....
Idaho:			
1880	363,930	193	614
1890	1,172,460	178	410
1900	3,295,045	188	422
1910	10,476,051	340	.....
Washington:			
1880	958,513	147	316
1890	3,150,200	174	383
1900	6,271,630	189	359
1910	16,709,844	297	.....
Oregon:			
1880	2,956,173	182	448
1890	4,556,770	178	430
1900	6,506,725	182	376
1910	13,205,645	290	.....
California:			
1880	8,447,744	235	354
1890	14,689,710	278	284
1900	21,311,670	294	316
1910	36,493,158	414	.....
Geographic division:			
North Atlantic—			
1880	107,083,426	154	310
1890	116,868,252	177	328
1900	152,805,090	226	368
1910	218,279,210	332	.....
South Atlantic—			
1880	30,812,107	48	32
1890	36,444,018	49	45
1900	53,318,890	55	51
1910	98,230,147	88	.....
North Central—			
1880	206,233,272	121	244
1890	252,225,315	131	324
1900	364,062,060	166	291
1910	637,742,094	286	.....
South Central—			
1880	46,588,624	53	41
1890	58,343,772	54	61
1900	126,692,285	76	81
1910	195,059,710	98	.....
Western—			
1880	15,802,626	189	330
1890	30,366,110	208	298
1900	52,897,645	218	331
1910	115,838,622	310	.....
United States:			
1880	406,520,055	101	122
1890	494,247,467	108	165
1900	749,775,970	131	170
1910	1,265,149,783	199	.....

NATIONAL AGRICULTURAL SURPLUS.

EXPORTS AND THEIR TENDENCY.

One-third of the persons gainfully employed sustain the agricultural production of this country and sustain the entire population. One person engaged in agricultural production sustains eight persons and besides doing this produces a surplus of enormous proportions for export for foreign countries. The annual value of agricultural exports from this country has risen to about $1,000,000,000, but it should be remembered that this value has been reached at a time of increasing prices, so that it does not accurately indicate the trend of the exports in quantities.

A detailed examination of the export statistics of the Department of Commerce and Labor from 1870 to 1911 discovers what the trend has been in the quantities of the national surplus of agricultural products. Let the exports of the 10 years 1900–1909 stand for 100, and the exports of each year or group of years can be related to 100 for a simple and easily understood comparison.

The cattle exports of the 10 years 1900–1909 being 100, those of 1870–1879 were 12.4. The index number rose to 85.3 in 1890–1899 and to 102.6 in the five years 1900–1904, from which time the decline was to 34.3 in the single year 1911.

The exports of horses, mules, and sheep reached their highest figure in 1900–1904. Swine eventually met adverse legislation on the Continent of Europe, and their exports declined from 236.5 in 1870–1879 to 31.7 in 1911.

Butter exports were highest in 1880–1889, for which period they are represented by 141.7, and fell to 35 in 1911. Cheese exports declined enormously from the highest figure, 494.8, in 1880–1889, to 47.8 in 1911. On the contrary, eggs have displayed a climbing tendency and have risen from 0.8 in 1870–1879 to 127 in the five years 1905–1909, and to 199.9 in 1911.

All beef and its products have been combined as far as they are ascertainable in pounds, and then it appears that the period of highest exports was the five years 1900–1904, the index number being 103. It was 49.1 in 1911. Canned beef was highest at 135.8 in 1890–1899 and fell to 21.9 in 1911; fresh beef dropped from 116.1 in 1900–1904 to 16.1 in 1911; oleomargarin, oleo oil, tallow, and salted and pickled beef were all highest in the five years 1905–1909.

The total for pork and its products reached the highest export mark, 102.2, in 1900–1904, and fell to 65.9 in 1911. Some pork exports were highest in 1905–1909, and these were salted and pickled pork and lard.

Lard compounds are represented by 16.8 in 1893–1899, by 68 in 1900–1904, by 132 in 1905–1909, and by 135.5 in 1911. Mutton also

is able to increase its export, and at the end of the period of 42 years under examination has the index number 164. Again, in the case of animal oils, not specially named, there is a similar tendency, and the number for 1911 is 229.8.

In the case of cotton the exports were 35.7 in 1870–1879, and the number steadily rose to 110.9 in the five years 1905–1909. It was 85.7 in 1910 and 107.8 in 1911.

Dried apples gained steadily until 101.1 was reached in 1905–1909, and fell to 64.6 in 1911, but fresh apples had gained to the last year, for which the number is 146.6. Both prunes and raisins have an upward tendency to 1911, the former being represented by 133.8 and the latter by 367.1. Glucose and grape sugar may be added to the list of products with gaining exports.

Barley has fallen from 109.9 in 1900–1904 to 89.1 in 1911; corn and corn meal, from 117.8 in 1900–1904 to 69.3 in 1911; oats, from 123.4 to 13.4; rye and rye flour, from 139.5 to 2; wheat, from 131.8 to 28.6; wheat flour, from 118.8 to 65.5. Bread and biscuit had highest exports, 124.8, in 1880–1884, and after a decline to 96.1 in 1905–1909 rose to 111.1 in 1911.

Hay declined from 111.8 in 1900–1904 to 72.2 in 1911; cotton seed, from 120 to 37.1; clover seed, from 133.3 to 39.7; beans and peas, from 102 to 77.8.

On the contrary, corn-oil cake advanced to 164.1 in 1905–1909 and to 275 in 1911; hops to 115.5 in 1905–1909; cottonseed oil cake and oil-cake meal to 104.4 in 1905–1909; flax seed, oil cake, and oil-cake meal to 110.7; cottonseed oil to 108.4; linseed oil to 134.3; rice to 165.8; rice bran, meal, and polish to 106.6; flax seed to 110.2; timothy seed to 123.1; onions to 125.2; potatoes to 124.9 in 1905–1909 and to 262.9 in 1911.

Tobacco had the index number 85.4 in 1890–1899; 101.1 in 1900–1904; 98.9 in 1905–1909; 110 in 1910; and 109.4 in 1911.

SUMMARY.

The numbers quoted in the foregoing presentation may be regarded as fairly indicating the upward or downward tendency of exports of the products mentioned.

Most of the cereals and their products, all of the animals, and most of the meats and their products are going down in quantity of exports, and these three great general classes of products have filled a large place in the body of exports. Only mutton and unspecified animal oils; rice and its bran, meal, and polish; corn-oil cake, glucose and grape sugar, and perhaps bread and biscuit, in these three great groups of exports, display a tendency to increase.

A long record of increase is presented by cotton, hops, and tobacco. Comparatively recent products have joined the old list and give

evidence of increase. Among these are cottonseed oil and flaxseed and cottonseed-oil cake and oil-cake meal, linseed oil, flaxseed and lard compounds. Among the fruits that are gaining are prunes, raisins, and fresh apples, and among the vegetables are onions and potatoes.

SUFFICIENCY OF AGRICULTURAL ABILITY.

INDICTMENT OF THE FARMER AND HIS METHODS.

Notwithstanding the great surplus of agricultural products that this country exports, it is freely stated that production is beginning to fail national sustenance, the cause of these statements apparently being the high prices of produce. The national surpluses of products, even though they may be diminishing ones, are a sufficient answer to these statements.

There is another feature of agricultural production that has entered into the situation during the last two years. The production of many of the foods has not been as abundant as previously on account of adverse climatic conditions.

FARMERS' FEAR OF OVERPRODUCTION.

The farmer is continually facing the penalties of overproduction, and it is the old familiar rule, established centuries ago in England by Arthur Young, that as production increases by certain percentages prices decrease in greater percentages. The potato crop of 400,000,000 bushels may not be worth so much to the producers as one of 300,000,000 bushels, and consequently farmers, in their collective action, endeavor to produce about the quantity of a crop that they can market at profitable prices. An experience of years gives them a rough sort of judgment with regard to this quantity, but they can not foresee what the weather will do to their crops. Having made their planting and sowing plans, we will assume, with fairness to themselves and also to consumers, the crop suffers under unforeseen adversities, there is inadequate production, and the general conclusion is that the agriculture of the country is unable to meet national requirements. This conclusion is forgotten after one year of overproduction, or of only sufficient production. The foregoing remarks seem pertinent to the present situation with regard to the supply of labor for agricultural production.

HAND AND MACHINE LABOR CONTRASTED.

BUREAU OF LABOR INVESTIGATION.

Although the agricultural element of the population has declined, the productivity of this element has increased per individual worker by means of better implements and machines and their more general

use. The reductions of time required and of money cost per unit of commodity by reason of the employment of more efficient implements and machinery were determined by an investigation made by the National Bureau of Labor a dozen years ago. The materials represented in the report of that investigation have been rearranged and subjected to some computations for the purpose of constructing Table 18.

BARLEY AS A SAMPLE OF RESULTS.

As a sample of one of the items of the investigation, attention may be directed to the statement for barley. This item is identified in the report of the Bureau of Labor as Unit 3. The production of barley was analyzed into the various distinctive operations, such as breaking ground, plowing, seeding, etc., and the time required for each operation was recorded, together with the money cost, and the time and money-cost statements were recorded for both human labor and animal labor, when there was animal labor. In the case of Unit 3, the investigation covered the production of barley in 1829–30, at a time when only simple implements were used, and in 1895–96 when the operations were performed mostly by machines. The production in both instances is placed at 30 bushels from 1 acre.

At the earlier time the cost of producing barley per bushel was $0.1199 for human labor and $0.0096 for animal labor, compared with which at the later time is a cost of $0.0201 for human labor and $0.0154 for animal labor.

The time required by human labor for the production of 1 bushel of barley on the average, in the earlier year, was 127.2 minutes and for animal labor 46 minutes, whereas in the later year the time required for human labor was 5.4 minutes per bushel and for animal labor 18.4 minutes.

CORN.

From 1855 to 1894 the time of human labor required to produce 1 bushel of corn on an average declined from 4 hours and 34 minutes to 41 minutes. This was because inventors had given to the farmers of 1894 the gang plow, the disc harrow, the corn planter drawn by horses, and the four-section harrow for pulverizing the topsoil; because they had given to the farmer the self-binder drawn by horses to cut the stalks and bind them; a machine for removing the husks from the ears and in the same operation for cutting the husks, stalks, and blades for feeding, the power being supplied by a steam engine; because they had given to the farmer a marvelous corn sheller, operated by steam and shelling 1 bushel of corn per minute instead of the old way of corn shelling in which the labor of one man was required for 100 minutes to do the same work.

WHEAT.

In the matter of wheat production, 1894 being compared with 1830, the required human labor declined from 3 hours and 3 minutes to 10 minutes. The heavy, clumsy plow of 1830 had given way to the disk plow that both plowed and pulverized the soil in the same operation; hand sowing had been displaced by the mechanical seeder drawn by horses; the cradling and thrashing with flails and hand winnowing had given way to reaping, thrashing, and sacking with the combined reaper and thrasher drawn by horses.

HAY.

When men mowed the grass with scythes in 1860, spread and turned it over for drying with pitchforks, when they raked it into windrows with a hand rake, cocked it with a pitchfork, and baled it with a hand press, the labor time required per ton was 35½ hours; but when for this method were substituted a mechanical mower drawn by horses, a hay tedder, and a hayrake and hay gatherers and stackers, all drawn by horses, and a press operated by a horse, the labor time was reduced to 11 hours and 34 minutes.

ECONOMIC POWER OF HORSE AND MULE.

Herein lies the strength of the horse and the mule as economic animals. The horse has been assailed by the bicycle, the electric street and suburban car, and by the automobile, but all combined have not prevented horses from increasing in numbers and in value. As sources of farm power and as substitutes for human labor in combination with implements and machines, the economic place of the horse and the mule on the farm is more strongly established than ever before.

The matter found in Table 18, in which comparison is made between production by hand labor, many years ago, and by machine labor at the end of the nineteenth century, is exceedingly instructive in every detail, as well as in the averages that have been computed per unit of production.

TABLE 18.—*Hand and machine labor.*

UNIT 3.—BARLEY: 30 BUSHELS (1 ACRE).

[Compiled from Thirteenth Annual Report of Commissioner of Labor.]

Operation and period.	Human labor.			Animal labor.		
	Time.		Cost.	Time.		Cost.
	Hours.	Minutes.		Hours.	Minutes.	
Hand, 1829–30.						
Breaking ground	6	40.0	$0.3333	13	20.0	$0.1667
Sowing seed	1	25.0	.0708			
Pulverizing topsoil and covering seed	2	50.0	.1417	5	40.0	.0708
Reaping, binding, and shocking	16	40.0	1.2500			
Hauling sheaves to barn	4	0.0	.2000	4	0.0	.0500
Thrashing and stacking straw	15	0.0	.7500			
Winnowing	12	45.0	.6375			
Gathering up and sacking barley	4	15.0	.2125			
Total		3,815.0	3.5958		1,380.0	.2875
Per bushel		127.2	.1199		46.0	.0096
Machine, 1895–96.						
Breaking ground, sowing and covering seed, and pulverizing topsoil	0	21.8	.1090			
Hauling water and fuel for engine	0	10.9	.0363	0	21.8	.0182
Reaping, thrashing, measuring, and sacking	0	52.5	.2502			
Hauling water and fuel for engine	0	15.0	.0500	0	30.0	.0250
Hauling barley to granary	1	2.6	.1565	8	20.8	.4173
Total		162.8	.6020		552.6	.4605
Per bushel		5.4	.0201		18.4	.0154

UNIT 5.—BROOM CORN: 1 TON (3 ACRES).

Hand, 1860.						
Breaking ground	15	0.0	$1.5000	30	0.0	$1.1250
Pulverizing topsoil	7	30.0	.7500	15	0.0	.5625
Furrowing ground	3	45.0	.3750	7	30.0	.2813
Dropping seed	7	30.0	.3750			
Covering seed	30	0.0	3.0000			
Cultivating	225	0.0	22.5000	75	0.0	2.8125
Breaking stalks	120	0.0	12.0000			
Cutting brush from stalks	160	0.0	16.0000			
Hauling brush to barn	40	0.0	4.0000	40	0.0	1.5000
Laying brush on table	5	0.0	.5000			
Straightening brush	15	0.0	1.5000			
Removing seed from brush	200	0.0	20.0000			
Hauling away seed	2	0.0	.2000	4	0.0	.1500
Baling brush	12	0.0	1.2000			
Machine, 1895.						
Breaking ground	6	40.0	.8333	26	40.0	1.3333
Pulverizing topsoil	2	27.3	.3069	9	49.3	.4911
Furrowing, drilling, and covering seed	1	52.5	.2344	3	45.0	.1875
Cultivating	11	15.0	1.4063	22	30.0	1.1250
Breaking stalks	30	0.0	3.7500			
Cutting brush from stalks	60	0.0	7.5000			
Hauling brush to seeding shed	17	8.3	2.1423	17	8.3	.8569
Laying brush on table	4	0.0	.5000			
Straightening brush	12	0.0	1.5000			
Removing seed and conveying brush to drying shelves	10	0.0	1.3000			
Hauling away seed	2	0.0	.2500	4	0.0	.2000
Placing brush on drying shelves	4	0.0	.5000			
Baling brush	7	5.0	.8854	1	25.0	.0708

TABLE 18.—*Hand and machine labor*—Continued.

UNIT 8.—CORN: 40 BUSHELS (1 ACRE), YELLOW CORN, SHELLED; STALKS, HUSKS, AND BLADES CUT INTO FODDER.

Operation and period.	Human labor.			Animal labor.		
	Time.		Cost.	Time.		Cost.
	Hours.	Minutes.		Hours.	Minutes.	
Hand, 1855.						
Breaking ground	5	0.0	$0.5000	10	0.0	$0.3750
Pulverizing topsoil	1	15.0	.1250	2	30.0	.0938
Marking check rows	2	30.0	.2500	2	30.0	.0938
Dropping seed in check rows	1	25.8	.1430			
Covering seed	2	51.5	.2858			
Pulverizing topsoil	1	15.0	.1250	2	30.0	.0938
Cultivating	10	0.0	1.0000	10	0.0	.3750
Cutting and shocking	5	0.0	.3750			
Husking	13	20.0	1.0000			
Hauling corn to crib	4	0.0	.3000	8	0.0	.3000
Hauling stalks to barn	8	0.0	.6000	16	0.0	.6000
Cutting stalks, husks, and blades into fodder	60	0.0	4.5000			
Shelling	66	40.0	5.0000			
Hauling corn to granary	1	19.5	.0994	2	39.0	.0994
Weighing corn	0	4.0	.0050			
Total		10,960.8	14.3082		3,249.0	2.0308
Per bushel		274.0	.3577		81.2	.0508
Machine, 1894.						
Breaking ground	2	0.0	.2000	8	0.0	.4000
Pulverizing topsoil	0	37.5	.0625	2	30.0	.1250
Planting seed in check rows	0	40.0	.0667	1	20.0	.0667
Pulverizing topsoil	0	15.0	.0250	1	0.0	.0500
Cultivating	5	0.0	.5000	10	0.0	.5000
Cutting and binding	1	15.0	.2500	2	30.0	.1250
Shocking	2	30.0	.5000			
Hauling corn to husker	6	40.0	1.0000	13	20.0	.6667
Husking corn and cutting stalks, husks, and blades into fodder	2	80.0	.8334			
Hauling water to engine	1	40.0	.2500	3	20.0	.1667
Hauling corn to crib	1	40.0	.2500	3	20.0	.1667
Shelling	0	36.0	.1100			
Hauling water to engine	0	6.0	.0125	0	12.0	.0100
Hauling corn to granary	0	67.4	.1583	2	14.8	.1123
Weighing corn	0	3.4	.0085			
Total		1,650.3	4.2269		2,866.8	2.3891
Per bushel		41.3	.1057		71.7	.0597

UNIT 9.—CORN: 40 BUSHELS (1 ACRE), YELLOW CORN, HUSKED; STALKS LEFT IN FIELD

Hand, 1855.						
Breaking ground	5	0.0	$0.5000	10	0.0	$0.3750
Pulverizing topsoil	1	15.0	.1250	2	30.0	.0938
Marking check rows	2	30.0	.2500	2	30.0	.0938
Dropping seed in check rows	1	15.0	.1250			
Covering seed	2	30.0	.2500			
Pulverizing topsoil	1	15.0	.1250	2	30.0	.0938
Cultivating	10	0.0	1.0000	10	0.0	.3750
Husking and hauling corn to crib	15	0.0	1.2500	10	0.0	.3750
Total		2,325.0	3.6250		2,250.0	1.4064
Per bushel		58.1	.0906		56.2	.0352
Machine, 1894.						
Breaking ground	2	0.0	.2000	8	0.0	.4000
Pulverizing topsoil	0	35.3	.0588	2	21.2	.1177
Planting seed in check rows	0	37.5	.0625	1	15.0	.0625
Pulverizing topsoil	0	15.0	.0250	1	0.0	.0500
Cultivating	5	0.0	.5000	10	0.0	.5000
Husking and hauling corn to crib	6	40.0	.6667	13	20.0	.6667
Total		907.8	1.5130		2,156.2	1.7969
Per bushel		22.7	.0378		53.9	.0449

TABLE 18.—*Hand and machine labor*—Continued.

UNIT 10.—COTTON: 750 POUNDS (1 ACRE), SEED COTTON.

Operation and period.	Human labor.			Animal labor.		
	Time.		Cost.	Time.		Cost.
	Hours.	Minutes.		Hours.	Minutes.	
Hand, 1841.						
Bedding land	8	48.0	$0.4000	8	48.0	$0.2000
Opening beds	2	12.0	.1000	2	12.0	.0500
Sowing seed	4	24.0	.2000			
Covering seed	2	12.0	.1000	2	12.0	.0500
Hoeing and chopping	27	0.0	1.2273			
Barring off	4	24.0	.2000	4	24.0	.1000
Cultivating	28	36.0	1.3000	28	36.0	.6500
Picking	77	0.0	3.7500			
Hauling to gin	13	12.0	.6000	13	12.0	.3000
Total		10,068.0	7.8773		3,564.0	1.3500
Per pound		13.4	.1050		4.8	.0018
1,000 POUNDS (1 ACRE), SEED COTTON.						
Machine, 1895.						
Bedding land	8	0.0	$0.8000	8	0.0	$0.4000
Pulverizing top soil	0	21.0	.0350	1	3.0	.0525
Planting seed	1	30.0	.1500	1	30.0	.0750
Cultivating	7	51.0	.7850	14	27.0	.7225
Chopping	5	0.0	.5000			
Picking	50	0.0	5.0000			
Hauling to gin	6	0.0	.6000	6	0.0	.3000
Total		4,722.0	7.8700		1,860.0	1.5500
Per pound		4.7	.0079		1.9	.0016
UNIT 11.—HAY: HARVESTING AND BALING 1 TON (1 ACRE), TIMOTHY HAY.						
Hand, 1860.						
Mowing grass	7	20.0	$0.6667			
Tedding hay	3	40.0	.1667			
Raking into windrows	3	40.0	.3333			
Cocking	1	50.0	.1667			
Hauling to barn	3	40.0	.3333	3	40.0	$0.1250
Baling	14	40.0	1.3333			
Weighing	0	40.0	.0606			
Per ton	35	30.0	3.0606	3	40.0	.1250
Machine, 1894.						
Mowing grass	1	6.0	.1250	2	12.0	.1000
Tedding hay	0	33.0	.0375	0	33.0	.0250
Raking to stack	1	6.0	.1250	2	12.0	.1000
Stacking	1	39.0	.1875	0	33.0	.0250
Baling	5	30.0	.6250	5	30.0	.2500
Weighing	0	20.0	.0379			
Hauling to barn	1	20.0	.1515	2	40.0	.1212
Per ton	11	34.0	1.2894	13	40.0	.6212

TABLE 18.—*Hand and machine labor*—Continued.

UNIT 12.—HAY: HARVESTING 1 TON (1 ACRE), TIMOTHY HAY.

Operation and period.	Human labor.			Animal labor.		
	Time.		Cost.	Time.		Cost.
	Hours.	Minutes.		Hours.	Minutes.	
Hand, 1850.						
Mowing grass	7	20.0	$0.6667			
Tedding hay	3	40.0	.1667			
Raking hay into windrows	3	40.0	.3333			
Cocking hay	1	50.0	.1667			
Loading hay and hauling to barn	1	50.0	.1667	[1] 3	40.0	$0.1667
Unloading hay	1	50.0	.1667			
Mowing hay	0	55.0	.0833			
Per ton	21	5.0	1.7501	3	40.0	.1667
Machine, 1895.						
Mowing grass	1	6.0	.1250	2	12.0	.1000
Tedding hay	0	33.0	.0375	0	33.0	.0250
Loading hay and hauling to barn	0	55.0	.1042	0	55.0	.0417
Unloading hay	0	55.0	.1042	0	55.0	.0417
Mowing hay	0	27.5	.0521			
Per ton	3	56.5	.4230	4	35.0	.2084

UNIT 16.—POTATOES: 220 BUSHELS (1 ACRE).

Hand, 1866.						
Breaking ground	5	0.0	$0.5000	10	0.0	$0.5000
Pulverizing topsoil	3	20.0	.3333	6	40.0	.3333
Cutting potatoes for seed	4	0.0	.4000			
Hauling seed to field	0	15.0	.0250	0	30.0	.0250
Furrowing ground	2	0.0	.2000	2	0.0	.1000
Dropping seed	5	0.0	.5000			
Covering seed	8	0.0	.8000			
Cultivating	14	20.0	1.4333	12	40.0	.6333
Digging	2	0.0	.2000	4	0.0	.2000
Picking up and putting into wagon	40	0.0	4.0000			
Hauling to pit	5	0.0	.5000	10	0.0	.5000
Sorting	20	0.0	2.0000			
Total		6,535.0	10.8916		2,750.0	2.2916
Per bushel		29.7	.0495		12.5	.0104
Machine, 1895.						
Breaking ground	4	0.0	.4000	12	0.0	.6000
Pulverizing topsoil	0	30.0	.0500	2	0.0	.1000
Cutting potatoes for seed	1	36.0	.1600			
Hauling seed to field	0	13.5	.0225	0	27.0	.0225
Planting	1	25.5	.1425	2	51.0	.1425
Cultivating	4	15.0	.4250	9	30.0	.4750
Digging	1	40.0	.1667	6	40.0	.3333
Picking up and putting into wagon	13	20.0	1.3333			
Hauling to pit	5	0.0	.5000	10	0.0	.5000
Sorting	6	0.0	.6000			
Total		2,280.0	3.8000		2,608.0	2.1733
Per bushel		10.4	.0173		11.9	.0099

[1] Including 1 hour and 50 minutes' time of unloading.

TABLE 18.—*Hand and machine labor*—Continued.

UNIT 13.—OATS: 40 BUSHELS (1 ACRE).[1]

Operation and period.	Human labor.			Animal labor.		
	Time.		Cost.	Time.		Cost.
	Hours.	Minutes.		Hours.	Minutes.	
Hand, 1830.						
Sowing seed	1	25.0	$0.0708			
Covering seed and pulverizing topsoil	2	50.0	.1417	5	40.0	$0.0708
Reaping, binding, and shocking	16	40.0	1.2500			
Hauling sheaves to barn	4	0.0	.2000	4	0.0	.0500
Thrashing oats and stacking straw	20	0.0	1.0000			
Winnowing	16	0.0	.8000			
Gathering up and measuring	5	5.0	.2542			
Putting into bin	0	15.0	.0125			
Total		3,975.0	3.7292		580.0	.1208
Per bushel		99.4	.0932		14.5	.0030
Machine, 1893.[2]						
Sowing seed	0	20.0	.0417	0	40.0	.0333
Covering seed and pulverizing topsoil	0	50.0	.1042	3	20.0	.1667
Pulverizing topsoil	0	15.0	.0313	1	0.0	.0500
Reaping and binding	0	40.0	.1000	2	0.0	.1000
Shocking sheaves	1	20.0	.2000			
Hauling sheaves to thrasher	1	55.2	.2880	2	33.6	.1280
Thrashing and measuring oats and stacking straw	1	7.2	.2120			
Hauling water for engine	0	9.6	.0240	0	19.2	.0160
Hauling oats to granary	0	19.2	.0480	0	38.4	.0320
Shoveling into bins	0	9.6	.0240			
Total		425.8	1.0732		631.2	.5260
Per bushel		10.6	.0268		15.8	.0132

[1] Wheat stubble land; no plowing required.
[2] Corn stubble land; no plowing required.

UNIT 18.—RYE: 25 BUSHELS (1 ACRE).

Hand, 1847–1848.						
Breaking ground	10	0.0	$0.6250	20	0.0	$0.6250
Pulverizing topsoil	3	20.0	.2084	6	40.0	.2084
Sowing seed	1	0.0	.0625			
Covering seed	1	40.0	.1042	3	20.0	.1042
Reaping and binding	11	33.8	.8673			
Shocking sheaves	2	0.0	.1500			
Hauling sheaves to barn	6	40.0	.4167	6	40.0	.2083
Thrashing	12	30.0	.7813			
Winnowing	10	41.3	.6680			
Measuring and sacking	3	33.8	.2227			
Total		3,778.9	4.1061		2,200.0	1.1459
Per bushel		151.2	.1642		88.0	.0458
Machine, 1894–1895.						
Breaking ground	5	0.0	.5000	10	0.0	.6250
Pulverizing topsoil	1	0.0	.1000	3	0.0	.1876
Sowing and covering seed	1	0.0	.1000	2	0.0	.1250
Reaping and binding	1	0.0	.1000	2	0.0	.1250
Shocking sheaves	2	0.0	.2000			
Hauling sheaves to barn	6	40.0	.6667	5	20.0	.3333
Thrashing and sacking rye and stacking straw	6	30.0	.7875			
Hauling water for engine	0	30.0	.0500	1	0.0	.0625
Hauling rye to granary	1	30.0	.1500	3	0.0	.1875
Total		1,510.0	2.6542		1,580.0	1.6459
Per bushel		60.4	.1062		63.2	.066

TABLE 18.—*Hand and machine labor*—Continued.

UNIT 21.—SWEET POTATOES: 105 BUSHELS (1 ACRE).

Operation and period.	Human labor.			Animal labor.		
	Time.		Cost.	Time.		Cost.
	Hours.	Minutes.		Hours.	Minutes.	
Hand, 1868.						
Breaking ground twice	13	20.0	$1.3333	26	40.0	$1.6667
Pulverizing topsoil	2	30.0	.2500	5	0.0	.3125
Smoothing ground	2	30.0	.2500	5	0.0	.3125
Making ridges	5	0.0	.5000	10	0.0	.6250
Dropping plants	20	0.0	1.0000			
Setting out plants	20	0.0	2.0000			
Watering	20	0.0	2.0000	40	0.0	2.5000
Pressing earth around plants	20	0.0	2.0000			
Cultivating potatoes	120	0.0	12.0000			
Digging and throwing into windrows	30	18.0	3.0300			
Sorting	33	20.0	1.6667			
Picking up	16	40.0	.8333			
Hauling to storehouse	5	12.0	.5200	10	24.0	.6500
Ricking table potatoes in bins	6	0.0	.6000			
Dumping seed and feed potatoes into bins	0	24.0	.0400			
Putting 60 bushels of table potatoes into barrels	2	6.0	.2100			
Total		19,040.0	28.2333		5,824.0	6.0667
Per bushel		181.3	.2689		55.5	.0578
Machine, 1895.						
Breaking ground twice	10	0.0	.8000	20	0.0	1.0000
Pulverizing topsoil	1	15.0	.1000	2	30.0	.1250
Smoothing ground	2	30.0	.2000	5	0.0	.2500
Making ridges	1	40.0	.1333	3	20.0	.1667
Furnishing plants to feeders	2	0.0	.0800			
Setting out, watering, and pressing earth around plants	6	0.0	.3200	4	0.0	.2000
Scraping off ridges	1	40.0	.1333	3	20.0	.1667
Throwing dirt back on ridges	1	40.0	.1333	3	20.0	.1667
Dressing off ridges	20	0.0	1.6000			
Digging potatoes	1	40.0	.1333	3	20.0	.1667
Throwing into windrows	10	0.0	.8000			
Sorting	33	20.0	1.3333			
Picking up	16	40.0	.6667			
Hauling to storehouse	5	12.0	.4160	10	24.0	.5200
Ricking table potatoes in bins	6	0.0	.4800			
Dumping seed and feed potatoes into bins	0	24.0	.0320			
Putting 60 bushels of table potatoes into barrels	2	6.0	.1680			
Total		7,327.0	7.5292		3,314.0	2.7618
Per bushel		69.8	.0717		31.6	.0263

UNIT 22.—TOBACCO: 1,200 POUNDS (1 ACRE), LEAF TOBACCO.

Hand, 1844.						
Hauling brush and burning it on seed beds	2	0.0	$0.0600	2	0.0	$0.1000
Preparing seed beds and sowing seed	1	12.0	.0360			
Breaking ground	8	0.0	.2400	16	0.0	.8000
Pulverizing topsoil and smoothing ground	8	0.0	.2400	16	0.0	.8000
Marking rows	4	0.0	.1200	8	0.0	.4000
Pulling, dropping, and setting out plants	20	0.0	.6000			
Cultivating	24	0.0	.7200	4	0.0	.2000
Worming	30	0.0	.9000			
Topping	2	0.0	.0600			
Suckering	8	0.0	.2400			
Cutting and hanging on sticks	20	0.0	.6000			
Hauling to barn	12	0.0	.3600	12	0.0	.6000
Stripping and grading	60	0.0	1.8000			
Total		11,952.0	5.9760		3,480.0	2.9000
Per pound		10.0	.0050		2.9	.0024

TABLE 18.—*Hand and machine labor*—Continued.

UNIT 22.—TOBACCO: 1,250 POUNDS (1 ACRE), LEAF TOBACCO—Continued.

Operation and period.	Human labor.			Animal labor.		
	Time.		Cost.	Time.		Cost.
	Hours.	Minutes.		Hours.	Minutes.	
Machine, 1895, 1,250 pounds (1 acre).						
Preparing seed beds and sowing seed	6	33.0	$0.4566	0	3.0	$0.0023
Weeding	8	15.0	.5751			
Breaking ground	7	42.0	.5367	15	24.0	.7000
Pulverizing topsoil	2	12.0	.1534	4	24.0	.2000
Smoothing ground	2	12.0	.1534	4	24.0	.2000
Pulling plants	5	30.0	.4409			
Hauling water and plants to field	5	30.0	.2500	2	45.0	.1250
Setting out and watering	8	15.0	.6613	5	30.0	.2500
Cultivating	43	27.0	3.4830	13	45.0	.6250
Worming and topping	48	7.5	3.8578			
Worming and suckering	68	45.0	5.5112			
Cutting and hanging on sticks and scaffolds	38	30.0	3.0863			
Hauling to barns and hanging up	19	15.0	1.5431	23	6.0	1.0500
Stripping	66	40.5	6.3906			
Grading	7	25.5	1.6500			
Prizing in hogsheads	14	51.0	1.4850			
Total		21,190.5	30.2344		4,161.0	3.1523
Per pound		17.0	.0242		3.3	.0025

UNIT 23.—TOBACCO: 1,500 POUNDS (1 ACRE), SPANISH SEED LEAF TOBACCO.

Hand, 1853.						
Breaking ground twice	13	20.0	$1.0000	26	40.0	$1.0000
Pulverizing topsoil	5	0.0	.3750	10	0.0	.3750
Leveling	1	15.0	.0938	2	30.0	.0938
Furrowing	2	30.0	.1875	2	30.0	.0938
Making hills	10	0.0	.7500			
Hauling water and plants to field	2	30.0	.1875	2	30.0	.0938
Making holes for plants	10	0.0	.7500			
Watering holes	10	0.0	.7500			
Setting out plants	20	0.0	1.5000			
Cultivating	20	0.0	1.5000	10	0.0	.3750
Topping	5	0.0	.3750			
Suckering	20	0.0	1.5000			
Cutting	10	0.0	.7500			
Gathering in hakes	10	0.0	.7500			
Spearing	10	0.0	.7500			
Hauling to shed	12	30.0	.9375	12	30.0	.4688
Hanging in shed	2	30.0	.1875			
Piling in bulk	5	0.0	.3750			
Stripping and tying in bundles	37	30.0	2.8125			
Grading and tying in hands	100	0.0	7.5000			
Packing in cases	4	18.0	.3225			
Total		18,683.0	23.3538		4,000.0	2.5002
Per pound		12.5	.0156		2.7	.0017
Machine, 1895.						
Breaking ground	5	0.0	.5000	10	0.0	.5000
Pulverizing topsoil	2	30.0	.2500	6	15.0	.3125
Leveling ground	0	37.8	.0630	1	15.6	.0630
Hauling water and plants to field	2	30.0	.2500	5	0.0	.2500
Setting out and watering	7	30.0	.5750	5	0.0	.2500
Cultivating	22	30.0	2.2500	20	0.0	1.0000
Topping	5	0.0	.5000			
Suckering	20	0.0	2.0000			
Cutting	8	0.0	.8000			
Gathering in hakes	10	0.0	1.0000			
Spearing	10	0.0	1.0000			
Hauling to shed	10	0.0	1.0000	10	0.0	.5000
Hanging in shed	2	30.0	.2500			
Piling in bulk	5	0.0	.5000			
Stripping and tying in bundles	37	30.0	3.7500			
Grading and tying in hands	100	0.0	10.0000			
Packing in cases	4	16.8	.4280			
Total		15,174.6	25.1160		3,450.6	2.8755
Per pound		10.1	.0167		2.3	.0019

TABLE 18.—*Hand and machine labor*—Continued.

UNIT 26.—WHEAT: 20 BUSHELS (1 ACRE).

Operation and period.	Human labor.			Animal labor.		
	Time.		Cost.	Time.		Cost.
	Hours.	Minutes.		Hours.	Minutes.	
Hand, 1829–1830.						
Breaking ground	6	40.0	$0.3333	13	20.0	$0.1667
Sowing seed	1	15.0	.0625			
Pulverizing topsoil and covering seed	2	30.0	.1250	5	0.0	.0625
Reaping, binding, and shocking	20	0.0	1.5000			
Hauling sheaves to barn	4	0.0	.2000	4	0.0	.0500
Thrashing wheat and stacking straw	13	20.0	.6667			
Winnowing wheat	10	0.0	.5000			
Gathering up and sacking	3	20.0	.1667			
Total		3,665.0	3.5542		1,340.0	.2792
Per bushel		183.2	.1777		67.0	.0140
Machine, 1895–1896.						
Breaking ground	1	0.0	.1500	12	0.0	.6000
Sowing seed	0	15.0	.0375	0	15.0	.0125
Pulverizing topsoil and covering seed	0	12.0	.0300	1	36.0	.0800
Reaping, thrashing, and sacking	0	60.0	.3125	6	30.0	.3250
Hauling wheat to granary	0	52.2	.1305	6	57.6	.3480
Total		199.2	.6605		1,638.6	1.3655
Per bushel		10.0	.0330		81.9	.0683

UNIT 27.—WHEAT: 20 BUSHELS (1 ACRE).

Hand, 1829–1830.						
Breaking ground	6	40.0	$0.3333	13	20.0	$0.1667
Sowing seed	1	25.0	.0708			
Pulverizing topsoil and covering seed	2	50.0	.1417	5	40.0	.0708
Reaping, binding, and shocking	20	0.0	1.5000			
Hauling sheaves to barn	4	0.0	.2000	4	0.0	.0500
Thrashing wheat and stacking straw	13	20.0	.6667			
Winnowing wheat	12	0.0	.6000			
Gathering up and sacking	4	0.0	.2000			
Total		3,855.0	3.7125		1,380.0	.2875
Per bushel		192.8	.1856		69.0	.0144
Machine, 1895–1896.						
Breaking ground, sowing and covering seed, and pulverizing topsoil	0	30.0	.1625			
Hauling water and fuel for engine	0	15.0	.0500	0	30.0	.0250
Reaping, thrashing, and sacking	0	63.0	.3150			
Hauling water and fuel for engine	0	18.0	.0600	0	36.0	.0300
Hauling wheat to granary	0	52.2	.1305	6	57.6	.3480
Total		178.2	.7180		483.6	.4030
Per bushel		8.9	.0359		24.2	.0202

HORSE WORK IN MINNESOTA.

AVERAGE TIME OF WORK.

Another investigation of the cost of agricultural production, conducted along scientific lines, has been made by the Division of Agriculture of the Minnesota Experiment Station in cooperation with this bureau. From Bulletin 73, of this bureau, a small amount of material has been extracted concerning the time worked by horses and the cost of horse labor. It was ascertained in that investigation during the six years 1902–1907 that on three farms in different townships and operated under somewhat different conditions the average time worked daily on week days by a horse throughout the whole year was 3.03 hours on the farm at Northfield, 3.29 hours on the farm at Marshall, and 3.14 hours on the farm at Halstad. The average number of hours worked by a horse during each week day and in each month is stated in Table 19.

COST OF MAINTAINING A HORSE.

The average annual cost of maintaining a farm work horse on four farms in Minnesota is stated in detail in Table 20. It appears that this average cost ranged from $65.23 to $90.40. About two-thirds of the cost was for feed and the item of cost next in importance was that of human labor required for the care of a horse.

Having ascertained the cost of maintaining a horse and the time devoted to labor, the Minnesota station computed the average cost of horse labor per hour with the following results: On one farm this average cost was 7.32 cents; on another farm it was 7.46 cents; on still another farm 8.36 cents; and the highest cost of horse labor per hour was found on the fourth farm with an average of 9.25 cents. Details may be found in Tables 20 and 21.

EQUIVALENCE OF HORSE AND HUMAN LABOR.

It has seemed worth while to compare the annual cost of maintaining a work horse on a Minnesota farm with the wages of the labor of a man working on the farm. The comparison is made in the manner expressed in Table 22. The large farm is excluded because not represented and the statement for the cost of maintaining a horse is confined to three farms.

If the interest on the value of a horse is included, the cost of maintenance for one year is $84.16, but, if the interest is excluded, the cost is $79.03.

For this cost of maintaining one horse during one year, for how long a time can a farm laborer be employed? This has been computed with results contained in Table 22. One laborer can be em-

ployed without board at the Minnesota average rate of wages in hiring by the year and season for 2.15 months to 2.29 months, according to the exclusion or inclusion of interest on the value of the horse. That is to say, using money as an equivalent for the cost of labor, one horse for one year costs the same as one man for somewhat over two months. This is a striking testimonial to the economic value of the horse as a source of power in comparison with human labor.

TABLE 19.—*Average number of hours worked daily on week days by horses on three farms in Minnesota, by months, average of 1902–1907.*

Farm at—	Average of 12 months.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Northfield	3.03	1.16	1.14	1.34	4.54	4.00	3.11	3.44	4.78	4.07	3.86	3.05	1.55
Marshall	3.29	.81	.96	1.72	4.46	4.66	3.55	3.68	5.07	5.08	4.61	3.57	1.37
Halstad	3.14	.71	.80	.86	2.48	5.06	3.14	3.24	5.21	6.07	6.56	2.77	.71

TABLE 20.—*Average annual cost of maintaining a farm work horse on four farms in Minnesota.*

Item of cost.	Northfield.					Marshall.				
	Average.	1904	1905	1906	1907	Average.	1904	1905	1906	1907
Interest on investment	$5.54	$3.24	$5.76	$6.43	$6.74	$4.68	$3.79	$4.96	$5.16	$4.83
Depreciation	5.56	15.48	.98	1.45	4.35	6.94	9.86	4.20	6.71	6.97
Harness depreciation	2.10	1.47	1.89	3.64	1.39	1.64	1.47	2.18	2.35	.57
Shoeing	1.42	1.11	1.55	1.54	1.46	.49	.53	.41	.45	.57
Feed	63.49	63.49	51.91	63.54	75.03	58.70	68.96	51.91	50.05	63.90
Labor	11.88	11.77	9.65	11.11	15.01	14.06	13.14	13.92	13.35	15.81
Miscellaneous expenses	.40	.55	.44	.34	.29	.49	.62	.55	.23	.57
Total	90.40	97.11	72.18	88.05	104.27	87.00	98.37	78.13	78.30	93.22

Item of cost.	Halstad.					1,820-acre farm (Norman County).				
	Average.	1904	1905	1906	1907	Average.	1904	1905	1906	1907
Interest on investment	$5.16	$5.14	$5.55	$5.63	$4.32	$4.24	$4.47	$4.56	$4.29	$3.64
Depreciation	5.82	7.37	6.20	7.12	2.60	1.04	.....	1.77	.....	2.38
Harness depreciation	1.35	1.95	1.27	1.85	.32	1.10	1.56	1.45	1.33	.05
Shoeing	.12	.14	.11	.10	.12	.....	.....	.....	.....	.....
Feed	42.34	42.28	37.69	42.23	47.15	40.21	40.18	37.29	36.54	46.82
Labor	19.68	20.09	16.86	19.03	22.73	18.62	14.24	18.06	20.54	21.64
Miscellaneous expenses	.61	.33	1.64	.28	.18	.03	.....	.12	.....	.....
Total	75.07	77.30	69.32	76.24	77.42	65.23	60.45	63.25	62.70	74.53

TABLE 21.—*Cost of horse labor per hour on four farms in Minnesota.*

Farm at—	Average.	1904	1905	1906	1907
	Cents.	*Cents.*	*Cents.*	*Cents.*	*Cents.*
Northfield	9.25	8.33	8.52	9.13	11.02
Marshall	8.36	8.95	7.16	8.31	9.02
Halstad	7.32	7.27	6.72	7.62	7.67
1,820-acre farm (Norman County)	7.46	6.60	7.68	6.79	8.77

TABLE 22.—*Annual cost of labor of horse and man compared, in Minnesota.*

Farm at—	Annual cost of maintaining 1 work horse on each of 3 farms in Minnesota; average for 1904–1907.	
	Interest on value of horse included.	Interest on value of horse excluded.
Northfield	$90.40	$84.86
Marshall	87.00	82.32
Halstad	75.07	69.91
Average	84.16	79.03
Equal to number of months of labor of 1 man without board in hiring by the year and season at rate of $36.69 in Minnesota in 1906	2.29	2.15

INTENSIVE AGRICULTURE AS A SOURCE OF WAGES.

HIGHER RATES AND COMMAND OF THE BEST LABOR.

In pursuing the nineteenth investigation of farm wage rates throughout the country for Bulletin 99, many thousands of correspondents were requested to mention the special manner of farming and the special crops that enabled farmers to pay the higher wages and get the better laborers. The information received in response to this specific inquiry is not uniform and, indeed, can not be so in a country possessing the great variety of agricultural and market conditions found in the United States. The general fundamental fact, however, is that the higher rates of wages in any community or larger region are sustained by the more intensive agriculture. This kind of agriculture embraces the more profitable lines of production in each community or larger area and probably the intensive methods are the cause of the profitable results. The intensive agricultural method carried on by intelligent men sustains a higher agricultural wage rate.

REPORTS OF STATE STATISTICAL AGENTS.

The information supplied by correspondents throughout the breadth and width of the country concerning the kinds of commodities and the character of the agriculture that sustains the higher wages may briefly be reviewed with profit.

The question was, "What special manner of farming and what special crops enable farmers to pay the higher wages and to get the better laborers?"

The State statistical agent for Maine reported that this question would be answered differently for the different counties of the State, and that in Aroostook County the advantageous product is potatoes; in other counties where butter factories are in operation that dairying

would be the favored specialty, while in still other counties it would be sweet corn for canning. In Vermont the higher wages are found in market gardening, dairying, and fruit harvest; in truck farming, and dairy farming on a large scale in Rhode Island; while in New York the best fruit growers, particularly those who market their product at retail, truck farming, and the breeding of pure-bred stock were designated.

The special agriculture that sustains the higher wages in New Jersey is fruit growing and general trucking; in Delaware, fruit growing combined with potatoes, both sweet and white; fruit growing and trucking in West Virginia.

From the State statistical agent for South Carolina the answer is, "intensive diversified farming, planting of cotton, corn, and small grain, with hay and stock raising;" from Ohio the report is, "diversified farming with well-planned rotations enables the farmer to employ help for the whole year; more intelligent laborers may be employed and higher wages paid."

The situation is thus described in North Dakota: "Our grain farmers pay rather the higher wages, but our mixed farmers are better able to pay higher wages and they get the better men on account of their assurance that men and women will have work for the entire year."

In Kansas, as well as in other States, wheat harvest pays the highest day rates of wages; otherwise the farmer who so manages his affairs as to be able to employ a man throughout the whole year is able to get the better quality of labor and must pay the highest rate.

In Alabama, "the laborer, good, bad, or indifferent, prefers to cultivate corn and cotton." The rice laborer is paid the best wages in Louisiana for the reason that this crop requires more skillful laborers than others do; the land is plowed with gang plows; disk harrows are used; the grain is seeded with seeders and then harvested with harvesters and binders.

It is the observation of the State statistical agent for Washington that "fruit growing appeals to the men of a higher order of intelligence, and the competent man in this line is paid the best wages." In Oregon, dairying appears to secure the better laborers on account of steady employment, but the commercial apple growers also are able to pay higher wages, and perhaps as a class pay the highest.

LOCAL CORRESPONDENTS.

From reports made by local correspondents the following extracts are indicative. In New York State various vegetable specialties pay the highest wages. In one county the breeding of registered stock is mentioned. In another county the apple-orchard interests predominate, and the best wages go to the laborers who have acquired the

needed skill. Among the other products mentioned in various places in New York are hops and potatoes.

Agricultural specialties in Virginia that command the better labor and pay the higher wages are fruit, potatoes, strawberries, and various vegetables for sale in Northern markets.

Reports from North Carolina mention diversification of crops, market gardening, more intensive agriculture, berries, tobacco, and cotton when raised intensively. From Georgia the reports include melons, general trucking, fruit growing, and especially peach growing, while the various correspondents mention intensive methods and diversification of crops.

Michigan has many specialties that are mentioned as possessing advantages over general agriculture without intensive treatment. Among these specialties are spearmint, peppermint, wormwood, and tansy, dairying near a city, ginseng, clover raised for hay and seed, chickory and sugar beets, celery, growing pease under contract with seed firms, strawberries, onions, and cucumbers, the latter for pickling; the raising of nursery stock, and small white beans. Several correspondents have observed that the highest wages are paid by the farmers who maintain the best farms and use the best labor-saving machinery. "It is not so much in the crop as in the person who employs and secures the highest production per acre."

The Iowa farmer finds an advantage in good riding machines and good horses; and under conditions in Illinois, "mixed farming with a systematic rotation of crops enables the farmer to pay the highest wages if he could be assured of getting the most trustworthy laborers." Among the specialties that pay the higher wages and get the better labor in Tennessee are truck gardening and tobacco.

The report of a local correspondent in Louisiana is: "Intensive and diversified farming. In this section alfalfa for hay seems to pay best, but where the land is suitable and convenient to market, trucking is quite profitable." In another part of Louisiana the advantage goes to sugar cane and elsewhere to cane grown for sirup and to vegetable and berry growing for northern markets.

California has a great variety of special products that pay the higher rates of wages. Among these are the citrus fruits, pears, apples, plums, prunes, apricots, olives, walnuts, sugar beets, garden seed crops, alfalfa, lima beans, berries, potatoes, hops, grapes, peaches, celery, and cantaloupes.

From every quarter the crop correspondents have observed that the higher wages and ability to select the better laborers are found on farms managed in the more intelligent ways and on which the cultivation is of the more intensive sort.

LENGTH OF EMPLOYMENT.

HIGHER RATES OF WAGES GO WITH SHORTER PERIODS.

An important matter in determining the rate of farm wages and the supply of labor is the period for which employment is given. The farmer who manages his affairs so as to be able to keep a laborer throughout a whole year has the advantage over farmers who can employ only for the fraction of a year. Regarding the temporary summer job on the farm, the Nebraska Farmer comments as follows:

> From experience and observation the laboring man knows that the summer job on the farm, held in harvest or haying, is at best short lived and that then he must shift again. This kind of employment appeals only to a certain roving class. To be sure of plenty of help farmers should so arrange their crops as to give continuous employment. Otherwise to supply the temporary needs of the farm for help they must depend upon the number of men in the country, who because of their disposition or because of economic pressure will go out after the transient job. To have too many of this class gives a decidedly unhealthy tone to society.

PREDOMINANCE OF SEASON OVER YEAR.

The average time during which farm laborers who were hired by the month were employed during the year in Kansas was ascertained by the Bureau of Labor and Industry in 1893. It was ascertained that the average period of employment was 6.76 months during the year and no day labor was included in the average.

In the nineteenth investigation of the wages of farm labor conducted by this bureau for Bulletin 99, inquiries were made in every township with regard to the percentage of male outdoor laborers on farms, hired at a monthly rate, who were so hired for the entire year. The results of this inquiry may be found in Table 23. It appears that 28.6 per cent of all male outdoor laborers on farms who worked at a monthly rate of pay were employed for the entire year, so that 71.4 per cent of the male laborers working at monthly rates were employed for less than one year, or, more emphatically stated, for much less than one year.

The highest percentage of laborers hired by the year is found in the South Atlantic States, where it is 34.9 per cent. Next in order is the North Atlantic division, with 33.9 per cent; the South Central States are third in order, with 28.5 per cent, after which follow the North Central States with 23.8 per cent, and last of all the western States with 21.8 per cent. The highest percentage found among the States is 50 per cent for Maryland. Other States with high percentages are New Jersey, 48 per cent; Massachusetts, 43 per cent; Connecticut, Virginia, South Carolina, each 40 per cent.

TABLE 23.—*Percentage of male outdoor laborers on farms, hired at a monthly rate, who are so hired for the entire year, by States and geographic divisions, 1909.*

State and geographic division.	Percentage, 1909, for male outdoor laborers.	State and geographic division.	Percentage, 1909, for male outdoor laborers.	State and geographic division.	Percentage, 1909, for male outdoor laborers.
Maine	20	Illinois	26	Wyoming	22
New Hampshire	29	Michigan	21	Colorado	24
Vermont	33	Wisconsin	25	New Mexico	21
Massachusetts	43	Minnesota	18	Arizona	19
Rhode Island	39	Iowa	24	Utah	10
Connecticut	40	Missouri	24	Nevada	16
New York	31	North Dakota	16	Idaho	18
New Jersey	48	South Dakota	20	Washington	19
Pennsylvania	33	Nebraska	24	Oregon	20
Delaware	13	Kansas	22	California	24
Maryland	50	Kentucky	30		
Virginia	40	Tennessee	30	Geographic division:	
West Virginia	22	Alabama	32	North Atlantic	33.9
North Carolina	29	Mississippi	32	South Atlantic	34.9
South Carolina	40	Louisiana	33	North Central	23.8
Georgia	36	Texas	25	South Central	28.5
Florida	25	Oklahoma	20	Western	21.8
Ohio	26	Arkansas	22		
Indiana	27	Montana	29	United States	28.6

BACK TO THE LAND.

SMALL MOVEMENT OF PERMANENT RESIDENTS.

"Back to the land" is the cry that is now often heard. It is made by those who believe that the dearth of agricultural production and inability of this country to sustain itself is at hand. It is made by some social theorists and also by social economists who would relieve the congestion of cities of the attendant want and misery.

The movement of people in this country from town and city to country and farm began about the middle of the last century in the establishment of country homes in Berkshire County, Mass., by wealthy men. That, of course, was not primarily an agricultural movement, although agriculture resulted. Since that beginning the countryward movement of this sort has grown enormously, often reaching out 100 miles or more from a city and in instances much farther. This movement is of such a sort that it adds to the local demand for farm labor, which may be supplied locally or, if not, by labor brought from other country places or from cities.

The movement from city to farm for the purpose of permanent farm life and labor, either for hire or under ownership, has hardly become general enough in this country to present recognizable proportions. There is a little of this movement here and a little there, but nearly all cases are sporadic. Many colonies have been organized and established during the last century and some of them have been successful in agriculture, but as far as they represent a movement from city to farm all of them combined have not contributed a perceptible movement. The success of the Salvation Army with several colonies of very poor people taken from cities to establish agricultural communi-

ties would seem to indicate that there is room for development along the same line, but this development requires a strong arm of control, the ability to command credit and to advance money to the colonists; it demands constant supervision and control for at least a considerable number of years; and, most important of all in a movement of this sort, it requires the selection of the very best and most industrious, intelligent, and promising families. Experience with labor and agricultural colonies in Europe has clearly demonstrated that it is only with picked families, if they are taken from the slums, that economic success can be achieved.

TEMPORARY WORKERS.

But there is one sort of labor that goes from city to farm which has become large enough to be perceptible, and that is seasonable labor for employment, not in general farming operations, but for special purposes. The migration of men from cities to follow the wheat harvest from Oklahoma to North Dakota is the best-known feature of this sort of farm labor. It is not so generally known that women and children and some men, too, go from the city to the farm at certain seasons to harvest cucumbers to be sold to the pickle factory, to pick, grade, pack, and dry fruits, to harvest hops and berries and dig potatoes, and so on with other crops that need a rush of labor at time of harvest. Some labor of this sort is applied also to the cultivation of crops, as in pulling weeds from beets and onions; but this labor does not seem to be used much for cultivating crops and not at all for planting. The conspicuous feature of the agriculture that utilizes this seasonal labor is that it is intensive. There is high production per acre, so that the wages paid are fully competitive with city rates.

CITY DISQUALIFICATIONS.

It is one of the strange facts of life that a man born and bred in the city is adaptable to the country with difficulty, if at all, whereas the countryman readily adapts himself to the city and to all sorts of occupations therein. It may seem senseless in social economy that there should be many thousands of idle men in the city and a long "bread line" at a time when farmers are worrying because of a short labor supply, but as a matter of fact the idle workmen if taken to the farm would need constant and close supervision for a long time, and the net result of their labor would not warrant the payment of customary wages, and perhaps not wages above sustenance. As for the bread line, it is safe to say that any farmer would prefer a plague of insects.

Another obstacle to the migration of labor from the city to the farm is the change from noise to quietude. It would seem as though

the incessant pounding of violent sound waves upon the nerves creates a craving for their continuance, just as frequent and continued use of morphine creates an irresistible habit. Whether this is to be accepted as a statement of a pathological condition or as only a simile, the fact seems to be that, psychologically and economically, the man born and bred in the city appears to be shut up there like a rat in a trap.

QUALITY OF LABOR REQUIRED.

WIDE RANGE OF KNOWLEDGE.

The requirements of the farm in the character of the labor employed are changing radically. The labor to be performed by the owner should be governed by extensive information and considerable scientific knowledge. A successful farmer at the present time may need considerable knowledge of chemistry, of bacteriology, of economic entomology, of the pathology and physiology of plants and animals; of plant and animal breeding, of fungicides and insecticides, of the conservation of soil moisture; of botany, pomology, viticulture, horticulture, and certainly much concerning the practical handling and marketing of his products. The hired laborer does not need to know so much, and yet he should be at least moderately intelligent and well informed. The hired man must know that it will not do to strike with his milking stool the cow he is milking, nor to set the dog upon her, and he must habitually enter the poultry house without causing a commotion among the fowls, or else milk and egg production will be diminished. He must have some knowledge of the strength of materials in order that tools and machinery may not be broken. He must be familiar with the tricks of plowing, and he must understand that he should not let the corn cultivator run deep enough to sever the roots of the corn plants. In a thousand and one particulars knowledge and intelligence are required in the operations of the most successful farmer.

The deterioration of the quality of farm labor in this country in recent years is a subject of widespread and frequent complaints, and these complaints apply to hired labor as well as to tenants. The farm tenancy also is steadily increasing, but there is a dearth in the supply of farm tenants of a competent sort, as well as farm laborers for hire.

SUPPLY OF FARM TENANTS.

RISE FROM HIRE TO TENANCY.

In beginning the nineteenth investigation of the wages of farm labor, made by this bureau for Bulletin 99, it was deemed advisable to obtain information with regard to the possible supply of farm tenants, and so correspondents were requested to return answer to the

question, "About what proportion of male farm laborers are fit to become farm tenants?" They reported in percentages, and these percentages were properly weighted in making averages for the geographic divisions and for the United States.

The results of the inquiry were that 42.7 per cent of the male farm laborers of this country were reported competent to become farm tenants. The highest percentage established is 47.8 for the South Central division of States; next to that is 46.4 per cent for the North Central division, and third in order is the Western division with 37.2 per cent. Next following is the South Atlantic division with 35.3 per cent, and lowest of all is the North Atlantic division with 33.2 per cent. The foregoing figures and those for the separate States may be found in Table 24.

SUPPLY OF OWNERS.

ADVANCEMENT FROM WAGE LABOR.

The acquisition of farms in this country by industrious and thrifty families has been a conspicuous feature of national economy from the beginning. The situation has attracted multitudes of agricultural workers from European countries who had the prospect of becoming farm owners within a few years.

Has that long-standing promise of farm ownership to those who work for it diminished amid the changes in economic conditions? With the hope that some information with regard to this might be discovered, in connection with the preparation of Bulletin 99, many thousands of correspondents, representing almost every agricultural neighborhood in this country, were requested to supply an answer to the following question:

> Is it now reasonably possible for a farm laborer to save enough out of his wages, or a farm tenant to save enough out of his receipts, to buy a farm large enough to support himself and family, especially if he makes only part payment of the purchase price and secures the remainder by mortgage?

Responses to this inquiry were freely made, and the results may be found in Table 24. Of the answers to the question, 71.7 per cent agree that it is reasonably possible for farm laborers and tenants to acquire the ownership of a farm. The percentages for the five geographic divisions are quite uniform and range only from 70.1 to 78.5.

In the opinion of men who live on the spot, and under local conditions, it is fairly possible for farm laborers and tenants to become farm owners throughout the length and breadth of this land. The old familiar proceeding that resulted in the wonderful production in the northern half of the Mississippi Valley was the beginning as a farm laborer, followed by farm purchase under mortgage, and eventual ownership free from debt. This process can still be employed in the

East, in the South, and in the Pacific Northwest, and even in the North Central States where farmers are "rich."

TABLE 24.—*Wage labor on farms, farm tenancy and farm ownership: Ability of workers to rise, by States, 1909.*

State and geographic division.	Percentage of male outdoor farm laborers fit to become farm tenants.	Is it reasonably possible for farm laborers and tenants to save enough to buy a farm that will support a family, even with help of a mortgage?	
		Percentage, yes.	Percentage, no.
Maine	45	81.1	18.9
New Hampshire	38	87.5	12.5
Vermont	29	88.2	11.8
Massachusetts	20	81.8	18.2
Rhode Island	38	75.0	25.0
Connecticut	26	100.0	.....
New York	33	83.8	16.2
New Jersey	25	83.1	16.9
Pennsylvania	38	66.2	33.8
Delaware	36	61.5	38.5
Maryland	26	80.2	19.8
Virginia	29	73.6	26.4
West Virginia	39	61.5	38.5
North Carolina	37	68.2	31.8
South Carolina	31	76.1	23.9
Georgia	42	74.9	25.1
Florida	35	64.4	35.6
Ohio	42	70.7	29.3
Indiana	41	60.0	40.0
Illinois	44	61.2	38.8
Michigan	40	81.8	18.2
Wisconsin	45	73.5	26.5
Minnesota	48	69.9	30.1
Iowa	54	71.7	28.3
Missouri	48	66.0	34.0
North Dakota	40	91.3	8.7
South Dakota	51	76.2	23.8
Nebraska	54	80.3	19.7
Kansas	53	79.8	20.2
Kentucky	45	59.4	40.6
Tennessee	45	69.8	30.2
Alabama	45	72.0	28.0
Mississippi	45	73.4	26.6
Louisiana	38	59.1	40.9
Texas	57	78.3	21.7
Oklahoma	52	71.0	29.0
Arkansas	53	68.6	31.4
Montana	32	100.0	.....
Wyoming	30	90.0	10.0
Colorado	40	83.7	16.3
New Mexico	46	52.4	47.6
Arizona	31	78.1	21.9
Utah	50	80.0	20.0
Nevada	8	66.7	33.3
Idaho	46	77.3	22.7
Washington	43	83.0	17.0
Oregon	43	69.3	30.7
California	30	79.1	20.9
Geographic division:			
North Atlantic	33.2	78.5	21.5
South Atlantic	35.3	72.4	27.6
North Central	46.4	70.2	29.8
South Central	47.8	70.1	29.9
Western	37.2	78.1	21.9
United States	42.7	71.7	28.3

PROSPECTS OF THE FUTURE.

HOLDING COUNTRY POPULATION TO THE SOIL.

FORCES AT WORK TO PRESERVE NATIONAL SELF-SUFFICIENCY.

The farmer would not need to get his labor from the cities if he could hold the country population to the soil, and the recognition of the importance of retaining the children on the farm and of keeping country labor from migrating to cities is governing most of the work by Nation and States in behalf of agriculture.

The old practice was to trust to the printed page for the instruction of the farmer, but in the course of time it was found that this was poorly productive of results. Then followed the farmers' institute movement, which consisted of lectures, sometimes later with practical demonstrations. In the meantime the United States Department of Agriculture and the experiment stations got into more prac-

tical lines of work by means of special advice in special cases, formerly by mail and now also by personal visits; so that it has been discovered that the most successful promotion of agricultural knowledge and practice is caused by practical demonstration under the observation of the farmers to be instructed.

In 1904 the department inaugurated on a small scale what is now known as its "Farmers' Cooperative Demonstration Work." The initial efforts met with such emphatic success that the work was gradually increased until within four years the whole cotton belt and many outlying regions were covered by a large force of trained field agents, all practical farmers. These men are wielding a wonderful influence among the farmers of the South to adopt better agricultural methods and to use improved seed and thus to increase their profits. In 1912 the movement was extended to the Eastern States.

Striking proof of the success of this work is that the results have attracted so much attention that voluntary private contributions toward its extension have almost reached the total amount appropriated by Congress for its maintenance. Large districts which had been almost deserted on account of the boll weevil are now more prosperous than at any time in their history, and many men who have been renters are buying land and raising cotton profitably as a result of better systems of management.

Closely related to this work are the farm management investigations of the department, consisting primarily of a detailed study of the practices followed on the most successful farms in well-defined communities and the application or adaptation of these practices to other and less prosperous farms throughout the country. The aim in all this work is to bring the farm up to its maximum producing power through systematic management, both as to cultural practices and as to business methods.

Along with this is the very recent movement to instruct country children in agriculture at the beginning of their school life and to continue this instruction to the high school and the college. In this way the foundation will be laid for successful farming, and such farming implies the retention of children upon the farm.

Still further and to the same end many agencies are at work upon the country people to improve their dwellings, their modes of living, their home life, and their social activities, which are already beginning to count against the unpleasantness of country life and in favor of making such life attractive. Influences of this sort, joined to the agricultural education of the young and to the practical teaching of the farmer how to do by doing, at a time when farming is prosperous and profitable, may be depended upon to save to our agriculture all the labor it will need for the maintenance of our national self-sufficiency.

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