# STATISTICAL ATLAS

## DESCRIPTIVE TEXT

# POPULATION.

## AREA OF ENUMERATION: 1910.

The area of enumeration in 1910 embraced the states and territories and the outlying possessions of Alaska, Hawaii, and Porto Rico. The gross area in square miles of the territory enumerated April 15, 1910, with the population as returned, is shown in Table 1. The area in square miles was 3,627,557 and the population returned, 93,402,151.

The increase in population from 3,929,214 at the census of 1790 to 93,402,151 at the census of 1910 was 89,472,937, or about 24 persons in 1910 to each person returned at the First Census. During the same period the area was extended from 892,135 square miles to 3,627,557 square miles. The area, therefore, increased only four times, as compared with a population increase of nearly twenty-four fold.

**Table 1**

| TERRITORY ENUMERATED: 1910. | Gross area (land and water) in square miles. | Population. |
|---|---|---|
| **United States** (with outlying possessions) | **3,627,557** | **93,402,151** |
| United States, exclusive of outlying possessions | 3,026,789 | 91,972,266 |
| Outlying possessions | 600,768 | 1,429,885 |
| Alaska | 590,884 | 64,356 |
| Hawaii | 6,449 | 191,909 |
| Porto Rico | 3,435 | 1,118,012 |
| Military and naval service abroad | ..... | 55,608 |

In Table 2 is given the gross area in square miles of the United States, including all its outlying possessions, at each enumeration from 1790 to 1910, together with the population; the area—land, water, and total—and the population of the United States, excluding the outlying possessions; and the gross area of the outlying possessions.

**Table 2**

| CENSUS YEAR. | UNITED STATES AND ITS OUTLYING POSSESSIONS | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | United States (excluding outlying possessions). | | | | |
| | Aggregate population. | Gross area (land and water) in square miles. | Population. | Area in square miles. | | | Gross area of outlying possessions in square miles. |
| | | | | Gross area (land and water). | Land. | Water. | |
| 1910 | 101,115,487 | 3,743,306 | 91,972,266 | 3,026,789 | 2,973,890 | 52,899 | 716,517 |
| 1900 | 77,256,630 | 3,742,870 | 75,994,575 | 3,026,789 | 2,974,159 | 52,630 | 716,081 |
| 1890 | 62,979,766 | 3,617,673 | 62,947,714 | 3,026,789 | 2,973,965 | 52,824 | 590,884 |
| 1880 | 50,189,209 | 3,617,673 | 50,155,783 | 3,026,789 | 2,973,965 | 52,824 | 590,884 |
| 1870 | 38,558,371 | 3,617,673 | 38,558,371 | 3,026,789 | 2,973,965 | 52,824 | 590,884 |
| 1860 | 31,443,321 | 3,026,789 | 31,443,321 | 3,026,789 | 2,973,965 | 52,824 | ..... |
| 1850 | 23,191,876 | 2,997,119 | 23,191,876 | 2,997,119 | 2,944,337 | 52,782 | ..... |
| 1840 | 17,069,453 | 1,792,223 | 17,069,453 | 1,792,223 | 1,753,588 | 38,635 | ..... |
| 1830 | 12,866,020 | 1,792,223 | 12,866,020 | 1,792,223 | 1,753,588 | 38,635 | ..... |
| 1820 | 9,638,453 | 1,792,223 | 9,638,453 | 1,792,223 | 1,753,588 | 38,635 | ..... |
| 1810 | 7,239,881 | 1,720,122 | 7,239,881 | 1,720,122 | 1,685,865 | 34,257 | ..... |
| 1800 | 5,308,483 | 892,135 | 5,308,483 | 892,135 | 867,980 | 24,155 | ..... |
| 1790 | 3,929,214 | 892,135 | 3,929,214 | 892,135 | 867,980 | 24,155 | ..... |

The gross area, land and water, of the United States at the Thirteenth Census was 3,743,306 square miles. The outlying territories had an area of 716,517 square miles, approximately one-fifth of the total area. In 1790, at the First Census, the area was 892,135 square miles, less than one-fourth of the present area, and was confined to the territory lying between the Atlantic Ocean and the Mississippi River, with the exception of the territory known as Florida. The largest accession of territory at any decade was that of the Louisiana Purchase in 1803. During the decade from 1840 to 1850 there were three accessions of territory, aggregating 1,204,896 square miles, which, with the area of the Louisiana Purchase, covered an area of over 2,000,000 square miles. The annexations made in other years, with the exception of Alaska, were smaller in area, but more densely populated.

Table 3 gives the gross area with the date of annexation of each accession of territory from 1790 to 1910. Colored Plate No. 1 shows the boundaries of the original 13 states and each of the accessions of territory.

**Table 3**

| ACCESSION. | Date acquired. | GROSS AREA (LAND AND WATER) IN SQUARE MILES. | |
|---|---|---|---|
| | | Area of accession. | Total area. |
| **Aggregate, 1910**—United States and outlying possessions | | | **3,743,306** |
| United States | | | 3,026,789 |
| Outlying possessions | | | 716,517 |
| Territory in 1790 [1] | | | 892,135 |
| Louisiana Purchase | 1803 | 827,987 | 1,720,122 |
| Florida | 1819 | 58,666 | 1,778,788 |
| By treaty with Spain | 1819 | 13,435 | 1,792,223 |
| Texas | 1845 | 389,166 | 2,181,389 |
| Oregon | 1846 | 286,541 | 2,467,930 |
| Mexican Cession | 1848 | 529,189 | 2,997,119 |
| Gadsden Purchase | 1853 | 29,670 | 3,026,789 |
| Alaska | 1867 | 590,884 | 3,617,673 |
| Hawaii | 1898 | 6,449 | 3,624,122 |
| Philippine Islands | 1899 | 115,026 | 3,739,148 |
| Porto Rico | 1899 | 3,435 | 3,742,583 |
| Guam | 1899 | 210 | 3,742,793 |
| Samoa | 1900 | 77 | 3,742,870 |
| Panama Canal Zone | 1904 | 436 | 3,743,306 |

[1] Includes the drainage basin of the Red River of the North, not a part of any accession, but in the past sometimes considered a part of the Louisiana Purchase.

Table 4 shows at each census the population, accumulative increase, per cent of increase from 1790, land area, and number of persons per square mile for the United States, exclusive of its outlying possessions. The increase in population in 1840, after 50 years of growth, was 334.4 per cent, having increased a little over four times. The increase for 100 years, to 1890, was 1,502 per cent, or there were then in the United States 16 persons where in 1790 there was one person. The increase for 120 years, to 1910, was 2,240.7 per cent; in other words, there were 23 persons in continental United States to each person returned in 1790. The land area has increased almost three and one-half times, while the population per square mile has increased nearly seven times, the increase in density from 1900 to 1910 being greater than during any previous decade. The increase and decrease in density of population is represented by Diagram 1, Plate No. 135.

**Table 4**

| CENSUS YEAR. | Population of continental United States. | Accumulative increase. | Per cent of increase from 1790. | Land area in square miles. | Population per square mile. |
|---|---|---|---|---|---|
| 1910 | 91,972,266 | 88,043,052 | 2,240.7 | 2,973,890 | 30.9 |
| 1900 | 75,994,575 | 72,065,361 | 1,834.1 | 2,974,159 | 25.6 |
| 1890 | 62,947,714 | 59,018,500 | 1,502.0 | 2,973,965 | 21.2 |
| 1880 | 50,155,783 | 46,226,569 | 1,176.5 | 2,973,965 | 16.9 |
| 1870 | 38,558,371 | 34,629,157 | 881.3 | 2,973,965 | 13.0 |
| 1860 | 31,443,321 | 27,514,107 | 700.2 | 2,973,965 | 10.6 |
| 1850 | 23,191,876 | 19,262,662 | 490.2 | 2,944,337 | 7.9 |
| 1840 | 17,069,453 | 13,140,239 | 334.4 | 1,753,588 | 9.7 |
| 1830 | 12,866,020 | 8,936,806 | 227.4 | 1,753,588 | 7.3 |
| 1820 | 9,638,453 | 5,709,239 | 145.3 | 1,753,588 | 5.5 |
| 1810 | 7,239,881 | 3,310,667 | 84.3 | 1,685,865 | 4.3 |
| 1800 | 5,308,483 | 1,379,269 | 35.1 | 867,980 | 6.1 |
| 1790 | 3,929,214 | | | 867,980 | 4.5 |

The increase in the land area of each of the states and of the entire United States is given in Table 5.

## LAND AREA OF THE UNITED STATES IN SQUARE MILES, BY STATES AND TERRITORIES: 1790 TO 1910.

**Table 5**

| STATE AND TERRITORY. | 1910 | 1900 | 1890 | 1880 | 1870 | 1860 | 1850 | 1840 | 1830 | 1820 | 1810 | 1800 | 1790 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **United States** | [1] 2,973,890 | [2] 2,974,159 | 2,973,965 | 2,973,965 | 2,973,965 | [3] 2,973,965 | [4] 2,944,337 | 1,753,588 | 1,753,588 | [5] 1,753,588 | [6] 1,685,865 | 867,980 | [7] 867,980 |
| Alabama | 51,279 | 51,279 | 51,279 | 51,279 | 51,279 | 51,279 | 51,279 | 51,279 | 51,279 | 51,279 | ..... | ..... | ..... |
| Arizona | [8] 113,810 | 113,840 | 113,840 | 113,840 | 113,840 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Arkansas | 52,525 | 52,525 | 52,525 | 52,525 | 52,525 | 52,525 | 52,525 | 52,525 | 52,525 | 105,275 | ..... | ..... | ..... |
| California | [9] 155,652 | [10] 156,092 | 155,900 | 155,900 | 155,900 | 155,900 | 155,900 | ..... | ..... | ..... | ..... | ..... | ..... |
| Colorado | 103,658 | 103,658 | 103,658 | 103,658 | 103,658 | [11] 103,658 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Connecticut | 4,820 | 4,820 | 4,820 | 4,820 | 4,820 | 4,820 | 4,820 | 4,820 | 4,820 | 4,820 | 4,820 | 4,820 | 4,820 |
| Delaware | 1,965 | 1,965 | 1,965 | 1,965 | 1,965 | 1,965 | 1,965 | 1,965 | 1,965 | 1,965 | 1,965 | 1,965 | 1,965 |
| District of Columbia | 60 | [12] 60 | 58 | 58 | 58 | 58 | 58 | 90 | 90 | 90 | 90 | 90 | ..... |
| Florida | 54,861 | 54,861 | 54,861 | 54,861 | 54,861 | 54,861 | 54,861 | 54,861 | 54,861 | 54,861 | ..... | ..... | ..... |
| Georgia | 58,725 | 58,725 | 58,725 | 58,725 | 58,725 | 58,725 | 58,725 | 58,725 | 58,725 | 58,725 | 58,725 | 111,877 | 145,196 |
| Idaho | 83,354 | 83,354 | 83,354 | 83,354 | 83,354 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Illinois | [13] 56,043 | 56,002 | 56,002 | 56,002 | 56,002 | 56,002 | 56,002 | 56,002 | 56,002 | 56,002 | 192,381 | ..... | ..... |
| Indiana | [14] 36,045 | 35,885 | 35,885 | 35,885 | 35,885 | 35,885 | 35,885 | 35,885 | 35,885 | 35,885 | 42,933 | 252,084 | ..... |
| Iowa | 55,586 | 55,586 | 55,586 | 55,586 | 55,586 | 55,586 | 55,586 | 191,656 | ..... | ..... | ..... | ..... | ..... |
| Kansas | 81,774 | 81,774 | 81,774 | 81,774 | 81,774 | [11] 81,774 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Kentucky | 40,181 | 40,181 | 40,181 | 40,181 | 40,181 | 40,181 | 40,181 | 40,181 | 40,181 | 40,181 | 40,181 | 40,181 | [15] 40,181 |
| Louisiana | 45,409 | 45,409 | 45,409 | 45,409 | 45,409 | 45,409 | 45,409 | 45,409 | 45,409 | 45,409 | [16] 34,065 | ..... | ..... |
| Maine | 29,895 | 29,895 | 29,895 | 29,895 | 29,895 | 29,895 | 29,895 | 29,895 | 29,895 | 29,895 | [17] 29,895 | [17] 29,895 | [17] 29,895 |
| Maryland | 9,941 | 9,941 | 9,941 | 9,941 | 9,941 | 9,941 | 9,941 | 9,941 | 9,941 | 9,941 | 9,941 | 9,941 | 9,999 |
| Massachusetts | 8,039 | 8,039 | 8,039 | 8,039 | 8,039 | 8,039 | 8,041 | 8,041 | 8,041 | 8,041 | 8,041 | 8,041 | 8,041 |
| Michigan | 57,480 | 57,480 | 57,480 | 57,480 | 57,480 | 57,480 | 57,480 | 57,480 | 186,052 | 186,052 | 42,625 | ..... | ..... |
| Minnesota | 80,858 | 80,858 | 80,858 | 80,858 | 80,858 | [11] 80,858 | 163,457 | ..... | ..... | ..... | ..... | ..... | ..... |
| Mississippi | 46,362 | 46,362 | 46,362 | 46,362 | 46,362 | 46,362 | 46,362 | 46,362 | 46,362 | 46,362 | [18] 97,641 | 33,319 | ..... |
| Missouri | 68,727 | 68,727 | 68,727 | 68,727 | 68,727 | 68,727 | 68,727 | 68,727 | 65,618 | ..... | ..... | ..... | ..... |
| Montana | 146,201 | 146,201 | 146,201 | 146,201 | 146,195 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Nebraska | 76,808 | 76,808 | 76,808 | 76,172 | 76,172 | [11] 118,915 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Nevada | 109,821 | 109,821 | 109,821 | 109,821 | 109,821 | [11] 61,260 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| New Hampshire | 9,031 | 9,031 | 9,031 | 9,031 | 9,031 | 9,031 | 9,031 | 9,031 | 9,031 | 9,031 | 9,031 | 9,031 | 9,031 |
| New Jersey | 7,514 | 7,514 | 7,514 | 7,514 | 7,514 | 7,514 | 7,514 | 7,514 | 7,514 | 7,514 | 7,514 | 7,514 | 7,514 |
| New Mexico | 122,503 | 122,503 | 122,503 | 122,503 | 122,503 | [11] 247,782 | 236,548 | ..... | ..... | ..... | ..... | ..... | ..... |
| New York | 47,654 | 47,654 | 47,654 | 47,654 | 47,654 | 47,654 | 47,652 | 47,652 | 47,652 | 47,652 | 47,652 | 47,652 | 47,652 |
| North Carolina | 48,740 | 48,740 | 48,740 | 48,740 | 48,740 | 48,740 | 48,740 | 48,740 | 48,740 | 48,740 | 48,740 | 48,740 | 48,740 |
| North Dakota | 70,183 | 70,183 | 70,183 | [19] | [19] | [19] | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Ohio | 40,740 | 40,740 | 40,740 | 40,740 | 40,740 | 40,740 | 40,740 | 40,740 | 40,228 | 40,228 | 40,228 | [20] 40,228 | ..... |
| Oklahoma | 69,414 | 38,624 | 38,624 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Oregon | 95,607 | 95,607 | 95,607 | 95,607 | 95,607 | 95,607 | 282,257 | ..... | ..... | ..... | ..... | ..... | ..... |
| Pennsylvania | 44,832 | 44,832 | 44,832 | 44,832 | 44,832 | 44,832 | 44,832 | 44,832 | 44,832 | 44,832 | 44,832 | 44,832 | [21] 44,832 |
| Rhode Island | 1,067 | 1,067 | 1,067 | 1,067 | 1,067 | 1,067 | 1,067 | 1,067 | 1,067 | 1,067 | 1,067 | 1,067 | 1,067 |
| South Carolina | 30,495 | 30,495 | 30,495 | 30,495 | 30,495 | 30,495 | 30,495 | 30,495 | 30,495 | 30,495 | 30,495 | 30,495 | 30,495 |
| South Dakota | 76,868 | 76,868 | 76,868 | [19] | [19] | [19] | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Tennessee | 41,687 | 41,687 | 41,687 | 41,687 | 41,687 | 41,687 | 41,687 | 41,687 | 41,687 | 41,687 | 41,687 | 41,687 | [22] 46,977 |
| Texas | 262,398 | 262,398 | 262,398 | 262,398 | 262,398 | 262,398 | 262,398 | ..... | ..... | ..... | ..... | ..... | ..... |
| Utah | 82,184 | 82,184 | 82,184 | 82,184 | 82,184 | [11] 122,887 | 230,610 | ..... | ..... | ..... | ..... | ..... | ..... |
| Vermont | 9,124 | 9,124 | 9,124 | 9,124 | 9,124 | 9,124 | 9,124 | 9,124 | 9,124 | 9,124 | 9,124 | 9,124 | 9,124 |
| Virginia | 40,262 | 40,262 | 40,262 | 40,262 | 40,262 | 64,284 | 64,284 | 64,252 | 64,252 | 64,252 | 64,252 | 64,252 | 64,284 |
| Washington | 66,836 | 66,836 | 66,836 | 66,836 | 66,836 | 183,254 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| West Virginia | 24,022 | 24,022 | 24,022 | 24,022 | 24,022 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Wisconsin | 55,256 | 55,256 | 55,256 | 55,256 | 55,256 | 55,256 | 55,256 | 82,643 | ..... | ..... | ..... | ..... | ..... |
| Wyoming | 97,594 | 97,594 | 97,594 | 97,594 | 97,594 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Territory northwest of Ohio River | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 25,855 | 318,167 |
| Territory south of Tennessee | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 5,290 | ..... |
| Missouri territory | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 608,565 | 674,183 | [23] 777,940 | ..... | ..... |
| Indian Territory and unorganized territory | ..... | 30,790 | 30,790 | 69,414 | 69,414 | 69,414 | 535,003 | 511,967 | 52,750 | ..... | ..... | ..... | ..... |
| Dakota territory | ..... | ..... | ..... | 147,687 | 147,693 | [11] 312,094 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

[1] Net reduction of 269 square miles due to the drainage of lakes and swamps in Illinois and Indiana (201 square miles of land), and the building of the Roosevelt and Laguna Reservoirs (30 square miles of water surface), and the overflow of the Colorado River into the Salton Sea in California (440 square miles of water surface).

[2] Increase of 194 square miles due to the reclamation of 2 square miles of Potomac River Flats in the District of Columbia and 192 square miles of Lake Tulare in California.

[3] Includes Gadsden Purchase (29,628 square miles) in 1853.

[4] Includes Texas annexation (385,590 square miles) in 1845; Oregon territory (282,257 square miles) in 1846; and Mexican Cession (522,902 square miles) in 1848.

[5] Includes Florida Purchase (54,861 square miles) and territory gained by treaty with Spain (12,862 square miles) in 1819.

[6] Includes Louisiana Purchase (817,885 square miles) of 1803.

[7] Includes the drainage basin of the Red River of the North.

[8] Decrease of 25 square miles due to the building of the Roosevelt Reservoir and 5 square miles due to the building of the Laguna Reservoir.

[9] Decrease of 440 square miles due to the overflow of the Colorado River into the Salton Sea.

[10] Increase of 192 square miles due to the reclamation of part of Lake Tulare, Cal.

[11] Area given is that in 1861.

[12] Increase of 2 square miles due to reclamation of Potomac River Flats in the District of Columbia.

[13] Increase of 41 square miles due to drainage of lakes and swamps.

[14] Increase of 160 square miles due to drainage of lakes and swamps.

[15] Then part of Virginia; area given is that in 1792, when it was admitted as a state.

[16] Then named Orleans territory; includes 4,611 square miles of disputed territory attached to the state of Louisiana in 1812, and excludes 1,134 square miles gained by treaty with Spain in 1819.

[17] Then under the jurisdiction of Massachusetts; admitted as a state in 1820.

[18] Includes 5,880 square miles of disputed territory attached to Mississippi territory in 1812.

[19] Then part of Dakota territory.

[20] Then part of "territory northwest of the Ohio River;" area given is that in 1802, when it was admitted as a state.

[21] Includes 314 square miles ceded to the United States by the state of New York in 1781 and sold to the state of Pennsylvania in 1792.

[22] Then known as "territory southwest of the Ohio River;" includes 5,290 square miles of territory ceded to the United States by the state of South Carolina in 1787.

[23] Then named territory of Louisiana.

## GEOGRAPHIC DIVISIONS.

In making comparisons of the growth in population, manufactures, and agriculture for groups of states, it has been found of great advantage to divide the United States into certain groups termed geographic divisions. The grouping of the country by geographic divisions is a natural one, and by the aid of it certain characteristic features in the development of groups of states are brought out. At the Thirteenth Census the United States was divided into nine groups or divisions termed geographic divisions. The boundaries of these divisions are shown on Plate No. 2. The divisions and states comprised in each division are as follows:

### NEW ENGLAND DIVISION.

| | | |
|---|---|---|
| Maine. | Vermont. | Rhode Island. |
| New Hampshire. | Massachusetts. | Connecticut. |

### MIDDLE ATLANTIC DIVISION.

| | | |
|---|---|---|
| New York. | New Jersey. | Pennsylvania. |

### EAST NORTH CENTRAL DIVISION.

| | | |
|---|---|---|
| Ohio. | Illinois. | Wisconsin. |
| Indiana. | Michigan. | |

### WEST NORTH CENTRAL DIVISION.

| | | |
|---|---|---|
| Minnesota. | Missouri. | Nebraska. |
| Iowa. | North Dakota. | Kansas. |
| | South Dakota. | |

### SOUTH ATLANTIC DIVISION.

| | | |
|---|---|---|
| Delaware. | Virginia. | South Carolina. |
| Maryland. | West Virginia. | Georgia. |
| District of Columbia. | North Carolina. | Florida. |

### EAST SOUTH CENTRAL DIVISION.

| | | |
|---|---|---|
| Kentucky. | Tennessee. | Mississippi. |
| | Alabama. | |

### WEST SOUTH CENTRAL DIVISION.

| | | |
|---|---|---|
| Arkansas. | Louisiana. | Texas. |
| | Oklahoma. | |

### MOUNTAIN DIVISION.

| | | |
|---|---|---|
| Montana. | Colorado. | Utah. |
| Idaho. | New Mexico. | Nevada. |
| Wyoming. | Arizona. | |

### PACIFIC DIVISION.

| | | |
|---|---|---|
| Washington. | Oregon. | California. |

In the New England and Middle Atlantic divisions the predominant industry is manufactures, consequently there is a tremendous growth of the urban population, and more than half of the population in these two divisions is in cities. The predominant industry in the South Atlantic and East South Central divisions is agriculture, while in the East North Central division the development of manufactures has increased the urban element, and agriculture is not the principal industry. In the West North Central and West South Central divisions agriculture is the principal industry. In the Mountain division mining probably is nearly as important as agriculture, while in the Pacific division, in spite of the large urban element in some of the states, agriculture is the predominant industry. A closer study of the industries in these divisions would show a greater diversity in the forms of agriculture followed, and in the Northern states an especially large increase in the dairy farming and a decrease in the area allotted to cereals.

## GROWTH OF POPULATION.

Colored Plates Nos. 3 to 15 present graphically the growth of the population of the United States since 1790. These maps may properly be termed the density of the rural population, as the population per square mile, upon which these maps, except Plate No. 15, are based, was computed by dividing the population of each county, exclusive of municipalities of 8,000 or more population, by its land area in square miles. New England towns having over 8,000 population were not excluded. The density map for 1910 was prepared on a slightly different basis. The density was obtained as follows: The population of municipalities having 2,500 or more inhabitants was deducted from the total population of the county, and in the New England states the towns with 2,500 or more population were also excluded from the population of the county, the remaining population, considered as rural, being then divided by the land area in square miles. All of the maps were then shaded by groups, as follows: Less than 2 persons to the square mile is regarded as unsettled area and left uncolored; the area with 2 to 6 persons to the square mile has the first, or lightest, shade; the area with 6 to 18 persons to the square mile, the second shade; 18 to 45 persons per square mile, the third shade; 45 to 90 persons to the square mile, the fourth shade; and 90 persons or more per square mile, the fifth, or darkest shade, thus dividing the country into six groups of density. The cities with 8,000 or more inhabitants are represented by circles of solid color in size approximately proportionate to their population. The groups of density are closely related to the industrial character of the country. The lowest group, less than 2 persons to the square mile, which for census purposes is regarded as unsettled territory, is inhabited principally by hunters, prospectors, and stock raisers. The next group, 2 to 6 persons to the square mile, includes stock raisers, also an area of sparse agricultural population where irrigation is relied upon for raising crops. Agriculture is the principal occupation of the group 6 to 18 persons to the square mile. The next group, 18 to 45 persons to the square mile, includes areas which have been given up to manufactures and commerce, although agriculture is still the principal occupation. The farms, however, are smaller than in the preceding group and the cultivation of the soil is more thorough. In the two groups in which the

population exceeds 45 persons to the square mile, manufacturing and commerce are of the greatest importance and the greater proportion of the people are in cities and towns.

DISTRIBUTION OF POPULATION: 1790.

The First Census of the United States, taken as of the first Monday in August, 1790, under the provisions of the second section of the first article of the Constitution, showed the population of the thirteen states then existing and of the unorganized territory to be, in the aggregate, 3,929,214. This population was distributed, as shown on Plate No. 3, almost entirely along the Atlantic seaboard, extending from the eastern boundary of Maine nearly to Florida, and in the region known as the Atlantic Plain. Only a very small proportion of the inhabitants of the United States, not indeed more than 5 per cent, was found west of the Appalachian Mountains. The average depth of settlement, in a direction at right angles to the coast, was 255 miles. The most populous areas were to be found in eastern Massachusetts, Rhode Island, Connecticut, and about New York city. The population had also extended north up the Hudson, so that the Hudson River Valley, as far north as Albany, had become quite thickly settled. The settlements in Pennsylvania, which started from Philadelphia, extended northeast and formed a solid body of occupation from New York, through Philadelphia, down to the upper part of Delaware.

The Atlantic coast, as far back as the limits of tidewater, was well settled at this time from Casco Bay south to the northern border of North Carolina, also around Charleston, S. C. In the "district of Maine" sparse settlement extended along the entire seaboard. The greater part of New Hampshire and Vermont was covered with settlements. In New York, branching off from the Hudson at the mouth of the Mohawk, the line of population followed a broad gap between the Adirondacks and the Catskills and even reached beyond the center of the state, occupying the whole of the Mohawk Valley and the country about the interior New York lakes. In Pennsylvania population had spread northwest, occupying not only the Atlantic Plain, but, with sparse settlements, the region traversed by the numerous parallel ridges of the eastern portion of the Appalachians. The general limit of settlement was at that time the southeastern edge of the Allegheny Plateau, but beyond this, at the junction of the Allegheny and Monongahela Rivers, a point early occupied for military purposes, considerable settlements existed which were established prior to the War of the Revolution. In Virginia settlements extended west beyond the Blue Ridge and on the western slope of the Allegheny Mountains, though very sparse. From Virginia, also, a narrow tongue of settlement, which was almost as populous as Vermont or Georgia, penetrated into the "Kentucky country," and down to the head of the Tennessee River in the great Appalachian Valley, where the "state of Franklin" had been for four years a political unit. In North Carolina settlements were abruptly limited by the base of the Appalachians. The state was occupied with remarkable uniformity, except in its southern and central portions, where population was comparatively sparse. In South Carolina, on the other hand, there was evidence of much natural selection, apparently with reference to the character of the soil. Charleston was then a city of considerable magnitude and about it was grouped a comparatively dense population; but all along a belt running southwest across the state, near its central part, settlement was very sparse. This area of scattered settlement joined that of central North Carolina and ran east to the coast, near the junction of the two states. Farther west, in the "up country" of South Carolina, the density of settlement was noticeable, due to the improvement in soil. At that date settlements were almost entirely agricultural and the causes for variation in their density were general. The movements of population at that epoch may be traced, in almost every case, to the character of the soil and to the facility of transportation to the seaboard; and, as the inhabitants were dependent mainly upon water transportation, the settlements also conformed very largely to navigable streams.

Outside the area of continuous settlement, which has been approximately sketched, were found a number of smaller settlements of greater or less extent. The principal one was located in the northern part of what was known as the "territory south of the River Ohio," and comprised an area of 10,900 square miles; another in western Virginia, upon the Ohio and Kanawha Rivers, comprised about 750 square miles; a third, in the southern part of the "territory south of the River Ohio," upon the Cumberland River, embraced about 1,200 square miles.

In addition to these there were a score or more of small posts, or incipient settlements, scattered over what was an almost untrodden wilderness—such as Detroit, Vincennes, Kaskaskia, Prairie du Chien, Mackinac, and Green Bay, besides the humble beginning of Elmira and Binghamton, in New York—which, even at that time, were outside the body of continuous settlement and embraced about 1,000 square miles.

The line which limited this body of settlement, following all its undulations, was 3,200 miles in length. In this measurement no account was made of slight irregularities, such as those in the ordinary meanderings of a river which forms the boundary line of population, but an account has been made of all the prominent irregularities of this frontier line, which seem to indicate a distinct change in the settlement of the country, either of progression or of retrogression. Thus the area of settlement formed that territory em-

braced between the frontier line and the coast, diminished by such unsettled areas as lay within it and increased by such settled areas as lay without it. These are not susceptible of very accurate determination, owing to the fact that the best maps are, to a certain extent, incorrect in boundaries and areas. The settled area of 1790, as indicated by the line traced, was 226,085 square miles. The entire body of continuously settled area lay between 31° and 45° north latitude and 67° and 83° west longitude. Beyond this were the smaller areas previously mentioned, which, added to the main body of settled area, gave as a total 239,935 square miles, the aggregate population being 3,929,214, and the average density of settlement 16.4 persons to the square mile.

The "district of Maine" belonged to Massachusetts; Georgia extended to the Mississippi River; Kentucky and Tennessee were known as the "territory south of the River Ohio;" and Ohio, Indiana, Illinois, Michigan, Wisconsin, and a part of Minnesota, as the "territory northwest of the River Ohio." Spain claimed possession of Florida, with a strip along the southern border of Georgia, and all of the region west of the Mississippi River.

### DISTRIBUTION OF POPULATION: 1800.

At the Second Census, that of 1800, the frontier line, as it appears on Plate No. 4, had advanced so that, while it embraced 282,208 square miles, it described a course, when measured in the same manner as that of 1790, of only 2,800 linear miles. The advancement of this line had taken place in every direction, though in some parts of the country much more prominently than in others.

In Maine and New Hampshire only a slight northern movement of settlement was apparent; in Vermont, on the other hand, while the settled area had not decidedly increased, its density had become greater. Massachusetts showed but little change, but in Connecticut the settlements along the lower course of the Connecticut River had appreciably increased.

In New York settlement had poured up the Hudson to the mouth of the Mohawk and thence westward through the great natural roadway. The narrow tongue, which before extended beyond the middle of the state, had now widened until it spread from the southern border of the state to Lake Ontario. A narrow belt of settlement stretched down the St. Lawrence and along all the northern border of the state to Lake Champlain, completely surrounding what may be characteristically defined as the Adirondack region.

In Pennsylvania settlements had extended up the Susquehanna and joined the New York groups, leaving an unsettled space in the northeast corner of the state, which comprised a section of rugged mountain country. With the exception of a little strip along the western border of Pennsylvania, the northern part of the state west of the Susquehanna was as yet entirely uninhabited. Population had streamed across the southern half of the state and settled in a dense body about the forks of the Ohio River, where the beginning of Pittsburgh may be noted, and thence extended slightly into the "territory northwest of the River Ohio."

In Virginia there was but little change, although there was a general extension of settlement, with an increase in density, especially along the coast. North Carolina was at that time almost entirely populated; the mountain region had, generally speaking, been nearly all reclaimed to the service of man. In South Carolina there was a general increase in density, while the southwestern border of the settled area had been extended to the Altamaha River. The settlements in northern Kentucky had spread southward across the state into Tennessee, forming a junction with the little settlement on the Cumberland River, noted at the date of the First Census. The group thus formed had extended down the Ohio, nearly to its junction with the Tennessee and the Cumberland, and across the Ohio River, where the beginning of Cincinnati can be noted. Other small settlements appeared at this time on that side of the river. On the east side of the Mississippi River was a strip of settlement along the bluffs below the Yazoo bottom. Above this, on the west side, was the beginning of St. Louis, not at that time within the United States, and directly across the river a settlement in what was known as "Indiana territory," while all the pioneer settlements previously noted had grown to a greater or less extent.

From the region embraced between the frontier line and the Atlantic must be deducted the Adirondack tract in northern New York and the unsettled region in northern Pennsylvania already referred to, so that the actual area of settlement, bounded by a continuous line, was 271,908 square miles. All this lay between 30° 45′ and 45° 15′ north latitude and 67° and 88° west longitude. To this should be added the aggregate extent of all settlements lying outside of the frontier line, which collectively amounted to 33,800 square miles, making a total area of settlement of 305,708 square miles. As the aggregate population was 5,308,483, the average density of settlement was 17.4 persons to the square mile.

The early settlements of this period had been much retarded at many points by the opposition of Indian tribes, but in the neighborhood of the more densely settled portions of the northern part of the country these obstacles had been of less magnitude than farther south. In Georgia, especially, the large and powerful tribes of Creeks and Cherokees had stubbornly opposed the progress of population.

During the decade Vermont, formed from the New Hampshire grants, territory claimed by both New York and New Hampshire, had been admitted to the Union; also Kentucky and Tennessee, formed from the "territory south of the River Ohio;" Mississippi territory

had been organized, having, however, very different boundaries from what was known later as the state of that name; while the "territory northwest of the River Ohio" had been divided and Indiana territory organized from the western portion. The District of Columbia, comprising 100 square miles, was formed in 1791 from portions of Maryland and Virginia.

### DISTRIBUTION OF POPULATION: 1810.

During the decade from 1800 to 1810 (Plate No. 5) great changes will be noted, especially the extension of sparse settlements in the interior. The hills of western New York had become almost entirely populated, settlements had spread along the south shore of Lake Erie well over into Ohio, and effected a junction with the previously existing body of population about the forks of the Ohio River, leaving unsettled an included heart-shaped area in northern Pennsylvania, which comprised the rugged country of the Appalachian Plateau. The occupation of the Ohio River Valley had now become complete, from its head to its mouth, with the exception of small gaps below the mouth of the Tennessee. Spreading in every direction from the "dark and bloody ground" of Kentucky, settlement covered almost the entire state, while its southern border line had been extended to the Tennessee River, into what was known as "Mississippi territory." In Georgia settlements were still held back by the Creek and Cherokee Indians, although in 1802 a treaty with the former tribe relieved the southwestern portion of the state of their presence and left the ground open for occupancy by the whites. In Ohio, starting from the Ohio River and from southwestern Pennsylvania, settlements had worked north and west until they covered two-thirds of the area of the state. Michigan and Indiana were still virgin territory, with the exception of a small strip about Detroit, in the former, and two small areas in the latter, one in the southeastern part of the territory extending along the Ohio River, and one in the southwestern part extending up the Wabash from its mouth to and including the settlement at Vincennes. St. Louis, from a fur-trading post, had become an important center of settlement, population having spread north above the mouth of the Missouri and south along the Mississippi to the mouth of the Ohio. On the Arkansas, near its mouth, was a similar body of settlement. The transfer of the territory of Louisiana to our jurisdiction, which was effected in 1803, had brought into the country a large body of population, which stretched along the Mississippi River from its mouth nearly to the northern limit of what was known as the "territory of Orleans" and up the Red and Ouachita (Washita) Rivers, in general occupying the alluvial regions. The incipient settlements, noted on Plate No. 4, in Mississippi territory effected a junction with those of Louisiana territory, while in the lower part of Mississippi territory a similar patch appeared upon the Mobile River.

During this decade large additions were made to the territory of the United States and many changes effected in the lines of the interior division. The purchase of Louisiana, an empire in itself, had added 827,987 square miles to the United States and had given to the people absolute control of the Mississippi and its navigable branches. Georgia, during the same period, had ceded to the United States about two-thirds of its territory. The state of Ohio had been formed from a portion of what had been known as the "territory northwest of the River Ohio." Michigan territory had been erected, comprising at that time the peninsula north of Ohio and the upper part of Indiana territory south of the straits. Indiana territory had become restricted in its limits to the following boundaries: Lake Michigan and Michigan on the north, Ohio on the east, the Ohio River on the south, and Illinois territory on the west, with a detached area between Lake Superior and Lake Michigan. Illinois territory comprised all territory west of Lake Michigan and Indiana territory, north of the Ohio and east of the Mississippi. The "territory of Orleans," which was located west of the Mississippi, had been carved out of the Louisiana Purchase. The remainder of the territory acquired from France was known by the name of "Louisiana territory."

At this date the frontier line was 2,900 miles long, and the settled territory included between this imaginary line and the Atlantic comprised 408,895 square miles. From this must be deducted several large areas of unsettled land: First, the area in northern New York, somewhat smaller than ten years before, but by no means inconsiderable in extent; second, the heart-shaped area in northwestern Pennsylvania, embracing part of the Allegheny Plateau, in size about equal to the unsettled area in New York; third, a strip along the western part of Virginia, extending south from the Potomac, taking in a part of eastern Kentucky and southwestern Virginia, and extending nearly to the border line of Tennessee; fourth, a comparatively small area in northern Tennessee upon the Cumberland Plateau. These tracts together comprised about 26,050 square miles, making the approximate area of settlement included within the frontier line 382,845 square miles. All this lay between latitude 29° 30′ and 45° 15′ north and longitude 67° and 88° 30′ west.

Beyond the frontier there were, in addition to the steadily increasing number of outposts and minor settlements, several considerable bodies of population, which have already been noted. The aggregate extent of these, and of the numerous small patches of population scattered over the West and South, may be estimated at 25,100 square miles, making the total area of settlement in 1810, 407,945 square miles. The aggregate population was 7,239,881, and the average density of settlement 17.7 persons to the square mile.

DISTRIBUTION OF POPULATION: 1820.

The decade from 1810 to 1820 (Plate No. 6) witnessed several territorial changes. Florida at this date (1820) had not actually become a part of the United States; the treaty with Spain to transfer this territory to the United States had been signed, but had not gone into effect. Alabama and Mississippi, made from Mississippi territory, had been organized and admitted as states, Alabama having been made a territory in 1817. Indiana and Illinois appeared as states, with restricted limits. The "territory of Orleans," with somewhat enlarged boundaries, had been admitted as a state and was known as Louisiana. The "district of Maine" had also been erected into a state. Arkansas territory had been cut from the southern portion of the territory of Louisiana. The Indian Territory had been constituted to serve as a reservation for the Indian tribes. Michigan territory included all area east of the Mississippi River and north of Illinois, Indiana, and Ohio. That part of the old Louisiana territory remaining, after cutting out Arkansas and the Indian Territory, had received the name of "Missouri territory."

Again, in 1820, there was a great change in regard to the frontier line. It had become vastly more involved, extending from southeastern Michigan, on Lake St. Clair, southwest into Missouri territory; thence, making a great semicircle to the east, it swept west again around a body of population in Louisiana, and ended along the Gulf coast in that state. The area east of this line had increased immensely, but much of this increase was balanced by the great extent of unsettled land included within it.

Taking up the changes in detail, the great increase in the population of central New York will be noted, a belt of increased settlement having swept up the Mohawk Valley to Lake Ontario, and along its shore nearly to the Niagara River. A similar increase was experienced about the forks of the Ohio River, and in northern Pennsylvania the unsettled region on the Appalachian Plateau had sensibly decreased in size. The unsettled area in western Virginia and eastern Kentucky had very greatly diminished, population having extended almost entirely over the Allegheny region in these states. The little settlements about Detroit had extended along the shore of Lake Erie, until they had joined those in Ohio. The frontier line in Ohio had crept north and west, leaving only the northwestern corner of the state unoccupied. Population had spread north from Kentucky and west from Ohio into southern Indiana, covering sparsely the lower third of that state. The groups of population around St. Louis, which at the time of the previous census were enjoying a rapid growth, had extended widely, making a junction with the settlements of Kentucky and Tennessee, along a broad belt in southern Illinois; following the main watercourses, population had gone many scores of miles up the Mississippi and the Missouri Rivers. The settlements in Alabama, which previously had been very much retarded by the Creeks, had been rapidly reenforced and extended, in consequence of the victory of General Jackson over this tribe and the subsequent cession of portions of this territory. Immigration to Alabama had already become considerable, indicating that in a short time the whole central portion of the state, embracing a large part of the region drained by the Mobile River and its branches, would be covered with settlements, to extend north and effect a junction with the Tennessee and Kentucky settlements, and west across the lower part of Mississippi, until they met the Louisiana settlements. In Georgia the Cherokees and the Creeks still held back settlement along the line of the Altamaha River. There were, however, scattered bodies of population in various parts of the state, though of small extent. In Louisiana is noted a gradual increase of the extent of redeemed territory, which appeared to have been limited almost exactly by the borders of the alluvial region. In Arkansas the settlements, which in 1810 were near the mouth of the Arkansas River, had extended up the bottom lands of that river, forming a body of population of considerable size. Besides these, a settlement was found in the south central part of the territory, at the southeastern base of the hill region, and another in the prairie region in the northern part.

The frontier line had a length of 4,100 miles, embracing an area (after excluding all unsettled regions included between it, the Atlantic, and the Gulf) of 504,517 square miles, all lying between 29° 30′ and 45° 30′ north latitude, and between 67° and 93° 45′ west longitude. Outside the frontier line were a few settlements on the Arkansas, White, and Ouachita (Washita) Rivers, in Arkansas, as before noted, as well as those in the Northwest. Computing these at 4,200 square miles in the aggregate, there was a total settled area of 508,717 square miles, the aggregate population being 9,638,453, and the average density of settlement 18.9 persons to the square mile.

DISTRIBUTION OF POPULATION: 1830.

In the early part of the decade from 1820 to 1830 (Plate No. 7) the final transfer of Florida from Spanish jurisdiction was effected and it became a territory of the United States. Missouri, carved from the southeastern part of the old Missouri territory, had been admitted as a state; otherwise the states and territories had remained nearly as before. Settlement during the decade had spread greatly. The westerly extension of the frontier did not appear to be so great as in some former periods, the energies of the people having been mainly given to settling the included areas. In other words, the decade from 1810 to 1820 seems to have been one of blocking out work which the succeeding decade was largely occupied in completing.

During this period the Indians, especially in the South, had still delayed settlement to a great extent.

The Creeks and Cherokees in Georgia and Alabama, and the Choctaws and Chickasaws in Mississippi, occupied large areas of the best portions of those states and successfully resisted encroachment upon their territory. Georgia, however, had witnessed a large increase in settlement during the decade. The settlements which heretofore had extended along the Altamaha had spread westward across the central portion of the state to its western boundary, where they reached the barrier of the Creek territory. Stopped at this point, they had moved south into the southwest corner and over into Florida, extending even to the Gulf coast. They stretched toward the west across the southern part of Alabama and joined that body of settlement which had previously formed in the drainage basin of the Mobile River. The Louisiana settlements had but slightly increased and no great change appeared to take place in Mississippi, owing largely to the cause previously noted, namely, the occupancy of this area by Indians. In Arkansas the spread of settlement had been in a strange and fragmentary way. A line reached from Louisiana to the Arkansas River and along its course to the boundary of the Indian Territory. It extended up the Mississippi and joined the body of population in Tennessee. A branch extended northeast from near Little Rock to the northern portion of the territory. All the settlements within Arkansas territory were as yet very sparse. In Missouri the principal extension of settlement had been in a broad belt along the Missouri River, reaching to the state line, at the mouth of the Kansas River, where quite a dense body of population appeared. Settlement had progressed in Illinois, from the Mississippi River east and north, covering more than half of the state. In Indiana it followed the Wabash River, thence spread toward the northern state line. But a small portion of Ohio remained unsettled. The sparse settlements about Detroit, in Michigan territory, had broadened out, extending toward the interior of the lower peninsula, while isolated patches appeared in various other localities.

Turning to the more densely settled parts of the country, it will be noted that settlement was slowly making its way northward in Maine, although discouraged by the poverty of the soil and the severity of the climate. The unsettled tract in northern New York was decreasing, but very slowly, as was also the case with the unsettled area in northwestern Pennsylvania. In western Virginia the unsettled tracts were reduced to almost nothing, while the unsettled region in eastern Tennessee on the Cumberland Plateau was rapidly diminishing.

In 1830 the frontier line had a length of 5,300 miles, and the aggregate area embraced between the Atlantic Ocean, the Gulf of Mexico, and the frontier line was 725,406 square miles. Of this, however, not less than 97,389 square miles were within the included unsettled tracts, leaving only 628,017 square miles as the settled area east of the frontier line, all of which lay between latitude 29° 15′ and 46° 15′ north and longitude 67° and 95° west.

Outside the body of continuous settlement large groups were no longer found, but several small patches of population appeared in the states of Ohio, Indiana, and Illinois, and Michigan territory, aggregating about 4,700 square miles, making a total settled area in 1830 of 632,717 square miles. As the aggregate population was 12,866,020, the average density of settlement was 20.3 persons to the square mile.

### DISTRIBUTION OF POPULATION: 1840.

During the decade ending in 1840 (Plate No. 8) the territory of Michigan had been divided; that part east of Lake Michigan and north of Ohio and Indiana, together with the greater part of the peninsula between Lakes Superior and Michigan, had been created into the state of Michigan, the remainder being known as Wisconsin territory. Iowa territory had been created out of that part of Missouri territory lying north of the Missouri state line and east of the Missouri River, and Arkansas had been admitted to the Union.

In 1840 we find, by examining Plate No. 8, that the settlements had been growing steadily and the frontier line of 1810 and 1820 advanced still farther. From Georgia, Alabama, and Mississippi the Cherokee, Creek, Choctaw, and Chickasaw Indians, who, at the time of the previous census, occupied large areas in these states and formed a very serious obstacle to settlement, had been removed to Indian Territory, constituted under the act of June 30, 1834, and their country opened up to settlement. Within the two or three years which had elapsed since the removal of these Indians the lands relinquished by them had been entirely taken up and the country covered with comparatively dense settlement. The Sac and Fox and the Potawatomi tribes having been removed to Indian Territory, their country in northern Illinois had been promptly taken up and settlements had spread over nearly the whole extent of Indiana and Illinois, also across Michigan and Wisconsin as far north as the forty-third parallel. Population had crossed the Mississippi River into Iowa territory and occupied a broad belt up and down that river. In Missouri settlements spread north from the Missouri River nearly to the boundary of the state, and south until they covered most of the southern portion, connecting (on the right and on the left) with the settlements of Arkansas. The unsettled area found in southern Missouri, together with that in northwestern Arkansas, was due to the hilly and rugged nature of the country and to the poverty of the soil, as compared with the rich prairie lands surrounding. In Arkansas the settlements remained sparse, but had spread widely away from the

streams, covering much of the prairie regions of the state. There was, besides the area in northwestern Arkansas just mentioned, a large area in the northeastern part of the state, almost entirely within the alluvial regions of the Black River, and one in the southern portion, extending over into northern Louisiana, which was entirely in the fertile prairie section. The fourth unsettled region lay in the southwestern part of the state.

In the older states we note a gradual decrease in the unsettled areas, as in Maine and New York. In northern Pennsylvania the unsettled section had nearly disappeared. A small portion of the unsettled patch on the Cumberland Plateau still remained. In southern Georgia the Okefenokee swamp and the pine barrens adjacent had thus far repelled settlement, although population had increased in Florida, passing entirely around this area to the south. The greater part of Florida, however, including nearly all the peninsula and several large areas along the Gulf coast, still remained unsettled. This was due in part to the nature of the country, being alternately swamp and hummock, and in part to the hostility of the Seminole Indians, who still occupied nearly all of the peninsula.

The frontier line in 1840 had a length of 3,300 miles. This shrinking in its length was due to its rectification on the northwest and southwest, owing to the settlement of the entire interior. It inclosed an area of 900,658 square miles, lying between latitude 29° and 46° 30′ north and longitude 67° and 95° 30′ west. The unsettled portions had, as noted above, decreased to 95,516 square miles, although they were still quite noticeable in Missouri and Arkansas. The settled area outside the frontier line was notably small and amounted in the aggregate to only 2,150 square miles, making the approximate settled area 807,292 square miles in 1840. The aggregate population being 17,069,453, the average density was 21.1 persons to the square mile.

### DISTRIBUTION OF POPULATION: 1850.

Between 1840 and 1850 (Plate No. 9) the limits of our country were further extended by the annexation of Texas and of territory acquired from Mexico by the treaty of Guadalupe Hidalgo. The states of Florida, Iowa, and Wisconsin had been admitted to the Union and the territories of Oregon and Minnesota created. That portion of the District of Columbia south of the Potomac originally ceded by Virginia was receded to that state July 9, 1846. An examination of the map shows that the frontier line had changed very little during the decade. At the western border of Arkansas the extension of settlement was peremptorily limited by the boundary of Indian Territory; and, curiously enough, the western boundary of Missouri also put almost a complete stop to all settlement, notwithstanding the fact that some of the most densely populated portions of the state lay directly on that boundary.

In Iowa settlements had made some advance, moving up the Missouri, the Des Moines, and other rivers. The settlements in Minnesota at and about St. Paul, which existed in 1840, had greatly extended up and down the Mississippi River, while scattered bodies of population appeared in northern Wisconsin. In the southern part of the state settlement had made considerable advance, especially in a northeasterly direction toward Green Bay. In Michigan the change had been very slight.

Texas, for the first time on the map of the United States, appeared with a considerable extent of settlement; in general, however, it was very sparse, most of it lying in the eastern part of the state and being largely dependent upon the grazing industry.

The included unsettled areas now were very small and few in number. There still remained one in southern Missouri, in the hilly country; a small one in northeastern Arkansas, in the swampy and alluvial region; and one in the similar country in the Yazoo bottom lands in western Mississippi. Along the coast of Florida were found two patches of considerable size, which were confined to the swampy coast regions. The same was the case along the coast of Louisiana. The sparse settlements of Texas were also interspersed with several patches devoid of settlement. In southern Georgia the large unsettled area heretofore noted, extending also into northern Florida, had disappeared, and the Florida settlements had already reached southward to a considerable distance in the peninsula, being now free to extend without fear of hostile Seminoles, the greater part of whom had been removed to Indian Territory.

The frontier line, which now extended around a considerable part of Texas and issued on the Gulf coast at the mouth of the Nueces River, was 4,500 miles in length. The aggregate area included by it was about 1,005,213 square miles, from which deduction must be made for unsettled area, in all 64,339 square miles. The isolated settlements lying outside this body in the western part of the country amounted to 4,775 square miles.

It was no longer true that a frontier line drawn around from the St. Croix River to the Gulf of Mexico embraced all the population of the United States, except a few outlying posts and small settlements. From the Pacific a line could be made to encircle 80,000 miners and adventurers, the pioneers of more than one state of the Union soon to arise on that coast. This body of settlement had been formed, in the main, since the acquisition of the territory by the United States, and, it might even be said, within the last year (1849–50), dating from the discovery of gold in California. These settlements may be computed rudely at 33,600 square miles, making a total area of settlement of 979,249 square miles, the aggregate population being 23,191,876, and the average density of settlement 23.7 persons to the square mile.

DISTRIBUTION OF POPULATION: 1860.

In 1860 (Plate No. 10) the first extension of settlements beyond the line of the Missouri River is noted. The march of settlement up the slope of the Great Plains had begun. In Kansas and Nebraska population was found beyond the ninety-seventh meridian. Texas had filled up even more rapidly, its extreme settlements reaching to the one hundredth meridian, while the gaps noted at the date of the previous census had all been filled by population. The incipient settlements about St. Paul, in Minnesota, had grown like Jonah's gourd, spreading in all directions, and forming a broad band of union with the main body of settlement down the line of the Mississippi River. In Iowa settlements had crept steadily northwest along the course of the drainage until the state was nearly covered. Following the Missouri, population had reached out beyond the northern border of Nebraska territory. In Wisconsin the settlements had moved at least one degree farther north, while in the lower peninsula of Michigan they had spread up the lake shores, nearly to the point of the peninsula on the side next to Lake Michigan. On the upper peninsula the little settlements which appeared in 1850 in the copper region on Keweenaw Point had extended and increased greatly in density, as that mining interest had developed in value. In northern New York there was apparently no change in the unsettled area. In northern Maine was noted for the first time a decided movement toward the settlement of its unoccupied territory in the extension of the settlements on its eastern and northern border along the St. John River. The unsettled regions in southern Missouri, northeastern Arkansas, and northwestern Mississippi had become sparsely covered by population. Along the Gulf coast there was little or no change; in the peninsula of Florida there was a slight extension of settlement south.

Between 1850 and 1860 the territorial changes noted were as follows: The territory of New Mexico had been created, and the territory south of the Gila River, which had been acquired from Mexico by the Gadsden Purchase (1853), added to it; Minnesota admitted as a state; Kansas and Nebraska territories formed from parts of Missouri territory; California and Oregon admitted as states; while in the unsettled parts of the Cordilleran Region two new territories, Washington and Utah, had been created, the former out of part of Oregon territory and the latter from part of the Mexican Cession.

The frontier line now measured 5,300 miles and embraced approximately 1,126,518 square miles, lying between latitude 28° 30′ and 47° 30′ north and between longitude 67° and 99° 30′ west. From this, deduction should be made on account of unsettled portions, amounting to 39,139 square miles, found mainly in New York and along the Gulf coast. The outlying settlements beyond the one-hundredth meridian were now numerous. They included, among others, a strip extending far up the Rio Grande in Texas, embracing 7,475 square miles (a region given over to the raising of sheep); while the Pacific settlements, comprising two sovereign states, were nearly three times as extensive as in 1850, embracing 99,900 square miles. The total area of settlement in 1860 was 1,194,754 square miles, the aggregate population 31,443,321, and the average density of settlement 26.3 persons to the square mile.

DISTRIBUTION OF POPULATION: 1870.

During the decade from 1860 to 1870 a number of territorial changes had been effected in the extreme West. A great tract called Alaska, stretching into Arctic regions and containing few people, was purchased from Russia in 1867. Arizona, Colorado, Dakota, Idaho, Montana, and Wyoming had been organized as territories. Kansas and Nebraska had been admitted as states. Nevada was made a territory in 1861 and admitted as a state in 1864. West Virginia had been cut off from the mother commonwealth and made a separate state.

In 1870 (Plate No. 11) a gradual and steady extension of the frontier line west over the Great Plains will be noted. The unsettled areas in Maine, New York, and Florida had not greatly diminished, but in Michigan the extension of the lumber interests northward and inward from the lake shore had reduced considerably the unsettled portion. On the upper peninsula settlements had increased somewhat, owing to the discovery of rich iron deposits destined to play so important a part in the manufacturing industry of the country.

Settlement had spread west to the boundary of the state in southern Minnesota, and up the Big Sioux River in southeastern Dakota. Iowa was entirely reclaimed, excepting a small area of perhaps 1,000 square miles in its northwestern corner. Through Kansas and Nebraska the frontier line had moved steadily west, following in general the courses of the larger streams and of the newly constructed railroads. The frontier in Texas had changed but little, that little consisting of a general westerly movement. In the Cordilleran Region settlements had extended but slowly. Those upon the Pacific coast showed little change, either in extent or in density. In short, everywhere the effects of the war were seen in the partial arrest of the progress of development.

Settlements in the West, beyond the frontier line, had arranged themselves mainly in three belts. The most eastern of these was located in New Mexico, central Colorado, and Wyoming, along the eastern base of and among the Rocky Mountains. To this region settlement was first attracted in 1859 and 1860 by the discovery of mineral deposits, and had been retained by the richness of the soil and by the abundance of water for irrigation, which served to promote the agricultural industry.

The second belt of settlement was that of Utah, settled in 1847 by the Mormons fleeing from Illinois. This community differed radically from that of the Rocky Mountains, being essentially agricultural, mining having been discountenanced from the first by the church authorities, as tending to fill the "Promised land" with Gentile adventurers and thereby imperil Mormon institutions. The settlements of this group, as seen on the map for 1870, extended from southern Idaho south through central Utah and along the eastern base of the Wasatch Range to the Arizona line. They consisted mainly of scattered hamlets and small towns, about which were grouped the farms of the communities.

The third strip was that in the Pacific states and territories, extending from Washington territory south to southern California and east into western Nevada. This group of population owed its existence to the mining industry; originated in 1849 by a great immigration movement, it had grown by successive impulses as new fields for rapid wealth had been developed. However, the value of this region to the agriculturist had been recognized and the character of the occupations of the people was undergoing a marked change.

These three great western groups comprised nine-tenths of the population west of the frontier line. The remainder was scattered about in the valleys and the mountains of Montana, Idaho, and Arizona, at military posts, isolated mining camps, and on cattle ranches.

The frontier line in 1870 embraced 1,178,068 square miles, between 27° 15′ and 47° 30′ north latitude and between 67° and 99° 45′ west longitude. From this, however, deduction must be made of 37,739 square miles on account of interior portions uninhabited. What remains should be increased by 11,810 square miles, on account of settled tracts east of the one-hundredth meridian, lying outside of the frontier line, and 120,100 square miles on account of settlements in the Cordilleran Region and on the Pacific coast, making the total area of settlement for 1870 not less than 1,272,239 square miles. The aggregate population was 38,558,371, and the average density of settlement 30.3 persons to the square mile.

### DISTRIBUTION OF POPULATION: 1880.

During the decade from 1870 to 1880 Colorado had been added to the sisterhood of states. The first noticeable point in examining Plate No. 12, showing the areas of settlement at this date, as compared with previous ones, is the great extent of territory which was brought under occupation during the decade. Not only had settlement spread west over large areas in Dakota, Nebraska, Kansas, and Texas, thus moving the frontier line of the main body of settlement west many scores of miles, but the isolated settlements of the Cordilleran Region and of the Pacific coast showed enormous accessions of occupied territory.

The migration of farming population to the northeastern part of Maine had widened the settled area to a marked extent, probably more than had been done during any previous decade. The unsettled portion of the Adirondack Region of northern New York had decreased in size and its limits had been reduced practically to the actual mountain tract. The most notable change, however, in the North Atlantic states, also in Ohio and Indiana, had been the increase in density of population and the migration to cities, with the consequent increase of urban population, as indicated by the number and size of the spots representing these cities upon the map. Throughout the Southern states there is to be noted not only a general increase in the density of population and a decrease of unsettled areas, but a greater approach to uniformity of settlement throughout the whole region. The unsettled area of the peninsula of Florida had decreased decidedly, while that previously seen along the upper coast of Florida and Louisiana had entirely disappeared. Although the Appalachian Mountain System was still distinctly outlined by its general lighter shade of color on the map, its density of population more nearly approached that of the country on the east and on the west. In Michigan there was a very decided increase of the settled region. Settlements had surrounded the head of the lower peninsula and left only a very small body of unsettled country in the interior. In the upper peninsula copper and iron interests and the railroads which subserve them had peopled quite a large extent of territory. In Wisconsin the unsettled area was rapidly decreasing as railroads stretched out over the vacant tracts. In Minnesota and in eastern Dakota the building of railroads and the development of the latent capabilities of this region in the cultivation of wheat caused a rapid flow of settlement, and the frontier line of population, instead of returning to Lake Michigan, as it did ten years before, met the boundary line of the British possessions west of the ninety-seventh meridian. The settlements in Kansas and Nebraska had made great strides over the plains, reaching at several points the boundary of the humid region, so that their westward extension beyond this point must be governed hereafter by the supply of water in the streams. As a natural result, settlements followed these streams in long ribbons of population. In Nebraska these narrow belts reached the western boundary of the state at two points, one upon the South Platte and the other upon the Republican River. In Kansas, too, settlements followed the Kansas River, its branches, and the Arkansas nearly to the western boundary of the state. Texas also had made great strides, both in the extension of the frontier line of settlement and in the increase in the density of population, due to the building of railroads and to the development of the cattle and sheep raising industry, and other agricultural interests. The heavy population in the prairie portions of the state is explained by

the railroads which traversed them. In Dakota, besides the agricultural region in the eastern part of the territory, may be noted the formation of a body of settlement in the Black Hills, in the southwest corner, which in 1870 was a part of the reservation of the Sioux Indians. This settlement was the result of the discovery of valuable gold deposits. In Montana the settled area had been greatly extended and, as it was mainly due to agricultural interests, was found chiefly along the courses of the streams. Mining, however, played not a small part in this increase in settlement. Idaho, too, showed a decided growth from the same causes. The small settlements which in 1870 were located about Boise and near the mouth of the Clearwater River had extended their areas to many hundreds of square miles. The settlement in the southeastern corner of the territory was almost entirely of Mormons, and had not made a marked increase.

Of all the states and territories of the Cordilleran Region, Colorado had made the greatest stride during the decade. From the narrow strip of settlement extending along the immediate base of the Rocky Mountains, the belt increased so that it comprised the whole mountain region, besides a great extension outward upon the plains. This increase was the result of the discovery of extensive and very rich mineral deposits about Leadville, producing a "stampede" second only to that of 1849 and 1850 to California. Miners spread over the whole mountain region, until every range and ridge swarmed with them. New Mexico showed but little change, although the extension of railroads in the territory and the opening up of mineral resources promised in the near future to add largely to its population. Arizona, too, although its extent of settlement had increased somewhat, was but just commencing to enjoy a period of rapid development, owing to the extension of railroads and to the suppression of hostile Indians. Utah presented a case dissimilar to any other of the territories—a case of steady growth, due almost entirely to its agricultural capabilities and to the policy of the Mormon church, which had steadily discountenanced mining and speculation in all forms, and encouraged in every way agricultural pursuits. Nevada showed a slight extension of settlement, due mainly to the gradual increase in agricultural interests. The mining industry was probably not more flourishing in this state than it was ten years before, and the population dependent upon it was, if anything, less in number. In California the attention of the people had become devoted more and more to farming, at the expense of mining and cattle raising. The population in some of the mining regions had decreased, while over the area of the great valley and in the fertile valleys of the Coast Ranges it had increased. In Oregon the increase had been mainly in the section east of the Cascade Range, a region drained by the Deschutes and the John Day Rivers, and by the smaller tributaries of the Snake, a region which, with the corresponding section in Washington territory, was coming to the front as a wheat producing district. In most of the settled portions here spoken of, irrigation was not necessary for the cultivation of crops, consequently the possibilities of the region in the direction of agricultural development were very great. In Washington territory, which in 1870 had been scarcely touched by immigration, the valley west of the Cascade Mountains was fairly well settled throughout, while the stream of settlement had poured up the Columbia into the valleys of the Walla Walla and Snake Rivers and the great plain of the Columbia, induced thither by the facilities for cattle raising and by the great profits of wheat cultivation.

The length of the frontier line in 1880 was 3,337 miles. The area included between this line, the Atlantic Ocean, the Gulf coast, and the northern boundary was 1,398,940 square miles, lying between 26° and 49° north latitude and 67° and 102° west longitude. From this must be deducted, for unsettled areas, a total of 89,400 square miles, distributed as follows:

| STATE. | Square miles. |
|---|---|
| Maine | 12,000 |
| New York | 2,200 |
| Michigan | 10,200 |
| Wisconsin | 10,200 |
| Minnesota | 34,000 |
| Florida | 20,800 |

To the remaining 1,309,540 square miles must be added the isolated areas of settlement in the Cordilleran Region and the extent of settlement on the Pacific coast, which amounted, in the aggregate, to 260,025 square miles, making a total settled area of 1,569,565 square miles. The population was 50,155,783, and the density of settlement 32 persons to the square mile.

### DISTRIBUTION OF POPULATION: 1890.

During the decade from 1880 to 1890 a trifling change was made in the boundary between Nebraska and Dakota, which slightly increased the area of Nebraska. Dakota territory was divided and the states of North Dakota and South Dakota admitted. Montana and Washington were added to the sisterhood of states. The territory of Oklahoma was created out of the western half of Indian territory, to which was added the strip of public land lying north of the panhandle of Texas.

The most striking fact connected with the extension of settlement during this decade was the numerous additions which were made to the settled area within the Cordilleran Region, as defined on Plate No. 13. Settlements spread westward up the slope of the plains until they joined the bodies formerly isolated in Colorado, forming a continuous body of settlement from the East to the Rocky Mountains. Practically the whole of Kansas became a settled region and the

unsettled area of Nebraska was reduced in dimensions to one-third of what it was ten years before. What had been a sparsely settled region in Texas in 1880 became the most populous part of the state, while settlements had spread westward to the escarpment of the Staked Plains. The unsettled regions of North Dakota and South Dakota were reduced to about one-half their former dimensions. Settlements in Montana spread until they occupied practically one-third of the state. In New Mexico, Idaho, and Wyoming considerable extensions of area were made. In Colorado, in spite of the decline of the mining industry and the depopulation of its mining regions, settlement spread over two-thirds of the state. Oregon and Washington showed equally rapid progress and California, although its mining regions had suffered, made great inroads upon its unsettled regions, especially in the southern part. Of all the Western states and territories Nevada alone was at a standstill in this respect, its settled area remaining practically the same as in 1880. When it is remembered that the state had lost over one-third of its population during the decade, the fact that it held its own in settled area is surprising, until it is understood that the state had undergone a material change in occupations, and that the inhabitants, instead of being closely grouped and engaged in mining pursuits, had scattered along its streams and engaged in agriculture.

Settlement was spreading with some rapidity in Maine, its unsettled area having dwindled from 12,000 to about 6,000 square miles. The unsettled portion of the Adirondack Region in New York had also diminished, there remaining but 1,000 square miles. The frontier had been pushed still farther south, in Florida, and the unsettled area reduced from 20,800 to about 15,000 square miles.

Lumbering and mining interests had practically obliterated the wilderness of Michigan and reduced that of Wisconsin to less than one-half of its former area. In Minnesota the area of the wild northern forests had been reduced from 34,000 to 23,000 square miles.

Up to and including 1880 the country had a frontier of settlement, but in 1890 the unsettled area had been so broken into by isolated bodies of settlement that there could hardly be said to be a frontier line. Its extent and westerly movement can not, therefore, be further discussed.

In 1890 the total population returned by the general enumeration was 62,622,250, and the settled area amounted to 1,947,280 square miles, making a density of 32.2 persons to the square mile.

### DISTRIBUTION OF POPULATION: 1900.

The Twelfth Census (Plate No. 14) marked 110 years of growth of the United States, during which period the population increased more than twenty-one times, and the country grew from groups of settlements of less than 4,000,000 people to one of the leading nations of the world, with a population of nearly 85,000,000. In the decade from 1890 to 1900, Idaho, Wyoming, and Utah were admitted as states, and numerous additions of territory were made, comprising Hawaii, Porto Rico, Philippine Islands, Guam, and Samoa, covering an area of nearly 130,000 square miles, with over 8,000,000 inhabitants.

It is a peculiar fact that, in spite of the great increase in population of continental United States from 1890 to 1900, the unsettled area also increased, principally in the Western states. In these states, however, the population of the settled area increased sufficiently to balance the loss in the sparsely settled districts, and the density of population for the state or territory, as a whole, did not decrease, except in Nevada. The unsettled area materially increased in Arizona, California, Colorado, Idaho, Kansas, Nevada, New Mexico, and Oregon, while in Nebraska, Montana, Texas, and Wyoming slight increases were also noted. The western portions of Kansas and Nebraska showed an increase in unsettled area, although the density of population of the state, as a whole, did not decrease, owing to the increase of population in the eastern portions of these states; this increase, however, was slight, being but 1 person to 10 square miles in Nebraska and 1 person to 2 square miles in Kansas.

In May, 1890, the territory of Oklahoma was created, and a month later the enumeration showed an area of settlement of 2,890 square miles, which, in 1900, had increased to 32,432 square miles, an actual increase in the settled area of 29,542 square miles, a greater increase than that of any other state or territory, due to the increase in population during the decade from 78,475 to 398,331, or 407.6 per cent.

Indian Territory also made a remarkable increase in population, but, as it was not divided into counties, no detailed computation of the density of settlement or comparison of the increase in settled area could be made. The area of settlement, computed by taking each Indian reservation as a unit, showed that every portion of the territory had a density of more than 2 persons to a square mile.

The unsettled area of Maine remained practically unchanged, although the second group, from 6 to 18 persons to a square mile, greatly increased. In northern New York the unsettled area of the Adirondack Region was entirely obliterated by advancing settlement. In Florida this area was practically unchanged. Mining and lumbering enterprises and the extension of railroads effaced the unsettled area in Wisconsin. In Minnesota the opening of Indian reservations, the growth of mining and lumbering enterprises, and the extension of railroads caused a great influx of settlement to the northern portion and the unsettled area was reduced 7,000 square miles. North

Dakota decreased its unsettled area by 18,000 square miles and extended its area of 2 to 6 persons per square mile north and west to the Canadian line and nearly to the border of Montana. The eastern part of the state, especially in the valley of the Red River of the North, made quite an increase in the area of 6 to 18 persons to a square mile. In South Dakota very little change was noted in the unsettled area, but the group from 2 to 6 increased and, in the southeastern portion of the state, the group of 18 to 45 enlarged its area. The unsettled area in Texas made a slight growth, the increase in population being principally in the eastern half. The unsettled area in the state of Washington decreased from 1890 to 1900, while in Montana, Oregon, and California an increase was noted. Nevada showed a great decrease in its settled area, the entire state having a population of only 1 person to each 2½ square miles of area; there were, however, patches of settlement, as shown on Plate No. 14, with a population of from 2 to 6 persons to a square mile.

The total land area of continental United States, in 1900, was 2,974,159 square miles, and the aggregate population, including Indians, 75,994,575, giving a density of 25.6. Excluding the unsettled area of 1,044,640 square miles, the density of population of the settled area in 1900 was 39.4 persons to the square mile.

### DISTRIBUTION OF POPULATION: 1910.

The returns of the Thirteenth Census measure the growth of the United States after 120 years of development. During this period the country has grown from less than 4,000,000 inhabitants to more than 90,000,000. During the period from 1900 to 1910 the Indian Territory and territory of Oklahoma were admitted as the state of Oklahoma, and the area of the Panama Canal Zone was added to the outlying possessions. The great increase in population of the United States from 1900 to 1910, as illustrated on Plate No. 15, has reduced materially the unsettled area and increased the density of the population adjacent to the great cities, due, in a measure, to the change in character of the foreign immigration which, instead of seeking the vacant lands of the West, remains in and around the large cities, the greater proportion seeking employment in manufactures and commerce. The unsettled area in Maine is practically unchanged, but the unsettled area of most of the Western states has been materially decreased, due to reclaiming arid lands by projects completed by the Reclamation Service of the United States, as well as by corporations and individuals. The extension of what is termed "dry farming" has also reduced the areas of sparse settlement.

The total land area of continental United States in 1910 was 2,973,890 square miles, and the population returned, 91,972,266. Excluding the unsettled area of approximately 870,000 square miles, the density of the settled area is almost 44 persons per square mile, which is a little more than the density of the state of Wisconsin. There are therefore 27 states that have a lower density and 21 that have a greater density than the United States as a unit.

After studying the increase in population of the United States from 1790 to 1910, it will be of interest to compare its growth in population during the past century with that of the principal nations of Europe; Plate No. 16 represents graphically the growth in population of the United States and nine of the most populous countries of Europe, from 1800 to 1910. As it was impossible to obtain the population of European countries for many of the decades shown, this diagram has been based upon a chart prepared by Prof. Fr. von Juraschek for the "Geographisch-Statistische Tabellen, 1911." Of the 10 countries represented on the diagram, the United States was eighth in 1800, but during the century its population increased so rapidly that it passed Spain, Italy, the United Kingdom, Austria-Hungary, France, and Germany, and, at the census of 1880, and since that census, has been second, standing just below Russia.

### INCREASE OF POPULATION.

Although there has been a great increase during the last decade in the population of the United States, the relative increase, as shown by the per cent of increase from 1900 to 1910, is much greater west of the Mississippi River than in the Eastern states. This was also true in the previous decade, 1890 to 1900, as will be noted on the two maps on Plate No. 17. The high rate of increase in the Western states shows that the migration which characterized previous decades has continued. The states which show an increase of more than 50 per cent are in the area west of the Mississippi River, six of them in the Mountain division. The three states with an increase of more than 100 per cent are Washington, increase 120.4 per cent, in the Pacific division; Oklahoma, increase 109.7 per cent, in the West South Central division; and Idaho, increase 101.3 per cent, in the Mountain division. In the states east of the Mississippi which increased more than 25 per cent most of the increase is due to foreign immigration, the exception being Florida, the increase in this state during this decade being principally due to interstate migration. During the decade from 1900 to 1910 the only state which showed a slight decrease in population was Iowa, in which the decrease was but three-tenths of 1 per cent.

The map on Plate No. 18 is an interesting presentation of the increase and decrease of population in smaller areas during the decade from 1900 to 1910. In preparing this map the county was used as the unit and it will be noted that, even in states like Washington, Oregon, Montana, Nevada, Wyoming, North Dakota, and Oklahoma, with tremendous

increases of population, there are counties in which the population has actually decreased. In Ohio, Indiana, Illinois, Iowa, Missouri, eastern portions of Kansas and Nebraska, southern Michigan, southern Minnesota, and southwestern Wisconsin, the white areas, indicating a decrease in population, are quite extensive. In fact, during the decade from 1900 to 1910 there were in the United States 769 counties that decreased in population; the land area of these counties, comprising 472,462 square miles, formed 15.9 per cent of the land area of the United States. The state of Iowa had 71 of its 99 counties decrease, embracing an area of 38,929 square miles, or 70 per cent of the land area of the state. Missouri also had 71 counties decrease, which covered an area of 42,937 square miles, or 62.5 per cent of the land area of the state. The corresponding percentage for Indiana is 59.7 per cent, for Illinois 44.7 per cent, and for Ohio 43.5 per cent. There were only five states—Rhode Island, Connecticut, Idaho, New Mexico, and Arizona—that were without a county showing a decrease in population.

The maps on Plates Nos. 19 to 66 show the increase and decrease in total and rural population by counties. The rural maps show, of course, the greater area in decreasing population. In the state of Iowa (Plate No. 32) there were only 9 of its 99 counties that reported an increase in rural population. In Missouri (Plate No. 41), of 115 counties there were only 31 that showed an increase in rural population, or 72.5 per cent of the area of Missouri decreased in rural population. The state of New York (Plate No. 48) increased its population 1,844,720, but in the rural population—that is, population outside of incorporated places having 2,500 inhabitants or more—38 counties out of 61 decreased in population. In Ohio (Plate No. 51) there were only 26 counties out of 88 that increased in rural population.

## DENSITY OF POPULATION.

By density of population is meant the number of persons to each square mile of land area.

Comparing the density of population by geographic divisions, the Middle Atlantic division had the greatest density of population (193.2), with the New England division second (105.7), and the Mountain division last, having only 3.1 persons per square mile of land area. Excluding the District of Columbia, Rhode Island, with 508.5 persons per square mile, is the most densely populated, closely followed by Massachusetts, New Jersey, and Connecticut, in the order named, the only states which had more than 200 persons per square mile. There were only 10 states with a density in excess of 100 persons per square mile, but there were 11 with a density of less than 10 persons per square mile. Nevada, with 0.7 persons per square mile, or 7 persons to 10 square miles, had the lowest density. Of the outlying possessions, Porto Rico had a density of 325.5 persons per square mile, which was greater than that of any state of the United States, except Rhode Island, Massachusetts, and New Jersey; Hawaii had a density of 29.8, while Alaska had only 1 person to each 10 square miles of territory.

Table 6 shows that every state has increased in population and density except Iowa, which decreased slightly in population and decreased in density 0.2 per square mile. Excluding the District of Columbia, which is a city, the state of Rhode Island shows the greatest increase in density, having increased from 401.6 in 1900 to 508.5 persons per square mile in 1910, with New Jersey second and Massachusetts third.

**Table 6**

| DIVISION AND STATE. | Population: 1910 | Land area in square miles: 1910 | POPULATION PER SQUARE MILE. | | |
|---|---|---|---|---|---|
| | | | 1910 | 1900 | 1890 |
| **United States** | **91,972,266** | **2,973,890** | **30.9** | **25.0** | **21.2** |
| GEOGRAPHIC DIVISIONS: | | | | | |
| New England | 6,552,681 | 61,976 | 105.7 | 90.2 | 75.8 |
| Middle Atlantic | 19,315,892 | 100,000 | 193.2 | 154.5 | 127.1 |
| East North Central | 18,250,621 | 245,564 | 74.3 | 65.2 | 54.9 |
| West North Central | 11,637,921 | 510,804 | 22.8 | 20.3 | 17.5 |
| South Atlantic | 12,194,895 | 269,071 | 45.3 | 38.8 | 32.9 |
| East South Central | 8,409,901 | 179,509 | 46.8 | 42.0 | 35.8 |
| West South Central | 8,784,534 | 429,746 | 20.4 | 15.2 | 11.0 |
| Mountain | 2,633,517 | 859,125 | 3.1 | 1.9 | 1.4 |
| Pacific | 4,192,304 | 318,095 | 13.2 | 7.6 | 5.9 |
| NEW ENGLAND: | | | | | |
| Maine | 742,371 | 29,895 | 24.8 | 23.2 | 22.1 |
| New Hampshire | 430,572 | 9,031 | 47.7 | 45.6 | 41.7 |
| Vermont | 355,956 | 9,124 | 39.0 | 37.7 | 36.4 |
| Massachusetts | 3,366,416 | 8,039 | 418.8 | 349.0 | 278.5 |
| Rhode Island | 542,610 | 1,067 | 508.5 | 401.6 | 323.8 |
| Connecticut | 1,114,756 | 4,820 | 231.3 | 188.5 | 154.8 |
| MIDDLE ATLANTIC: | | | | | |
| New York | 9,113,614 | 47,654 | 191.2 | 152.5 | 126.0 |
| New Jersey | 2,537,167 | 7,514 | 337.7 | 250.7 | 192.3 |
| Pennsylvania | 7,665,111 | 44,832 | 171.0 | 140.6 | 117.3 |
| EAST NORTH CENTRAL: | | | | | |
| Ohio | 4,767,121 | 40,740 | 117.0 | 102.1 | 90.1 |
| Indiana | 2,700,876 | 36,045 | 74.9 | 70.1 | 61.1 |
| Illinois | 5,638,591 | 56,043 | 100.6 | 86.1 | 68.3 |
| Michigan | 2,810,173 | 57,480 | 48.9 | 42.1 | 36.4 |
| Wisconsin | 2,333,860 | 55,256 | 42.2 | 37.4 | 30.6 |
| WEST NORTH CENTRAL: | | | | | |
| Minnesota | 2,075,708 | 80,858 | 25.7 | 21.7 | 16.2 |
| Iowa | 2,224,771 | 55,586 | 40.0 | 40.2 | 34.4 |
| Missouri | 3,293,335 | 68,727 | 47.9 | 45.2 | 39.0 |
| North Dakota | 577,056 | 70,183 | 8.2 | 4.5 | 2.7 |
| South Dakota | 583,888 | 76,868 | 7.6 | 5.2 | 4.5 |
| Nebraska | 1,192,214 | 76,808 | 15.5 | 13.9 | 13.8 |
| Kansas | 1,690,949 | 81,774 | 20.7 | 18.0 | 17.5 |
| SOUTH ATLANTIC: | | | | | |
| Delaware | 202,322 | 1,965 | 103.0 | 94.0 | 85.7 |
| Maryland | 1,295,346 | 9,941 | 130.3 | 119.5 | 104.9 |
| District of Columbia | 331,069 | 60 | 5,517.8 | 4,645.3 | 3,972.3 |
| Virginia | 2,061,612 | 40,262 | 51.2 | 46.1 | 41.1 |
| West Virginia | 1,221,119 | 24,022 | 50.8 | 39.9 | 31.8 |
| North Carolina | 2,206,287 | 48,740 | 45.3 | 38.9 | 33.2 |
| South Carolina | 1,515,400 | 30,495 | 49.7 | 44.0 | 37.7 |
| Georgia | 2,609,121 | 58,725 | 44.4 | 37.7 | 31.3 |
| Florida | 752,619 | 54,861 | 13.7 | 9.6 | 7.1 |
| EAST SOUTH CENTRAL: | | | | | |
| Kentucky | 2,289,905 | 40,181 | 57.0 | 53.4 | 46.3 |
| Tennessee | 2,184,789 | 41,687 | 52.4 | 48.5 | 42.4 |
| Alabama | 2,138,093 | 51,279 | 41.7 | 35.7 | 29.5 |
| Mississippi | 1,797,114 | 46,362 | 38.8 | 33.5 | 27.8 |
| WEST SOUTH CENTRAL: | | | | | |
| Arkansas | 1,574,449 | 52,525 | 30.0 | 25.0 | 21.5 |
| Louisiana | 1,656,388 | 45,409 | 36.5 | 30.4 | 24.6 |
| Oklahoma [1] | 1,657,155 | 69,414 | 23.9 | 11.4 | 3.7 |
| Texas | 3,896,542 | 262,398 | 14.8 | 11.6 | 8.5 |
| MOUNTAIN: | | | | | |
| Montana | 376,053 | 146,201 | 2.6 | 1.7 | 1.0 |
| Idaho | 325,594 | 83,354 | 3.9 | 1.9 | 1.1 |
| Wyoming | 145,965 | 97,594 | 1.5 | 0.9 | 0.6 |
| Colorado | 799,024 | 103,658 | 7.7 | 5.2 | 4.0 |
| New Mexico | 327,301 | 122,503 | 2.7 | 1.6 | 1.3 |
| Arizona | 204,354 | 113,810 | 1.8 | 1.1 | 0.8 |
| Utah | 373,351 | 82,184 | 4.5 | 3.4 | 2.6 |
| Nevada | 81,875 | 109,821 | 0.7 | 0.4 | 0.4 |
| PACIFIC: | | | | | |
| Washington | 1,141,990 | 66,836 | 17.1 | 7.8 | 5.3 |
| Oregon | 672,765 | 95,607 | 7.0 | 4.3 | 3.3 |
| California | 2,377,549 | 155,652 | 15.3 | 9.5 | 7.8 |

[1] Includes population of Indian Territory for 1900 and 1890.

Plate No. 67 shows the population per square mile, by states, in 1910 and 1900. In 1900 there were six states with a density of population of less than 2 persons to the square mile, while in 1910 there were only three such states—Arizona, Nevada, and Wyoming. A number of states which show but a slight increase in their population have advanced to a higher group of density in 1910. East of the Mississippi River only five states advanced in their density group, Michigan, West Virginia, North Carolina, and South Carolina having advanced from the 18 to 45 group to the 45 to 90 group, and Illinois from the 45 to 90 group to 90 persons per square mile and over. The states of North Dakota, South Dakota, Oklahoma, Colorado, New Mexico, Idaho, Montana, and Oregon have also advanced to a higher group in density.

Plate No. 68 presents the density of population of the United States in 1910, the county being used as a unit. The states of Nevada and Montana have the greatest area not shaded, indicating counties with less than 2 persons per square mile.

The plates from No. 69 to No. 115 show the density of population in 1910, total and rural, for each state, by counties. By comparison of the two maps of each state the location of the large urban communities is indicated by the density of population, as, in the total population, the greatest density is in the counties in which large cities with populous suburbs are located. The decrease in density of the population of many rural communities is strikingly apparent in the states of Iowa, Missouri, Ohio, Indiana, and Illinois, and the southern portions of Minnesota and Wisconsin.

The population per square mile, 1790 to 1910, is represented in Diagram 1, Plate No. 135. The change in the length of the bars shows that the increase has not been regular; for instance, from 1790 to 1800 the population increased in density, but in 1810, owing to the large annexations of sparsely settled territory, the density of the United States as a whole decreased. In 1820, 1830, and 1840 each census showed an increase. In 1850 a large decrease is noted, due to the annexation of Texas in 1845 and the territory ceded by Mexico in 1848. The population, in proportion to the area annexed, was very small and, consequently, the density showed a decrease. Since 1850 no decrease in the density of population of the United States has taken place. On the contrary it has had an almost uniform increase, as is indicated by the length of the bars in the diagram.

Diagram 3, Plate No. 135, represents the density of population of each state for 1910 and 1900. Every state has increased in density except the state of Iowa, which decreased slightly from 1900 to 1910. Rhode Island was the most densely populated state both in 1900 and 1910. The other states following in the order of their density are Massachusetts, New Jersey, Connecticut, New York, Pennsylvania, Maryland, Ohio, Delaware, and Illinois. These were the only states that had a population of more than 100 persons per square mile in 1910, and their rank in density was the same at both censuses.

### CENTER OF POPULATION.

On the basis of the Thirteenth Census returns the center of population and the median lines for continental United States have been determined for April 15, 1910. In these calculations no account is taken of the territory and population of Alaska and of other noncontiguous territory. The location of the center at the dates of the several censuses, 1790 to 1910, and the movement of the median point from decade to decade, are indicated on Plate No. 116. The map on Plate No. 118 shows the location of the median parallel of latitude and the median meridian of longitude, also the center of area and the center of population, for 1910.

A somewhat technical significance, different from that frequently given to it, attaches to the term "center of population" as used in census publications. The center is often understood to be the point of intersection of a north and south line which divides the population equally, with an east and west line which likewise divides it equally. This point of intersection is, in a certain sense, a center of population; it is here, however, designated the median point to distinguish it from the point technically defined as the center.

The character of these two points may be made clear through a physical analogy. The center of population may be said to represent the center of gravity of the population. If the surface of the United States be considered as a rigid plane without weight, capable of sustaining the population distributed thereon, individuals being assumed to be of equal weight, and each, therefore, to exert a pressure on any supporting pivotal point directly proportional to his distance from the point, the pivotal point on which the plane balances would, of course, be its center of gravity, and this is the point referred to by the term "center of population" as here used. Continuing the above analogy, it may be noted that the median point, which may be described as the numerical center of population, is in no sense a center of gravity. In determining the median point, distance is not taken into account, and the location of the units of population is considered only in relation to the intersecting median lines—as being north or south of the median parallel and east or west of the median meridian. It is evident that extensive changes in the geographic distribution of the population may take place without affecting the position of the median point. In this respect the median point differs essentially from the center of population, which responds to the slightest population change in any section of the country. To

illustrate: Since the median point lies east of Minnesota, a million persons could move from Minnesota to Oregon without affecting the median point, while the movement of 500 persons from one town in Indiana to another, across the north and south line passing through the median point, would change the location of the point. On the other hand, a movement of a million persons from Minnesota to Oregon would have a very considerable effect on the center of population, since, in terms of the above analogy, the pressure exerted by each individual would increase in proportion to the distance traveled away from the center. If all the people in the United States were to be assembled at one place, the center of population would be the point which they could reach with the minimum aggregate travel, assuming that they all traveled in direct lines from their residence to the meeting place. No such statement holds true of the median point.

METHOD OF DETERMINING THE CENTER OF POPULATION.

In locating the center of population it is first assumed to be approximately at a certain point. Through this point a parallel and a meridian are drawn crossing the entire country. In determining the center of population in 1910, it was assumed to be at the intersection of the parallel of 39° north latitude with the meridian of 86° west longitude, which lines were taken as the axes of moments.

The product of the population of a given area by its distance from the assumed parallel is called a north or south moment, and the product of the population of the area by its distance from the assumed meridian is called an east or west moment. In calculating north and south moments the distances are measured in minutes of arc; in calculating east and west moments it is necessary to use miles, on account of the unequal length of the degrees and minutes in different latitudes. The population of the country is grouped by square degrees—that is, by areas included between consecutive parallels and meridians—as they are convenient units with which to work. The population of the principal cities is then deducted from that of the respective square degrees in which they lie and treated separately. The center of population of each square degree is assumed to be at its geographic center, except where such an assumption is manifestly incorrect; in these cases the position of the center of population of the square degree is estimated as nearly as possible. The population of each square degree north and south of the assumed parallel is multiplied by the distance of its center from that parallel; a similar calculation is made for the principal cities; and the sum of the north moments and the sum of the south moments are ascertained. The difference between these two sums, divided by the total population of the country, gives a correction to the latitude. In a similar manner the sums of the east and of the west moments are ascertained and from them the correction in longitude is made.

CENTER OF POPULATION: 1910.

At the Thirteenth Census the center of population was in the following position:

| | |
|---|---|
| Latitude | 39° 10′ 12″ N. |
| Longitude | 86° 32′ 20″ W. |

This point is in southern Indiana in the western part of Bloomington city, Monroe County, as shown on the map on Plate No. 117.

During the last decade, 1900 to 1910, the center of population moved west 43′ 26″, or approximately 39 miles, while its northward movement was only 36″, or approximately seven-tenths of a mile. The great increase in the population of New York, Pennsylvania, and certain other states north of the thirty-ninth parallel has balanced the increase in Texas, Oklahoma, and southern California. The advance toward the west is, to a large extent, due to the increase in the population of the Pacific Coast states, their distance from the center giving any increase of population in those states much greater weight than an equal increase in the populous states east, which are nearer the center. For instance, San Francisco, Seattle, Portland, and Sacramento combined, with a population of 906,016, have as great an influence on the center as Philadelphia, Boston, and Baltimore combined, with a population of 2,778,078. The westward movement from 1900 to 1910 was nearly three times as great as from 1890 to 1900, but was less than that for any decade between 1840 and 1890.

LOCATION OF THE CENTER OF POPULATION: 1790 TO 1900.

In 1790 the center of population was at 39° 16′ 30″ north latitude and 76° 11′ 12″ west longitude, which, according to the best maps, is a point about 23 miles east of Baltimore. During the decade from 1790 to 1800 it moved almost due west to a point about 18 miles west of the same city, latitude 39° 16′ 6″, longitude 76° 56′ 30″.

From 1800 to 1810 it moved west and slightly south to a point in the state of Virginia about 40 miles northwest by west of Washington, latitude 39° 11′ 30″, longitude 77° 37′ 12″. The southward movement during this decade was due to the annexation of the territory of Louisiana, which contained quite extensive settlements.

From 1810 to 1820 the center of population moved west and again slightly south to a point about 16 miles north of Woodstock, Va., latitude 39° 5′ 42″, longitude 78° 33′. This second southward movement was

due principally to the extension of settlements in Mississippi, Alabama, and eastern Georgia.

From 1820 to 1830 it again moved west and south to a point about 19 miles west-southwest of Moorefield, in the area now comprising the state of West Virginia, latitude 38° 57′ 54″, longitude 79° 16′ 54″. This is the most decided actual southward movement that it has made during any decade, owing to the annexation of Florida and the great extension of settlements in Alabama, Louisiana, Mississippi, and Arkansas, or generally, it may be said, in the Southwest. The movement from 1870 to 1880 was apparently greater, but this was due chiefly to a defective enumeration in 1870, and can not be considered as an actual change in the distribution of population.

From 1830 to 1840 it continued west, but slightly changed its course to the north, reaching a point 16 miles south of Clarksburg, in the area now comprising the state of West Virginia, latitude 39° 2′, longitude 80° 18′. During this decade population had increased rapidly in the Prairie states and in the southern portions of Michigan and Wisconsin.

From 1840 to 1850 the center moved west and slightly south again, reaching a point about 23 miles southeast of Parkersburg, in the area now comprising the state of West Virginia, latitude 38° 59′, longitude 81° 19′, the change of direction to the south being largely due to the annexation of Texas.

From 1850 to 1860 it moved west and slightly north, reaching a point 20 miles a little east of south of Chillicothe, Ohio, latitude 39° 0′ 24″, longitude 82° 48′ 48″.

From 1860 to 1870 it moved west and sharply north, reaching a point about 48 miles east by north of Cincinnati, Ohio, in latitude 39° 12′, longitude 83° 35′ 42″. This northward movement was due in part to the waste and destruction in the South consequent upon the Civil War, and in part to the fact that the census of 1870 was defective in its enumeration of the southern people, especially of the newly enfranchised negro population.

In 1880 the center of population had returned south to nearly the latitude occupied in 1860, being near Cincinnati, Ohio, just south of the Kentucky boundary, in latitude 39° 4′ 8″, longitude 84° 39′ 40″.

In 1890, owing to the great increase of population in the cities of the Northwest and in the state of Washington, also in New England, the center moved north to latitude 39° 11′ 56″, longitude 85° 32′ 53″.

During the decade from 1890 to 1900 the center of population moved west 16′ 1″, a little over 14 miles, to longitude 85° 48′ 54″, and south 2′ 20″, a little less than 3 miles, to latitude 39° 9′ 36″. This is the smallest movement it has ever shown in a decade, the great increase in the population of Indian Territory, Oklahoma, and Texas being largely offset by an increase in the population of the North Atlantic states.

The movement from 1900 to 1910 has already been described.

The closeness with which the center of population throughout its westward movement has clung to the thirty-ninth parallel of latitude is remarkable. The most northern point was reached in 1790 and the most southern point in 1830, but the difference was only about 21 miles. In each decade there has been a westward movement. The greatest movement west was during the decade from 1850 to 1860, when the center advanced 81 miles; the least from 1890 to 1900, when it advanced 14 miles. The total westward movement since 1790 is 557 miles.

The following table and the map on Plate No. 116 show the location of the center of population and its westward advance during each decade since 1790.

CENTER OF POPULATION: 1790 TO 1910.

| CENSUS YEAR. | North latitude. | | | West longitude. | | | APPROXIMATE LOCATION BY IMPORTANT TOWNS. | MOVEMENT IN MILES. | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | From point to point in direct line. | West. | North. | South. |
| | ° | ′ | ″ | ° | ′ | ″ | | | | | |
| 1790 | 39 | 16 | 30 | 76 | 11 | 12 | 23 miles east of Baltimore, Md | | | | |
| 1800 | 39 | 16 | 6 | 76 | 56 | 30 | 18 miles west of Baltimore, Md | 40.6 | 40.6 | | 0.5 |
| 1810 | 39 | 11 | 30 | 77 | 37 | 12 | 40 miles northwest by west of Washington, D. C. | 36.9 | 36.5 | | 5.3 |
| 1820 | 39 | 5 | 42 | 78 | 33 | 0 | 16 miles north of Woodstock, Va | 50.5 | 50.1 | | 6.7 |
| 1830 | 38 | 57 | 54 | 79 | 16 | 54 | 19 miles west-southwest of Moorefield, W. Va.[1] | 40.4 | 39.4 | | 9.0 |
| 1840 | 39 | 2 | 0 | 80 | 18 | 0 | 16 miles south of Clarksburg, W. Va.[1] | 55.0 | 54.8 | 4.7 | |
| 1850 | 38 | 59 | 0 | 81 | 19 | 0 | 23 miles southeast of Parkersburg, W. Va.[1] | 54.8 | 54.7 | | 3.5 |
| 1860 | 39 | 0 | 24 | 82 | 48 | 48 | 20 miles south by east of Chillicothe, Ohio | 80.6 | 80.6 | 1.6 | |
| 1870 | 39 | 12 | 0 | 83 | 35 | 42 | 48 miles east by north of Cincinnati, Ohio | 44.1 | 42.1 | 13.3 | |
| 1880 | 39 | 4 | 8 | 84 | 39 | 40 | 8 miles west by south of Cincinnati, Ohio | 58.1 | 57.4 | | 9.1 |
| 1890 | 39 | 11 | 56 | 85 | 32 | 53 | 20 miles east of Columbus, Ind | 48.6 | 47.7 | 9.0 | |
| 1900 | 39 | 9 | 36 | 85 | 48 | 54 | 6 miles southeast of Columbus, Ind | 14.6 | 14.4 | | 2.8 |
| 1910 | 39 | 10 | 12 | 86 | 32 | 20 | In the city of Bloomington, Ind | 39.0 | 38.9 | 0.8 | |

[1] West Virginia formed part of Virginia until 1860.

In connection with the location of the center of population of the United States, it is of interest to note also the position of what may be termed the center of area—that is, the point on which the surface of continental United States would balance, if it were a plane of uniform weight per unit of area. This point is located in northern Kansas, 10 miles north of Smith Center, the county seat of Smith County, approximate latitude 39° 55′, longitude 98° 50′, and is therefore about three-fourths of a degree (51 miles) north and 12° 15′ (657 miles) west of the center of population. Its location is shown on the map on Plate No. 118, designating the position of the median lines. This would also be the center of population if the population were distributed evenly over the territory of continental United States.

### MEDIAN LINES.

In connection with the definition of the median point another method of presenting facts with regard to the geographic distribution of the population has been noted, involving the location of median lines. A parallel of latitude is determined which evenly divides the population so that the population north of that parallel is the same as that south. Similarly, a meridian of longitude is determined which divides the population evenly as between east and west. In calculating these median lines it is necessary, in the case of the square degrees of latitude and longitude which are traversed by the lines themselves, to assume that the population is evenly distributed through these square degrees or to make an estimated adjustment where this is obviously not the case.

The eastern terminus of the median parallel, according to the census of 1910, is on the New Jersey coast near Seagirt. In its course west this line passes through central New Jersey, leaving the state near Burlington and entering Pennsylvania a few miles north of Philadelphia, thence passing through Norristown and continuing through southern Pennsylvania and across the northern extremity of West Virginia, leaving the latter state at a point a few miles north of Wheeling. It nearly bisects Ohio, Indiana, and Illinois, crossing about 10 miles north of Columbus, Ohio, 25 miles north of Indianapolis, Ind., and about 20 miles north of Springfield, Ill. Through Missouri it runs about 30 miles south of the Iowa and Missouri line, thence passing through Nebraska about 10 miles north of its southern boundary, and across the northern part of Colorado, passing about 5 miles north of Boulder city. Its location in Utah is about 45 miles south of Salt Lake City near Spanish Fork city. There are no large towns near its course across the northern part of Nevada and California. The western terminus of the median parallel is on the Pacific coast, in Humboldt County, Cal., about 5 miles north of Point Delgada and 20 miles south of Cape Mendocino, the point of continental United States extending farthest west.

The median meridian starts at Whitefish Point, on the northern peninsula of Michigan, near the eastern end of Lake Superior, thence passing south through the southern peninsula of Michigan about 25 miles west of Lansing and through Indiana about 10 miles west of the Indiana-Ohio boundary, and 25 miles west of Cincinnati. South of the Ohio River it bisects Kentucky about 40 miles east of Louisville, crosses eastern Tennessee, and leaves the state 20 miles east of Chattanooga. Through Georgia it passes close to the Georgia-Alabama line, about 2 miles west of Columbus, Ga., leaving the state near the intersection of the Alabama, Georgia, and Florida boundary lines. It then crosses the northwestern portion of Florida and terminates in the Gulf of Mexico at the city of Apalachicola.

During the last three decades, from 1880 to 1910, there has been little change in the location of these lines—so slight, in fact, that the changes can not be accurately shown on a small map. For this reason the median lines are not drawn on the map on Plate No. 118 for any years prior to 1910. The median parallel has moved north a distance of 11.3 miles since 1880. In the same period the median meridian has moved west 45.3 miles. Each of the three decades has shown a slight movement of the parallel north and of the meridian west. Between 1900 and 1910, however, the northern movement was only 2.3 miles, and the westward only 7.5 miles. The greatest change took place in the decade from 1880 to 1890, during which period the median parallel moved north 6.6 miles, and the median meridian west 27 miles. The location of these lines at the several censuses, from 1880 to 1910, is shown in the following table. The location of these lines in 1910 is shown on the map on Plate No. 118.

MEDIAN LINES: 1880 TO 1910.

| CENSUS YEAR. | Median parallel, north latitude. | Median meridian, west longitude. | MOVEMENT IN MILES. | |
|---|---|---|---|---|
| | | | Median parallel, north. | Median meridian, west. |
| 1880 | 39° 57′ 0″ | 84° 7′ 12″ | ..... | ..... |
| 1890 | 40° 2′ 51″ | 84° 40′ 1″ | 6.6 | 27.0 |
| 1900 | 40° 4′ 22″ | 84° 51′ 29″ | 2.4 | 10.8 |
| 1910 | 40° 6′ 24″ | 84° 59′ 59″ | 2.3 | 7.5 |

It may be observed that while each median line exactly bisects the population as a whole it does not at any given point or through any given section of its course necessarily bisect the population even approximately. The median parallel does not bisect even approximately the population living either west or east of the Mississippi River. Similarly, the median meridian does not bisect the population either of the northern or southern section of the country. Nor does any one of the four sections into which the intersecting median lines divide the country contain one-fourth of the total population. It is obvious, however, that the diagonally opposite sections are necessarily exactly equal in population.[1] The population of the northeastern section exactly equals the population of the southwestern; and, similarly, the population of the southeastern exactly equals that of the northwestern. The northeastern and southwestern each contain, in fact, a population of about 27,500,000, while the southeastern and northwestern sections each contain about 18,500,000.

### MEDIAN POINT.

What is termed by the Census Bureau the "median point" of the population corresponds, as already stated, to a common conception of the center of population—that is, it is the junction of the median line dividing the population equally north and south with the median line dividing it equally east and west, distance of the population from the center not being considered. As already indicated, the changes in the median point reflect only the difference between the growth of population east of the point and the growth west of it and the difference between the growth north and south of the point. Other differences in relative growth do not affect its location.

In 1910 the median point was located at latitude 40° 6′ 24″ north and longitude 84° 59′ 59″ west, practically the eighty-fifth meridian. Its location, therefore, was 3 miles south of Winchester, Randolph County, Ind.; its westward movement during the decade was 7.5 miles, and its northward movement 2.3 miles. Comparing its movement since 1900 with that of the center of population, it will be noted that the north movement of the median point was 1.6 miles more than that of the center, while the center of population moved west 31.5 miles more than the median point, showing that the increase in the population of the Pacific coast had a much greater influence on the movement of the center of population than upon the median point.

The exact location of the median point is indicated by the median lines already shown; in the following table its approximate location with reference to certain towns is described:

POSITION OF THE MEDIAN POINT: 1880 TO 1910.

| CENSUS YEAR. | APPROXIMATE LOCATION BY IMPORTANT TOWNS. |
|---|---|
| 1880 | 16 miles nearly due west of Springfield, Ohio. |
| 1890 | 5 miles southwest of Greenville, Ohio. |
| 1900 | In Spartanburg, Ind. |
| 1910 | 3 miles south of Winchester, Ind. |

[1] The mathematical demonstration of this is simple. If A, B, C, and D represent, respectively, the population of the northwestern, northeastern, southeastern, and southwestern sections, then:
A+B=½ population of U. S.
B+C=½ population of U. S.
A+B=B+C.
Therefore A=C.
Similarly, it may be proven that B=D.

CENTER OF POPULATION OF EACH STATE: 1880 TO 1910.

| STATE. | Census year. | North latitude. | West longitude. | APPROXIMATE LOCATION, BY IMPORTANT TOWNS. | | MOVEMENT IN MILES. | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | County. | Nearest city or town. | Actual distance. | North. | South. | East. | West. |
| | | ° ′ ″ | ° ′ ″ | | | | | | | |
| ALABAMA | 1880 | 32 51 9 | 86 43 16 | Chilton | 5.5 miles W. by N. of Clanton, Chilton Co. | | | | | |
| | 1890 | 32 54 38 | 86 44 46 | Chilton | 3.4 miles S. by E. of Jemison, Chilton Co. | 4.3 | 4.0 | | | 1.5 |
| | 1900 | 32 53 13 | 86 42 18 | Chilton | 5.7 miles SSE. of Jemison, Chilton Co. | 2.9 | | 1.6 | 2.4 | |
| | 1910 | 32 54 7 | 86 42 29 | Chilton | 4.7 miles SSE. of Jemison, Chilton Co. | 1.0 | 1.0 | | | 0.2 |
| ARIZONA | 1880 | 33 17 36 | 111 25 32 | Pinal | 18.7 miles N. by W. of Florence, Pinal Co. | | | | | |
| | 1890 | 33 15 51 | 111 25 39 | Pinal | 16.6 miles N. by W. of Florence, Pinal Co. | 2.0 | | 2.0 | | 0.1 |
| | 1900 | 33 34 29 | 111 15 58 | Maricopa | 9.2 miles SW. of Roosevelt Dam, Maricopa Co. | 23.2 | 21.2 | | 9.3 | |
| | 1910 | 33 24 18 | 110 59 38 | Gila | 12.3 miles W. by N. of Globe, Gila Co. | 19.5 | | 11.5 | 15.7 | |
| ARKANSAS | 1880 | 34 55 41 | 92 30 25 | Pulaski | 4.8 miles WSW. of Mayflower, Faulkner Co. | | | | | |
| | 1890 | 34 57 35 | 92 29 41 | Faulkner | 3.9 miles WNW. of Mayflower, Faulkner Co. | 2.3 | 2.2 | | 0.7 | |
| | 1900 | 34 56 18 | 92 28 27 | Pulaski | 3.2 miles WSW. of Mayflower, Faulkner Co. | 1.9 | | 1.5 | 1.2 | |
| | 1910 | 34 55 16 | 92 25 8 | Faulkner | 3.0 miles SSW. of Mayflower, Faulkner Co. | 3.3 | | 1.2 | 3.1 | |
| CALIFORNIA | 1880 | 37 55 55 | 121 27 42 | San Joaquin | 3.3 miles E. by S. of Moorland, San Joaquin Co. | | | | | |
| | 1890 | 37 25 35 | 121 2 20 | Stanislaus | 3.1 miles NNE. of Crows Landing, Stanislaus Co. | 41.9 | | 34.9 | 23.1 | |
| | 1900 | 37 14 26 | 120 53 11 | Merced | 6.2 miles NE. of Ingomar, Merced Co. | 15.3 | | 12.8 | 8.4 | |
| | 1910 | 36 42 29 | 120 31 23 | Fresno | 9.5 miles WSW. of Mendota, Fresno Co. | 41.8 | | 36.7 | 20.1 | |
| COLORADO | 1880 | 39 5 23 | 105 32 53 | Park | 13.7 miles ENE. of Hartzell, Park Co. | | | | | |
| | 1890 | 39 9 52 | 105 14 10 | Douglas | 3.8 miles WNW. of West Creek, Douglas Co. | 17.6 | 5.2 | | 16.8 | |
| | 1900 | 39 5 45 | 105 16 5 | Teller | 6.4 miles WSW. of West Creek, Douglas Co. | 5.0 | | 4.7 | | 1.7 |
| | 1910 | 39 11 53 | 105 11 28 | Douglas | 3.6 miles N. by W. of West Creek, Douglas Co. | 8.2 | 7.1 | | 4.1 | |
| CONNECTICUT | 1880 | 41 32 49 | 72 46 21 | New Haven | 2.0 miles ENE. of Meriden P. O., New Haven Co. | | | | | |
| | 1890 | 41 31 41 | 72 48 0 | New Haven | 0.8 mile SSE. of Meriden P. O., New Haven Co. | 1.9 | | 1.3 | | 1.1 |
| | 1900 | 41 31 23 | 72 49 6 | New Haven | 1.2 miles SSW. of Meriden P. O., New Haven Co. | 1.0 | | 0.3 | | 1.0 |
| | 1910 | 41 30 54 | 72 50 20 | New Haven | 2.5 miles SW. of Meriden P. O., New Haven Co. | 1.3 | | 0.6 | | 1.1 |

CENTER OF POPULATION OF EACH STATE: 1880 TO 1910—Continued.

| STATE. | Census year. | North latitude. | West longitude. | APPROXIMATE LOCATION, BY IMPORTANT TOWNS. | | MOVEMENT IN MILES. | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | County. | Nearest city or town. | Actual distance. | North. | South. | East. | West. |
| | | ° ′ ″ | ° ′ ″ | | | | | | | |
| DELAWARE | 1880 | 39 9 50 | 75 35 30 | Kent | 3.5 miles W. by N. of Dover, Kent Co | | | | | |
| | 1890 | 39 11 9 | 75 35 36 | Kent | 4.0 miles NW. of Dover, Kent Co | 1.5 | 1.5 | | | 0.1 |
| | 1900 | 39 11 35 | 75 35 9 | Kent | 4.0 miles NW. by N. of Dover, Kent Co | 0.6 | 0.5 | | 0.4 | |
| | 1910 | 39 11 49 | 75 35 6 | Kent | 4.2 miles NW. by N. of Dover, Kent Co | 0.3 | 0.3 | | | 0.4 |
| DISTRICT OF COLUMBIA | 1900 | 78 ft. N. of H St., NW. | 20 ft. W. of 4th St., NW. | | Opposite No. 801 Fourth Streeet NW | | | | | |
| | 1910 | 159 ft. S. of K St., NW. | 111 ft. E. of 5th St., NW. | | On No. 927 Fifth Street NW | 983 ft. | 743 ft. | | | 643 ft. |
| FLORIDA | 1880 | 29 43 40 | 83 17 0 | Lafayette | 1.0 mile SW. of Hines, Lafayette Co | | | | | |
| | 1890 | 29 29 15 | 83 3 28 | Lafayette | 7.0 miles N. by W. of Vista, Levy Co | 21.4 | | 16.6 | 13.5 | |
| | 1900 | 29 28 40 | 83 7 19 | Lafayette | 7.7 miles NW. by N. of Vista, Levy Co | 3.9 | | 0.7 | | 3.8 |
| | 1910 | 29 19 30 | 83 0 32 | Levy | 5.0 miles SSE. of Vista, Levy Co | 12.5 | | 10.5 | 6.8 | |
| GEORGIA | 1880 | 33 2 4 | 83 42 0 | Jones | 10.2 miles WNW. of Gray, Jones Co | | | | | |
| | 1890 | 33 0 0 | 83 40 17 | Jones | 8.3 miles W. of Gray, Jones Co | 2.9 | | 2.4 | 1.7 | |
| | 1900 | 32 56 38 | 83 38 24 | Jones | 7.3 miles N. by W. of Macon, Bibb Co | 4.3 | | 3.9 | 1.8 | |
| | 1910 | 32 54 25 | 83 37 8 | Jones | 4.5 miles N. by E. of Macon, Bibb Co | 2.8 | | 2.5 | 1.2 | |
| IDAHO | 1880 | 43 59 34 | 114 24 4 | Custer | 19.5 miles E. by S. of Pierson, Custer Co | | | | | |
| | 1890 | 44 12 41 | 114 27 33 | Custer | 4.8 miles S. by W. of Clayton, Custer Co | 15.4 | 15.1 | | | 2.9 |
| | 1900 | 44 36 14 | 114 37 19 | Lemhi | 13.0 miles SSW. of Meyers Cove, Lemhi Co | 28.3 | 27.1 | | | 8.1 |
| | 1910 | 44 30 50 | 114 47 38 | Custer | 6.6 miles NE. of Sunbeam, Custer Co | 10.5 | | 6.2 | | 8.5 |
| ILLINOIS | 1880 | 40 26 47 | 88 57 44 | McLean | 2.8 miles SE. of Bloomington, McLean Co | | | | | |
| | 1890 | 40 39 14 | 88 44 34 | McLean | 2.0 miles E. by N. of Lexington, McLean Co | 18.4 | 14.3 | | 11.6 | |
| | 1900 | 40 46 48 | 88 37 12 | Livingston | 1.5 miles N. by E. of Weston, McLean Co | 10.8 | 8.7 | | 6.4 | |
| | 1910 | 40 51 29 | 88 33 18 | Livingston | 4.0 miles SE. of Pontiac, Livingston Co | 6.4 | 5.4 | | 3.4 | |
| INDIANA | 1880 | 39 51 33 | 86 13 26 | Marion | 2.0 miles SE. of New Augusta, Marion Co | | | | | |
| | 1890 | 39 52 53 | 86 14 16 | Marion | 0.5 mile N. of New Augusta, Marion Co | 1.7 | 1.5 | | | 0.7 |
| | 1900 | 39 54 36 | 86 14 3 | Marion | 2.0 miles N. by E. of New Augusta, Marion Co | 2.0 | 2.0 | | 0.2 | |
| | 1910 | 39 56 49 | 86 15 47 | Boone | 0.3 mile W. by N. of Zionsville, Boone Co | 2.9 | 2.5 | | | 1.5 |
| IOWA | 1880 | 41 51 40 | 92 56 53 | Marshall | 1.8 miles S. of Laurel, Marshall Co | | | | | |
| | 1890 | 41 56 2 | 92 58 43 | Marshall | 2.9 miles NW. of Laurel, Marshall Co | 5.2 | 5.0 | | | 1.6 |
| | 1900 | 41 55 45 | 93 15 11 | Story | 2.6 miles NE. by E. of Collins, Story Co | 14.1 | | 0.3 | | 14.1 |
| | 1910 | 41 57 43 | 93 15 18 | Story | 4.8 miles SE. of Colo, Story Co | 2.3 | 2.3 | | | 0.1 |
| KANSAS | 1880 | 38 36 11 | 96 41 7 | Morris | 3.3 miles SSW. of Wilsey, Morris Co | | | | | |
| | 1890 | 38 33 1 | 97 8 0 | Marion | 1.7 miles E. of Tampa, Marion Co | 24.6 | | 3.6 | | 24.3 |
| | 1900 | 38 32 25 | 96 43 21 | Morris | 7.2 miles SSW. of Wilsey, Morris Co | 22.3 | | 0.7 | 22.3 | |
| | 1910 | 38 29 31 | 96 49 41 | Marion | 7.0 miles E. by S. of Lincolnville, Marion Co | 6.6 | | 3.3 | | 5.7 |
| KENTUCKY | 1880 | 37 42 40 | 85 26 30 | Nelson | 1.7 miles N. by W. of Holycross, Marion Co | | | | | |
| | 1890 | 37 42 46 | 85 21 52 | Washington | 1.0 mile E. of Blincoe, Washington Co | 4.2 | 0.1 | | 4.2 | |
| | 1900 | 37 42 15 | 85 24 40 | Marion | 2.0 miles ENE. of Holycross, Marion Co | 2.7 | | 0.6 | | 2.6 |
| | 1910 | 37 42 29 | 85 21 29 | Washington | 1.4 miles E. by S. of Blincoe, Washington Co | 3.0 | 0.3 | | 2.9 | |
| LOUISIANA | 1880 | 30 49 29 | 91 21 8 | West Feliciana[1] | 4.3 miles NNE. of Bayou Sara, West Feliciana Par. | | | | | |
| | 1890 | 30 50 40 | 91 29 24 | West Feliciana[1] | 4.0 miles SSE. of Brandon, West Feliciana Par. | 8.3 | 1.4 | | | 8.2 |
| | 1900 | 30 48 56 | 91 31 46 | Pointe Coupee[1] | 2.4 miles NE. of Raccourci, Pointe Coupee Par. | 3.0 | | 2.0 | | 2.3 |
| | 1910 | 30 48 47 | 91 33 50 | Pointe Coupee[1] | 1.0 mile N. by E. of Raccourci, Pointe Coupee Par. | 2.0 | | 0.2 | | 2.0 |
| MAINE | 1880 | 44 55 10 | 69 32 46 | Somerset | 4.8 miles ESE. of Athens P. O., Somerset Co | | | | | |
| | 1890 | 44 57 3 | 69 32 36 | Somerset | 4.7 miles E. of Athens P. O., Somerset Co | 2.2 | 2.2 | | 0.1 | |
| | 1900 | 44 57 52 | 69 33 5 | Somerset | 4.3 miles ENE. of Athens P. O., Somerset Co | 1.0 | 0.9 | | | 0.4 |
| | 1910 | 44 47 2 | 69 29 49 | Somerset | 2.3 miles E. by S. of Canaan P. O., Somerset Co | 12.8 | | 12.5 | 2.7 | |
| MARYLAND | 1880 | 39 9 4 | 76 41 17 | Anne Arundel | 0.8 mile SE. of Harmans, Anne Arundel Co | | | | | |
| | 1890 | 39 9 32 | 76 41 21 | Anne Arundel | 0.5 mile E. of Harmans, Anne Arundel Co | 0.5 | 0.5 | | | 0.1 |
| | 1900 | 39 9 36 | 76 42 15 | Anne Arundel | 0.4 mile W. by N. of Harmans, Anne Arundel Co | 0.8 | 0.1 | | | 0.8 |
| | 1910 | 39 10 1 | 76 42 36 | Anne Arundel | 0.9 mile NW. of Harmans, Anne Arundel Co | 0.6 | 0.5 | | | 0.3 |
| MASSACHUSETTS | 1880 | 42 22 30 | 71 28 15 | Middlesex | 3.0 miles W. by S. of Sudbury P. O., Middlesex Co. | | | | | |
| | 1890 | 42 22 30 | 71 28 10 | Middlesex | 2.9 miles W. by S. of Sudbury P. O., Middlesex Co. | 0.1 | | | 0.1 | |
| | 1900 | 42 22 19 | 71 28 8 | Middlesex | 2.9 miles WSW. of Sudbury P. O., Middlesex Co. | 0.2 | | 0.2 | 0.03 | |
| | 1910 | 42 22 23 | 71 25 8 | Middlesex | 0.5 mile SSW. of Sudbury P. O., Middlesex Co | 2.6 | 0.1 | | 2.6 | |
| MICHIGAN | 1880 | 43 3 29 | 84 38 36 | Clinton | 5.8 miles NNW. of St. Johns, Clinton Co | | | | | |
| | 1890 | 43 15 24 | 84 43 38 | Gratiot | 5.5 miles N. by W. of Middleton, Gratiot Co | 14.3 | 13.7 | | | 4.2 |
| | 1900 | 43 21 0 | 84 46 19 | Gratiot | 9.2 miles WNW. of Ithaca, Gratiot Co | 6.8 | 6.4 | | | 2.2 |
| | 1910 | 43 19 55 | 84 45 0 | Gratiot | 7.7 miles WNW. of Ithaca, Gratiot Co | 1.6 | | 1.2 | 1.1 | |
| MINNESOTA | 1880 | 44 47 33 | 93 44 41 | Carver | 1.6 miles ENE. of America, Roseau Co | | | | | |
| | 1890 | 45 5 42 | 93 50 36 | Wright | 3.6 miles ENE. of Montrose, Wright Co | 21.4 | 20.9 | | | 4.8 |
| | 1900 | 45 15 29 | 93 59 24 | Wright | 2.2 miles N. by E. of Maple Lake, Wright Co | 13.3 | 11.2 | | | 7.2 |
| | 1910 | 45 22 23 | 93 51 29 | Sherburne | 1.9 miles SE. of Becker, Sherburne Co | 10.2 | 7.9 | | 6.4 | |
| MISSISSIPPI | 1880 | 33 2 50 | 89 42 6 | Attala | 4.0 miles ENE. of Sallis, Attala Co | | | | | |
| | 1890 | 32 59 52 | 89 43 26 | Attala | 3.5 miles SE. of Sallis, Attala Co | 3.6 | | 3.4 | | 1.3 |
| | 1900 | 32 55 37 | 89 44 46 | Attala | 7.0 miles SE. by S. of Sallis, Attala Co | 5.1 | | 4.9 | | 1.3 |
| | 1910 | 32 54 7 | 89 45 22 | Attala | 8.5 miles S. by E. of Sallis, Attala Co | 1.8 | | 1.7 | | 0.6 |
| MISSOURI | 1880 | 38 42 32 | 92 25 8 | Moniteau | 2.6 miles NW. of Marion, Cole Co | | | | | |
| | 1890 | 38 38 19 | 92 27 57 | Moniteau | 2.9 miles NW. of Centertown, Cole Co | 5.4 | | 4.8 | | 2.5 |
| | 1900 | 38 36 11 | 92 25 55 | Cole | 0.6 mile SW. of Centertown, Cole Co | 3.1 | | 2.5 | 1.8 | |
| | 1910 | 38 33 0 | 92 18 25 | Cole | 6.5 miles WSW. of Jefferson City, Cole Co | 7.7 | | 3.7 | 6.8 | |
| MONTANA | 1880 | 46 23 5 | 111 43 16 | Broadwater | 19.7 miles SE. of Helena, Lewis and Clark Co | | | | | |
| | 1890 | 46 31 45 | 111 51 22 | Jefferson | 9.3 miles ESE. of Helena, Lewis and Clark Co | 11.9 | 10.0 | | | 6.4 |
| | 1900 | 46 34 45 | 111 36 18 | Broadwater | 19.7 miles E. by S. of Helena, Lewis and Clark Co | 12.5 | 3.4 | | 12.0 | |
| | 1910 | 46 41 31 | 110 59 49 | Meagher | 9.8 miles NNW. of White Sulphur Springs, Meagher Co. | 30.0 | 7.8 | | 29.0 | |

[1] Parish.

CENTER OF POPULATION OF EACH STATE: 1880 TO 1910—Continued.

| STATE. | Census year. | North latitude. | | | West longitude. | | | APPROXIMATE LOCATION, BY IMPORTANT TOWNS. | | MOVEMENT IN MILES. | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | County. | Nearest city or town. | Actual distance. | North. | South. | East. | West. |
| | | ° | ′ | ″ | ° | ′ | ″ | | | | | | | |
| NEBRASKA | 1880 | 40 | 57 | 47 | 97 | 20 | 43 | Seward | 4.7 miles N. by E. of Utica, Seward Co. | | | | | |
| | 1890 | 41 | 5 | 54 | 97 | 43 | 34 | Polk | 3.5 miles ENE. of Polk, Polk Co. | 22.0 | 9.3 | | | 19.9 |
| | 1900 | 41 | 8 | 43 | 97 | 42 | 10 | Polk | 6.2 miles WNW. of Stromburg, Polk Co. | 3.4 | 3.2 | | 1.2 | |
| | 1910 | 41 | 11 | 13 | 97 | 50 | 17 | Merrick | 1.7 miles S. of Clarks, Merrick Co. | 7.7 | 2.9 | | | 7.1 |
| NEVADA | 1880 | 39 | 41 | 41 | 117 | 59 | 22 | Churchill | 2.5 miles SSE. of Boyer, Churchill Co. | | | | | |
| | 1890 | 39 | 31 | 55 | 118 | 1 | 46 | Churchill | 13.8 miles S. by W. of Boyer, Churchill Co. | 11.4 | | 11.2 | | 2.1 |
| | 1900 | 39 | 51 | 36 | 117 | 49 | 23 | Churchill | 13.3 miles NE. of Boyer, Churchill Co. | 25.1 | 22.6 | | 11.0 | |
| | 1910 | 39 | 16 | 48 | 117 | 33 | 18 | Lander | 20.3 miles SE. of Alpine, Churchill Co. | 42.4 | | 40.0 | 14.2 | |
| NEW HAMPSHIRE | 1880 | 43 | 26 | 25 | 71 | 35 | 50 | Belknap | 0.2 mile W. by S. of Tilton, Belknap Co. | | | | | |
| | 1890 | 43 | 26 | 1 | 71 | 35 | 23 | Merrimack | 0.6 mile S. by E. of Tilton, Belknap Co. | 0.6 | | 0.5 | 0.4 | |
| | 1900 | 43 | 26 | 1 | 71 | 34 | 44 | Merrimack | 0.9 mile SE. of Tilton, Belknap Co. | 0.5 | | | 0.5 | |
| | 1910 | 43 | 21 | 18 | 71 | 32 | 10 | Merrimack | 2.2 miles NE. of Canterbury P. O., Merrimack Co. | 5.8 | | 5.4 | 2.1 | |
| NEW JERSEY | 1880 | 40 | 25 | 48 | 74 | 31 | 1 | Middlesex | 5.5 miles SW. of New Brunswick, Middlesex Co. | | | | | |
| | 1890 | 40 | 37 | 19 | 74 | 30 | 14 | Somerset | 2.8 miles NW. of Dunellen, Middlesex Co. | 13.2 | 13.2 | | 0.7 | |
| | 1900 | 40 | 27 | 54 | 74 | 29 | 37 | Middlesex | 3.0 miles SW. by W. of New Brunswick, Middlesex Co. | 10.8 | | 10.8 | 0.5 | |
| | 1910 | 40 | 29 | 24 | 74 | 26 | 20 | Middlesex | First ward of New Brunswick, Middlesex Co. | 3.4 | 1.7 | | 2.9 | |
| NEW MEXICO | 1880 | 35 | 9 | 35 | 106 | 10 | 35 | Santa Fe | 5.0 miles SE. of San Pedro, Santa Fe Co. | | | | | |
| | 1890 | 34 | 58 | 19 | 106 | 9 | 1 | Torrance | 6.4 miles W. by S. of Moriarty, Torrance Co. | 13.1 | | 13.0 | 1.5 | |
| | 1900 | 34 | 55 | 0 | 106 | 9 | 41 | Bernalillo | 7.5 miles WSW. of Moriarty, Torrance Co. | 3.8 | | 3.8 | | 0.6 |
| | 1910 | 34 | 49 | 5 | 105 | 43 | 8 | Torrance | 19.5 miles ENE. of Estancia, Torrance Co. | 26.0 | | 6.8 | 25.1 | |
| NEW YORK | 1880 | 42 | 0 | 4 | 74 | 54 | 50 | Delaware | 3.0 miles NW. by W. of Craigeclare, Sullivan Co. | | | | | |
| | 1890 | 41 | 54 | 51 | 74 | 51 | 56 | Sullivan | 1.8 miles W. by N. of Livingston Manor, Sullivan Co. | 6.5 | | 6.0 | 2.5 | |
| | 1900 | 41 | 48 | 0 | 74 | 45 | 51 | Sullivan | 1.2 miles SW. of Liberty, Sullivan Co. | 9.5 | | 7.9 | 5.2 | |
| | 1910 | 41 | 39 | 29 | 74 | 51 | 50 | Sullivan | 0.7 mile NW. by W. of Forestine, Sullivan Co. | 11.0 | | 9.8 | | 5.1 |
| NORTH CAROLINA | 1880 | 35 | 38 | 35 | 79 | 18 | 37 | Chatham | 2.2 miles NNW. of Goldston, Chatham Co. | | | | | |
| | 1890 | 35 | 38 | 22 | 79 | 25 | 11 | Chatham | 2.5 miles S. of Mt. Vernon Springs, Chatham Co. | 6.2 | | 0.2 | | 6.2 |
| | 1900 | 35 | 38 | 13 | 79 | 28 | 37 | Chatham | 4.2 miles SW. of Mt. Vernon Springs, Chatham Co. | 3.2 | | 0.2 | | 3.2 |
| | 1910 | 35 | 37 | 23 | 79 | 29 | 49 | Chatham | 3.3 miles ENE. of Cheeks, Randolph Co. | 1.5 | | 1.0 | | 1.1 |
| NORTH DAKOTA | 1880 | 47 | 2 | 3 | 98 | 9 | 37 | Barnes | 2.0 miles SW. of Matteson, Barnes Co. | | | | | |
| | 1890 | 47 | 28 | 35 | 98 | 20 | 25 | Griggs | 7.2 miles SW. of Jessie, Griggs Co. | 31.6 | 30.5 | | | 8.4 |
| | 1900 | 47 | 31 | 40 | 98 | 42 | 27 | Foster | 6.6 miles SW. of McHenry, Foster Co. | 17.6 | 3.5 | | | 17.2 |
| | 1910 | 47 | 30 | 32 | 99 | 39 | 47 | Wells | 3.5 miles NE. of Bowdon, Wells Co. | 44.7 | | 1.3 | | 44.7 |
| OHIO | 1880 | 40 | 20 | 17 | 82 | 53 | 48 | Delaware | 3.7 miles E. by N. of Kilbourne, Delaware Co. | | | | | |
| | 1890 | 40 | 22 | 59 | 82 | 53 | 56 | Morrow | 4.9 miles WSW. of Marengo, Morrow Co. | 3.1 | 3.1 | | | 0.1 |
| | 1900 | 40 | 24 | 12 | 82 | 54 | 45 | Morrow | 5.4 miles W. of Marengo, Morrow Co. | 1.6 | 1.4 | | | 0.7 |
| | 1910 | 40 | 28 | 48 | 82 | 48 | 25 | Morrow | 1.5 miles E. by N. of Fulton, Morrow Co. | 7.7 | 5.3 | | 5.6 | |
| OKLAHOMA | 1890 | 35 | 18 | 58 | 96 | 28 | 1 | Seminole | 5.0 miles WSW. of Bearden, Okfuskee Co. | | | | | |
| | 1900 | 35 | 30 | 25 | 96 | 57 | 32 | Lincoln | 3.3 miles W. of Meeker, Lincoln Co. | 30.7 | 13.2 | | | 27.7 |
| | 1910 | 35 | 28 | 19 | 97 | 5 | 28 | Lincoln | 3.0 miles NNE. of McLoud, Pottawatomie Co. | 7.9 | | 2.4 | | 7.5 |
| OREGON | 1880 | 44 | 39 | 37 | 122 | 18 | 0 | Linn | 9.1 miles WSW. of Detroit, Marion Co. | | | | | |
| | 1890 | 44 | 46 | 13 | 122 | 0 | 9 | Marion | 7.8 miles ENE. of Detroit, Marion Co. | 16.5 | 7.6 | | 14.7 | |
| | 1900 | 44 | 55 | 58 | 121 | 56 | 0 | Clackamas | 18.0 miles NE. by N. of Detroit, Marion Co. | 11.7 | 11.2 | | 3.4 | |
| | 1910 | 44 | 52 | 12 | 122 | 12 | 4 | Marion | 10.8 miles NNW. of Detroit, Marion Co. | 13.9 | | 4.3 | | 13.2 |
| PENNSYLVANIA | 1880 | 40 | 19 | 55 | 77 | 11 | 2 | Perry | 0.8 mile WNW. of Shermans Dale, Perry Co. | | | | | |
| | 1890 | 40 | 19 | 18 | 77 | 13 | 53 | Perry | 3.2 miles W. by S. of Shermans Dale, Perry Co. | 2.6 | | 0.7 | | 2.5 |
| | 1900 | 40 | 18 | 0 | 77 | 16 | 3 | Perry | 3.3 miles SE. of Landisburg, Perry Co. | 2.4 | | 1.5 | | 1.9 |
| | 1910 | 40 | 17 | 35 | 77 | 19 | 37 | Perry | 3.4 miles SSW. of Landisburg, Perry Co. | 3.1 | | 0.5 | | 3.1 |
| RHODE ISLAND | 1880 | 41 | 46 | 14 | 71 | 27 | 40 | Providence | 4.1 miles SW. by S. of Providence P. O., Providence Co. | | | | | |
| | 1890 | 41 | 46 | 46 | 71 | 27 | 49 | Providence | 3.7 miles SW. of Providence P. O., Providence Co. | 0.6 | 0.6 | | | 0.1 |
| | 1900 | 41 | 47 | 5 | 71 | 27 | 42 | Providence | 3.4 miles SW. of Providence P. O., Providence Co. | 0.4 | 0.4 | | 0.1 | |
| | 1910 | 41 | 47 | 24 | 71 | 27 | 40 | Providence | 3.1 miles SW. by W. of Providence P. O., Providence Co. | 0.4 | 0.4 | | 0.02 | |
| SOUTH CAROLINA | 1880 | 33 | 58 | 47 | 80 | 58 | 46 | Richland | 3.4 miles SE. by E. of Columbia, Richland Co. | | | | | |
| | 1890 | 33 | 59 | 12 | 80 | 58 | 50 | Richland | 3.2 miles ESE. of Columbia, Richland Co. | 0.5 | 0.5 | | | 0.1 |
| | 1900 | 34 | 0 | 18 | 80 | 59 | 49 | Richland | 1.3 miles E. by N. of Columbia, Richland Co. | 1.6 | 1.3 | | | 0.9 |
| | 1910 | 34 | 2 | 2 | 81 | 4 | 1 | Richland | 3.3 miles NW. of Columbia, Richland Co. | 4.5 | 2.0 | | | 4.0 |
| SOUTH DAKOTA | 1880 | 43 | 59 | 28 | 98 | 18 | 4 | Sanborn | 5.0 miles SSW. of Woonsocket, Sanborn Co. | | | | | |
| | 1890 | 44 | 16 | 52 | 98 | 24 | 26 | Beadle | 1.5 miles S. by E. of Virgil, Beadle Co. | 20.7 | 20.0 | | | 5.3 |
| | 1900 | 44 | 21 | 20 | 98 | 25 | 9 | Beadle | 10.0 miles W. by S. of Huron, Beadle Co. | 5.1 | 5.1 | | | 0.6 |
| | 1910 | 44 | 19 | 48 | 98 | 50 | 6 | Hand | 0.9 mile NE. of Danforth, Hand Co. | 20.6 | | 1.8 | | 20.5 |
| TENNESSEE | 1880 | 35 | 50 | 9 | 86 | 38 | 37 | Williamson | 4.6 miles SE. of Arrington, Williamson Co. | | | | | |
| | 1890 | 35 | 50 | 7 | 86 | 35 | 58 | Rutherford | 5.4 miles NW. by N. of Rockvale, Rutherford Co. | 2.5 | | 0.03 | 2.5 | |
| | 1900 | 35 | 50 | 6 | 86 | 36 | 19 | Rutherford | 5.6 miles NW. of Rockvale, Rutherford Co. | 0.3 | | 0.02 | | 0.3 |
| | 1910 | 35 | 49 | 16 | 86 | 33 | 47 | Rutherford | 4.5 miles W. of Overall, Rutherford Co. | 2.6 | | 1.0 | 2.4 | |
| TEXAS | 1880 | 31 | 20 | 50 | 96 | 38 | 30 | Limestone | 6.4 miles SW. of Thornton, Limestone Co. | | | | | |
| | 1890 | 31 | 26 | 11 | 96 | 50 | 52 | Falls | 3.0 miles WSW. of Otto, Falls Co. | 13.7 | 6.2 | | | 12.2 |
| | 1900 | 31 | 28 | 35 | 96 | 52 | 26 | Falls | 4.5 miles NNW. of Otto, Falls Co. | 3.2 | 2.8 | | | 1.5 |
| | 1910 | 31 | 31 | 23 | 97 | 15 | 14 | McLennan | 7.0 miles WSW. of Waco, McLennan Co. | 22.6 | 3.2 | | | 22.4 |
| UTAH | 1880 | 40 | 13 | 56 | 111 | 54 | 30 | Utah | 26.6 miles W. by S. of Provo, Utah Co. | | | | | |
| | 1890 | 40 | 18 | 53 | 111 | 46 | 47 | Utah | 4.6 miles SSE. of American Fork, Utah Co. | 8.9 | 5.7 | | 6.8 | |
| | 1900 | 40 | 16 | 2 | 111 | 45 | 29 | Utah | 4.7 miles WNW. of Provo, Utah Co. | 3.5 | | 3.3 | 1.1 | |
| | 1910 | 40 | 23 | 6 | 111 | 47 | 46 | Utah | 1.4 miles ENE. of American Fork, Utah Co. | 8.3 | 8.1 | | | 2.0 |
| VERMONT | 1880 | 44 | 1 | 45 | 72 | 43 | 5 | Washington | 3.8 miles S. by E. of Roxbury P. O., Washington Co. | | | | | |
| | 1890 | 44 | 2 | 38 | 72 | 42 | 48 | Washington | 3.0 miles SE. by S. of Roxbury P. O., Washington Co. | 1.0 | 1.0 | | 0.2 | |
| | 1900 | 44 | 3 | 18 | 72 | 39 | 1 | Orange | 2.0 miles E. by N. of Brookfield P. O., Orange Co. | 3.2 | 0.8 | | 3.1 | |
| | 1910 | 44 | 3 | 0 | 72 | 44 | 56 | Washington | 2.6 miles S. by W. of Roxbury P. O., Washington Co. | 4.9 | | 0.3 | | 4.9 |

CENTER OF POPULATION OF EACH STATE: 1880 TO 1910—Continued.

| STATE. | Census year. | North latitude. | West longitude. | APPROXIMATE LOCATION, BY IMPORTANT TOWNS. | | MOVEMENT IN MILES. | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Country. | Nearest city or town. | Actual distance. | North. | South. | East. | West. |
| | | ° ′ ″ | ° ′ ″ | | | | | | | |
| VIRGINIA | 1880 | 37 29 34 | 78 29 51 | Buckingham | 3.2 miles NNE. of Arcanum, Buckingham Co. | | | | | |
| | 1890 | 37 28 31 | 78 33 29 | Buckingham | 2.9 miles NW. of Arcanum, Buckingham Co. | 3.5 | | 1.2 | | 3.3 |
| | 1900 | 37 26 19 | 78 32 54 | Buckingham | 1.9 miles W. by S. of Arcanum, Buckingham Co. | 2.5 | | 2.5 | 0.5 | |
| | 1910 | 37 25 5 | 78 33 58 | Buckingham | 3.5 miles SW. of Arcanum, Buckingham Co. | 1.7 | | 1.4 | | 1.0 |
| WASHINGTON | 1880 | 47 5 32 | 120 36 29 | Kittitas | 4.3 miles ENE. of Thorp, Kittitas Co. | | | | | |
| | 1890 | 47 15 44 | 120 52 30 | Kittitas | 5.8 miles ENE. of Roslyn, Kittitas Co. | 17.2 | 11.7 | | | 12.6 |
| | 1900 | 47 19 50 | 120 46 35 | Kittitas | 7.8 miles NW. of Liberty, Kittitas Co. | 6.6 | 4.7 | | 4.6 | |
| | 1910 | 47 23 6 | 121 4 16 | Kittitas | 12.7 miles NNW. of Roslyn, Kittitas Co. | 12.0 | 3.8 | | | 11.4 |
| WEST VIRGINIA | 1880 | 38 53 20 | 80 37 47 | Braxton | 2.5 miles NNE. of Burnsville, Braxton Co. | | | | | |
| | 1890 | 38 49 59 | 80 41 26 | Braxton | 2.7 miles SW. of Burnsville, Braxton Co. | 5.1 | | 3.9 | | 3.3 |
| | 1900 | 38 48 7 | 80 44 22 | Braxton | 1.4 miles W. by S. of Delta or Braxton P. O., Braxton Co. | 3.3 | | 2.1 | | 2.6 |
| | 1910 | 38 45 32 | 80 49 12 | Braxton | 1.8 miles NW. of Chapel, Braxton Co. | 5.2 | | 3.0 | | 4.3 |
| WISCONSIN | 1880 | 43 44 57 | 89 17 6 | Marquette | 3.8 miles SE. of Montello, Marquette Co. | | | | | |
| | 1890 | 43 53 27 | 89 18 22 | Marquette | 2.3 miles W. of Germania, Marquette Co. | 9.9 | 9.8 | | | 1.1 |
| | 1900 | 43 57 29 | 89 18 43 | Marquette | 5.1 miles W. by S. of Neshkoro, Marquette Co. | 4.6 | 4.6 | | | 0.3 |
| | 1910 | 43 56 53 | 89 14 10 | Marquette | 2.2 miles SW. of Neshkoro, Marquette Co. | 3.9 | | 0.7 | 3.8 | |
| WYOMING | 1880 | 42 10 48 | 106 39 14 | Carbon | 4.7 miles E. of Leo, Carbon Co. | | | | | |
| | 1890 | 42 24 46 | 106 36 27 | Carbon | 12.3 miles NNW. of Shirley, Carbon Co. | 16.3 | 16.1 | | 2.4 | |
| | 1900 | 42 32 14 | 106 52 39 | Natrona | 7.8 miles W. by S. of Alcova, Natrona Co. | 16.3 | 8.6 | | | 13.8 |
| | 1910 | 42 42 0 | 107 0 7 | Natrona | 6.8 miles SE. of Oilcity, Natrona Co. | 12.9 | 11.2 | | | 6.4 |

## LARGEST MOVEMENT.

| STATE. | DECADE. | MOVEMENT IN DEGREES. | | | | MOVEMENT IN MILES. | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | North. | South. | East. | West. | Actual distance. | North. | South. | East. | West. |
| | | ° ′ ″ | ° ′ ″ | ° ′ ″ | ° ′ ″ | | | | | |
| California | 1880 to 1890 | | 0 30 20 | 0 25 22 | | 41.9 | | 34.9 | 23.1 | |
| Oklahoma | 1890 to 1900 | 0 11 27 | | | 0 29 31 | 30.7 | 13.2 | | | 27.7 |
| North Dakota | 1900 to 1910 | | 0 1 8 | | 0 57 20 | 44.7 | | 1.3 | | 44.7 |
| California | 1880 to 1910 | | 1 13 26 | 0 56 19 | | 99.1 | | 84.4 | 51.9 | |

## SMALLEST MOVEMENT.

| | | ° ′ ″ | ° ′ ″ | ° ′ ″ | ° ′ ″ | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Massachusetts | 1880 to 1890 | | | 0 0 5 | | 0.1 | | | 0.1 | |
| Massachusetts | 1890 to 1900 | | 0 0 11 | 0 0 2 | | 0.2 | | 0.2 | 158 ft. | |
| Delaware | 1900 to 1910 | 0 0 14 | | | 0 0 6 | 0.3 | 0.3 | | | 211 ft. |
| Rhode Island | 1880 to 1910 | 0 1 10 | | | | 1.3 | 1.3 | | | |

## LARGEST VARIATIONS.

| | | ° ′ ″ | ° ′ ″ | ° ′ ″ | ° ′ ″ | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Arizona | 1880 to 1890 | | 0 1 45 | | 0 0 7 | 2.0 | | 2.0 | | 0.1 |
| | 1890 to 1900 | 0 18 29 | | 0 9 41 | | 23.2 | 21.2 | | 9.3 | |
| | 1900 to 1910 | | 0 10 2 | 0 16 20 | | 19.5 | | 11.5 | 15.7 | |
| | 1880 to 1910 | 0 7 42 | | 0 25 54 | | 26.4 | 8.9 | | 24.9 | |
| Kansas | 1880 to 1890 | | 0 3 10 | | 0 26 53 | 24.6 | | 3.6 | | 24.3 |
| | 1890 to 1900 | | 0 0 36 | 0 24 39 | | 22.3 | | 0.7 | 22.3 | |
| | 1900 to 1910 | | 0 2 54 | | 0 5 20 | 6.6 | | 3.3 | | 5.7 |
| | 1880 to 1910 | | 0 6 40 | | 0 8 34 | 10.9 | | 7.7 | | 7.7 |
| Nevada | 1880 to 1890 | | 0 9 46 | | 0 2 24 | 11.4 | | 11.2 | | 2.1 |
| | 1890 to 1900 | 0 19 41 | | 0 2 43 | | 25.1 | 22.6 | | 11.0 | |
| | 1900 to 1910 | | 0 34 48 | 0 16 5 | | 42.4 | | 40.0 | 14.2 | |
| | 1880 to 1910 | | 0 24 53 | 0 26 4 | | 36.8 | | 28.6 | 23.1 | |
| New Jersey | 1880 to 1890 | 0 11 31 | | 0 0 47 | | 13.2 | 13.2 | | 0.7 | |
| | 1890 to 1900 | | 0 9 25 | 0 0 37 | | 10.8 | | 10.8 | 0.5 | |
| | 1900 to 1910 | 0 1 30 | | 0 3 17 | | 3.4 | 1.7 | | 2.9 | |
| | 1880 to 1910 | 0 3 36 | | 0 4 41 | | 5.8 | 4.1 | | 4.1 | |

CENTER OF POPULATION OF STATES.

The center of population of each of the states has never been computed or published by the Census Bureau at any census, but, in response to numerous requests for such data, the location of the center of population of each state has been computed, commencing with the Tenth Census, 1880. The direction of the movement of the population of each state is shown during the last 30 years, with the exception of the state of Oklahoma. The territory which now comprises this state was not open to settlement by the whites in 1880, but was allotted to the Indians and known as the Indian Territory; no returns were made of its population at the Tenth Census, so that it is not possible to compute the center of its population for that date, but the centers have been figured for 1890, 1900, and 1910 for Oklahoma and the Indian Territory combined.

Plates Nos. 119 to 132 are made up of a series of small sketch maps showing the location of the center of population in each state. Its movement, therefore, can be readily followed on the map and its geographic location in relation to the nearest towns and railroad centers can be ascertained.

From 1900 to 1910 the center of population of the United States, exclusive of its outlying possessions, moved west and north. A comparison of the movements of the centers of population of the states during the same decade brings out the fact that the centers of 20 states moved north, and for 28 states the movement was south. The centers of population of 22 of these states moved east and of 26 moved west. The movement of the center of population of each state does not, therefore, coincide with the movement of the center of population of the entire United States.

As an analysis of the movement of the center of population for each state was deemed impracticable, only a brief description is given of the movement for a few of the states in which the variation of the movement of the center presents some exceptional features. The center of population of California from 1880 to 1890 advanced 34.9 miles south and 23.1 miles east, an actual distance of 41.9 miles; this was the greatest advance made during that decade in any state. Oklahoma held this distinction when the movement of the center from 1890 to 1900 was 30.7 miles, the north movement 13.2 miles, and the west movement 27.7 miles. The greatest movement from 1900 to 1910 was made in North Dakota, the distance the center moved being 44.7 miles, made up of a south movement of 1.3 miles and a west movement of 44.7 miles.

The greatest distance the center of population of any state advanced during the 30 years from 1880 to 1910 was in California. The center moved in a southeasterly direction 99.1 miles, the point in 1880 being located 3.3 miles east by south of Moorland, San Joaquin County, and in 1910, 9.5 miles west southwest of Mendota, Fresno County. It is well also to note those states in which the least change occurred in the location of the center. The center of population of Massachusetts from 1880 to 1890 advanced one-tenth of a mile east; there was no north or south movement; from 1890 to 1900 there was a south movement of two-tenths of a mile and a movement east of 158 feet.

In Delaware, from 1900 to 1910, the movement was three-tenths of a mile north and 211 feet west. The smallest change in the location of the center made during the period from 1880 to 1910 was in Rhode Island; its center of population during the 30 years moved 1.3 miles directly north. The center of population of this state in 1880 was located 4.1 miles southwest by south of Providence and in 1910 it was 3.1 miles southwest by west of Providence.

The center of population of New York state in 1880 was 3 miles northwest by west of Craigeclare, Sullivan County, and in 1910 it was seven-tenths of a mile northwest by west of Forestine, in the same county. The distance traversed was 6.5 miles from 1880 to 1890; 9.5 miles from 1890 to 1900; and 11 miles from 1900 to 1910. The movement was south and east from 1880 to 1890 and from 1890 to 1900, and from 1900 to 1910, south and west.

Although Texas has the greatest area of any state, the movements of the center were not large, as the development in all parts of the state has been uniform. The center in 1880 was located 6.4 miles southwest of Thornton, Limestone County; in the 30 years, to 1910, it had shifted to 7 miles west-southwest of Waco, McLennan County. The movement from 1880 to 1890 was 13.7 miles; from 1890 to 1900, 3.2 miles; and from 1900 to 1910, 22.6 miles, the advance being north and west at each census.

The states which show the greatest variation in the location of the center are Arizona, Kansas, Nevada, and New Jersey. For Arizona the movement shown in 1890 was 2 miles south and 1 mile west; from 1890 to 1900 it reversed the direction to 21.2 miles north and 9.3 miles east, an actual distance of 23.2 miles. During the decade from 1900 to 1910 it moved 11.5 miles south and 15.7 miles east, the entire movement from 1880 to 1910 being 8.9 miles north and 24.9 miles east. For Kansas, while the movement was south at each census, from 1880 to 1890 it advanced westward 24.3 miles; from 1890 to 1900, 22.3 miles east; while from 1900 to 1910 the direction again changed to west, 5.7 miles, a net movement during the 30 years of 7.7 miles south and 7.7 miles west. From 1880 to 1890 the movement in Nevada was south 11.2 miles and west 2.1 miles; from 1890 to 1900 it changed, going north 22.6 miles and east 11 miles. The development of the mines between 1900 and 1910 in the southeastern portion of the state again changed the direction and produced the greatest advance at any decade, the

movement being 40 miles south and 14.2 miles east, an actual distance of 42.4 miles; during the 30 years from 1880 to 1910 the net movement was 36.8 miles south and east. New Jersey has also shown considerable change in the direction of the movement of its center of population. From 1880 to 1890 it was 13.2 miles north and seven-tenths of a mile east; in the next decade, from 1890 to 1900, the movement was 10.8 miles south and five-tenths of a mile east; from 1900 to 1910 it again moved north 1.7 miles and east 2.9 miles. Its entire movement from 1880 to 1910 was 4.1 miles both north and east.

The movement of the center of population of Alabama has varied in direction at each decade. From 1880 to 1890 it moved 4 miles north and 1.5 miles west; from 1890 to 1900, 1.6 miles south and 2.4 miles east; and from 1900 to 1910, 1 mile north and two-tenths of a mile west. Connecticut shows a steady movement south and west, the distance from 1880 to 1890 being 1.9 miles; from 1890 to 1900, 1 mile; and from 1900 to 1910, 1.3 miles.

In Illinois the effect of the growth of Chicago on the center of population is evident from its northeast movement at each census, the actual distance from 1880 to 1890 being 18.4 miles; from 1890 to 1900, 10.8 miles; and from 1900 to 1910, 6.4 miles.

There were only 12 states in which the center of population moved in the same general direction at each census from 1880 to 1910. These states are as follows: In the state of Illinois it moved north and east; for California, Georgia, and New Hampshire the movement was south and east; for Connecticut, Mississippi, North Carolina, Pennsylvania, and West Virginia the movement was south and west; and for Maryland, South Carolina, and Texas the movement was north and west.

It is a matter of interest to study the movement of the center of population of the states in each geographic division, which reveals the fact that in not a single division was the movement of the center in the same general direction, showing that local conditions in each state affect the movement of population. In the New England division the centers of two states moved north and east, two moved south and east, and two moved south and west. In the Middle Atlantic division the center of population of New Jersey moved north and east, while for New York and Pennsylvania the movement was south and west. Of the five states in the East North Central division two moved north and east, two moved south and east, and one moved north and west. In the West North Central division the center of one state moved north and east, one moved south and east, three moved south and west, and two moved north and west. In the South Atlantic division the centers of two states moved south and east, three moved south and west, and three moved north and west. Of the four states in the East South Central division one moved north and east, one moved south and east, one moved south and west, and one moved north and west. Of the West South Central division the center of population of one state moved south and east, of two, south and west, and of one, north and west. In the Mountain division the centers of two states moved north and east, in three it moved south and east, in one, south and west, and in two it moved north and west. In the Pacific division the center of one state moved south and east, for one it moved south and west, and for one it moved north and west.

A comparison of the maps on which are located the centers of population of the states will bring to our attention the fact that in only nine states are the centers of population near the state capitals. The nine states are Arkansas, Delaware, Indiana, Missouri, Montana, New Hampshire, Rhode Island, South Carolina, and Vermont. As the center of population is the point from which all the population is supposed to be equidistant, if it were necessary to assemble all the inhabitants of a state at one place, each individual to travel in a direct line from his residence to the meeting place, the center of population is the point they could all reach with the minimum aggregate of travel.

### CENTER OF FOREIGN-BORN POPULATION.

The movement of the center of the total population from census to census is the result of all migration, both interstate and foreign. In view of the change in the character of the foreign immigration and the large proportion of immigrants who are settling in the cities, the location of the center of foreign-born population and its movement from decade to decade is a matter of great interest.

On the map on Plate No. 133 the position of the center of total population at each census from 1790 to 1910 is indicated, also the location of the center of the foreign-born population from 1880 to 1910. The location of the center of population and the median point were discussed on pages 26 and 29. For the first time in a census report the center of the foreign-born population has been computed and located on a map.

In 1880 the center of the foreign-born population was located in latitude 41° 49′ 52″, longitude 83° 44′ 17″, in Monroe County, Michigan, approximately 15.5 miles northwest of Toledo, Ohio.

In 1890 the center had advanced almost two degrees to the west. The opening of Oklahoma and the increase in the population of Texas drew the point to the south, when it was located in latitude 41° 22′ 05″, longitude 85° 23′ 17″, in Noble County, Indiana, approximately 54.5 miles southeast of South Bend.

The falling off in the class of immigrants who settled in the far Western states is indicated by the change in the direction of the movement from 1890 to 1900, for in 1900 the center of the foreign-born population was

located in Defiance County, Ohio, 18 miles northwest of Defiance, being in latitude 41° 22′ 48″, almost the same latitude as in 1890, and longitude 84° 43′ 21″, nearly a degree farther east. The eastern movement was due, as previously stated, to the newer immigration that settled principally in the large cities of the East.

In 1910 the center of foreign-born population was again located in Defiance County, Ohio, about 10.5 miles southwest of Defiance, in latitude 41° 17′ 24″, showing a decided movement south, and in longitude 84° 36′ 7″, showing a further advance toward the east, but not nearly as great as during the previous decade. This was undoubtedly due to the increase in the foreign-born population in Washington, Oregon, and California, which, on account of the great distance from the center, have relatively a much greater weight than the foreign born of the Eastern and Middle states. The following table gives the location of the center of foreign-born population at each census, and its movement in miles, also the location in relation to a city:

CENTER OF FOREIGN-BORN POPULATION: 1880 TO 1910.

| CENSUS YEAR | North latitude. | | | West longitude. | | | Approximate location by important towns. | Movement in miles. |
|---|---|---|---|---|---|---|---|---|
| | ° | ′ | ″ | ° | ′ | ″ | | |
| 1880 | 41 | 49 | 52 | 83 | 44 | 17 | In Monroe County, Mich., 15.5 miles northwest of Toledo, Ohio | |
| 1890 | 41 | 22 | 05 | 85 | 23 | 17 | In Noble County, Ind., 54.5 miles southeast of South Bend, Ind | 93 miles west-southwest. |
| 1900 | 41 | 22 | 48 | 84 | 43 | 21 | In Defiance County, Ohio, 18 miles northwest of Defiance, Ohio | 34.5 miles east. |
| 1910 | 41 | 17 | 24 | 84 | 36 | 07 | In Defiance County, Ohio, 10.5 miles southwest of Defiance, Ohio. | 8.5 miles southeast. |

CENTER OF NEGRO POPULATION.

The question of negro migration has always been one of great interest, and on the map, Plate No. 134, the location of the center of negro population of continental United States is indicated by a star. The center of negro population was computed for 1790 and for each census from 1880 to 1910, no computations being made for the censuses from 1800 to 1870, inclusive. The movement of the center of negro population is an accurate index of the direction of negro migration. In 1790 the center of negro population was located in Dinwiddie County, Virginia, 25 miles west-southwest of Petersburg, in latitude 37° 4′ 8″ north, and longitude 77° 51′ 21″ west. In 1880 the center was located in northwestern Georgia, 10.4 miles east of Lafayette, in the eastern part of Walker County, latitude 34° 42′ 14″ north, longitude 85° 6′ 56″ west, showing a movement in a southwesterly direction across North Carolina and a part of Georgia of approximately 443 miles, or an average of 49 miles for each decade. From 1880 to 1890 the southwesterly movement of the center was continued, and it advanced 20.5 miles, to a point in Walker County, Georgia, 15.7 miles west-southwest of Lafayette, latitude 34° 36′ 18″ north, longitude 85° 26′ 49″ west, about 4 miles east of the Alabama line. From 1890 to 1900 its movement was greatly retarded, and it advanced only 9.5 miles southwest, across the Alabama-Georgia state line into Dekalb County, Alabama, 10.7 miles northeast of Fort Payne, in northeastern Alabama, about 4 miles west of the Georgia line, latitude 34° 31′ 16″ north, longitude 85° 34′ 35″ west. In 1910 the center of negro population was located 5.4 miles north-northeast of Fort Payne, Dekalb County, Alabama, in latitude 34° 30′ 0″ north, and longitude 85° 40′ 43″ west, its movement for the decade being 5.8 miles west-southwest. Its movement south has evidently been greatly retarded by the migration of the negroes to the Northern and Eastern states. A study of the movement from 1790 to 1910 shows a steady advance in a southwesterly direction, but the distance covered at each decade is much smaller than the movement at the previous decade; if this decrease continues during the next decade, it is probable that the direction will be reversed and that the center in 1920 will retrograde toward the North and East. In the following table is given the latitude and longitude of the centers of negro population at each census, also the distance moved during the decade, and the location of the center relative to a city or town:

CENTER OF NEGRO POPULATION: 1790 AND 1880 TO 1910.

| CENSUS YEAR. | North latitude. | | | West longitude. | | | Approximate location by important towns. | Movement in miles. |
|---|---|---|---|---|---|---|---|---|
| | ° | ′ | ″ | ° | ′ | ″ | | |
| 1790 | 37 | 4 | 8 | 77 | 51 | 21 | 25 miles west-southwest of Petersburg, Dinwiddie County, Virginia. | |
| 1880 | 34 | 42 | 14 | 85 | 6 | 56 | 10.4 miles east of Lafayette, Walker County, Georgia | 443 miles southwest.[1] |
| 1890 | 34 | 36 | 18 | 85 | 26 | 49 | 15.7 miles southwest of Lafayette, Walker County, Georgia | 20.5 miles southwest. |
| 1900 | 34 | 31 | 16 | 85 | 34 | 35 | 10.7 miles northeast of Fort Payne, Dekalb County, Alabama | 9.5 miles southwest. |
| 1910 | 34 | 30 | 0 | 85 | 40 | 43 | 5.4 miles north-northeast of Fort Payne, Dekalb County, Alabama. | 5.8 miles west-southwest. |

[1] Movement from 1790 to 1880.

CENTERS OF URBAN AND RURAL POPULATION: 1910.

On Plate No. 133, in addition to the centers of total and foreign-born population, are indicated the location of the centers of urban and rural population in 1910. The center of urban population has never been computed at any previous census and it was deemed of interest to do so in 1910. Not only was the center of urban population located, but the center of the rural population was also ascertained—that is, the population excluding all places with 2,500 or more inhabitants in 1910, as well as the New England towns of that size. The center of urban population is located in latitude 40° 16′ 12″ and longitude 83° 59′ 22″ in Champaign County, Ohio, 15.3 miles northeast of Piqua, Miami County, Ohio.

The center of rural population is located in latitude 38° 12′ 36″ and longitude 88° 39′ 3″ in Hamilton County, Illinois, 16.7 miles southeast of Mount Vernon, Jefferson County, Illinois.

As the centers of urban and rural population were not computed for previous censuses, no statement can be made as to the distance or direction in which these centers moved from 1900 to 1910, or during any previous decade.

The location of these centers shows strikingly the preponderance of urban population in the northeastern portion of the United States, the center of urban population being approximately 145 miles north and 250 miles east of the center of rural population. In a direct line the center of urban population is 289 miles northeast from the center of rural population.

URBAN AND RURAL POPULATION.

The change in classification of urban population from census to census renders it impossible to make a fair comparison of the growth from 1790 to 1910, as no tables have been made giving the population of the United States at each enumeration outside of cities with 2,500 or more inhabitants, including New England towns of that size. The Census Bureau classified as urban population in 1910, that part of the population in municipal corporations, including New England towns, with 2,500 or more inhabitants. At previous censuses the urban element was considered as that residing in places with 8,000 or more inhabitants, not including New England towns of that size. The diagram comparing the increase in urban population from 1790 to 1910 is made on the basis of 8,000 inhabitants or more, and is shown as Diagram 1, Plate No. 141.

Diagram 5 on Plate No. 135, urban and rural population, 1880 to 1910, represents the proportion of urban population in places of 2,500 or more inhabitants, including New England towns of that size, at each census from 1880 to 1910. In 1880, of the total population of the United States, there were in municipalities with 2,500 or more population 14,772,438; in 1890 this element had grown to 22,720,223; in 1900 it was 30,797,185; and in 1910, 42,623,383 persons were in municipalities, forming 46.3 per cent of the total population of the United States.

Diagram 4 on Plate No. 135 compares the per cent urban in the total population, by states, for 1910 and 1900, every state showing an increase. The states with the greatest per cent of increase are Oklahoma and Idaho, each increasing over 200 per cent.

Two maps on Plate No. 136 indicate the per cent which the urban forms of the total population of each state in 1910 and 1900, the increase being especially noticeable in all parts of the country, no state showing a decrease in the urban element.

The diagram on Plate No. 137 gives the per cent of urban in the total population of each state, from 1880 to 1910. There were 14 states in 1910 in which more than half the population was living in territory classified as urban. The greatest per cent urban in any state was in Rhode Island, which had 96.7 per cent, while North Dakota, with 11 per cent, had the smallest proportion of its people in urban communities.

Maps 1 and 2 on Plate No. 138 show the per cent of increase in urban and rural population, by states, from 1900 to 1910. The greatest per cent of increase in both classes is in the states west of the Mississippi River. This is especially true of the increase in rural population.

Plate No. 139 indicates, by the length of the bars, the growth in population of 36 of the largest cities in the United States from 1790 to 1910, or, in the case of a number of the cities, from the earliest censuses at which they were returned. The cities are arranged in the order of their population as returned at the Thirteenth Census. The diagram brings out strikingly the rapid growth of all the cities represented. The phenomenal growth of New York, Chicago, and Philadelphia is especially noticeable. The population in 1910 of these 36 cities formed 20.3 per cent of the total population of the United States, and, if the rate of growth in both the United States and these cities continues until another enumeration, the probabilities are that the population of these large cities will be about 25 per cent of the population of the entire United States.

Plate No. 140 represents, by the difference in the shade lines, the proportion of the population in each county in municipalities with 2,500 or more inhabitants in 1910. The towns in New England with 2,500 or more inhabitants were considered as urban and classed with the urban population. At previous censuses, in computing the urban population, the New England towns were excluded and counted as rural. The darkest shade represents those counties in which 75 per cent or more of the population was urban, and are found principally in New England, with a few scattered areas near the large cities in other states. Massachusetts is almost entirely covered, showing that there

are but few counties in that state in which the urban element does not form more than 75 per cent of the population. Connecticut and Rhode Island also fall in the highest group. The small areas of this highest shade indicate the location of the counties in which are found the principal cities. The heavy shading of the New England and Middle Atlantic states shows the large proportion of the urban population in these divisions. The white area, representing no urban population, covers practically one-third of the land surface of the United States, indicating that farming is still the leading industry.

Diagram 3 on Plate No. 141 shows the population in 1910 and 1900 of cities having, in 1910, 100,000 inhabitants or more. The great population of New York, Chicago, and Philadelphia, as compared with the other cities, is well brought out by the difference in the length of the bars. The total population of all the cities with 100,000 population in 1910 was 20,302,138, and of New York, Chicago, and Philadelphia, 8,501,174, or 41.9 per cent of the total for the 50 cities. Every city of this class reported an increase in population from 1900 to 1910, New York having the largest numerical increase and Birmingham the highest percentage of increase.

### COLOR OR RACE, NATIVITY, AND PARENTAGE.

The composition of the population of the United States is of vital importance and Diagram 2 on Plate No. 141 is of great interest, as it shows the principal elements of the population in both urban and rural communities, by geographic divisions, in 1910.

On Plate No. 142 the population of the United States is represented by circles, proportionate to the number returned at each census, from 1850 to 1910, the divisions of the circle indicating the proportion of the population in each of the principal classes. The great increase in the foreign element, including both foreign born and the native of foreign parentage, is brought out very clearly. The proportion of colored population is practically the same at each enumeration, but the proportion of the native white of native parentage has steadily decreased.

Diagram 1 on Plate No. 143, at the first glance, appears rather complicated but, on closer inspection, one can readily comprehend the actual proportions of the various elements of population in each of the geographic divisions in 1910. The heavy black portion shown in the South Atlantic, East South Central, and West South Central divisions represents their negro population, which forms 33.7 per cent in the South Atlantic, 31.5 per cent in the East South Central, and 22.6 per cent in the West South Central division. In the New England, Middle Atlantic, East North Central, and West North Central divisions the foreign element, shown by the heavy black and white portion of the bars, is much in evidence. Where the negro element is large the foreign element is small, and where the negro element is small the foreign element usually forms a considerable portion of the population. It is evident, therefore, that the foreign element does not locate in that portion of the country in which negroes form a large proportion of the population. Considering the natives of foreign or mixed parentage and the foreign born together, more than half of the New England and Middle Atlantic divisions are of foreign stock, the percentage in the Middle Atlantic division being 53.9 and in the New England division 59; in the East North Central division it is 44.8 per cent; in the West North Central, 41.5 per cent; in the Mountain division, 40 per cent; and in the Pacific division, 45.6 per cent. The negro and native white of native parents together form more than 88 per cent of the total population in the following divisions: In the South Atlantic division, 93.9 per cent; in the East South Central division, 96.3 per cent; and in the West South Central division, 88.3 per cent.

Diagram 2 on Plate No. 143 shows, by states, the distribution of the foreign-born population in 1910 and 1900. New York with 2,729,272 leads, Pennsylvania with 1,438,719 is second, Illinois with 1,202,560 is third, and Massachusetts with 1,051,050 is fourth. The diagram brings out the small proportion of the foreign element in the southern portion of the country, as compared with the northern portion.

Diagram 4 on Plate No. 141 presents the color or race, nativity, and parentage, of the population in those states having a fair proportion of their population Chinese, Japanese, and Indians in 1910 and 1900. Arizona had a larger per cent of Indians in its population than any other state, both in 1900 and in 1910. Although Oklahoma had a larger number, the Indians in Arizona formed a larger percentage of its population than the Indians did in any other state both in 1900 and in 1910. There were in 1910 a larger number of Chinese and Japanese in California, Oregon, and Washington than in any of the other states, although in Nevada they formed as large a proportion of the population as they did in Washington, but their numbers were comparatively small.

Diagram 3 on Plate No. 143 shows, by geographic divisions, the principal elements of the population in 1910 and 1900. The foreign-born whites formed a larger proportion of the population in 1910 than in 1900 in the New England, Middle Atlantic, East North Central, South Atlantic, and Pacific divisions, but a smaller proportion in the West North Central, East South Central, and Mountain divisions. The slight changes in the small percentages of foreign-born whites in the southern divisions, however, are not specially significant. The increase in the proportion of foreign-born whites was most marked in the Middle Atlantic division (from 21.4 per cent in 1900 to 25 per cent in 1910). The proportion was, however,

even higher in New England, although the increase from 1900 to 1910 (from 25.7 to 27.7 per cent), was less.

On Plate No. 144 the two diagrams represent the per cent of the population by principal elements, for each state, in 1910 and 1900. The great proportion of the foreign-born white element and the native whites of foreign or mixed parentage in a number of states, at both censuses, is brought out; it will also be noted that the proportion has decreased from 1900 to 1910 in a number of the states. In 1910 Rhode Island, with 32.8 per cent of its white population foreign born, leads in the proportion of that element. Combining the foreign born and native white of foreign or mixed parentage, Minnesota has the greatest proportion of the combined elements, with North Dakota second, the combination representing over 70 per cent of the population of those states at the Thirteenth Census. The state showing the smallest proportion of the foreign element both in 1900 and 1910 is North Carolina, closely followed by South Carolina, Georgia, and Mississippi.

The two diagrams on Plate No. 145 show the color or race, nativity, and parentage of the population in cities with 100,000 or more inhabitants for 1910 and 1900. In 1910 the city of Fall River, Mass., led with the largest proportion (86.3 per cent) of its population made up of foreign born and natives of foreign or mixed parentage; Lowell, Mass. (80.4 per cent), was second; and New York and Milwaukee third (each with 78.6 per cent). In 1900 Fall River had the greatest proportion (85.9 per cent) of the foreign element; Milwaukee (82.7 per cent) was second; and Lowell (77.9 per cent) third.

The cities with the greatest proportion of negroes, in 1910, were Memphis, Tenn. (40 per cent); Birmingham, Ala. (39.4 per cent); and Richmond, Va. (36.6 per cent), in the order named. In 1900 Memphis had the greatest proportion of negroes (48.8 per cent); with Washington, D. C. (31.1 per cent), second; and New Orleans (27.1 per cent), third. The city with the greatest proportion of native whites of native parentage in 1910 was Indianapolis, Ind. (64.5 per cent); with Columbus, Ohio (64.4 per cent), second; and Dayton, Ohio (62 per cent), third. In 1900 St. Joseph, Mo., had the greatest proportion of native whites of native parentage (66.9 per cent); with Columbus, Ohio (59.8 per cent), second; and Indianapolis, Ind. (57.8 per cent), third.

Plate No. 146 has two maps showing, by states, the per cent of native whites of native parentage in the white population, and the per cent of foreign-born whites in the total population, in 1910.

In the Southern states the white population is nearly all native of native parentage. In 1910 this element formed over 95 per cent of the population in eight of the states—North Carolina, South Carolina, Georgia, Tennessee, Mississippi, Alabama, Virginia, and Arkansas—North Carolina leading with 99 per cent, practically all of its white population being native of native parentage.

The lower percentages of native white of native parentage are found in the New England and Northwestern states. In 1910 Minnesota had only 27.9 per cent, North Dakota 28.5 per cent, and Wisconsin 32.9 per cent. In the New England states, Rhode Island had only 30 per cent of the white population native of native parentage, Massachusetts 33.2 per cent, and Connecticut and New York exactly the same proportion, 36 per cent. In these states less than two-fifths of the white population were native of native parentage. In addition, there are nine other states of the class where the natives of native parentage were less than half of the white population.

Map 2 shows the per cent of foreign-born whites in the total population in 1910. In Massachusetts, Rhode Island, Wisconsin, Minnesota, and North Dakota the proportion of foreign or mixed parentage exceeded the proportion of native whites of native parentage. In Rhode Island the foreign-born whites outnumbered the native whites of native parentage. The Southern states, which had the largest proportion of the population native white of native parentage, show the lowest proportion of foreign birth and of foreign or mixed parentage.

Map 1 on Plate No. 147 indicates in eight groups, by the character of the shading, the percentage of the native whites of foreign or mixed parentage in the total population in 1910. The heavy shading indicates the groups from 35 to 50 per cent, Minnesota having 45.3 per cent, Wisconsin 44.8 per cent, North Dakota 43.5 per cent, South Dakota 37.2 per cent, Rhode Island 35.9 per cent, and Utah 35.2 per cent of that element of the population. The states having the smallest proportion of native whites of foreign or mixed parentage are North Carolina, with 0.4 per cent, and South Carolina, with 0.7 per cent. The Southern states, with few exceptions, fall within the group with less than 5 per cent.

Map 2 indicates, in eight groups, by the character of the shading, the percentage of foreign-born whites and native whites of foreign or mixed parentage combined in the total population in 1910. The solid black, indicating 50 per cent or more, covers 13 states, while the next group, 35 to 50 per cent, also covers 13 states, and indicates that for 26 states 35 per cent or more of the population is of foreign birth or parentage. These 26 states have 53.3 per cent of the total population of the United States. The state with the lowest percentage is North Carolina, which has less than 1 per cent. All the states of the South Atlantic and East South Central divisions, except Delaware, Maryland, West Virginia, Florida, and Kentucky, also the District of Columbia, have less than 5 per cent of the foreign-born element in their population.

Plate No. 148 is shaded to indicate the counties having a higher percentage of native whites of native parentage to the total population in 1910 than in 1900; 74 per cent of the total number of counties had a larger percentage of native white of native parentage in 1910 than in 1900.

The map on Plate No. 149 also shows, by counties, the per cent of native whites of foreign or mixed parentage in the total population in 1910, the counties being shaded in groups, from less than 1 per cent, to the highest group, 50 per cent and over. The shaded areas on the map indicate where this element of the population is of importance. The highest group, 50 per cent and over, is found principally in Michigan, Wisconsin, Minnesota, North Dakota, and South Dakota. In three-fourths of the counties west of the Mississippi River the proportion of native whites of foreign or mixed parentage is over 15 per cent of the total population. As indicated on the state map, the county map shows that there are very few counties in the Southern states, east of the Mississippi River, which have more than 1 per cent of their population native white of foreign or mixed parentage, with the exception of Florida, and there are only a dozen counties in the entire area—that is, the states east of the Mississippi and south of the Ohio River and the states of Virginia and West Virginia—where the foreign element forms 5 per cent or more of their population.

The map on Plate No. 150 is shaded to indicate the counties which had a higher percentage of native whites of foreign or mixed parentage to the total population in 1910 than in 1900. The shaded areas on this map indicate that 29.9 per cent of the counties in the United States had a higher proportion of this element of the population in 1910 than in 1900.

The map on Plate No. 151 may be considered as indicating the proportion of the foreign element in 1910, as it includes not only the foreign-born whites but the native whites of foreign or mixed parentage. The densely shaded areas indicate the counties in which the foreign element forms more than 50 per cent of the population, such areas covering all of North Dakota and Connecticut and nearly the entire states of Massachusetts, Rhode Island, Wisconsin, and Minnesota. The absence of shading in the Southern states, except Florida and Texas, shows the small proportion of the foreign element in that section.

The map on Plate No. 152 is shaded to indicate the per cent of foreign-born whites in total population, by counties, in 1910. The groups of shading are the same as on the previous map and the areas covered by the heaviest shade are almost in the same position. The absence of shaded areas in nearly all of the Southern states indicates, as on the previous map, that the proportion of foreign population in that part of the country is very small.

Plates Nos. 153 to 184 comprise a series of maps, two for each state, except the Southern states, showing for each county the per cent of the foreign-born white in the total population and the per cent of native white of foreign or mixed parentage in the total population in 1910. The North Central states of Minnesota, Wisconsin, and North Dakota show the highest per cent of both the foreign-born white population and the native white of foreign or mixed parentage. As the foreign element was small, no maps were prepared for the states of Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia.

### NEGRO POPULATION.

The per cent of increase in the total population, white, and negro, from 1790 to 1910, is graphically presented on Diagram 2, Plate No. 135. The abnormal increase shown in the negro population from 1870 to 1880 is due, in a great measure, to the omission at the census of 1870 of a number of negroes in the South; in fact, the entire census of the South at the enumeration of the Ninth Census was defective, and this diagram points out the defect. The large decrease indicated from 1860 to 1870 is therefore not all accounted for by the loss during the Civil War, but is partly due to the defective census of 1870.

The map on Plate No. 185 presents, by states, the per cent distribution of the negroes in 1910, in seven groups, shaded as indicated in the legend. Mississippi and South Carolina have the highest per cent of negroes and are the only states with more than 50 per cent of their population negroes. The negroes form a very small per cent of the population, except in the South Atlantic, East South Central, and West South Central divisions, as indicated by the heavy shading.

Diagram 2 on Plate No. 185 indicates, by the length of the bars, the number of negroes in each state at the Twelfth and Thirteenth Censuses. Georgia leads, with 1,176,987, followed closely by Mississippi, with 1,009,487; Alabama being third, with 908,282; and South Carolina fourth, with 835,843, these states retaining their respective rank since 1900.

Diagram 3, on the same plate, shows the number of negroes in 1900 and 1910 in cities having 100,000 or more population in 1910. Washington leads, with 94,446; New York is second, with 91,709; New Orleans third, with 89,262; Baltimore fourth, with 84,749; and Philadelphia fifth, with 84,459; Memphis, with 52,441, Birmingham, with 52,305, and Atlanta, with 51,902, follow in order; these are the only cities in the United States with more than 50,000 negroes in 1910.

The per cent distribution of negroes in the total population in 1910, by counties, is indicated on the map on Plate No. 186, in eight groups, shaded according to the legend. The highest percentage is in the cotton-

producing sections of the South. South Carolina, Georgia, Alabama, and Mississippi have the largest number of counties in which negroes form more than 50 per cent of the population.

Plate No. 187 indicates, by shading, the counties having at least 1,000 negroes in 1910, in which there was a higher per cent of negroes in the total population in 1910 than in 1900. With the exception of a few widely scattered counties in the Northern states, the increase in negro population is confined almost entirely to the South Central and South Atlantic states.

The diagram on Plate No. 188 represents the proportion of negroes in the total population in each of the Southern states, from 1790 to 1910, or for each census at which they were returned. South Carolina had a larger proportion of negro population than any other state at each census from 1790 to 1890, but in 1900 the number of negroes in Mississippi had increased to 58.5 per cent, while in South Carolina the per cent had fallen to 58.4. In 1910 Mississippi had the highest percentage, 56.2, and South Carolina was second, with 55.2.

On the four maps on Plate No. 189 the light shading indicates the counties in the Southern states having at least 50 per cent of their population negroes in 1860, 1880, 1900, and 1910. The heavier shaded area indicates the counties having 75 per cent or more of their population negroes. The only states having counties so shaded are South Carolina, Georgia, Alabama, Florida, Mississippi, Arkansas, Louisiana, and Texas.

The per cent of negroes in the total population, by counties, in each of the Southern states in 1910, is indicated in seven groups, by the different shading, on Plates Nos. 190 to 200. The states having the greatest proportion of negroes in their population are Mississippi, 56.2 per cent, and South Carolina, 55.2 per cent. These states also have the counties with the largest percentage of negroes, Mississippi being first with 17 counties having more than 75 per cent negro, and 21 counties with 50 to 75 per cent negro; and South Carolina second, with 4 counties having over 75 per cent negro, and 29 counties with 50 to 75 per cent. Issaquena County, Mississippi, with 94.2 per cent, has the greatest proportion of negroes in any county in the United States, while Beaufort County, South Carolina, with 86.9 per cent negro, has the highest percentage in that state. There are also a number of counties in North Carolina, Alabama, and Louisiana that have a high percentage of negroes. Georgia has 66 counties in which this element forms more than 50 per cent of the population.

There were in the United States in 1910, 53 counties with 75 per cent and over of their population negro and 211 counties with 50 to 75 per cent of their population negro.

### INDIAN POPULATION.

Map 1 on Plate No. 201 shows the distribution of the Indian population of the United States, by states, in 1910, and Map 2 the proportion of full-bloods in the Indian population in 1910. The state of Oklahoma has the greatest number of Indians, as it comprises the area formerly known as the Indian Territory, and, while the proportion of the Indians to the total population is not as great as in a few counties in other states, it is due to the fact that the reservations were thrown open to settlement after the Indian lands were allotted and all available land occupied by white settlers. The growth of the white population from 172,554 in 1890 to 1,444,531 in 1910 is an evidence of the most rapid settlement of a territory in the history of the United States.

### SEX DISTRIBUTION.

Plate No. 202, map of the United States, presents, by the different shading, the proportion of males to females in 1910, by counties—that is, the county is taken as the unit. Females were in excess in a number of counties in the Eastern states, also in a few counties in the West, two in Utah, two in South Dakota, one in Kansas, and seven in Texas. Every state east of the Mississippi River, with the exception of Delaware, had one or more counties in which the females were in excess, while west of the Mississippi River there were only seven states that had any counties in which the females exceeded the males. In the states of Montana, Wyoming, and Nevada, in every county the males were in excess at least 20 per cent. This map is of great interest, as it indicates those portions of the country in which the males are in excess, also the states in which the females exceed the males.

Plate No. 203, Map 1, indicates the proportion of males to females in the total population at the Thirteenth Census, by states. The females are in excess in Massachusetts, Rhode Island, Maryland, District of Columbia, North Carolina, and South Carolina. In 1910 the states having the greatest proportion of males to females were Nevada, with 179.2, Wyoming with 168.8, and Montana with 152.1 males to each 100 females. The proportion for the United States is 106 males to each 100 females. The excess of males is due principally to the large foreign immigration, in which the males largely outnumber the females. The map brings out the fact that no geographic division east of the Mississippi River had, in 1910, more than 106 males to 100 females, the United States average, but in all of the western divisions the proportion is much higher, the Pacific division reaching a total of 129 males to 100 females. This is, undoubtedly, due to the migration of the native male population from the Eastern states to California, Oregon, and Washington. The sections which have been recently settled in that part of the country give more opportunity for the labor of men than of women.

Plate No. 204, Diagram 1, shows the number of males to 100 females in urban and rural communities in 1910,

by geographic divisions. The large proportion of males to females in the rural section of the Mountain and Pacific divisions is well brought out. In the New England, South Atlantic, and East South Central divisions, the females in urban areas, especially adjacent to the large cities, exceed the males, but in all divisions the males are in excess in the rural areas.

### AGE DISTRIBUTION.

Diagram 2, on Plate No. 203, distribution by age and sex of the total population by single years of age, presents very strikingly the irregularity in the proportion of the ages of the population as returned in 1910. A normal diagram should form a perfect pyramid, each bar representing an age period being smaller than the one below it. The sexes are nearly equally divided, but the abnormal length of the bars, especially for the periods ending in zero or in 5, stand out in the diagram. These irregularities are due almost entirely to errors in the returns, and it will be noted on the diagram, particularly the length of the bar indicating 30 years of age (for both males and females), as compared with the bars for 29 and 31 years of age. The same disproportion or irregularity is shown for the ages 40, 50, 60, and 70 years. After 70 years of age the pyramid becomes nearly normal, and after 80 there is apparently no tendency to concentrate on certain ages. The disproportion in the ages below 50 years can not be charged entirely to errors in the returns, however, as the foreign immigration contains a large proportion of male adults and increases the proportion in the ages above 15.

Plate No. 204, Diagram 2, distribution of the total population in 1910, by age periods and by each class, shows the large proportion of adults among the Chinese, Japanese, and foreign-born white population. The heavy line in the center marked zero is the line of 15 years of age, and there are two groups to the left and four to the right of the line. The groups below 15 (under 5, and 5 to 14) are on the left. The remainder of the bar to the right of the heavy black line represents the four age groups, from 15 to 24, 25 to 44, 45 to 64, and 65 and over.

Taking up the groups under 15 years of age, in the under 5 group the smallest proportion is shown (omitting the "all other" class), in the foreign-born white, the next lowest proportion being in the Chinese, due to the fact that practically all of the Chinese immigration is made up of males of adult age. The Japanese also have a low proportion, ranking next to, but a trifle above, the Chinese. The largest proportion of children under 5 are among the Indians. The greatest number of children from 5 to 14 will be noted in the native white of mixed parentage. In the age groups above 15 the largest proportion of the 15 to 24 group is noted in the native white of mixed parentage, while the Chinese have the smallest proportion. In the 25 to 44 group the Japanese have the largest proportion and the Indians the smallest. Of the ages 45 to 64 the Chinese have the largest proportion and the Japanese the smallest. Of the group 65 and over the foreign-born white have the largest proportion and the Japanese the smallest.

The influence of immigration on the age composition of the native population is evident, as compared with the native white of native parentage. The age distribution of the native white is affected indirectly by immigration, but the extent to which it is affected is hard to determine. A comparison of the bars for the various elements of the population with that of the total population shows that the abnormal number in certain age periods is due to the foreign immigration; if immigration were to cease for a number of years, the proportion of children below 15 years of age, as compared with the adults, would be much greater, as the age distribution of the foreign born affects materially that of the entire population.

Diagram 3 on Plate No. 204, distribution by age periods of the native white, native negro, and foreign-born white population in 1910, shows in millions the total number in each age period and delineates very clearly the excess of foreign born in the age groups above 15 and below 50. The gradual reduction of the negroes and the native white of native parentage shows that in these two classes the number of persons in each age period is nearly normal. The native white of foreign-born or mixed parentage more closely approaches the normal but is somewhat affected by the other two classes.

There are certain errors in the statement of the ages of young children, especially noticeable among negroes under 5 and from 5 to 9. It is a well-grounded principle that the largest proportion of the population in any age group is in the youngest age, the bar, therefore, presenting 0 to 5 should be much larger than 5 to 9, and the bars should gradually lessen for each of the higher age groups. The bars should form an almost perfect pyramid and the differences in length be nearly uniform, so far as the negro population and the native white of native parentage are concerned. The differences in the other two classes are due to the disproportionate number of the foreign born in the higher age groups. The departures from the normal in the first two classes are due to misstatements of the ages of the children and the tendency to return the age in a number ending with a zero or 5.

Diagram 4 on Plate No. 204 shows the distribution by age periods of the total population and each principal class in 1910, 1900, and 1890. This diagram presents very clearly the abnormal number of the foreign born in the older age groups, and that the same condition has existed at the Eleventh, Twelfth, and Thir-

teenth Censuses. The proportions can therefore again be considered as practically the same at each of the enumerations. The greatest change shown since 1890 is the change in the age distribution of the native whites of foreign or mixed parentage; this difference is probably due to the variation in the volume of immigration during the different decades.

In Diagram 1 on Plate No. 205, the distribution by age periods of the total population by geographic divisions in 1910, it will be noticed that the three southern divisions had a very high proportion in the age groups below 25 years, especially in the West South Central division. In the West South Central division 59.4 per cent and in the East South Central division 58.5 per cent of the population was under 25 years of age, as compared with 45.5 per cent in the New England division and 42.9 per cent in the Pacific division. This is, undoubtedly, due to the large number of negroes and small number of the foreign born in the South.

Diagram 2 on Plate No. 205 shows the distribution by age periods and sex of total population for 1910. The percentages which this diagram represents are based upon the total population. The diagram also brings out very clearly the effect of the abnormal age periods of the foreign-born population, especially in the groups from 10 to 25 years of age, and particularly for males.

Diagram 3 on Plate No. 205 shows, by age periods, the distribution of the urban and rural population in 1910, by geographic divisions. Only three age periods are given—under 15, 15 to 44, and 45 and over. The larger proportion of the population in rural communities in the lower age group, under 15, will be noted in the South Atlantic, East South Central, and West South Central divisions. The Pacific division has the largest proportion of its population over 15 years of age in the urban class, a higher percentage than in any other division.

Diagram 4 on Plate No. 205 shows the distribution, by age periods and sex, of the total population and of each principal class in 1910. The abnormal number of persons in the age groups above 15 years is shown for the foreign-born white, both male and female, the proportion in the female being slightly less than in the male. For the other elements the males and females for the age group 25 to 44 are almost identical in their proportion of the population in the four age groups.

The distribution of the principal elements of the population by age periods and sex is graphically presented on Plate No. 206.

Diagram 1 illustrates the proportion of the native white of native parentage; Diagram 2, the native white of foreign or mixed parentage; Diagram 3, the foreign-born white; and Diagram 4, the negro.

A comparison of these four diagrams directs the attention to the wide differences in the age distribution of the principal classes, and, as no two of the diagrams are identical in form, it is evident that the diagram that is not affected by the abnormal grouping of the foreign-born white population is that representing the negro population, although the diagram of the native white of native parents is but slightly affected by this factor. The abnormal differences between the lengths of the bars for certain age groups of the foreign-born white population, as compared with the same ages on the other diagrams, clearly indicates the excess of the males over the females, and the preponderance of the ages from 20 to 40 years. The diagrams for the native white of native parentage and the negro should show the same proportion in each age group, but the difference is, undoubtedly, due to the erroneous statements in the ages of the negroes, especially for the children in the two groups under 5 and from 5 to 9.

### MARITAL CONDITION.

Diagram 1 on Plate No. 207 presents the marital condition of the total population 15 years of age and over, by geographic divisions, in 1910. This diagram shows the proportion of the single, married, and widowed or divorced in the total number of persons 15 years of age and over, classified by sex. In the New England division there were a larger number of males reported married than females, and a larger number of females reported as widowed or divorced than males. In each division and in the United States total more males than females were reported as single, while in every division the number returned as widowed or divorced was greater for the females than for the males; for every division, except New England, there were more females than males reported as married, the percentage reported as married in the Middle Atlantic division being exactly the same for both sexes. In the Mountain division the proportion of females reported as married was 15 per cent more than that of the males; in this same division there were 20 per cent more males reported as single than females. The East South Central division had the highest proportion of widowed for both male and female, 5.1 and 11.8 per cent, respectively; the proportion in the New England division is a little lower for the females, being 11.5 per cent, and the males 5.1 per cent, exactly the same.

Diagram 2, on the same plate, shows the marital condition of principal classes of the population, by age periods, in 1910. The periods used in the preparation of this diagram may be termed "broad age periods," as there are only three groups—15 to 24 years, 25 to 44 years, and 45 years of age and over. These broad age groups are entirely satisfactory for the purpose of measuring the differences in the four classes by sex. The heavy line marked "zero" separates the diagram into two parts, the left section representing the single and the section on the right of the line the married and widowed or divorced. The classification used is native

white of native parentage, native white of foreign or mixed parentage, foreign-born white, and negro. Each class was divided into single, married, and widowed or divorced, and, as indicated on the previous diagram, each age period included in group 15 to 24 contained a large proportion of both males and females who were single, the per cent of males in each of the four classes being higher than for the females. On the right of the line the proportion of the married and the widowed or divorced females exceed the males in each class. In the next group, 25 to 44, a marked decline in the number of single persons in each class and a large increase in the number of married and widowed or divorced will be noted, the single males outnumbering the single females and the married females outnumbering the married males for each of the four classes; this is also true of the widowed or divorced. In the third age group, 45 years and over, the difference between the percentage of the single males and females is greatly reduced, and in the first class, native white of native parentage, the proportion of both sexes is nearly equal, that of the females being a little larger than that of the males.

Diagram 3 on Plate No. 207 shows the marital condition of the adult population for 1910, in eight age periods, by sex. The diagram is divided into sections by the heavy line under the zero. The percentages for single persons are on the left, and for the married and widowed or divorced on the right. The ages considered were for adults 15 years and over. In the lower group, 15 to 19, a very small proportion of the males was reported as married, the females showing a much larger percentage. The proportion of females married and widowed or divorced is higher than for males in all the age periods below 65 years and over. In this group the percentage of single males and females is almost the same; in the married class the males show almost double the percentage of the females, while for widowed or divorced the percentage for females is more than double that of the males. In all the age groups below 65 years, for those who were returned as single, the males form a larger percentage than the females, the difference being greatest in the age group 20 to 24, with a gradual reduction in the higher ages to the age group 65 and over. The proportion married among the males increased from the low group to the age group 45 to 54. For the higher age groups, 55 to 64 and 65 and over, the proportion decreased rapidly. The married and widowed or divorced combined showed an increase in percentage at each age period above 15 to 19 years. The diagram brings out very clearly the prevailing difference between men and women as to age at marriage.

### INTERSTATE MIGRATION.

Map 1 on Plate No. 208, per cent of the population born in each state, living in other states, in 1910. California, Texas, Louisiana, and Florida have the smallest percentage of the population born in these states who are living in other states, while New Hampshire, Vermont, Delaware, Iowa, Kansas, Wyoming, and Nevada have the largest percentage of the population born in the state living in other states.

On Map 2, per cent of the native population living in each state born in other states, it will be noticed that most of the states east of the Mississippi were in the low percentage groups, with the exception of Florida, this state having the highest percentage of the native population living in the state born in other states. The Western states, almost without exception, have a large proportion of the native population living in the state who were born in other states. The marked exception is Utah, which has a smaller proportion of its population born in other states who are living in the state than any other state west of the Mississippi, except Louisiana.

On Diagram 1, Plate No. 209, is shown the aggregate migration of the native population from and to each state, as reported at the Thirteenth Census. The states are arranged in geographic order and, on the left of the diagram, the number of persons born in the state who are living in other states is shown. On the opposite side appears the number of persons living in the state who were born in other states. It is especially noticeable that for New York 1,317,398 persons were born in the state and are living in other states, and but 686,616 living in the state who were born in other states; in other words, New York has lost through interstate migration over 600,000 natives. Illinois also has lost through interstate migration, as there are 1,308,085 natives of the state living in other states. The Western states, especially those in the Mountain and Pacific divisions, have gained through interstate migration. The state of Oklahoma, with 1,092,844 persons who were born in other states, has a larger number of that class of immigrants than any other state, not excepting the more populous states of New York, Pennsylvania, and Illinois. Illinois, with 997,189, ranks next to Oklahoma; Texas, with 907,908 residents who were born in other states, is third; these three states have lost a comparatively small number through migration to other states.

In Diagram 2 on Plate No. 209 net gain or net loss through interstate migration in 1910 is represented. The only state in the West South Central division which shows a net loss through interstate migration is Louisiana; the loss, however, was small. In the Mountain division Utah shows a slight loss through interstate migration. In the Pacific division all the states made great gains through interstate migration. New York, Pennsylvania, Ohio, Kentucky, Virginia, and Tennessee lost heavily through interstate migration. Excluding the District of Columbia, 23 states lost by interstate migration and 25 gained.

Diagram 1 on Plate No. 210 shows the per cent distribution of the natives of each state, as living in the state or living in other states, in 1910. California and Florida have the smallest percentage of persons born in the state who are living in other states, while Nevada and Vermont have the largest proportion born in the state and living in other states. There were only seven states—New Hampshire, Kansas, Vermont, Delaware, Iowa, Wyoming, and Nevada—in which the proportion of the population born in the state and living in the state is less than 70 per cent, and in 41 of the 48 states more than seven-tenths of the native population born in the state is living in the state.

Diagram 2 on Plate No. 210 is interesting in indicating the proportion of the population of each state as born in the state, born in other states, or foreign born, as returned at the Thirteenth Census. When the foreign born is considered in connection with persons born in the state, the states of Wyoming and Washington have less than 25 per cent of their total population born in the state of residence. The highest proportions of foreign-born population appear in Rhode Island, Massachusetts, New York, and Connecticut, in the order named. The states which had over 75 per cent of the total population of each state born in the state are Maine, Indiana, Maryland, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Kentucky, Tennessee, Alabama, Mississippi, and Louisiana.

The small map (3) on Plate No. 210 indicates for 1910, by the shaded lines, the states which lost through interstate migration, the unshaded states having gained.

The small map (4) on Plate No. 210 shows the states having gained or lost through all migration in 1910. Some of the states which lost through interstate migration have gained, when the foreign element is also considered. The gain for these states, therefore, is entirely due to the foreign-born population.

## FOREIGN-BORN POPULATION.

Diagram 1 on Plate No. 211 indicates, by the length of the bars, the number of natives of each of the principal foreign countries that were returned at each census, from 1850 to 1910. The countries are ranked according to the number returned in 1910, the country with the largest number appearing first. The diagram presents most strikingly the change that has taken place in the character of the foreign-born population since 1850. The natives of Germany increased in numbers from 1850 to 1900, but in 1910 there was a falling off. There was a comparatively small number of natives of Russia and Finland and Austria-Hungary returned at the censuses prior to 1900. Increasing numbers of Irish are found at each census from 1850 to 1890, when the highest mark was reached; since then the number has steadily decreased. The natives of Italy, like those of Austria-Hungary, came in great numbers to this country between 1890 and 1900, and especially between 1900 and 1910. Norway, Sweden, and Denmark combined have had a constant increase at each census since 1850, the largest number having been enumerated in 1910. Natives of England, Scotland, and Wales increased from 1850 to and including 1890; 1900 showed a slight decrease from the previous enumeration, but in 1910 an increase over the 1900 census was reported. The natives of Canada and Newfoundland increased at each enumeration from 1850 to 1910, although the increase from 1900 to 1910 was small.

Diagram 2 on Plate No. 211 shows the increase and decrease from 1900 to 1910, or the net result of the immigration from these countries. As previously stated, Germany leads at both enumerations, but shows a decrease from 1900 to 1910. Russia and Finland shows a large increase, as does Austria-Hungary. In 1900 Ireland was second in point of the number of its natives returned in the United States, but in 1910 it had fallen to the fourth place, and the number enumerated was less than in 1900. Italy, which had in 1900 the smallest returns of the eight countries shown on the diagram, was fifth in rank in 1910. England, Scotland, and Wales showed a slight increase, as did Canada and Newfoundland. Norway, Sweden, and Denmark occupied fifth place in 1900 and sixth in 1910.

Diagram 3 on Plate No. 211 indicates, by the length of the bars, the number of natives returned at the census of 1910, from each of the foreign countries that were tabulated separately, the countries being arranged in the order of the total number returned by the enumerators at the Thirteenth Census. As in the previous diagrams, Germany has the largest number. There were 2,501,333 natives of Germany returned in 1910; this was over three-quarters of a million more than was returned from any other country. The smallest number returned for any country which was tabulated separately was 1,736, from Central America.

Plate No. 212, Diagram 1. The four circles are proportionate in size to the total foreign-born population returned at the censuses of 1850, 1870, 1890, and 1910. The divisions of each circle present the percentage of distribution of the foreign-born population by principal countries of birth at each of the censuses specified.

In 1850 the natives of Ireland (42.8 per cent), Germany (26 per cent), and Great Britain (16.9 per cent) formed 85.7 per cent of the foreign-born population. In 1870 the same countries furnished 77.5 per cent of our foreign born. Germany increased its proportion of the foreign-born population and was nearly equal to the Irish, the percentage being 33.3 for Ireland against 30.4 for Germany. In 1890 the Germans outnumbered the Irish at the rate of

30.1 to 20.2 per cent of the total foreign born. In 1910 Germany was again the country furnishing a larger porportion than any other, with 18.5 per cent; Russia and Finland, with 12.8 per cent, and Austria-Hungary, with 12.4 per cent, were second and third, respectively, Ireland having fallen to the fourth place, with 10 per cent. The circles present graphically the great change that has taken place in the composition of our foreign-born population since 1850.

In Diagram 2 the two circles are in proportion to the total foreign-born population returned in 1910 and 1900. They also indicate, by the size of the divisions, the proportion the foreign element from each of the principal countries of birth forms of the total. In 1900 Germany ranked first, with 27.2 per cent; Ireland was second, with 15.6 per cent; Canada and Newfoundland third, with 11.4 per cent; Great Britain fourth, with 11.3 per cent; Norway, Sweden, and Denmark combined fifth, with 10.4 per cent; Austria-Hungary sixth, with 6.2 per cent; Russia and Finland seventh, with 6.2 per cent; and Italy eighth, with 4.7 per cent. In 1910 Germany ranked first in the number of foreign born; Russia and Finland had advanced from the seventh place to the second; Austria-Hungary had advanced from sixth to third; Ireland had dropped from the second to the fourth place; Italy had advanced from eighth to fifth; Norway, Sweden, and Denmark dropped from fifth to sixth place; and Great Britain had fallen from fourth place to the seventh.

The series of circles on Plate No. 213 represent the foreign-born population of each geographic division, and the sectors of the circles indicate the proportion the natives of each of the principal countries of birth form of the total foreign born of the geographic division. For instance, in the New England division the Germans form the smallest proportion, while the natives of Ireland and Canada and Newfoundland form large proportions of the foreign element. In the Middle Atlantic division, Russia and Finland, Austria-Hungary, Italy, and Germany have the largest sectors. In the East North Central division the Germans far exceed all others, the natives of Austria-Hungary ranking next in order. In the West North Central division, Norway, Sweden, and Denmark combined rank first and Germany second. The Germans lead in the South Atlantic, the East South Central, and the West South Central divisions. The natives of England, Scotland, and Wales combined rank first in the Mountain division, and the Scandinavians rank first in the Pacific division. The countries are arranged in the same order on all the circles.

Plate No. 214 is made up of nine small diagrams, each diagram showing, by the length of the bars, the number of the natives of the principal foreign countries in that geographic division, in 1910 and 1900. The countries are ranked according to the number of natives returned in 1910.

In the New England division the natives of Canada and Newfoundland led in the number returned at both censuses. The natives of Russia and Finland were most numerous in the Middle Atlantic division in 1910, but in 1900 the Germans were first. In the East North Central division the Germans led in both 1910 and 1900, but their number had decreased. In the West North Central division the natives of Norway, Sweden, and Denmark combined led in 1910, but in 1900 Germany ranked first. For the South Atlantic and East South Central divisions the Germans led at both censuses. In the West South Central division the natives of Mexico led at both censuses. In the Mountain division natives of England, Scotland, and Wales combined were in the lead in both 1910 and 1900. The natives of Norway, Sweden, and Denmark ranked first in the Pacific division in 1910, but in 1900 the Germans were the most numerous. Comparing all the diagrams, the largest number of the natives of Russia and Finland were found in the Middle Atlantic division, while the largest number of Germans were returned in the East North Central division. The natives of Canada and Newfoundland were most numerous in New England, and the natives of Norway, Sweden, and Denmark were most prominent in the West North Central division. The largest number of the natives of England, Scotland, and Wales was found in the Middle Atlantic division, and the largest number of Italians was returned in the Middle Atlantic division. There were more natives of Ireland returned in the Middle Atlantic division than in any other.

Plates Nos. 215 and 216 are composed of four diagrams each, showing, for 1910 and 1900, by double bars, the natives of certain foreign countries, by states, the states being ranked according to the number returned, with the largest first. Diagram 1 on Plate No. 215 presents the natives of Germany; Diagram 2, natives of Norway, Sweden, and Denmark; Diagram 3, Ireland; and Diagram 4, Austria-Hungary. Diagram 1 on Plate No. 216 shows the natives of Russia and Finland; Diagram 2, Italy; Diagram 3, Canada and Newfoundland; and Diagram 4, England, Scotland, and Wales.

A comparison of the eight diagrams on these plates, as to the states leading in the number of foreign born of each country returned in 1910, brings into relief the composition of the foreign population of those states which receive large numbers of immigrants.

New York has the greatest number of natives of Germany, Ireland, Russia and Finland, Italy, and of England, Scotland, and Wales. This state is second in the number of natives of Austria-Hungary, third in the number of natives of Canada and Newfoundland,

and fourth in the number of natives of Norway, Sweden, and Denmark. Pennsylvania leads in the number of natives of Austria-Hungary; is second in the number of natives of Russia and Finland, Italy, and England, Scotland, and Wales; is third in the number of natives of Ireland; and fourth in the number of Germans. Minnesota leads in the number of natives of Norway, Sweden, and Denmark; Illinois is second, and Wisconsin third. In fact, of the eight countries shown, New York leads in five; Minnesota in one (number of natives from Norway, Sweden, and Denmark); Pennsylvania in one (natives of Austria-Hungary); and Massachusetts in one (the number of natives of Canada and Newfoundland). The diagrams bring out clearly the decrease in the number of natives of Germany and Ireland in the various states from 1900 to 1910, also the great increase in the number of natives of Austria-Hungary and of Russia and Finland from 1900 to 1910. In fact, the natives of Austria-Hungary, Italy, and Russia and Finland in the states of New York and Pennsylvania have more than doubled in the 10 years since 1900.

Plate No. 217 is composed of six small maps, presenting graphically the percentage of the population of each state, at the Thirteenth Census, born in the foreign countries specified, and locates geographically the states that returned the greatest proportion of the natives of (1) Germany, (2) Russia and Finland, (3) Austria-Hungary, (4) Ireland, (5) Italy, and (6) Norway, Sweden, and Denmark. Considering the proportion, and not the number of persons returned, the Germans form a larger proportion of the total population of Wisconsin (10 per cent) and Illinois (5.7 per cent) than of any other state. New York (6.2 per cent) and North Dakota (5.7 per cent) have the highest percentage of natives of Russia and Finland. The greatest number of natives of Austria-Hungary, also the highest percentage (4.9), is found in Pennsylvania. The highest percentage of natives of Ireland is found in Massachusetts (6.6 per cent) and Rhode Island (5.5 per cent). The greatest number of Italians, also the highest percentage, are found in New York (5.2 per cent). The largest percentage of the natives of Norway, Sweden, and Denmark combined is found in Minnesota (11.8 per cent), with North Dakota (11 per cent), South Dakota (6.4 per cent), and Washington (6 per cent) ranking in the order named. The natives of England, Scotland, and Wales, as presented by Map 1, Plate 218, are widely distributed, the highest percentage being found in Rhode Island (6.3 per cent), and the next largest proportion in Utah (6 per cent). The natives of Canada and Newfoundland form the largest proportion in the New England states of New Hampshire (13.5 per cent) and Maine (10.3 per cent), as shown on Map 2 of the same plate.

Diagram 4, Plate No. 218, is made up of two small diagrams, the one on the left representing the distribution of the Japanese in 1910 and 1900 in the cities having the largest number of that element of the population, and the diagram on the right giving similar data for the Chinese. The bars are arranged with the city having the largest number in 1910 at the top, the others following in order. As the Japanese and Chinese are largely distributed through the great cities, it is deemed advisable to simply show the population for these cities in which the Japanese and Chinese formed a fair proportion of the population. The first diagram, the Japanese, shows that Seattle had the largest number, followed by San Francisco, Los Angeles, Oakland, Portland, and Sacramento, in the order named. These were the only cities having more than 1,200 Japanese at the Thirteenth Census. It will be noted from the shaded bar, representing 1900, that the number of Japanese in each of these cities has increased largely since that date, Los Angeles showing the highest percentage of increase of the cities mentioned.

On the diagram representing the Chinese, San Francisco led, with Portland, New York, Oakland, Los Angeles, and Chicago, the only cities reporting over 1,200 Chinese in 1910, following in the order named. It will be noted from the difference in the length of the bars that the number of Chinese in San Francisco, Portland, New York, and Los Angeles has decreased since 1900, while in Oakland and Chicago the number has increased.

The Japanese population in the 12 cities shown in the diagram formed 33.1 per cent of the total Japanese population of the United States, and the Chinese shown in the dozen cities listed formed 47.6 per cent of the total Chinese population of the United States in 1910.

## FOREIGN WHITE STOCK.

Great interest is taken, not only in the number of natives of foreign countries residing in the United States, but also in the number of persons born in the United States of foreign parentage. For brevity the term "foreign white stock" is used to indicate the combined total of three classes—the foreign-born whites, the native whites of foreign parentage, and the native whites of mixed parentage—that is, one parent foreign born and one parent native. The term "country of origin" is used not only to signify the country of birth of the person enumerated, but also the country of birth of the foreign-born parent or parents.

Diagram 3 on Plate No. 218 presents the foreign white stock by principal countries of origin, for 1910, in the three classes just described. The largest number were from Germany, the bar being shaded to indicate first the number born in Germany; second, the number

born in this country, both parents born in Germany; and third, the native with one parent born in Germany and the other in the United States. The same designations are carried out through all the bars. One peculiarity will be noticed in the bars for the countries which have only recently begun to send large numbers of their natives to the United States. Of Germany, Ireland, Canada, and England, the foreign white stock includes a large number of one parent born in the specified country and one in the United States. The bar for Russia and Finland, as well as those for Italy, Austria, and Hungary, have a very small proportion in this class. In other words, the Russians, Italians, and Austro-Hungarians are not intermarrying with natives of the United States to such an extent as the Germans, Irish, Canadians, and English.

Diagram 1 on Plate No. 219 presents the percentage of foreign white stock, by eight principal countries of origin, in 1910. Germany leads with 25.7 per cent of the total, followed, in order of percentage, by Ireland, with 14 per cent; England, Scotland, and Wales combined, with 10 per cent; Canada, with 8.6 per cent; and Russia and Finland, with 8.5 per cent. These are the only countries forming 8.5 per cent or more of the foreign white stock. These five countries are followed by Austria-Hungary and Norway, Sweden, and Denmark, with 8.4 per cent. The three countries of Germany, Ireland, and England, Scotland, and Wales combined, form 49.7 per cent, practically 50 per cent, of the total foreign white stock.

### MOTHER TONGUE.

The census act of July 2, 1909, was amended by Public Resolution No. 23, approved March 24, 1910, to include an inquiry as to the nationality or mother tongue. The Thirteenth Census was therefore the first enumeration to include an inquiry as to the mother tongue of the foreign-born population.

The circle, Diagram 2, Plate No. 219, indicates, by the size of the sectors, the per cent of the foreign white stock in each of the linguistic groups or mother tongues in 1910. The English and Celtic are the most prevalent, forming 31.1 per cent; with Germanic second, 28.5 per cent; Latin and Greek third, 13.3 per cent; and Slavic and Lettic fourth, 10.1 per cent.

The circles in Diagram 3 represent for 1910 the total foreign born (on the left), and the total native of foreign stock (on the right), by linguistic groups. Each circle is divided into sectors proportional to the size of the group. Comparing the circle for the foreign born with that for the native of foreign stock, the difference in size of the sectors of the two circles shows that the English and Celtic and the Germanic elements are much larger in the total native of foreign stock than in the foreign born. For the other elements, Slavic and Lettic, Latin and Greek, and Scandinavian, the sectors for the circle indicating the foreign born are larger than those for the circle indicating the native of foreign stock.

Diagram 4 on Plate No. 219 shows the foreign white stock, by principal mother tongues, in 1910. The English and Celtic is the most largely represented of the foreign white stock in the United States, there being over 10,000,000 people in that group; it is closely followed by the Germans, with a little less than 9,000,000. The other mother tongues are much smaller, the Italians having a little over 2,000,000, followed by Polish, Yiddish and Hebrew, Swedish, French, and Norwegian, each of these having in its group more than 1,000,000 people, the total for all mother tongues being 32,243,382. The English and Celtic and Germans together contribute more than one-half of the total.

Diagram 5 on the same plate represents, by the different shading of the bars, the three elements of the foreign white stock, by principal mother tongues, in 1910, each bar being divided into foreign-born white; native white, both parents foreign born; and native white, one parent foreign born and one native. This diagram brings out the difference in the proportion of the above described elements—especially the native white, one parent foreign born and one native. This element has a much larger proportion in the groups of English and Celtic and Germanic than in any of the others. The Swedish, French, and Norwegian show a much larger proportion of this element than do the Italians, Polish, and Yiddish and Hebrew.

### IMMIGRATION.

Plate No. 220 presents, by the length of the bars, the immigration of the foreign-born population in two divisions—those arriving in the United States before January 1, 1901, and those arriving after January 1, 1901, in each state and territory, arranged by geographic divisions.

The difference in the length of the two bars indicates strikingly the large proportion of the immigration in certain states that has arrived in this country since January 1, 1901. This is especially noticeable in the New England and Middle Atlantic states. In the West North Central division the contrary will be noted—that is, that the bars representing the arrivals before January 1, 1901, are much longer than the bars representing the arrivals after January 1, 1901. The large number of the foreign born who were returned from the state of New York, as compared with the other states, is also indicated by the length of the bars on the diagram. The large number of immigrants in the first four geographic divisions, as compared with the last five divisions on the diagram, is especially noticeable. The states of West Virginia, Wyoming, and Arizona are the only states in which the number of immigrants arriving after January 1, 1901, exceeds the number arriving before that date.

VOTING AGE, MILITIA AGE, AND NATURALIZATION.

The two diagrams on Plate No. 221 show the distribution of the males 21 years of age and over, by color or race, nativity, and parentage, for the several states, at the censuses of 1910 and 1900. The proportion in each state is almost the same as on the diagram for the total population. The largest proportion of native white of native parents at both censuses was found in West Virginia, with Kentucky second and Oklahoma third in 1910, and Oklahoma second and Kentucky third in 1900. Minnesota led in the number of foreign-born white, with Rhode Island second, and North Dakota third, in 1910; in 1900, North Dakota was first, Minnesota second, Wisconsin third, and Rhode Island fourth. In the proportion of native white of foreign or mixed parentage Wisconsin led both in 1910 and 1900, with Utah second at both censuses. The large proportion of negroes in the states of the South Atlantic and East South Central divisions is indicated by the black portion of the bars, the proportions being practically the same for both 1910 and 1900. The foreign element was small in these same divisions and formed about the same proportion of the population at each census.

Diagram 1 on Plate No. 222 shows the color or race, nativity, and parentage of males 21 years of age and over in urban and rural communities, by geographic divisions, in 1910. The large proportion of the foreign-born white males 21 years of age and over in the urban communities, as compared with the rural communities, is shown for all the divisions except the Mountain and Pacific. In the Mountain division only do the rural communities have a larger proportion of the foreign-born white than the urban; in the Pacific division the proportion is almost the same in both communities. In every geographic division, with the exception of the West North Central, the proportion of native white of foreign or mixed parentage is larger in the urban communities than in the rural, and, conversely, the proportion of natives of native parentage is much larger in the rural communities than in the urban. The New England division with 69.1 per cent, has the largest proportion of native white of native parentage in the rural communities, closely followed by the East South Central (67.3 per cent), the West South Central (65.8 per cent), and the South Atlantic (63.1 per cent). In each of these divisions over 60 per cent of the male population 21 years of age and over in rural areas is native white of native parentage.

Diagram 2 on Plate No. 222, presenting the proportion of foreign-born white males 21 years of age and over, by citizenship and country of birth, in 1910, is divided into two parts by a heavy black line in the center, the left side indicating the percentage of the foreign-born white males who are naturalized, have taken out first papers, or the status of whose naturalization was not reported. On the right side of the diagram is indicated the percentage of the population who are alien. The width of the bars, representing each of the principal foreign countries, is in accordance with the number returned in 1910, arranged with the country having the highest percentage of foreign-born white males at the bottom. The percentage alien was highest among the natives of Bulgaria, Servia, Montenegro, etc., and lowest for the natives of Germany. The European countries having over 45 per cent aliens were countries of southern or eastern Europe; in the remaining European countries, except Belgium and Luxemburg, France, and Scotland, the proportion of aliens was less than 20 per cent of the total number reported. The percentage alien for natives of Mexico was 66.6, that of Cuba and other West Indies 44.2, and for Canada and Newfoundland together 28.3, while among the French Canadians it was 40.2. The large proportion of the bars on the left side of the diagram is due to the large percentage of male immigrants from certain countries who have become naturalized or have taken out their first papers.

SCHOOL ATTENDANCE.

Diagram 3 on Plate No. 222 indicates, by the rise and fall of the curve, the percentage for single years of age of the population of school age (6 to 20 years), attending school during the school year of 1909–10. The curve, beginning at 52.1 per cent, at the age of 6, rises rapidly and reaches its highest point, 91.2 per cent, at the age of 11 years, decreasing slightly to 14, then rapidly at each age, until at 20 years of age the per cent is 8.4. The curve shows that among children from the ages of 6 to 16, more than 50 per cent are attending school.

The four curved lines on Diagram 4 on Plate No. 222 indicate the per cent attending school in the total population and in certain classes at each year from 6 to 20 years of age, during the school year 1909–10. The classes presented are the total population, native white, foreign-born white, and negro. The solid line represents the total population, the broken line the native white population, the dash and dot the foreign-born white, and the dash and cross the negro. The native white at each age has a higher proportion attending school than the foreign-born white, the negro, or the total population. The foreign-born whites have a higher proportion attending school at the ages from 6 to 12 than the total population, but after 12 years of age the percentage of the foreign born attending school decreases rapidly until between the ages of 14 and 15 it falls below the curve representing the negro school attendance. The curve representing the percentage of negroes attending school is much lower than the other classes from the ages of 6 to 14, but, after the age of 14, they have a higher school attendance than the for-

eign born. The legal age for employment in many states being 14 probably accounts for the rapid falling off in the school attendance in all classes and is strikingly apparent among the foreign-born children.

### ILLITERACY.

Map 1 on Plate No. 223 presents graphically in seven groups, by states, the percentage of illiterates in the population 10 years of age and over in 1910. The highest percentage group, 25 per cent and over, applies to the states of South Carolina and Louisiana. The Southern states have a heavy rate of illiteracy for the total population, as do New Mexico and Arizona. The states of Iowa, South Dakota, Nebraska, Kansas, Idaho, Utah, Washington, and Oregon have the lowest rate, from 1 to 3 per cent, illiterate. No state shows for its total population a percentage of illiteracy of less than 1 per cent.

The percentage of illiterates among the native whites of native parentage is indicated on Map 2, Plate No. 223. For this element of the population nearly all the states in the West North Central and Mountain divisions have less than 1 per cent illiterates. In the New England division there are only two states, Maine and Vermont, which have more than 1 per cent illiterate. In the Middle Atlantic division New York is the only state whose illiteracy among the native white of native parentage is less than 1 per cent. In the East North Central division there is only one state, Wisconsin, with a rate of illiteracy among the native white of native parentage of less than 1 per cent. In the West North Central division all the states, except Missouri, have a rate of illiteracy of less than 1 per cent. In the Mountain division there are only three states—Colorado, New Mexico, and Arizona—that have a rate of illiteracy of over 1 per cent. In the Pacific division all the states have a rate of illiteracy of less than 1 per cent among the native white of native parentage.

Map 1 on Plate No. 224 shows, for 1910, by states, the per cent of illiterates in the population 10 years of age and over among the foreign-born whites. Three states—Arizona, New Mexico, and Texas—have the highest percentage of illiteracy, 25 per cent and over. In the next group, 15 to 25 per cent, are found the states of Louisiana, West Virginia, Pennsylvania, Delaware, Rhode Island, Connecticut, and Mississippi. In general, it will be noted that the illiteracy among the foreign-born whites is lowest in the West North Central and Pacific divisions. The state of Washington has the smallest percentage of illiterates among the foreign born.

Map 2 on Plate No. 224 shows the percentage of negro illiterates in the population 10 years of age and over at the Thirteenth Census. In every state in the East South Central division more than 25 per cent of the negroes 10 years of age and over were illiterate. Louisiana had the highest rate of negro illiteracy, 48.4 per cent, and Alabama was second, with 40.1 per cent. In the South Atlantic division every state, with the exception of West Virginia, with 20.3 per cent, and Maryland, with 23.4 per cent, had more than 25 per cent of the negroes illiterate. In the states in the far North, where the negro population was small, the lowest percentage of negro illiteracy was found, that of Oregon and Minnesota being but 3.4 per cent.

The four diagrams on Plate No. 225 show for (1) all classes, (2) native whites of native parentage, (3) foreign-born whites, and (4) negroes, the percentage of illiterates in the population 10 years of age and over, in each state, for 1910 and 1900 compared. Nearly all the states show a considerable reduction in the percentage of illiterates in all the elements since 1900. The reduction is especially prominent among negroes, as indicated on Diagram 4. In "all classes," Diagram 1, the proportion decreased in all the states, except New York, whose percentage (5.5) was the same at both censuses, and Connecticut, which had a slight increase in the percentage of illiterates, from 5.9 per cent in 1900 to 6 per cent in 1910. In the native whites of native parentage, Diagram 2, no state shows an increase in the per cent of illiterates. Among the foreign-born whites, Diagram 3, 24 states, including the District of Columbia, show an increase in the percentage of illiterates, but not a single state shows an increase in the percentage of illiterates among the negroes. The highest per cent of decrease in negro illiteracy during the decade was in Nevada. With this exception, the greatest decreases in the percentage of negro illiteracy were in the Southern states.

### INABILITY TO SPEAK ENGLISH.

Plate No. 226 represents, by the length of the bars, the foreign-born white population 10 years of age and over unable to speak English, in 1910 and 1900, males and females. It will be noted that the diagram is not symmetrical—that is, there are a larger number of males who can not speak English than females in 1910; this was not true, however, in 1900, the bars being a little longer for the females, with almost the same proportions existing in regard to inability to speak English between the males and females in 1910 as in 1900. New York and Pennsylvania, with the longest bars for 1910, have a considerable preponderance of the males over the females in this class. In 1900 it will be noted that there were more females than males in New York who could not speak English, while in Pennsylvania the reverse was true. In Illinois, in 1900, there were more females than males who could not speak English; this was also true of Wisconsin and Minnesota. In fact, in a majority of the states the females unable to speak English outnumbered the males in 1900. In 1910 in all the states, except Maine, Rhode Island, Wisconsin,

North Dakota, and South Dakota, there was a larger number of males who could not speak English than females. The difference in the length of the bars shows the large number of the foreign-born population in New York, Pennsylvania, Illinois, Ohio, and New Jersey, as compared with the small number of this element in other states, who could not speak English. In the United States the number of males who could not speak English, 1,683,949, exceeded the number of females, 1,269,062, by 414,887. West Virginia, in proportion to the size of the state and the number of foreign born, had in 1910 a larger proportion of males who could not speak English than any other state, closely followed by New Mexico, Arizona, and Texas, in the order named, each with over 50 per cent, while Arizona had the largest proportion of females (63.8 per cent), followed by Texas and New Mexico in order, each exceeding 50 per cent.

### DWELLINGS AND FAMILIES PER SQUARE MILE.

The two maps on Plate No. 227 show, by states, the number of dwellings per square mile of the total land area, and the number of families per square mile of the total land area, at the Thirteenth Census. The states taken as the unit, and the number of families, also the number of dwellings, divided by the total land area in square miles, presents what might be called the map showing the density of dwellings and the density of families. The maps bring out very strikingly the peculiar fact that in the entire western half of the United States there are less than five dwellings to a square mile, also less than five families, taking the state as the unit. It would therefore seem that there is still considerable room for settlement in the West. Such states as Maine, Vermont, Wisconsin, and Iowa, with most of the Southern states, fall in the class from 5 to 10 dwellings per square mile, also the same number of families, 5 to 10 per square mile. The maps also bring out very clearly the fact that the number of families are only slightly in excess of the number of dwellings; as compared with the total area of the state, the most densely populated states have, of course, the greatest difference between the number of families and the number of dwellings. A comparison of these maps with the maps showing the density of population shows that the density of families and dwellings and the density of population are closely related.

### OWNERSHIP OF HOMES.

On Plate No. 228, Diagram 1 illustrates the proportion of all homes owned free, owned encumbered, and rented, in 1910, by states. Excluding the District of Columbia, the largest proportion of rented homes is in the state of Rhode Island, with 71.7 per cent; the next states in order are Georgia, South Carolina, and New York, each with over 69 per cent. The smallest percentage of rented homes (24.9) is shown in the state of North Dakota, and the largest proportion (66.3 per cent) of homes owned free in the state of New Mexico; this state also has the smallest proportion (4 per cent) of homes encumbered and is next to North Dakota in the small proportion of rented homes (29.7 per cent).

Diagram 2 on the sample plate shows the same distribution of farm homes, owned free, owned encumbered, and rented, at the Thirteenth Census. Maine has the smallest proportion of its farms rented, while Mississippi has the highest percentage of farms rented, followed by Georgia and South Carolina. The highest percentage of farms owned free is in New Mexico (88.9 per cent), with Arizona second, and Utah, Montana, Wyoming, and Maine following, each having over 70 per cent of their farm homes owned free. The percentage owned encumbered is highest in Wisconsin; Vermont is second, closely followed by North Dakota, Michigan, and Connecticut, in the order named. By comparing the two diagrams, it will be noted that, except for the Southern states, the states having a large proportion of urban population have the highest percentage of rented homes, while among the farm homes the Southern states, in which the tenant system is followed, have the largest proportion of rented farms.

### OCCUPATIONS.

Plate No. 229, proportion of population 10 years of age and over engaged in gainful occupations for both sexes in 1910 and 1900, and for each sex in 1910, by states, is divided into two parts. The bars on the left represent the per cent of the total population 10 years of age and over—that is, both sexes, engaged in gainful occupations, in each state, in 1910 and 1900, the states being arranged in order of the percentages for 1910, with the highest percentage at the top. The length of the black bar, as compared with the shaded bar, shows the increase of the percentage of 1910 over that of 1900. In 1900 Wyoming had the highest percentage, with South Carolina second and Montana third. In 1910 Mississippi was in the lead, with South Carolina second, Alabama third, Nevada fourth, and Wyoming fifth. The bar for Mississippi indicates that 68 per cent of the population 10 years of age and over was engaged in gainful occupations in 1910. The bars on the right compare the percentage of males with that of the females engaged in gainful occupations in 1910, the black bar representing the males and the shaded bar the females. Alabama leads in the proportion of males engaged in gainful occupations, 88.3 per cent, and is third in rank for the females (40.9 per cent). Mississippi, which is second in the percentage of males employed, has a larger proportion of females employed (47.6 per cent) than Alabama (40.9 per cent). South

Carolina, which is sixth in rank in the percentage of males employed, has a larger proportion of females employed (49 per cent) than any other state. Iowa has the lowest percentage employed for both sexes and for the males, while Idaho has the lowest percentage of females employed in gainful occupations (12.8 per cent).

Plate No. 230 presents the proportion of males and females 10 years of age and over engaged in gainful occupations, by states, in 1910 and 1900. The length of the bars indicates that Wyoming leads in the percentage of males employed in 1910, also in 1900, the proportion being higher in 1900 than in 1910. There are only two states—Arizona and Nevada—that show a larger proportion of males employed in gainful occupations in 1910 than in 1900. South Carolina has the lowest percentage of males employed in 1910 (63.2 per cent), also in 1900 (68.2 per cent), with the exception of the District of Columbia, which had, in 1900, 67.6 per cent. The column on the right indicates the proportion of females 10 years of age and over engaged in gainful occupations for 1910 and 1900, the states being arranged in the same order as for the males. Comparing the bars for the males with those representing the females, it will be noted that those states which have the largest proportion of males employed have the smallest proportion of females. This is, of course, true for both 1900 and 1910. Wyoming, leading in the proportion of males employed, has the smallest proportion of females.

Plate No. 231 shows the proportion of males and females 10 to 13, also 14 and 15 years of age engaged in gainful occupations, by states, in 1910. This diagram is of great interest, in view of the agitation in regard to restricting child labor. The large proportion of children, both male and female, 10 to 13 years of age engaged in gainful occupations in the Southern states is, undoubtedly, due to the inclusion of all children employed in agriculture. Mississippi leads in the proportion of males (56.1 per cent) and South Carolina in the proportion of female workers 10 to 13 years of age (39.5 per cent), while New York has the lowest percentage of males (1.1 per cent) and Massachusetts of females (0.3 per cent). The diagram on the right shows the percentage of males and females 14 and 15 years of age engaged in gainful occupations. The states of Mississippi, Alabama, South Carolina, and North Carolina have the largest proportion of males and females for these ages, and rank in the same order as for the ages 10 to 13 years. The District of Columbia has the smallest number of males (15.5 per cent) and the state of Idaho the smallest number of females 14 and 15 years of age (3 per cent) employed in gainful occupations.

Plate No. 232 is made up of two maps, Map 1 showing, by states, the percentage of males 10 to 13 years of age engaged in gainful occupations in 1910, and Map 2 presenting similar data for males 14 and 15 years of age.

Map 1, for males 10 to 13 years of age, presents, by the different shading, seven groups of percentages. The lowest group, unshaded, is less than 1 per cent; the next group, 1 to 5 per cent, covers the Pacific Coast states, all the New England and Middle Atlantic states, and all of the East North Central states, except Indiana, showing that but a small proportion of these young boys are at work. The highest percentage group is shaded a solid black, and indicates that South Carolina, Alabama, and Mississippi are the only states in which 50 per cent or more of the males 10 to 13 years of age are gainful workers. The next group, 35 to 50 per cent, applies to the states of North Carolina, Georgia, Arkansas, and Texas. Florida falls in the next lower group, 25 to 35 per cent, as does Kentucky and Tennessee. The map brings out strikingly the high percentage of males 10 to 13 years of age who are employed in gainful occupations in the southern part of the United States.

Map 2, for the ages of 14 and 15 years, 14 years being the lawful age of employment in most of the states, shows a much higher percentage of boys of these two ages employed. The highest percentages are found in the Southern states. The entire Mountain division, except New Mexico, and the Pacific division, except Washington, fall in the class of 15 to 25 per cent. The two lower groups, which cover a considerable portion of the preceding map, do not appear on this map, except in the case of Washington, which is the only state that has less than 15 per cent of the males 14 and 15 years of age employed in gainful occupations. All the states in the East South Central division and the West South Central division, with the exception of Oklahoma, are in the highest group, showing that more than 50 per cent of the boys 14 and 15 years of age are at work. Mississippi and Alabama lead, with more than 75 per cent of their youths engaged in gainful occupations. The states of Virginia, North Carolina, South Carolina, Georgia, and Florida, of the South Atlantic division, are also in the class of 50 per cent and over.

Plate No. 233 is made up of two maps covering the same data for the females that were shown for the males on Plate No. 232. Map 1 indicates, by the seven groups of shading, the percentage of females 10 to 13 years of age engaged in gainful occupations in 1910. The uncolored area, principally in the North and West, indicates the states in which less than 1 per cent of the females of this class are engaged in gainful occupations. The light shade, indicating the states in which 1 to 5 per cent of the females of this class are employed, together with the unshaded area, covers three-fourths of the states. The highest percentages, indicated by the dark shades, are found in the South Atlantic, East

South Central, and West South Central divisions. Mississippi, Alabama, and South Carolina are in the group from 35 to 50 per cent; North Carolina, Georgia, and Arkansas fall in the next lower group, 25 to 35 per cent; Texas is in the group 15 to 25 per cent; Virginia, Tennessee, Florida, Louisiana, and Oklahoma are in the group 5 to 15 per cent; all the remainder of the United States has less than 5 per cent of the females 10 to 13 years of age engaged in gainful occupations.

Map 2 indicates, by the seven groups of shading, the percentage of females 14 and 15 years of age engaged in gainful occupations in 1910. As in the preceding illustration, the highest percentages are found in the Southern states. South Carolina and Mississippi are the only states that have 50 per cent or more of the females of the ages specified engaged in gainful occupations. The next group, 35 to 50 per cent, covers North Carolina, Georgia, Alabama, Arkansas, and Rhode Island, the latter being the only Northern state to fall in this class. The next lower group, 25 to 35 per cent, applies to the states of Louisiana and Texas only. All the Northern and Western states, with the exception of Rhode Island, fall in the groups below 25 per cent. Nebraska, Kansas, Montana, Wyoming, Utah, Nevada, Idaho, Oregon, and Washington have less than 5 per cent of the females 14 and 15 years of age engaged in gainful occupations. Taking up the number of states below and above 15 per cent, we find that, excluding the District of Columbia, there are 28 states that have less than 15 per cent, and 20 states that have 15 per cent or more of the females 14 and 15 years of age gainfully employed.

Plate No. 234 shows the proportion of males and females 10 years of age and over engaged in certain gainful occupations in 1910, the black portion of the bar representing the male workers and the unshaded part the female. The long black bars indicate the occupations in which males preponderate. The occupations in each grand group having the largest proportion of male workers are as follows: Stock herders, drovers, and feeders; shoemakers and cobblers (not in factory); mail carriers; commercial travelers; laborers (public service); physicians and surgeons; saloon keepers; and agents, canvassers, and collectors. Where the black bar is the smallest female workers preponderate, as in the case of laundresses (not in laundries); milliners and millinery dealers; trained nurses; housekeepers and stewards; and telephone operators. The preponderance of the black bar over the white indicates that there is a larger proportion of males engaged in that occupation than of females.

Plate No. 235 shows graphically for each state the proportion of persons engaged in each of the nine general divisions of occupations at the Thirteenth Census, 1910. The states are ranked in the order of the percentage of persons employed in agriculture, forestry, and animal husbandry, the state with the highest percentage being first. Mississippi has the highest percentage of persons employed in the first general division of occupations. South Carolina, Arkansas, Alabama, North Carolina, and Georgia follow in order, each having more than 60 per cent of the population 10 years of age and over engaged in agriculture, forestry, and animal husbandry. The states having the smallest proportion of persons employed in this general division of occupations are Massachusetts, with 4.9 per cent, and Rhode Island, with 5 per cent, all other states having more than 5 per cent of their gainful workers engaged in the first general division of occupations. The diagram shows strikingly the fact that where manufacturing and mechanical industries predominate, farming is unimportant, and, conversely, where agriculture predominates, manufacturing is of small importance. The clerical occupations, the last on the bar, are largely in those states which have manufactures and trade.

The states having the largest number of persons employed in the second division of occupations, extraction of minerals, are Nevada (21.9 per cent), Arizona (17.7 per cent), West Virginia (14.4 per cent), and Montana (10.9 per cent), Wyoming and Pennsylvania having the same percentage, 10.5 each.

The states leading in the proportion of persons engaged in manufacturing and mechanical industries are as follows: Rhode Island (56.3 per cent), Connecticut (52.8 per cent), Massachusetts (50.6 per cent), and New Hampshire (49.4 per cent).

The states having the largest proportion of their population engaged in the fourth general division of occupations, transportation, are as follows: Wyoming (14.7 per cent), Montana (13.4 per cent), Washington (11.6 per cent), Oregon (11.5 per cent), and Nevada (11.4 per cent). These are the only states which have more than 10 per cent of their workers in this general division of occupations.

In the next group, trade, California leads (13.7 per cent); excluding the District of Columbia (13 per cent), New York follows (13.6 per cent), with Illinois third (12.4 per cent), New Jersey fourth (12.1 per cent), and Massachusetts fifth (12 per cent).

In public service, Wyoming leads with 6.2 per cent, and, excluding the District of Columbia (4.7 per cent), this state is followed by Rhode Island with 2.8 per cent; California and Washington are the next states in order, each having 2.2 per cent employed in this group.

In the group of professional service, excluding the District of Columbia with 8 per cent, California leads with 6.3 per cent, and Colorado is second with 6.2 per cent, followed by Iowa and Utah, each having 6 per cent.

In the next group, clerical occupations, the states, excluding the District of Columbia (15.3 per cent), are ranked in the following order: New York (8.3 per cent),

New Jersey (8 per cent), Illinois (7.3 per cent), and Massachusetts (7.1 per cent).

In the last group, domestic and personal service, excluding the District of Columbia with 25.7 per cent, Maryland leads with 14.6 per cent, followed by New York with 13.4 per cent, Virginia with 12.9 per cent, and California, Florida, and Nevada, each with 12.7 per cent.

The diagram shows that in all the states, except Arizona, California, Colorado, Montana, Nevada, New York, and Wyoming, agriculture and manufacturing combined include more than 50 per cent of the gainful workers.

Plate No. 236, Diagram 1, gives the proportion of males and females 10 years of age and over engaged in each general division of occupations in 1910, the light shading on the left representing the males and the cross-hatched portion the females. The males have the largest proportion of the workers in the following occupations: Extraction of minerals, public service (not elsewhere classified), and transportation. The only division in which the females exceed the males is the division of domestic and personal service, of which they form 67.1 per cent of the total. In the remaining divisions the males form more than 50 per cent of the gainful workers.

In Diagram 2 the proportion which gainful workers, both sexes, males, and females, of each specified age group constituted of all gainful workers in 1910, is indicated. The group 21 to 44 years has a larger proportion of "both sexes" and of males and females than any of the other age groups. The first group, 10 to 13 years of age, shows a slightly smaller number for "both sexes" and those for males and females than the next group, 14 and 15 years. The age group 16 to 20 years has a much larger proportion employed than the lower age groups. It will be noted for the first three age groups that the females have a larger proportion than the males; but in the last two age groups, 21 to 44 and 45 years and over, the males have a larger proportion than the females. The two groups, 21 to 44 and 45 years and over, include 80.5 per cent of "both sexes" engaged in gainful occupations; in the same groups the males form 83.6 per cent of the number of male workers, and the females form 69.3 per cent of the number of female workers.

Diagram 3 presents the proportion of each principal class of population 10 years of age and over, both sexes, males, and females, engaged in gainful occupations in 1910. For "all classes," 53.3 per cent of both sexes are engaged in gainful occupations; for the males, 81.3 per cent are workers; and of the females, 23.4 per cent. Of the four classes of population shown on the diagram, the negroes have the largest proportion of both sexes engaged in gainful occupations (71.0 per cent), also of the females (54.7 per cent). The native white of native parentage has the lowest per cent of both sexes (48.4 per cent), and of females (17.1 per cent). The foreign-born white has the highest per cent of males (90 per cent), and is slightly in excess of the negroes (87.4 per cent). Of the females in these two classes, the negroes, with 54.7 per cent, far exceed the proportion of females in the foreign-born white, which is 21.7 per cent.

Diagram 4 presents the proportion of males and females of each of five age groups engaged in gainful occupations in 1910. In the first age group, 10 to 13 years of age, the proportion of males is more than double that of the females. In fact, the proportion of males exceeds that of the females in every age group. In the age group 21 to 44 years 96.7 per cent of the males are workers. In this same group the proportion of the females at work is only 26.3 per cent. The largest proportion of females in any age group is in the group of 16 to 20 years of age, in which 39.9 per cent of the females 10 years of age and over are employed in gainful occupations.

# AGRICULTURE.

## FARMS AND FARM PROPERTY.

The enumerators of the Thirteenth Census returned at the date of the census enumeration 6,361,502 farms, containing 878,798,325 acres, of which 478,451,750 acres were improved, the remaining 400,346,575 acres comprising the acreage of woodland and other unimproved land in farms.

On Plate No. 237 the seven circles indicate, by the size of their sectors, the relative proportion of improved and unimproved land area in farms to the total land area of the United States at each census from 1850 to 1910. The rapid decrease in the area not in farms will be noted, also the increase in the proportion improved to the unimproved; the circle for 1910 indicates that a greater proportion of the total area was improved in 1910 than at any previous census, but that less than 50 per cent of the total is in farms.

Diagram 1 on Plate No. 238 represents, by the length of the bars and the shading, the total land area and the area of improved and unimproved land in farms, in 1910 and 1900, in each state. The diagram presents, in an effective manner, the relative size of all the states, as well as the large proportion that the land in farms and the improved land in farms forms of the total area in Iowa, Ohio, Indiana, and Illinois, where over 90 per cent of the total land area is in farms, and the small proportion of the land area in farms in the states of Arizona, Nevada, Utah, and Idaho, each being under 10 per cent. The great difference between the land area of Texas as compared with Rhode Island is strikingly presented by the difference in the length of the bars representing the two states.

Diagram 2 on Plate No. 238 represents, by the length of the bars, the total land area and the improved and unimproved acreage in farms, from 1850 to 1910. This diagram illustrates, in a slightly different form, the same data graphically presented by the circles on Plate No. 237. In 1850 a little over one-third (38.5 per cent) of the land in farms was improved. In 1910 over half (54.4 per cent) of the farm land was improved; the increase in the proportion of improved land to the total land area in farms and the increased proportion of the total land area that is in farms are more readily calculated from this diagram than from Plate No. 237.

In Diagram 3 on Plate No. 238 the increase in the number of farms, from 1850 to 1910, is indicated by the length of the bars. The number of farms increased more rapidly than the acreage of land in farms, resulting in a material decrease in the average size of farms.

The map on Plate No. 239 shows, by counties, the percentage land in farms formed of the total land area in 1910. The heavy black shade, which indicates that 95 per cent and over of the land in the county was in farms, covers a large proportion of the area of Iowa, the eastern part of Kansas and Nebraska, the northern part of Missouri, and portions of Ohio. The unshaded area of the arid states indicates the small proportion of the total land area that is in farms.

The average acreage of all land per farm, by counties, in 1910, is presented in Plate No. 240. The average for the United States was 138.1 acres of land per farm. The seven designations on the map indicate groups from less than 80 acres to 640 acres and over; the darkest three shades indicate the counties having an average of 240 acres or more; practically all of these shades were found west of the Mississippi River, except a few counties in Florida, Virginia, and southern Georgia, proving that the large ranches in some of the Western states have not been materially reduced in size.

Map 1 on Plate No. 241 gives the proportion of improved land in farms to the total land area, by states, and Map 2 the average number of acres of all farm land per farm, by states, in 1910. A study of Map 1 shows that the states of Iowa and Illinois have the highest proportion (over 75 per cent) of improved land to the total land area. The next group, 50 to 75 per cent, covers a wider area and includes the states of Maryland, Delaware, Ohio, Indiana, Kentucky, Missouri, and Kansas. All the states in the Mountain division, together with the states of Oregon and Florida, have less than 10 per cent of their land area improved.

As indicated on Map 2, the states of Nevada and Wyoming have the largest farms, the state average being over 640 acres per farm. The next group, from 320 to 640 acres, covers the states of Montana, North Dakota, and South Dakota. Arkansas and Louisiana are the only states west of the Mississippi River with an average of less than 120 acres per farm. In the eastern part of the United States the average size of the farm is much smaller than in the West, New Hampshire, Vermont, and Illinois being the only

states with an average of 120 to 160 acres. The states for which the average is less than 80 acres are Massachusetts, New Jersey, South Carolina, Alabama, and Mississippi.

The map on Plate No. 242 indicates, in seven shades, the percentage improved land in farms formed of the total land area, by counties, in 1910. The counties with the highest proportion, 75 per cent and over, are solid black and cover nearly the entire state of Iowa, three-fourths of the state of Illinois, and considerable portions of Ohio, Indiana, Nebraska, Minnesota, North Dakota, South Dakota, Missouri, and Kansas, the land in these counties being practically all under cultivation. The unshaded areas, indicating that less than 12½ per cent, or one-eighth, of the county is under cultivation, are found principally in the states of the Mountain and Pacific divisions.

On Plate No. 243 the map of the United States shows, by the number of dots, the improved land in farms at the Thirteenth Census, each dot representing 10,000 acres. The sparsely settled areas of Arizona, New Mexico, Utah, Nevada, and southeastern California stand out very strongly, as well as the northeastern part of Minnesota and the southwestern part of Texas and along the Rio Grande.

Plate No. 244 illustrates the average acreage of improved land per farm, by counties, in 1910, and, as the largest farms are in the Western states, nearly all the higher grades from 160 to 200 acres, and from 200 acres and over, are in that section, the state of Nevada, with its large ranches, being especially prominent. North Dakota, South Dakota, Nebraska, and Kansas also show a very high average acreage of improved land per farm.

Plate No. 245 consists of two maps, Map 1 showing the per cent of increase in number of acres of improved land in farms, by states, from 1900 to 1910, and Map 2, the per cent of increase in number of acres of improved land in farms, by states, from 1890 to 1900. The states having the greatest increase from 1890 to 1900 were all west of the Mississippi River. The unshaded area, indicating states in which the number of acres of improved land in farms decreased during the decade, covers all of the New England and Middle Atlantic divisions, also Delaware, Texas, Nevada, Oregon, and California.

As indicated by the map for 1900 to 1910, there was a great change in the per cent of increase or decrease in the number of acres of improved land in farms. Iowa and California in the West decreased, also all of the New England and Middle Atlantic states, as well as Delaware, Maryland, Virginia, and Ohio. The states reporting an increase of 50 per cent and over were North Dakota, Oklahoma, Montana, Idaho, Washington, Wyoming, Colorado, and New Mexico. Texas, which decreased from 1890 to 1900, reported an increase of between 25 and 50 per cent from 1900 to 1910.

The five maps on Plates Nos. 246 to 250 show the number of farms of specified sizes in 1910.

Plate No. 246 indicates, by the dots, the number of farms with from 3 to 9 acres at the Thirteenth Census, each dot representing 10 farms. The groups of dots in the Eastern states show that the greater number of small farms are in that part of the country.

The next map, on Plate No. 247, indicates the number of farms of from 20 to 49 acres in 1910, each dot standing for 40 farms. The dense groups of dots are almost entirely in the South and in the states bordering on the Gulf of Mexico, where the largest number of such farms are located.

Plate No. 248 represents the number of farms of from 100 to 174 acres, at the same date, with 40 farms to each dot. The dense groups of dots, indicating where such farms are most numerous, are in the Middle Atlantic, East North Central, and West North Central divisions.

Plate No. 249 indicates the number of farms of from 260 to 499 acres in 1910, each dot representing 10 farms of the acreage specified. The dense groups of dots are found in the states of Minnesota, North Dakota, South Dakota, Iowa, Nebraska, Kansas, and Oklahoma.

Plate No. 250 shows, by the dots, the number of farms of 1,000 acres and over in 1910. The heaviest grouping of farms of this class is noted in Texas, western Nebraska, Kansas, California, and eastern Washington. In Texas the dense groups are due principally to the large cattle ranches.

Diagram 1 on Plate No. 251 indicates, by the length of the bars, the average size of farms in each state, in 1910 and 1900—that is, the average number of acres of all farm land per farm. The diagram shows that, with the exception of 13 states—Rhode Island, New York, Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Iowa, Missouri, North Dakota, Nebraska, and Kansas—the size decreased from 1900 to 1910, striking decreases being shown in the states of Nevada, Wyoming, Montana, and Arizona. North Dakota and Nebraska are the only states which showed a fair increase in the average size of farms.

In Diagram 3 the average size of farms in the United States at each decade from 1850 to 1910 is shown by the length of the bars, and the gradual decrease from 1850 to 1880, and increase from 1880 to 1900, will be noted.

Diagram 2 shows the proportion of value of each class of farm property to the total value of farm property in 1910. Farm land forms the greater proportion of the value of farm property. In California and Washington the value of farm land forms over 80 per cent of the total value of farm property. In Oregon, South Dakota, Nebraska, Kansas, and Illinois the value of farm land forms over 75 per cent of the total value of farm property. In fact, it is only in the states of the New England and Middle Atlantic divisions,

except Pennsylvania, that the value of buildings, implements and machinery, and live stock forms more than 50 per cent of the total value of farm property.

Diagrams 4, 5, and 6 show, at each census from 1850 to 1910 the value of implements and machinery on farms; the value of live stock, including domestic animals, poultry, and bees on farms; and the average value of farm land and buildings per acre. The value of implements and machinery and live stock, etc., shows a steady increase. The value of farm land and buildings per acre shows a slight variation, as it increased steadily from 1850 to 1890, the value in 1890 being $21.31 per acre; in 1900 the value had decreased to $19.81 per acre; during the next 10 years the value of farm land increased so rapidly that for 1910 the average value per acre was $39.60, or double the value in 1900.

On Diagram 1, Plate No. 252, the total value in each state of all farm property, by each class of farm property in 1910, is indicated by the division of the bars, by shade lines to agree with the proportion in each class of farm property. Illinois, with a total value of farm property of $3,905,321,075, ranks first; Iowa is second, with $3,745,860,544; while Rhode Island is last, with $32,990,739. The states of Illinois and Iowa far exceed the other states in the value of their farm property. Texas, the state ranking third, has $1,686,675,911 less in value of its farm property than Illinois, and $1,527,215,380 less than Iowa.

Diagram 2 represents, by the length of the bars, the average value of all farm property per farm, at each census, from 1850 to 1910. The average value increased from 1850 to 1860, decreased to 1870, and further decreased to 1880; in 1890 there was an increase and from 1890 to 1900 a very slight increase, but from 1900 to 1910 the average value of farm property per farm almost doubled.

Diagram 3 on the same plate shows a steady increase in the value of farm land and buildings, from 1850 to 1910. For the last 10 years, from 1900 to 1910, it more than doubled.

A series of United States maps on Plates Nos. 253 to 255 show, in seven shades, the per cent of increase in the value of farm property, by states, at each census from 1850 to 1910.

On Map 1, Plate No. 253, the per cent of increase in the value of all farm property from 1850 to 1860, the white areas indicate the states from which no increases in value were reported. All the other states reported increases, 19 states showing increases of 100 per cent or more; 9 states, 50 to 100 per cent; 6 states, 25 to 50 per cent; and only 1 state—Massachusetts—10 to 25 per cent.

Map 2, the per cent of increase from 1860 to 1870, has only 6 states without report. Minnesota, Iowa, North Dakota, South Dakota, Nebraska, Kansas, Nevada, and California reported increases of over 100 per cent. It will be noted that for this decade decreases were reported from New Hampshire, Massachusetts, and Rhode Island; all the South Atlantic division, except Delaware; the East South Central states; and the West South Central, except Oklahoma, as indicated by the solid black shading. The decreases were due principally to the ravages during the Civil War.

Map 1 on Plate No. 254, the per cent of increase in value of all farm property from 1870 to 1880, has only one state—Oklahoma, which at that date was known as the Indian Territory—from which no farm values were reported. On this map there are only three states showing decreases in the value of farm property—Vermont, New Jersey, and Delaware. New York and Louisiana show the smallest increases—less than 10 per cent. Aside from Oklahoma, every state west of the Mississippi River reported increases of 100 per cent and over, except Iowa, Missouri, Louisiana, and California. Iowa and California increased from 50 to 100 per cent, Missouri from 10 to 25 per cent, and Louisiana less than 10 per cent. Florida was the only state east of the Mississippi River that reported an increase of 100 per cent or more.

Map 2 on Plate No. 254 presents the increase from 1880 to 1890. Every state west of the Mississippi River showed an increase of 50 per cent or more, with the exception of Louisiana, which increased from 25 to 50 per cent. The states in the Mountain division, with the exception of the state of Nevada, all showed increases of 100 per cent or more. Florida was again the only state east of the Mississippi that reported an increase of 100 per cent and over. The New England and Middle Atlantic states, also Ohio, reported decreases.

Map 1 on Plate No. 255, the increase in value from 1890 to 1900, shows that the great increases in the value of farm property reported for the previous decade were not continued, although the New England states all reported small increases of less than 10 per cent, except Massachusetts, which increased 10 to 25 per cent. The only states reporting an increase of 100 per cent and over were North Dakota, South Dakota, Idaho, and Oklahoma. Four states, all in the East—New York, Pennsylvania, Delaware, and Florida—reported decreases in the value of farm property.

Map 2 presents the increase from 1900 to 1910, the greatest increase ever shown for the entire United States. Not a state reported a decrease and every state west of the Mississippi River, with the exception of Minnesota, Missouri, and Louisiana, reported an increase of 100 per cent and over. The three states excepted increased from 50 to 100 per cent. The states of the South Atlantic division also showed increases of 100 per cent or more, except Virginia, West Virginia, and Delaware, which reported increases of 50 to 100 per cent each, and Maryland, with an increase

of 25 to 50 per cent. Two states in the East South Central division—Alabama and Mississippi—also showed increases of 100 per cent or more. Florida, which decreased at the previous decade, reported an increase of over 100 per cent. Not a single state reported an increase of less than 10 per cent. The smallest increases reported were for New Hampshire, Massachusetts, Rhode Island, and Pennsylvania—10 to 25 per cent. There were only 4 states that reported increases of less than 25 per cent, and 25 that reported increases of over 100 per cent.

Plate No. 256 presents, by counties, the percentage of increase in value of all farm property, from 1900 to 1910. The black shade, which covers the greater part of some of the Western states, indicates an increase of 200 per cent and over. The states having the largest of such areas are North Dakota, South Dakota, Nebraska, Kansas, Oklahoma, New Mexico, Montana, Idaho, and Washington. A number of counties in some of the Southern states—South Carolina, Georgia, and Florida—also reported increases of over 200 per cent, as well as a number of counties in the Northern states of Maine, Michigan, Wisconsin, and Minnesota. The white areas, indicating an increase of less than 25 per cent, are widely scattered, except in the states of New Hampshire, Massachusetts, Rhode Island, New York, and Pennsylvania, the latter state showing a larger unshaded area than any other state.

Plate No. 257 contains two maps indicating the average value of farm land per acre, by states, in 1910 and 1900. From a comparison of the two maps the remarkable increase in the average value of farm land per acre, from 1900 to 1910, will be noted, especially in the following named states, each having increased more than 200 per cent: Arizona, 475.8 per cent; Washington, 278.3 per cent; Montana, 276.2 per cent; Idaho, 276.1 per cent; Wyoming, 261.5 per cent; South Dakota, 249.7 per cent; Oklahoma, 246 per cent; Oregon, 213.7 per cent; Texas, 209.1 per cent; and Utah, 200.3 per cent. The states of North Carolina, South Carolina, Georgia, Florida, Iowa, North Dakota, Nebraska, Kansas, Colorado, New Mexico, and Nevada also reported large increases, although the proportionate increase was not as high as for the states previously mentioned. Not a single state showed a decrease in the value of farm land per acre; the smallest increases were reported for Pennsylvania, 14.2 per cent, and Rhode Island, 14.9 per cent. In 1900 Illinois was the only state that reported a value of over $40 per acre. In 1910 there were 11 states that reported an average value of farm land of over $40 per acre. New Mexico was the only state in 1910 that reported an average value of less than $10 per acre.

The map on Plate No. 258 presents for the United States, by counties, the average value of land in farms per acre in 1910. The group with the highest valuation, $125 and over per acre, is confined to a few counties in the states of Washington, Oregon, California, Idaho, Colorado, Kansas, and Missouri, in the West; and Wisconsin, Illinois, Indiana, Ohio, Pennsylvania, New York, and New Jersey, in the East, Illinois having the greatest number of counties with an average value of $125 and over per acre. Considerable areas in a number of the states are left unshaded, indicating an average value of less than $10 per acre.

The map on Plate No. 259 shows, by counties, the per cent of increase in the average value of farm land per acre from 1900 to 1910. The per cent of increase for the United States as a whole was 108.1, but a majority of the counties reported increases of over 125 per cent. The areas shown in black indicate the counties for which the increase was 200 per cent and over. A number of counties east of the Mississippi River, in the Southern states, are in the highest group, but nine-tenths of the counties reporting increases of over 200 per cent are in states west of the Mississippi River. The dark area covers nearly all of South Dakota and Idaho, and a large part of North Dakota, Nebraska, Kansas, Oklahoma, Texas, Montana, and Washington. One singular fact brought out in this map is that white areas, indicating counties with an increase of less than 25 per cent, are, in many instances, adjacent to counties in which the increase is 200 per cent and over. The largest white areas are in New York and Pennsylvania.

The map on Plate No. 260 indicates, by dots, the value of farm land in 1910, each dot representing $1,000,000. The dense groups in Illinois and Iowa indicate the extensive areas of high valuation in those states.

Plate No. 261, a map similar to the map on Plate No. 260, shows the value of farm buildings, at the same date, each dot on this map representing $200,000. The dense groups of dots, indicating where the value of farm buildings is the highest, are in New York, New Jersey, Pennsylvania, Ohio, Michigan, Illinois, and Wisconsin. The highest values of farm buildings are not all located in the same areas as the highest values of farm land.

Plate No. 262 indicates the value of farm implements and machinery at the Thirteenth Census, each dot representing $30,000. The dense groups of dots, indicating the highest valuation of farm implements and machinery, are found in practically the same areas as the highest values of farm buildings.

Plates Nos. 263 to 312 comprise a series of maps arranged in pairs for each state, one map showing the per cent of land area in farms and the other the average value of farm land per acre, by counties, in 1910. On the first map the counties are shaded to indicate in which of the seven groups of percentages, as specified in the legend, they fall. The lowest group, less than 20 per cent, is unshaded; the highest group, 95 to 100 per cent, is solid black. The second map shows, for counties, by the seven groups of shading, the average

value of the farm land per acre. Comparison of the two maps will reveal that the counties that have the highest percentage of land in farms are not always the counties with the highest value of farm land per acre. The data from which this series of maps were prepared will be found in the Report on Agriculture, Volumes VI and VII of the Thirteenth Census Reports. In preparing these maps the entire county was used as a unit, although in many of the Western states, where irrigation is necessary, it is undoubtedly a little misleading to have the entire county shaded to indicate a high value of farm land per acre when the actual area in farms forms a very small part of the county, and a large portion of the county is of very little value. For instance, in the state of California it will be noted that San Bernardino County is shaded to show a valuation of $125 and over per acre; this value is true for only a very small part of its area. The same conditions exist in a number of other states, especially in the arid and semiarid regions, where the raising of crops and the farm values depend upon the water supply and are due almost entirely to irrigation. Small areas, therefore, have a high valuation per acre, while adjacent areas that can not be irrigated are practically of no value.

### FARM TENURE.

Plate No. 313 is composed of two United States maps, the first showing the proportion of farms owned to all farms, by states, in 1910, and the second, similar data for 1900. At the Twelfth Census the densely shaded area, showing 90 per cent and over of farms owned to all farms, covered the states of Maine, New Hampshire, and North Dakota. In 1910 Maine and New Hampshire were still in the highest class, but North Dakota had dropped to the class 75 to 90 per cent, while New Mexico and Utah had advanced to the highest class, 90 per cent and over. There were 10 states that changed their grouping from 1900, as compared with 1910: New Mexico and Utah advanced from the 75 to 90 per cent group to the group 90 per cent and over; New York, Colorado, and California from group 50 to 75 per cent to group 75 to 90 per cent; Delaware from the less than 50 per cent group to the 50 to 75 per cent group; North Dakota dropped from the 90 per cent and over group to the 75 to 90 per cent group; South Dakota dropped from group 75 to 90 per cent to group 50 to 75 per cent; Oklahoma and Arkansas also decreased, dropping from group 50 to 75 to group less than 50 per cent.

Plate No. 314 presents the number of farms, classified by character of tenure of operator, in 1910, for each state arranged geographically. In this diagram each bar represents 100 per cent, and the different shades indicate the proportion in the three classes—owners, managers, and tenants. Maine leads with the highest percentage of the number of farms owned, New Mexico is second, Utah third, and New Hampshire fourth. The state having the smallest percentage of the number of farms owned is Mississippi, and, conversely, the largest proportion of tenants, while Alabama, with 0.2 per cent, has the smallest proportion of farms operated by managers. Maine has the smallest proportion of tenants, with New Mexico second, New Hampshire third, and Utah fourth. Excluding the District of Columbia, which is considered as a city, Nevada has the largest proportion of the number of farms operated by managers. Considered by geographic divisions, New England and the Mountain and Pacific divisions have the largest proportion of the number of farms owned, while the East South Central and West South Central divisions have the smallest proportion of the number of farms owned and the highest percentage of farms rented.

Plate No. 315, acreage of all land in farms, classified by character of tenure of operator, in 1910, arranged geographically by states, is similar to the previous diagram, although their percentages vary. The highest percentage of the acreage of all land in farms operated by owners is in Maine, with New Hampshire second, Utah third, and Idaho fourth. The lowest percentage of the acreage of all land in farms operated by owners is in Nevada, but this state has the highest percentage of the acreage of land in farms operated by managers, Wyoming being second, and New Mexico third. The states having the smallest proportion of acreage operated by managers are Iowa and Kentucky. The highest percentage of acreage of all land in farms operated by tenants is found in Delaware, with Illinois second, Oklahoma third, and Georgia fourth. The lowest percentage of the acreage of all land in farms operated by tenants is found in Maine, with New Hampshire second, Utah third, and Nevada fourth.

Plate No. 316 indicates the number of farms operated by owners and part owners April 15, 1910; Plate No. 317 is a similar map showing the number of farms operated by tenants at the same date; Plate No. 318 shows the number of farms operated by share tenants in 1910; and Plate No. 319, the number of farms operated by cash tenants in 1910. The distribution of the several kinds of tenure is shown by dots, each dot representing 50 farms. The heavy shading in the northern part of the United States, east of the Mississippi River, shows the areas in which the farms operated by owners are most numerous. The heavy shading in the southern part of the country on Plate No. 317 indicates the great number of farms operated by tenants in that portion of the United States. On Plate No. 318, the number of farms operated by share tenants, the dense groups of dots are found in the Southern states and in Ohio and Indiana, while on Plate No. 319, number of farms operated by cash tenants in 1910, the dense shading is found in the states of the South Atlantic and East South Central divisions.

On Map 1, Plate No. 320, per cent of number of farms operated by tenants, by states, in 1910, the heavy shaded areas, indicating the highest percentages, are all in the southern portion of the United States, while on Map 2, per cent of all land in farms operated by tenants, by states, at the Thirteenth Census, only three states—Illinois, Georgia, and Oklahoma—fall in the class 40 to 50 per cent, and but one—Delaware—in the highest class reported, 50 to 60 per cent.

Plate No. 321 presents the per cent of farms operated by tenants, by counties, in 1910. This map gives a comprehensive idea of the condition of the United States as related to farm tenants. The darkest shaded areas, indicating 75 per cent and over of the farms operated by tenants, are found in South Carolina, Georgia, Alabama, Mississippi, Tennessee, Oklahoma, Arkansas, and Louisiana. For the states west of the one hundred and first meridian the greater portion of this entire area shows less than 20 per cent of the farms operated by tenants.

The dense shading on the map on Plate No. 322, per cent of improved land in farms operated by tenants, by states, in 1910, indicates that five states—Delaware, South Carolina, Georgia, Alabama, and Mississippi—have between 50 and 60 per cent of the improved land in farms operated by tenants. The next group, from 40 to 50 per cent, covers the states of Maryland, Illinois, Oklahoma, and Texas.

### FARM MORTGAGES.

Diagram 2 on Plate No. 322 shows the number of farms operated by their owners free from mortgage and mortgaged in 1910. The solid black part of the bar represents the farms free from mortgage and the light shaded portion the mortgaged. It will be noted that, with a few exceptions, the states of the New England, Middle Atlantic, and East and West North Central divisions have the highest proportion of their number of farms mortgaged. The states showing the lowest per cent of mortgaged farms are in the South Atlantic and Mountain divisions.

Plate No. 323 shows, by dots, the distribution of the mortgaged farms, by counties, for the same date, each dot representing 50 farms. The dense groups of dots, indicating the greatest number of mortgaged farms, are found in Massachusetts, Connecticut, and Vermont of the New England division; New York, New Jersey, and Pennsylvania, comprising the Middle Atlantic division; Michigan and Wisconsin, of the East North Central division; and Missouri of the West North Central division.

### STATISTICS OF FARMS, CLASSIFIED BY RACE, NATIVITY, AND TENURE OF FARMERS.

Plate No. 324 is made up of five diagrams, Diagram 1 showing the per cent of the number of farms, classified by color and nativity of operator, in 1910. The bars are shaded to indicate the proportion of the native white, foreign-born white, and negro and other nonwhite. The native white has the largest proportion of the number of farms in every state, except four—Minnesota, North Dakota, South Carolina, and Mississippi. In the first two the foreign-born whites operate over 50 per cent of the farms, and in South Carolina and Mississippi the negroes operate over 50 per cent. In West Virginia the native whites operate 98.4 per cent of the number of farms; Indiana is second, with 95.1 per cent. In Missouri (93.5 per cent), Pennsylvania (93.4 per cent), Ohio (92.9 per cent), and Kentucky (94.7 per cent), a little less than 95 per cent of the farms are under control of native white operators. West Virginia shows the smallest proportion of the number of farms operated by foreign-born whites and negroes, less than 2 per cent of the farms being operated by these two classes combined.

Diagram 2 compares, by the length of the bars, for the states in the South Atlantic, East South Central, and West South Central divisions, the average value of farm property per acre for white and colored farmers, in 1910, the black bar representing the value of property operated by colored farmers. The average value of farm property per acre for white farmers in Delaware, Maryland, Virginia, Florida, Louisiana, and Oklahoma, is higher than for colored farmers in 1910. In the remaining 10 states shown in this diagram the average value of farm property per acre for the colored farmers is higher than that of the white. Delaware has the highest average value of farm property per acre for the whites and Kentucky the highest for the colored.

Diagram 3 presents similar data for 1900, for the same states. In 1900 the average value of farm property per acre for both white and colored farmers was much lower than in 1910. The states of North Carolina and Oklahoma show a decided change. In 1900 the average value of farm property per acre in Oklahoma for the colored farmer was larger than for the white, while in 1910 the reverse was true. In North Carolina the value for the white farmer was greater than for the colored in 1900, but the value for the colored exceeded that of the white farmer in 1910.

Diagrams 4 and 5 show the average value of farm property per farm for white and colored farmers in the same 16 states for 1910 and 1900, respectively. In every instance the average value of the farm property per farm of the white farmers far exceeds that of the colored farmers both for 1910 and 1900.

Plate No. 325 indicates, by the length of the bars, the total number of acres in farms of white and colored farmers in 1910 and 1900, by states, ranked according to the number of acres in farms, with the greatest number first. Texas has by far the greatest area in farms, but the number of acres has decreased

since 1900; decreases are also shown for 24 other states, North Dakota, South Dakota, Nebraska, Oklahoma, and New Mexico showing the greatest increase in the total number of acres in farms of white farmers.

Map 1 on Plate No. 326 shows, by states, in eight groups of shading, the per cent of the number of farms of white farmers operated by white owners in the Southern states in 1910. The solid black shade indicates the states in which 70 per cent and over of the number of farms are operated by white owners and covers the states of Florida, Virginia, and West Virginia. Georgia and Oklahoma have the lowest percentage, 40 to 50 per cent, of farms operated by white owners; Delaware, South Carolina, Alabama, and Texas are in the group with 50 to 60 per cent, while the remainder of the Southern states—Maryland, North Carolina, Kentucky, Tennessee, Mississippi, Arkansas, and Louisiana—are in the group 60 to 70 per cent.

Map 2 on the same plate, per cent of the number of farms of colored farmers operated by colored owners, for the Southern states only, presents similar data to Map 1. The only state showing over 70 per cent of the farms of colored farmers operated by colored owners is West Virginia. Maryland and Virginia are in the group from 60 to 70 per cent. All other Southern states, with the exception of Kentucky and Oklahoma, with 50 to 60 per cent, fall in the groups having less than 50 per cent.

Map 1 on Plate No. 327 presents the per cent of number of farms of white farmers operated by white tenants, in 1910, for the Southern states only. The states of Georgia and Oklahoma have the highest percentage reported, between 50 and 60 per cent, all other Southern states having less than 50 per cent.

On Map 2, the per cent of number of farms of colored farmers operated by colored tenants, for the Southern states only, at the same date, seven states are colored solid black, indicating that colored tenants operate 70 per cent and over of the farms of colored farmers in the cotton-producing states of South Carolina, Georgia, Alabama, Mississippi, Tennessee, Arkansas, and Louisiana. The next group, 60 to 70 per cent, includes North Carolina and Texas; Delaware is the only state in the group 50 to 60 per cent; Florida, Kentucky, and Oklahoma are in the group 40 to 50 per cent, the remainder of the states having less than 40 per cent of the colored farmers as tenants.

Map 1 on Plate No. 328 shows the per cent of number of all farms operated by colored farmers, in 1910, for the Southern states only. The shading indicates that Mississippi is the only state in which the colored farmers form 60 per cent and over of the number of all farmers. South Carolina is in the group 50 to 60 per cent; the states of Georgia, Alabama, and Louisiana are in the group 40 to 50 per cent; the remaining Southern states are in the groups below 30 per cent.

Map 2 presents the per cent of number of farms of white farmers operated by white managers, in 1910, for the Southern states only. There are only five states in which the white managers operate over 1 per cent of the farms of white farmers. Florida has the highest per cent, appearing in the group 3 to 4 per cent.

On Plate No. 329 the dots indicate the number of farms in the United States operated by colored owners and part owners, at the Thirteenth Census, each dot representing 50 farms. The map shows that the colored owners are scattered all over the United States, every state having one or more dots, except Maine, New Hampshire, Vermont, and Rhode Island. The greatest density of this character of ownership is found in the Southern states, Virginia and South Carolina having the greatest number.

Plate No. 330 indicates, by the dots, the number of farms operated by colored tenants, in 1910. A comparison with the map showing the counties in the Southern states having 50 per cent or more of their population colored will coincide almost exactly with the heavy groups of dots on this map. In other words, the number of farms operated by colored tenants are more numerous where the density of the colored population is highest. The states of South Carolina, Georgia, Alabama, Mississippi, Arkansas, and Louisiana have the largest areas most densely shaded. For the remainder of the United States, outside of the Southern states, the number of the colored tenants is very small.

Map 1 on Plate No. 331 indicates the percentage of all land in farms of white farmers operated by white owners, in 1910, for the Southern states only. Almost the entire area of the Southern states is solid black, indicating that in these states 70 per cent and over of the land of the white farmers was operated by white owners. Only five states have smaller percentages—Georgia and Texas, with 60 to 70 per cent; Maryland and Oklahoma, with 50 to 60 per cent; and Delaware, with 40 to 50 per cent. In other words, the map shows that in the Southern states more than 50 per cent of the land in farms of white farmers is owned.

Map 2, per cent of all land in farms of colored farmers operated by colored owners, in the Southern states, in 1910, shows that 70 per cent of all land in farms of colored farmers is operated by colored owners in West Virginia and Oklahoma. In Virginia colored owners operated from 60 to 70 per cent of the land in farms of colored farmers; in Kentucky and Florida, from 50 to 60 per cent; and in Arkansas and Texas, from 40 to 50 per cent. All the other states have less than 40 per cent of land in farms of colored farmers operated by colored owners.

Plate No. 332 consists of two maps, the first being per cent of all land in farms of white farmers operated by white managers, for the Southern states only, and Map 2, per cent of all land in farms of colored farmers

operated by colored managers, also for the Southern states, at the Thirteenth Census. A comparison of the two maps shows that the white managers operate a larger proportion of the acreage of the farms of white farmers than colored managers operate of the farms of colored farmers.

Plate No. 333 comprises two maps, Map 1, per cent of all land in farms of white farmers operated by white tenants, for the Southern states, in 1910, and Map 2, per cent of all land in farms of colored farmers operated by colored tenants, for the same states, at the same date. These maps indicate that the white tenancy in the Southern states operates a smaller proportion of the acreage of the land of white farmers than the colored tenants operate of the land of colored farmers.

Map 1 on Plate No. 334 gives the per cent of all land in farms operated by colored farmers in 1910, for the Southern states only. The highest per cent of all land operated by colored farmers is shown for Mississippi, which appears in the group 30 to 40 per cent. The states of South Carolina, Georgia, Alabama, and Louisiana are in the group 20 to 30 per cent, while all other states have less than 20 per cent of all land in farms operated by colored farmers.

Map 2 presents the per cent of improved land in farms operated by colored farmers in 1910, for the Southern states only. The colored farmers operated from 40 to 50 per cent of the improved land in Mississippi and South Carolina, and from 30 to 40 per cent in Georgia and Alabama. For the other states less than 30 per cent of the improved land in farms was operated by colored farmers.

### SELECTED PLANTATION AREA.

The Census Bureau made an investigation, for a selected area, of the plantations in 1910, the first that had ever been made by the bureau, and in its conduct of this investigation a special plantation schedule was used in addition to the regular agricultural schedule. The selected area comprised 325 counties in the states of Virginia, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Tennessee, Arkansas, Louisiana, and Texas.

The sketch map of a portion of the United States on Plate No. 335 is shaded to indicate the selected plantation area, also the limit of cotton production, as well as the counties in which negroes formed 50 per cent or more of the population in 1910. It will be noted that the selected plantation area covers a large proportion of the counties in which the negroes predominate. The cross-hatched area indicates the counties selected for the special investigation; the dotted area indicates those counties in which the negroes formed 50 per cent or more of the population; a number of such counties are shown outside of the plantation areas, but the dots within the cross-hatching indicate the counties within the selected area that had a majority of the population negroes. The discussion of the subject of the selected plantation area will be found on pages 877 to 890 of the Report on Agriculture, Volume V, Reports of the Thirteenth Census.

### LIVE STOCK.

On Plate No. 336 the value of domestic animals on farms and ranges in 1910 is indicated by dots, each dot representing animals valued at $100,000. The dense groups of dots indicate the areas from which the domestic animals having the highest value were reported.

On Plate No. 337 the number of neat cattle on farms and ranges in 1910 is represented by dots. Each dot represents 1,000 head of cattle and indicates the density of neat cattle in proportion to the area. The dense groups of dots in Wisconsin, Iowa, Minnesota, Illinois, Nebraska, Kansas, and New York indicate the areas from which the greatest number of cattle were reported.

On Plate No. 338, cattle on farms in 1910 and 1900, the length of the bar indicates the number of cattle on farms in each state. The states are ranked in the order of the number of cattle reported in 1910, with the largest number first. Texas was first, Iowa second, Kansas third, Nebraska fourth, Wisconsin fifth, and Missouri sixth in 1910, the first 4 states appearing in the same order in 1900. For 24 of the states a decrease in the number of cattle was reported in 1910. The largest decreases from 1900 to 1910 were in Texas, Iowa, Kansas, Illinois, and Oklahoma, while California and Minnesota reported the largest increases in the number of cattle on farms from 1900 to 1910.

Map 1 on Plate No. 339 shows, by the number of dots, the number of cattle on farms in 1910, by states, each dot representing 200,000 cattle.

Map 2 illustrates, by the dots, the number of dairy cows on farms in 1910, by states, each dot representing 200,000 dairy cows. A comparison of the two maps shows that a number of the states having large numbers of cattle reported a small number of dairy cows. Texas ranked first in the number of cattle but was sixth in the number of dairy cows; Iowa was second in the number of cattle and third in the number of dairy cows; New York, leading in the number of dairy cows on farms, ranked eighth in the number of cattle; Pennsylvania, seventh in the number of dairy cows, ranked thirteenth in the number of cattle.

Plate No. 340 shows, by dots, each dot representing 1,000 dairy cows, the distribution of dairy cows on farms and ranges, by counties, in 1910. The dense groups of dots locate the counties in which dairy cows are most numerous. In Wisconsin the dense groups of dots in the southern part of the state locate the great dairy farming district; central New York is also marked as a dairy farming district; southeastern Pennsylvania, near Philadelphia, also has an area

closely covered by dots, indicating a large number of dairy cows.

Diagram 1 on Plate No. 341 presents the number of sheep on farms in 1910 and 1900, the length of the bars showing the number of sheep at both censuses. In 1900 Montana had the largest number of sheep, but in 1910 Wyoming was slightly in the lead, Montana showing a large decrease in the number of sheep from 1900 to 1910. The arrangement of the bars on this diagram presents strikingly the decreases in the number of sheep reported from 36 of the 48 states. Utah, New Mexico, New York, Montana, Wisconsin, Pennsylvania, Colorado, Washington, Michigan, Indiana, North Dakota, and Oregon reported the largest decreases in the number of sheep returned in 1910, as compared with 1900. The total number of sheep reported at the census of 1910 showed a decrease, over the number returned in 1900, of 9,055,852, or 14.7 per cent.

In Diagram 2, horses, mules, and asses and burros in 1910 and 1900, Texas leads in the number reported, closely followed by Illinois, Iowa, Missouri, Kansas, Nebraska, and Oklahoma, each of these states reporting over 1,000,000 of such animals. The number of horses increased 1,566,093 over the number reported in 1900; the number of mules increased 945,154, and for the horses, mules, and asses and burros combined, from 1900 to 1910, the number increased 2,522,780, or 11.7 per cent.

On Map 1, Plate No. 342, number of horses, mules, and asses and burros on farms in 1910, by states, the number of dots indicates the number of animals, each dot representing 200,000.

The number of sheep on farms in 1910 is shown on Map 2, by states, each dot representing 200,000 sheep.

Plate No. 343 indicates the number of horses and mules on farms and ranges at the Thirteenth Census. Each dot on this map represents 1,000 animals, and the density of the dots indicates where the largest number of the animals were found.

Plate No. 344 presents similar data for sheep, each dot representing 2,500 sheep. The dense groups of dots in Ohio, Michigan, Idaho, Wyoming, and Montana are especially prominent, locating the counties reporting a large number of these animals.

Plate No. 345 gives the number of swine on farms in 1910 and 1900, by states, arranged in order of the number reported in 1910, with the largest first. Iowa leads, with 7,545,853, and Illinois is second, with 4,686,362. The black bars represent the number returned in 1910 and the open bars the number in 1900. The bars for the states producing the largest number of swine indicate a decrease from 1900 to 1910, 25 states reporting fewer swine in 1910 than in 1900; Oklahoma is the state showing the largest increase from 1900 to 1910. The total number of swine reported in 1910 was 58,185,676, or 4,682,365 less than the number reported in 1900.

Plate No. 346 shows the distribution of swine on farms and ranges, by counties, in 1910, each dot representing 2,500. As indicated on the diagram on Plate No. 345, Iowa, Illinois, Missouri, Indiana, Nebraska, and Ohio returned the largest number of swine.

Map 1 on Plate No. 347 also shows the number of swine on farms in 1910, by states, each dot representing 200,000 swine, and Map 2 the number of fowls on farms, by states, in 1910, each dot representing 1,000,000 fowls. The increase in the total number of fowls in the 10 years was 18.1 per cent. Iowa leads, with 23,482,880; Illinois is second, with 21,409,835; and Missouri third, with 20,897,208.

Plate No. 348 illustrates, by means of the dots, the distribution of poultry on farms and ranges in 1910, each dot representing 10,000 fowls. The dense groups of dots indicate that Iowa, Illinois, and Missouri have the largest numbers, and are the only states reporting over 20,000,000 fowls at the Thirteenth Census.

Plate No. 349 shows, by the length of the bars, the value of fowls raised in 1909 and 1899, by states, arranged in geographic divisions. Illinois reported the highest values at both the Twelfth and the Thirteenth Censuses. Large increases were reported for every state in 1909, as compared with 1899.

Plate No. 350 shows, by the length of the bars, the value of eggs produced in 1909 and 1899. Though Illinois led in the value of fowls raised, Ohio led in the value of eggs produced, followed by Missouri, Iowa, Illinois, and New York, in the order named, each producing eggs valued at over $17,000,000. The value of eggs in 1909 for Illinois and Missouri was more than double the value reported for 1899.

On Plate No. 351 the production of wool in pounds in 1909 and 1899 is indicated by the length of the bars. Although the number of sheep was reduced from 1900 to 1910, the production of wool in Wyoming, Montana, and Ohio, the leading states, showed a fair increase. Although 31 of the states reported decreases, the total production of wool increased. The estimate of the number of pounds produced shows that the increase amounted to 12,852,393 pounds, or 4.6 per cent. The value of the wool clipped was $45,670,053 in 1899, and $65,472,328 in 1909, an increase of $19,802,275, or 43.4 per cent.

### SUMMARY FOR ALL CROPS.

Diagram 1 on Plate No. 352 shows the value of all farm crops in 1909 and 1899. Illinois was first at both enumerations, closely followed by Iowa, Texas, and Ohio, in the order named. New York, which was fifth in 1899, had dropped to eighth in 1909, Georgia having advanced to fifth place, Missouri to sixth, and Kansas to seventh. The value of crops in the United States increased 83 per cent during the decade and the diagram shows for individual states the valuation at the Twelfth and Thirteenth Censuses,

the difference in the length of the bars showing approximately the increase.

Diagram 2, proportion of land in farms, improved and in crops, with acreage reports, to total land area in 1910. The white, or unshaded, portion of the bar represents the per cent of the total land area that is not in farms. The heavily shaded part indicates the land in farms that is unimproved, the other two shades representing, first, the land in crops, and, second, by the cross-hatching, the other improved land. It will be noted that for the New England and Middle Atlantic states more than 50 per cent of the land is unimproved and not in farms. In the East North Central division only two states—Michigan and Wisconsin—show 50 per cent of the land unimproved and not in farms. In the West North Central division North and South Dakota, Minnesota, and Nebraska have less than 50 per cent of the land improved. In the states of the South Atlantic division, excluding the District of Columbia, which is a city, Florida shows the greatest proportion of unimproved land and land not in farms—94.6 per cent. In the states of the East South Central division the proportion of the land in crops and other improved land varies, only one state—Kentucky—having over 50 per cent of its land improved. In the West South Central division Texas, with the greatest total area, has the lowest per cent improved. The Mountain division has the smallest area improved and the states all show the lowest percentages of land improved of any in the United States. Arizona has the greatest proportion of unimproved area and the greatest percentage of land not in farms. The states comprising the Pacific division also have very low percentages of land improved and in crops. There are only nine states in the United States that have over 50 per cent of their total area improved.

On Plate No. 353, the proportion which the value of specified crops formed of the value of all crops in 1909, the total length of the bar represents the value of all crops in each state, the shaded portions indicating the proportionate value of the seven crops specified, and the unshaded portion the value of all other crops. The hay and forage crop in the states of the New England and Mountain divisions is the most valuable. Cereals are the predominating crop in Pennsylvania and all the states of the East North Central and West North Central divisions, also in Maryland, Delaware, Virginia, West Virginia, Kentucky, Tennessee, Louisiana, Oklahoma, Montana, Idaho, Washington, and Oregon. Cotton is the most valuable crop in the southern part of the South Atlantic division, and in Mississippi and Alabama of the East South Central division, and in the West South Central division, except the state of Oklahoma, in which cereals form more than 50 per cent of the value of all crops, and in Louisiana, where cereals are the leading crop. Vegetable crops are important in the New England and Middle Atlantic divisions. Fruits and nuts and forest products are of small importance as compared with the other crops specified.

Diagram 1 on Plate No. 354, average value per acre of crops with acreage reports, 1909 and 1899, indicates that the New England states of Massachusetts, Rhode Island, and Connecticut reported the highest values, in the order named. The only states reporting values in excess of $25 per acre were Massachusetts, with an average of $41.33 per acre; Rhode Island, with $40.50 per acre; Connecticut, with $35.84; New Jersey, with $33.19; South Carolina, with $26.45; and Arizona, with $25.97 per acre. The last state named on the diagram is South Dakota, which had a value of $10.17 per acre. All of the states, except New Mexico, showed large increases in the average value of farm crops per acre from 1899 to 1909, New Mexico, the only state that decreased, reporting an average value of farm crops per acre of $14.27 in 1899 and $12.76 in 1909.

In Diagram 2, average value of farm crops per farm, 1909 and 1899, North Dakota leads with a valuation of $2,429 per farm; Nevada is second, with $2,203 per farm; California third, with $1,736; South Dakota fourth, with $1,616; and Nebraska fifth, with $1,512 per farm. These were the only states reporting an average value of farm crops per farm of more than $1,500. The state reporting the smallest value is New Mexico, with $250 per farm in 1909 and $249 in 1899, the reports at each census being nearly equal. Not a single state on the entire list showed a decrease in the average value of farm crops per farm in 1909, as compared with 1899, and, with a few exceptions, the proportionate increase for each state was large.

The small map (3), at the bottom of the plate, indicates, by means of dots, the geographic distribution of the value of all farm crops, by states, in 1909, each dot representing a value of $8,000,000. It will be noted that the dots are closely grouped in the states of Iowa, Illinois, Indiana, and Ohio, but nearly all the Eastern and Southern states returned higher valuations. The Mountain states reported the lowest valuations, New Mexico, Arizona, and Nevada being the lowest. The Pacific states, while not as heavily shaded as the states in the East, reported farm crops of large value.

Plate No. 355 shows the distribution of the value of all crops in 1909, each dot representing a value of $100,000. Illinois leads, with $372,270,470; Iowa is second, with $314,666,298; Texas third, with $298,133,466; and Ohio fourth, with $230,337,981.

The map on Plate No. 356 represents, by dots, the expenditures by farmers for labor in 1909, each dot representing $15,000. The dense groups of dots show the counties having the greatest expenditures for labor and are nearly all counties located near great cities.

Plate No. 357 represents, by dots, the expenditures of farmers for feed for live stock in 1909, each dot equaling $50,000. The Eastern states show the most densely shaded areas and indicate the greatest expenditures for feed for live stock.

Plate No. 358 shows the expenditures of farmers for fertilizer in 1909. Each dot represents $5,000 and the dense groups are almost entirely in states on the Atlantic coast. The small number of dots in the states west of the Mississippi River presents strikingly the small amount expended for fertilizer.

Plate No. 359 shows, by dots, the value of the receipts from sale of feedable crops in 1909, each dot representing $50,000. The dense groups in the counties in the northern half of Illinois indicate the greatest receipts from the sale of feedable crops in 1909.

### INDIVIDUAL CROPS.

Plate No. 360 shows the changes in the acreage of all cereals from 1899 to 1909, for each state, arranged by geographic divisions. The black bars on the left of the central line show the decrease in acreage and the bars on the right of the central line indicate the increase. Decreases in 27 states are indicated and increases in 21 states. California shows the greatest decrease, 2,033,762 acres; Iowa was second in decrease of acreage, with 1,879,056 acres; Minnesota was third, with 1,067,219 acres; and Tennessee fourth, with 918,681 acres. The states showing the greatest increases in acreage are North Dakota, with 6,276,767 acres; Oklahoma second, with 3,816,834 acres; and Kansas, with 2,311,729; South Dakota, with 1,992,296; and Washington, with 1,240,685 acres, following in the order named. The total increase in acreage in cereals was 6,413,743 acres, or 3.5 per cent. The acreage east of the Mississippi River decreased over 6,000,000 acres, while that west of the Mississippi increased over 12,000,000 acres.

Map 1 on Plate No. 361 indicates, by states, in six groups, the changes in acreage of all cereals from 1899 to 1909. The highest group, with an increase of 2,500,000 acres and over, includes North Dakota and Oklahoma; the group 1,000,000 to 2,500,000 includes South Dakota, Kansas, and Washington. The decreases shown on the map are all in the states east of the ninety-seventh meridian, with the exception of Texas and California. The only states east of the Mississippi River increasing their acreage of cereals were Massachusetts, Rhode Island, Connecticut, Indiana, and Florida.

Map 2 on Plate No. 361 shows the acreage, by states, of all cereals in 1909, each dot representing 400,000 acres. Illinois has the greatest acreage, closely followed by Kansas and Iowa, each of these states having over 15,000,000 acres; Nebraska, North Dakota, Missouri, and Minnesota, in addition to those named, are the only states having over 10,000,000 acres each in cereals.

On Map 1, Plate No. 362, changes in yield of corn crop per acre, by states, from 1899 to 1909, the states unshaded, or left white, increased their yield in 1909. Oklahoma and Kansas showed the greatest decrease, 8 bushels and over per acre, while the corn crop of Pennsylvania, Arkansas, Nebraska, and Texas decreased 4 to 8 bushels; and Maryland, Mississippi, Iowa, New Mexico, and California reported a decrease of 2 to 4 bushels per acre in their corn crop.

Map 2, corn—acreage, by states, in 1909, shows that the states having more than 5,000,000 acres in corn were, in order of size of acreage, Illinois, Iowa, Kansas, Nebraska, Missouri, Oklahoma, and Texas; Illinois, with 10,045,839 acres in corn, reported the largest acreage in 1909.

Plate No. 364 consists of six diagrams, relating to the production of corn, wheat, and oats. In Diagram 1, production of corn in 1909 and 1899, Illinois, with 390,218,676 bushels, ranked first; Iowa was second, with 341,750,460 bushels; Indiana was third, with 195,496,433 bushels; and Missouri fourth, with 191,427,087 bushels. Comparing the bars for the two years, it will be noted that in 16 of the 28 states shown the production was less in 1909 than in 1899.

Diagram 4, Plate No. 364, shows the production of corn at each census from 1849 to 1909. The increase was small from 1849 to 1859; it decreased from 1859 to 1869; the crop more than doubled from 1869 to 1879; the increase was regular from 1879 to 1889 and from 1889 to 1899, but a slight decrease was reported in 1909.

Plate No. 365 represents, by dots, the production of corn in 1909; each dot equals 100,000 bushels. The dense groups of dots in Illinois, Iowa, Indiana, and Nebraska are almost solid black, indicating a tremendous production in these states. The scattering dots in other states show the relative importance of the grain crop in these states.

Map 1 on Plate No. 363, wheat—acreage, by states, in 1909, indicates that North Dakota, with 8,188,782 acres, had the largest area in wheat in 1909. Kansas was second, with 5,973,785 acres; Minnesota, with 3,276,911 acres, was third; and South Dakota, with 3,217,255 acres, was fourth.

Diagram 2 on Plate No. 364, production of wheat in 1909 and 1899, shows that North Dakota was first in 1909, with a crop of 116,781,886 bushels; Kansas second, with 77,577,115 bushels; Minnesota third, with 57,094,412 bushels; and Nebraska fourth, with 47,685,745 bushels. There were 13 of the 24 states represented on the diagram that reported a smaller production in 1909 than in 1899.

Diagram 5, Plate No. 364, production of wheat at each census from 1849 to 1909, indicates that the wheat crop increased at each census; the increase over the previous census from 1879 to 1889 and from 1899 to 1909 was very small.

Plate No. 366 represents, by dots, the production of wheat in 1909. The dense groups in North Dakota, South Dakota, and parts of Nebraska and Kansas indicate the counties in which the production was greatest.

Map 2, Plate No. 363, oats—acreage, by states, in 1909, shows that Iowa had the largest area in oats, with an acreage of 4,655,154; Illinois being second, with 4,176,485 acres; and Minnesota third, with 2,977,258 acres.

Diagram 3, Plate No. 364, shows the production of oats in 1909 and 1899. Illinois was first, with a production of 150,386,074 bushels; Iowa was second, with 128,198,055 bushels; Minnesota third, with 93,897,717 bushels; and Wisconsin fourth, with 71,349,038 bushels. These states had almost the same rank in 1899, except that Minnesota and Wisconsin changed places. Of the 26 states represented on the diagram, 9 reported a smaller production in 1909 than in 1899.

Diagram 6, Plate No. 364, production of oats at each census from 1849 to 1909, indicates that the oats crop showed a steady increase at each enumeration, the largest increase being shown from 1879 to 1889.

Plate No. 367 presents, by dots, the production of oats in 1909, each dot representing 100,000 bushels. Illinois and Iowa led in the production of this cereal and the dense groups of dots in the northern part of Illinois indicate where the greatest production was reported in 1909.

Diagram 1 on Plate No. 368 shows the production of barley for the 15 principal producing states in 1909 and 1899. The acreage of barley increased 3,228,510 acres and the production 53,709,335 bushels. Minnesota reported the largest crop at the last enumeration, 34,927,773 bushels; California was second, with a production of 26,441,954 bushels; North Dakota third, with 26,365,758 bushels; South Dakota fourth, with 22,396,130 bushels; and Wisconsin fifth, with 22,156,041 bushels. Iowa, the state ranking fourth in 1899, reported a decrease of over 7,000,000 bushels in its crop for 1909.

Diagram 2 gives the production of rye in 1909 and 1899 for the 12 principal producing states. Michigan, with a crop of 5,814,394 bushels, was first in production; Wisconsin second, with 4,797,775 bushels; Minnesota third, with 4,426,028 bushels; and Pennsylvania fourth, with 3,496,603 bushels. The crop of 1909 was less than that reported in 1899 for 6 of the 12 states represented on the diagram. The increase for the entire United States was 3,951,832 bushels. The increase in the states of Michigan and Minnesota was 6,243,402 bushels. The greatest decrease reported by any state was from Nebraska, a decrease of 1,241,189 bushels for 1909.

In Diagram 3, production of buckwheat for 1909 and 1899, New York leads, with a crop of 5,691,745 bushels; Pennsylvania being second, with 4,797,350 bushels; Michigan third, with 958,119 bushels; and West Virginia fourth, with 533,670 bushels. These were the only states reporting over 500,000 bushels. The three states of the Middle Atlantic division produced 10,701,643 of the 14,849,332 bushels reported for the entire United States.

The maps on Plates Nos. 369 to 371 show the distribution of the production of barley, rye, and buckwheat, respectively, in 1909. Each dot represents 50,000 bushels and the dense groups of dots locate the principal producing areas of these crops.

Diagram 4, Plate No. 368, presents the production of tobacco in 1909 and 1899. Kentucky was the leading state, with a production of 398,482,301 pounds; North Carolina, with a production of 138,813,163 pounds, was second; and Virginia third, with a production of 132,979,390 pounds. These were the only states producing over 100,000,000 pounds.

Plate No. 372 represents, by the dots, the tobacco production in 1909, each dot equaling 400,000 pounds. The dense groups of dots are located in Kentucky, North Carolina, Virginia, Ohio, Tennessee, Wisconsin, Pennsylvania, and Connecticut. The acreage devoted to the tobacco crop is small; only 1,294,911 acres were reported in 1909. The dots indicate that the areas in Pennsylvania and Connecticut are very small and the crop is cultivated in comparatively few counties. Kentucky, the state leading in its production, has the greatest number of counties producing tobacco.

The fifth illustration on Plate No. 368 is a map of the United States presenting the acreage of hay and forage in 1909, each dot representing 400,000 acres. Iowa, with 5,046,185 acres, was the leading state, New York following closely, with 5,043,373 acres; Nebraska was third, with 4,520,034 acres; Kansas fourth, with 3,957,745 acres; and Minnesota fifth, with 3,946,072 acres. The total acreage reported was 72,280,776, an increase since 1899 of 10,589,707 acres, or 17.2 per cent. Only 10 states reported a decrease in acreage in this crop.

Plate No. 373 shows the production of hay and forage in 1909. This is one of the leading agricultural crops of the United States and its distribution is indicated by the dots, each dot representing 2,000 tons. The dense groups of dots are in the counties where the crop is of the greatest importance. Each state has a number of dots, showing that it is a crop of wide range and one of importance in nearly every state. The dots are most numerous in the Northern states, especially in the Middle Atlantic and East and West North Central divisions, where are found the areas producing the heaviest crop of hay and forage.

On plate No. 374 the production of alfalfa in 1909 is indicated. The dots on this map show that the

crop is unimportant east of the Mississippi River, but in the Western states, especially in Nebraska, Kansas, Colorado, Utah, Idaho, and California, the crop, while a minor one, is of considerable value.

Plate No. 375 consists of four diagrams. In Diagram 1, production of potatoes in 1909 and 1899, New York state leads for both 1899 and 1909. In 1899 it reported 38,060,471 bushels, while the crop of 1909 was 48,597,701 bushels. Michigan, the second state in point of production, reported 38,243,828 bushels in 1909; Wisconsin, the third state, reported 31,968,195 bushels; Maine, with 28,556,837 bushels, was fourth; Minnesota, with 26,802,948 bushels, was fifth; Pennsylvania, with 21,740,611 bushels, was sixth; and Ohio, with 20,322,984 bushels, was seventh. Each of these states reported a production of more than 20,000,000 bushels in 1909. The total production increased from 273,318,167 bushels to 389,194,965 bushels, an increase of 115,876,798 bushels, or 42.4 per cent.

Plate No. 376 gives the production of potatoes in 1909, each dot representing 100,000 bushels. The dots, indicating the distribution of the crop, are most dense in Maine, New York, Michigan, Wisconsin, and Minnesota, showing that these states lead in the production of potatoes. The dense groups of dots in the northern part of Maine locate important producing counties of the state in 1909.

For the production of sweet potatoes and yams in 1909 and 1899, as indicated in Diagram 2, Plate No. 375, North Carolina was the leading state in both 1899 and 1909, reporting, at the Twelfth Census, 5,781,587 bushels, and at the Thirteenth Census, 8,493,283 bushels. Georgia was second in 1909, with 7,426,131 bushels; Alabama third, with 5,314,857 bushels; and Virginia fourth, with 5,270,202 bushels. The total production reported in 1899 was 42,517,412 bushels, as compared with 59,232,070 bushels in 1909, an increase of 16,714,658 bushels, or 39.3 per cent. Of the states appearing on the diagram, there were but four reporting a smaller production for 1909 than for 1899. Texas reported the largest decrease, the 1909 crop being 569,052 bushels less than that of 1899. The reports of 15 states for 1909 indicated decreases in the number of bushels produced, as compared with the production for 1899.

On Plate No. 377 the production of sweet potatoes and yams in 1909 is shown, the distribution of the crop being indicated by the dots, each dot representing 100,000 bushels. The area of production is principally confined to the states of the South Atlantic and East and West South Central divisions. The states leading in the production are all Southern states. The total production in 1909 was 59,232,070 bushels, 29,628,153 bushels of which were produced in the South Atlantic division, 13,573,580 bushels in the East South Central division, and 9,025,928 bushels in the West South Central division. Over 52,000,000 of the 59,000,000 bushels were produced in these three divisions.

Diagram 4 on Plate No. 375 presents the production of cotton in 1909 and 1899. The total production in bales was 9,534,707 in 1899 and 10,649,268 in 1909, an increase of 11.7 per cent. Texas was the state leading in production at both censuses, with 2,506,212 bales in 1899 and 2,455,174 in 1909, a decrease of 51,038 bales. Georgia, South Carolina, Alabama, and Mississippi follow in the order named and were the only states each reporting over 1,000,000 bales.

Diagram 3, on the same plate, production of cotton at each census from 1849 to 1909, indicates that the production increased each year, except in 1869, at which date there was a reduction in the crop of over 2,000,000 bales from the amount returned in 1859. The production in 1879 was larger than that of 1869 by more than 2,500,000 bales.

Plate No. 383 represents, by dots, the distribution of the cotton crop in 1909, each dot equaling 1,000 bales. This crop is confined to the Southern states, and the dense groups of dots indicate the principal producing areas in the states of North Carolina, South Carolina, Georgia, Alabama, Mississippi, Arkansas, and Texas.

On Map 1, Plate No. 384, cotton—acreage, by states, each dot represents 400,000 acres. The Southern states are the only states in which solid black dots are found. Texas is the leading state in both acreage and production, reporting 9,930,179 acres in cotton. Georgia is second, with 4,883,304 acres; Alabama third, with 3,730,482 acres; and Mississippi fourth, with 3,400,210 acres.

On Plate No. 378 the production of dried peas and beans in 1909 is indicated by the dots, each dot representing 10,000 bushels. The thickly shaded areas in Michigan and New York indicate that these states lead in the production of dried peas and beans. The crop is unimportant in other portions of the country, as indicated by the small number of dots shown in other states.

Plate No. 379, production of rice in 1909, indicates the areas in which this crop is produced, each dot representing 50,000 bushels. Louisiana, with 10,839,973 bushels; Texas, with 8,991,745 bushels; and Arkansas, with 1,282,830 bushels, produced 21,114,548 bushels, the remaining states producing only 723,972 bushels. South Carolina produced 541,570 bushels in 1909. The states of Virginia, North Carolina, Georgia, Florida, Alabama, and Mississippi also reported small amounts. The states mentioned are the only states from which rice was reported.

The map on Plate No. 380 represents, by the dots, the distribution of the production of sugar beets in 1909, each dot equaling 5,000 tons. The report indicates that every state in the United States, except Connecticut, produced sugar beets in 1909. The total production was 3,932,857 tons. The states leading in the production were Colorado (1,231,712 tons), California (845,191 tons), Michigan (707,639 tons), Utah (413,946 tons), Idaho (179,661 tons), Wisconsin (127,526 tons), and Montana (109,434 tons). These were the only states reporting a production of more than 100,000 tons each, most of the remaining states reporting small quantities. The dots locate the counties in the states from which this crop was reported, and it will be noted that the area from which sugar beets were reported is very small, as compared with the area of other crops. The total acreage reported in 1909 was only 364,093 acres.

Plate No. 381 indicates, by the distribution of the dots, the production of flaxseed in 1909, each dot representing 10,000 bushels. The heavily dotted areas are found principally in North Dakota, South Dakota, and Minnesota, with a few scattered dots in Montana, Kansas, Missouri, and Iowa. These states together reported 19,328,129 bushels of the total (19,512,765).

The map on Plate No. 382 represents, by the dots, the distribution of the production of hops in 1909. This crop is one of importance in only four states—Oregon, California, Washington, and New York—the other states reporting small quantities of hops.

Map 2 on Plate No. 384 represents the distribution of the value of fruits and nuts reported in 1909. The value of the fruits and nuts produced at that date in California was more than half the total value reported for the entire United States. New York was second in the value of the fruit production and Texas in the value of nuts produced.

Plate No. 385 represents the production of small fruits in 1909. The producing areas are indicated by the dots, each dot representing 100,000 quarts. Massachusetts, New Jersey, Delaware, and Michigan have dense groups of dots, indicating the portions of these states in which this crop is produced. New York, Maryland, Missouri, and California also have quite an extended area of this crop, although not as concentrated as in the states referred to above.

Plate No. 386 presents the production of orchard fruits in 1909, the density of the production being indicated by the dots, each dot representing 25,000 bushels. The dense groups of dots, indicating the counties with the greatest production, are found in New York, California, and Michigan. Orchard fruits are widely distributed over all parts of the country, except in the Mountain and West North Central divisions.

On Plate No. 387, production of grapes in 1909, the distribution and density of production are indicated by dots, each dot representing 1,000,000 pounds. California produced 77 per cent of the 1,979,686,525-pound crop, and the dense groups of dots locate the counties in which this crop was produced. New York, with a production of 253,006,361 pounds, and Michigan, with 120,695,997 pounds, rank next to California. The production in some counties of New York and Michigan is very large, as indicated by the solid black area.

Plate No. 388 presents the centers relating to farms, agricultural products, and population, for 1900 and 1910. This map of a section of the United States has indicated thereon, by various symbols, the location of ten centers. The first, indicated by stars, are the centers of population in 1900 and 1910, the center of population moving almost directly west during the decade. The second, the heavy rimmed circles, indicates the location of the centers of the number of farms in 1900 and 1910. The center of the number of farms moved west and south, the movement being about 30 miles southwest for the 10 years. The centers of improved acreage in 1900 and 1910 are indicated by two triangles. This center during the decade moved west and north about 35 miles. The center of the production of cereals in both 1900 and 1910 is indicated by a cross inscribed in a circle. As this crop was largely produced in the Northwest, the change was in that direction, the center moving a little west of north about 12 miles. The centers of farm values are indicated by the black blocks with the white center. The center of farm values had the largest movement of any of the centers during the decade, moving almost directly west about 65 miles.

In general, agricultural production has followed the movement of population—that is, they all moved in a westerly direction, although not in a parallel line, as three of the centers had a decided movement north, while that for the number of farms was in the opposite direction. The south movement of the center of number of farms was due to the large number of tenant farms reported in the South.

The table following indicates the latitude and longitude in 1900 and 1910, the distance each of the centers moved during the decade, and the location of the center in relation to a prominent city. Of the ten centers shown on the map, two, those of population, are in Indiana, five in Illinois, two in Missouri, and one in Iowa.

The center of number of farms for 1900 and 1910, also the center of production of cereals for 1900, the center of improved acreage for 1900, and the center of farm values in 1900 are in Illinois. The centers of farm values and improved acreage for 1910 are in Missouri, while the center of production of cereals for 1910 falls in Iowa.

CENTERS OF POPULATION AND AGRICULTURE: 1900 AND 1910.

| CENSUS YEAR. | North latitude. | West longitude. | APPROXIMATE LOCATION BY IMPORTANT TOWNS. | MOVEMENT FROM 1900 TO 1910. | |
|---|---|---|---|---|---|
| | | | | Distance in miles. | Direction. |
| **CENTER OF POPULATION: 1900 AND 1910.** | | | | | |
| | ° ′ ″ | ° ′ ″ | | | |
| 1900 | 39 9 36 | 85 48 54 | 6 miles southeast of Columbus, Ind | 39.0 | West. |
| 1910 | 39 10 12 | 86 32 20 | In the city of Bloomington, Ind | | |
| **CENTER OF NUMBER OF FARMS: 1900 AND 1910.** | | | | | |
| | ° ′ ″ | ° ′ ″ | | | |
| 1900 | 38 17 00 | 88 12 30 | 11.2 miles southeast of Fairfield, Wayne County, Ill | 43.9 | West-southwest. |
| 1910 | 38 4 12 | 88 57 33 | 6.6 miles north-northwest of Benton, Franklin County, Ill | | |
| **CENTER OF IMPROVED ACREAGE: 1900 AND 1910.** | | | | | |
| | ° ′ ″ | ° ′ ″ | | | |
| 1900 | 39 26 20 | 90 39 20 | In Greene County, Ill., 60 miles north-northwest of St. Louis, Mo. | 68.2 | West by north. |
| 1910 | 39 31 12 | 91 52 13 | 9.2 miles east-northeast of Paris, Monroe County, Mo | | |
| **CENTER OF PRODUCTION OF CEREALS: 1900 AND 1910.** | | | | | |
| | ° ′ ″ | ° ′ ″ | | | |
| 1900 | 40 16 13 | 91 25 10 | 28 miles north of Quincy, Ill | 28.7 | North-northeast. |
| 1910 | 40 37 48 | 91 41 36 | 19.1 miles west of Fort Madison, Lee County, Iowa | | |
| **CENTER OF FARM VALUES: 1900 AND 1910.** | | | | | |
| | ° ′ ″ | ° ′ ″ | | | |
| 1900 | 39 57 48 | 90 21 35 | 39 miles west-northwest of Springfield, in Cass County, Ill | 105.4 | West. |
| 1910 | 39 57 0 | 92 18 36 | 14 miles south-southwest of Edina, Knox County, Mo | | |

## IRRIGATION.

Plate No. 389 is a reproduction of the map prepared by the United States Weather Bureau, Department of Agriculture, on which the normal annual precipitation from 1870 to 1901 is indicated by the curved red lines. This map is of value in studying the areas in which irrigation is necessary, owing to the low precipitation. In the 11 states forming what is known as the arid region, the line marking the annual precipitation of less than 20 inches practically outlines the boundaries of the region where irrigation is commonly practiced.

The per cent of total land area irrigated and per cent of number of farms irrigated in 1909 are presented, by counties, for those states where irrigation was used to any extent, on Plates Nos. 390 to 400.

Plate No. 390 treats of irrigation in Arizona and the map at the left shows that Maricopa County, which had 3.5 per cent of its area irrigated, is the only county with more than 1 per cent of the total land area irrigated in 1909. The map at the right is shaded to show, in groups, the proportion of farms irrigated. One county, Pinal, has over 90 per cent of its farms irrigated, three counties have 75 to 90 per cent, one county has between 50 and 75 per cent, five counties have from 25 to 50 per cent, and the remaining counties of Apache, Navajo, and Coconino have less than one-fourth of the farms irrigated. Pinal County has the largest proportion of farms irrigated, 92.8 per cent, and Graham County ranks second, with 86.1 per cent.

The first map of California, on Plate No. 391, shows that Kings County, with 25.7 per cent, was the only county in the state with more than 15 per cent of its area irrigated in 1909. Del Norte was the only county in the state reporting no area irrigated. The map for the per cent of the farms irrigated shows that in Inyo and Imperial Counties more than 90 per cent of the farms were irrigated. Imperial County had the highest per cent of farms irrigated, 94.6 per cent, and Inyo was second, with 93.2 per cent. The greatest proportion of the number of farms irrigated was reported from the counties in the southern part of the state.

In the case of Colorado, Plate No. 392, the counties with the highest proportion of land irrigated are Boulder, 23.1 per cent, and Weld, 15.4 per cent, in the north; and Rio Grande, 18.7 per cent, and Conejos, 15.6 per cent, in the south—the only counties with

more than 15 per cent of their area irrigated. The map for per cent of number of farms irrigated shows only three counties—Phillips, Clear Creek, and San Juan—as having no land under irrigation. Forty-one of the 60 counties of the state reported that more than half the farms were irrigated. Rio Grande County, with 99.6 per cent, had the highest proportion of irrigated farms, but there were 17 other counties with more than 90 per cent of the farms irrigated, all being located in the western part of the state.

On Plate No. 393, Idaho, Canyon County, with 16.2 per cent, was the only county in the state reporting more than 15 per cent of its area under irrigation. One county, Latah, was without an irrigated farm. The map at the right shows that two counties—Twin Falls (92.9 per cent) and Lincoln (91.5 per cent)—had the largest number of farms irrigated, reporting more than 90 per cent of the whole number of farms under irrigation. Four counties—Ada, with 87.5 per cent; Custer, with 87.9 per cent; Lemhi, with 87.3 per cent; and Bear Lake, with 86.7 per cent—reported more than 85 per cent of their farms irrigated. Irrigation of importance in Idaho is confined to the southern part of the state. Eighty-nine per cent of the land under irrigation in the entire state is found in the valley of the Snake River, which extends across the state from east to west.

Plate No. 394 shows that not a county in Montana had more than 10 per cent of its area irrigated. Gallatin County, with 7.9 per cent, had a larger proportion than any other county. The lower map, per cent of the number of farms irrigated, shows that Deer Lodge County, with 99.4 per cent, had the largest percentage of farms irrigated, and Ravalli, with 92.4 per cent, was second. Only two other counties—Beaverhead, with 89.6 per cent, and Madison, with 81.1 per cent—had more than 75 per cent of the number of farms under irrigation.

Plate No. 395, for Nevada, indicates that only two counties—Douglas (6.9 per cent) and Lyon (6.4 per cent)—had more than 5 per cent of their area irrigated. The counties in Nevada are very large and the farm area irrigated forms only a small proportion (1 per cent) of the total area, but practically all the farms are irrigated, as 89.5 per cent of the total number of farms in the state were reported as being under irrigation. In 8 of the 15 counties the per cent of the number of farms irrigated is over 90, while in the remaining counties it is over 80. In Douglas County every farm was reported as irrigated, and in Clark and Lander Counties only one farm in each county was reported as not under irrigation. The county which had the least proportion of its farms irrigated was White Pine, the percentage being 80.8.

For New Mexico, Plate No. 396, not a single county had more than 2.9 per cent of its total land area irrigated. The proportion irrigated for the state was only 0.6 per cent. As indicated by the map at the right, three counties in the state reported more than 90 per cent of their farms irrigated, these counties being Rio Arriba, with 96.4 per cent; Taos, with 96.2 per cent; and Dona Ana, with 91.4 per cent.

Plate No. 397, for Oregon, shows only one county in the state, Baker, with 6.6 per cent, as having more than 5 per cent of the total land area irrigated. The per cent for the entire state was only 1.1. The per cent of the number of farms irrigated, illustrated on the lower map, shows two counties in the eastern extremity of the state—Baker, with 80.6 per cent, and Malheur, with 77.7 per cent—as the only counties having more than 75 per cent of the number of farms irrigated. In Hood River County the number of farms irrigated formed 62.4 per cent of the total.

On Plate No. 398, Utah, the map for the per cent of total land area irrigated in 1909 shows that only one county, Salt Lake, with 17.1 per cent, reported more than 15 per cent of its land area under irrigation. The map at the right indicates that every county in the state reported more than 50 per cent of its farms as irrigated, the lowest proportion being 65.7 per cent. For 17 of the 27 counties at least 90 per cent of the farms were irrigated, and for 7, from 75 to 90 per cent, while in only 3 counties was the percentage of farms irrigated less than 75. The highest percentage shown for any county was 99.7 for Emery. Ten other counties reported 95 per cent or more of the number of farms as irrigated; these were Morgan (99.2 per cent), Carbon (98.8 per cent), Beaver and Wasatch (98.1 per cent), Sevier (97.6 per cent), Piute (97.5 per cent), Rich (96.8 per cent), Sanpete (96.6 per cent), Wayne (95.5 per cent), and Washington (95 per cent).

Plate No. 399, Washington. The Cascade Mountains extend north and south, crossing the state of Washington and dividing it into two parts. West of the Cascades the rainfall is heavy, while east of the mountains very few crops mature without irrigation, and most of the irrigated area, therefore, lies east of the Cascades. The report for 1910 shows that 98.6 per cent of the total acreage irrigated was in the eastern part of the state. The two maps on the plate indicate, by the different shading, the counties which had the largest proportion of irrigated land, also those having the highest percentage of the number of farms irrigated. The irrigated area in the state of Washington formed only 0.8 per cent of its total area, the map showing for each county the percentage of the total land area irrigated. There is not a single county in the state that reported more than 5 per cent of its area under irrigation in 1909. Kittitas and Yakima Counties, each with 4.6 per cent, reported the highest percentage. The lower map shows that Yakima, with 88.3 per cent, had the highest percentage of farms irrigated. Of the 38 counties in the state, 5 reported no irrigated area and from 13 others the amount of irrigated area reported was so small that they have been

grouped as "all other;" this leaves 20 counties which reported a portion of their farms as irrigated, 10 of these having less than 10 per cent of their farms irrigated.

The upper map of Wyoming, on Plate No. 400, shows that only two counties—Sheridan, with 5.7 per cent, and Albany, with 5.4 per cent—had over 5 per cent of their total land area under irrigation. The proportion for the entire state was 1.8 per cent of the total land area irrigated. The per cent of the number of farms irrigated, as indicated on the lower map, shows that in three counties over 90 per cent of the number of farms were irrigated; these are Park County, with 96.5 per cent; Big Horn County, with 94.4 per cent; and Carbon County, with 90.9 per cent.

### AREA IN IRRIGATION PROJECTS.

Plates Nos. 401 to 408, inclusive, comprise a series of maps of the states covered by the special census of irrigation; each map shows the approximate location and extent of the land included in irrigation projects in 1910. On each state map a shaded square is drawn to the scale of the map and represents the area irrigated in 1909, in proportion to the total area of the state as represented by the map.

Plate No. 401, Map 1, of Wyoming, shows the location of the water courses and the approximate area of the irrigation projects along these courses. The shaded square in the lower left-hand corner is drawn to scale and represents the irrigated area as compared with the total area of the state. In the number of acres irrigated, Wyoming, with 1,133,302 acres, is fifth; Colorado, with 2,792,032 acres; California, with 2,664,104 acres; Montana, with 1,679,084 acres; and Idaho, with 1,430,848 acres, being the only states with a greater area irrigated.

The shaded square at the upper right-hand corner of the map of Colorado (No. 2) shows the 2,792,032 acres of irrigated area in Colorado, as compared with the total area of the state. The returns of the Thirteenth Census reported that Colorado had more acres irrigated than any other state.

The irrigated area of Arizona, as shown on Map 1 on Plate No. 402, is very small as compared with the total area of the state. In New Mexico, Map 2, the area irrigated is slightly larger than that of Arizona. The shading on the map indicates that a large proportion of the areas under irrigation are along the Rio Grande.

On Plate No. 403, approximate location of the irrigated areas of Idaho and Montana, Map 1, of Idaho, shows that practically all the irrigated area is in the southern part of the state and a large proportion in the Snake River Valley. The shaded square is drawn on the same scale as the map of the state and represents the 1,430,848 acres, in proportion to the size of the state. Map 2, of Montana, shows the approximate location of the irrigated areas and that they are found in all parts of the state. In fact, every county in the state reported irrigated acreage. The shaded square represents the 1,679,084 acres of irrigated area, as compared with the total area of the state.

On the map of Nevada, Plate No. 404, the approximate location of the irrigated areas is indicated by the shade lines and, like Montana, the areas are in every county in the state. The proportion of the irrigated area, 701,833 acres, to the total area of the state is indicated by the shaded square in the lower left-hand corner of the map. Map 2 shows, by the shade lines, the location of the irrigated areas in Utah, which, as in Nevada, are found in every county. The shaded square in the upper right-hand corner, representing 999,410 acres, is in proportion to the total area of the state.

The map of Washington on Plate No. 405 shows, by the shaded areas, that the irrigated area is in the eastern portion of the state; the small shaded square in the lower left-hand corner represents the 334,378 acres irrigated in proportion to the total area of the state.

The shaded areas on the map of Oregon (on the same plate) indicate that the irrigated areas are in the eastern and southern parts of the state, also that the irrigation projects are numerous but the individual projects are small. The total irrigated area of 686,129 acres is compared with the total area of the state by the shaded square in the upper left-hand corner of the map.

On Plate No. 406 the map of California appears with an irrigated area of 2,664,104 acres and the shaded areas locate the projects. The total area of California is very large, therefore, although the irrigated area is larger than that of any other state except Colorado, the relative proportion of the irrigated area to the total area of the state is small, as shown by the shaded square in the upper right-hand corner, compared with the map of the entire state.

Plate No. 407, the maps of North and South Dakota, locates the irrigation projects in these states. North Dakota has a very small irrigated area, practically all found in the counties of McKenzie and Williams. South Dakota has a rather small area under irrigation, although it is much larger than that of North Dakota. It is all in the extreme western portion of the state.

Plate No. 408 consists of maps on which are located the irrigated areas of Nebraska and Kansas. The greater portion of the irrigated areas in Nebraska are found along the Platte River and its tributaries. The irrigated area in Kansas is small and is practically all located along the Arkansas River, in the western portion of the state, and nearly all in five counties.

# MANUFACTURES.

The Thirteenth Census returned a total value of products of manufactures of $20,672,051,870 for the year 1909. The special census of manufactures for the year 1904 returned a total value of products of $14,793,902,563, and the Twelfth Census, for the year 1899, a total value of products of $11,406,926,701.

The three circles on Plate No. 409 represent the total value of products of manufactures returned at the censuses specified, the circles being proportionate in size to the total value of products of manufactures as reported, the sectors representing the per cent each of the geographic divisions reported of the total. The geographic divisions, ranked according to the total value of manufactures returned in 1909, 1904, and 1899, are as follows: Middle Atlantic first, then East North Central, New England, West North Central, South Atlantic, Pacific, East South Central, West South Central, and Mountain. The divisions have the same relative position at each of the three censuses specified.

Diagram 1 on Plate No. 410 indicates, by the length of the bars, the value of the products of manufacturing industries, by states, in 1909 and 1899, the black bars representing the amount returned for 1909 and the shaded bars that for 1899. The states are arranged in the order of the value of manufactures, the state with the greatest value being first. Every state presented an increase in the value of its manufactures for 1909 over the returns for 1899. New York was first, with the greatest numerical increase in the value of products from 1899 to 1909, $1,497,659,320, or an increase of 80 per cent. Pennsylvania was second, with an increase of $976,859,654; Illinois third, with $798,408,286; Ohio fourth, with $689,264,962; and New Jersey fifth, with an increase in its products of $592,523,392. Wyoming, the state with the smallest increase in the value of products, reported an increase of $2,980,523. The greatest per cent of increase reported (842.7 per cent) was from Nevada, although this state stood third from the last in the value of products.

On Diagram 2, Plate No. 410, average number of wage earners, by states, 1909, New York state is first, with 1,003,981; Pennsylvania, with 877,543; Massachusetts, with 584,559; Illinois, with 465,764; Ohio, with 446,934; and New Jersey, with 326,223, follow in the order named. A comparison with Diagram 1 shows that the states do not rank in the same order for the average number of wage earners as they do in the value of products. Massachusetts, which was fourth in the value of products, is third in the average number of wage earners, while Illinois, third in the value of products, is fourth in wage earners. Connecticut, which was twelfth in the value of products, is eighth in the average number of wage earners. Of the other states, Wisconsin, which was eighth in the value of products, is tenth in the average number of wage earners. Indiana has the same position in both diagrams, while Missouri, which was tenth in the value of products, is eleventh in the average number of wage earners. The same differences in rank will be noticed in the states having small value of products and a small number of wage earners. Nevada, which is last in the average number of wage earners, was third from the last in the value of products, while Wyoming, which was last in the value of products, is third from the last in the number of wage earners.

Diagram 1 on Plate No. 411 arranges the value of manufactured products for 48 leading cities, in 1909, according to the value of their products. New York City was first, with products valued at $2,029,692,576; Chicago, the second city, returned products valued at $1,281,171,181; Philadelphia was the third city, with $746,075,659; St. Louis fourth, with $328,495,313; and Cleveland fifth, with $271,960,833. The forty-eighth city shown on the diagram was Waterbury, Conn., which returned, in 1909, products valued at $50,349,816. The per cent of increase from 1899 to 1909 for New York City was 73.1; for Chicago, 60.6; for Philadelphia, 43.5; for St. Louis, 69.6; and for Cleveland, 95.2. Each of the 21 leading cities shown on the diagram returned products valued at over $100,000,000.

Diagram 2 on Plate No. 411, average number of wage earners for 48 cities leading in value of products in 1909, shows that New York leads, with 554,002, Chicago being the second city, with 293,977. All the cities do not have the same rank in regard to the number of wage earners as in the value of products, but the first six cities on both diagrams are the same. Pittsburgh, which was seventh in value of products, was ninth in number of wage earners; Baltimore, seventh in wage earners, was thirteenth in value of products; Minneapolis, fourteenth in value of products, was twenty-fifth in average number of

wage earners; Waterbury, forty-eighth in value of products, was thirty-second in wage earners.

On Plate No. 412, value added by manufacture in 1909, by states, the length of the bar indicates the value added by manufacture in each state, the states being ranked in order, with the state having the greatest value at the top. New York is the leading state, followed by Pennsylvania, Illinois, Massachusetts, and Ohio, in the order named, each of these states reporting value added by manufacture of over $600,000,000. The states do not rank in the total value added by manufacture (Plate No. 412) in the same order as in Diagram 1 on Plate No. 410, value of products. The first seven states, however, are in the same order; the remaining states changed their rank, showing that the value added by manufacture is not always proportionate to the total value of products returned. Nevada, which is last in the value added by manufacture, is, excluding the District of Columbia, forty-sixth in the total value of products. Wyoming, which is last in the total value of products, is next to the last in the value added by manufacture.

Plate No. 413 presents the value of all manufactured products and proportional value of each group returned in 1909, 1904, and 1899. The area of each circle is in proportion to the value returned at each census, and the circles are divided into fourteen sectors, proportionate to the value of each of the principal groups of manufactures, the groups having the same relative importance at each of the enumerations. Food and kindred products was the leading group at each census, iron and steel and their products ranked second, and textiles third, these three groups having almost 50 per cent of the value of all manufactured products at each of the censuses specified.

Plate No. 414, value of products for groups of industries for 1909, 1904, and 1899, represents, by the length of the bars, the value of products for the 14 general groups of industries, arranged in order of the value of their products in 1909. The three bars are shaded to indicate the value of products in 1909, 1904, and 1899, in the order in which they appear on the diagram. Each of the groups increased at each of the enumerations, food and kindred products showing the greatest increase.

Diagram 1 on Plate No. 415, value of products for leading industries in 1909 and 1899, is arranged in the order of the value of their products in 1909, the length of the bar being in proportion to the value of the product. Slaughtering and meat packing leads, with foundry and machine-shop products second, and lumber and timber third, each of these industries having products valued at over one billion dollars; iron and steel, steel works and rolling mills are fourth; flour-mill and gristmill products fifth; printing and publishing sixth; cotton goods, including cotton small wares, seventh; clothing, men's, including shirts, eighth; and boots and shoes, including cut stock and findings, ninth. These nine industries were the only industries reporting values of products exceeding $500,000,000 in 1909. Not one of these industries reported a value in 1899 of $800,000,000. Of the nine industries specified, printing and publishing had the highest percentage of increase from 1899 to 1909, 86.7 per cent; cotton goods, 85.3 per cent; boots and shoes, 76.8 per cent; flour-mill and gristmill products, 76.2 per cent; and men's clothing, including shirts, 75.4 per cent. Only three of the nine leading industries specified reported increases of less than 75 per cent.

Diagram 2 represents, by the length of the bars, the percentage of the total value of products reported for the leading industries in 1909. Slaughtering and meat packing, with 6.6 per cent, had the largest proportion of the total value of products; foundry and machine-shop products was second, with 5.9 per cent; and lumber and timber products third, with 5.6 per cent. These were the only industries with a value of products forming more than 5 per cent of the total value of all products.

Plate No. 416, average number of wage earners, by states, in 1909 and 1899, represents, by the length of the black bar, the number of wage earners in 1909 and, by the shaded bar, the number in 1899, the state having the largest average number being placed first. New York leads, with 1,003,981; Pennsylvania is second, with 877,543; and Massachusetts third, with 584,559; Illinois, Ohio, and New Jersey follow in the order named, being the only states reporting an average number of wage earners of over 250,000 for 1909. The difference between the length of the black and shaded bar indicates the increase in each state in the number of wage earners in 1909 over the number employed in 1899.

On Plate No. 417, average number of wage earners, by industries employing over 40,000 wage earners in 1909, the bars are arranged in the order of the number of wage earners returned, the largest being first. The lumber and timber industry leads in the average number of wage earners, followed by the foundry and machine-shop industry, second; cotton goods, third; cars and general shop construction and repairs, fourth; and printing and publishing, fifth. These are the only industries each reporting over 250,000 wage earners in 1909.

Plate No. 418 consists of five diagrams, showing the value of products in 1909 and 1899 for states leading in each industry specified. In Diagram 1 the length of the bars represents the value of products for boots and shoes, including cut stock and findings, for 1909 and 1899, in the 14 states leading in this industry. Massachusetts was first, with products valued at $236,342,915, the second state in order being Missouri, with $48,751,235, Massachusetts reporting products with a valuation nearly five times that of the second state.

New York was third, with $48,185,914, and New Hampshire fourth, with $39,439,554. The only states reporting values in excess of $20,000,000, in addition to those above cited, were Ohio, with $31,550,957, and Pennsylvania, with $20,218,784.

In the value of products for leather, tanned, curried, and finished, represented in Diagram 2, Pennsylvania was the leading state, with a value of products of $77,926,321; Wisconsin was second, with $44,667,676; and Massachusetts third, with $40,002,079, followed by New Jersey, with $28,430,955, and New York, with $27,642,383. These are the only states which reported a value of products for this industry in excess of $20,000,000.

In the value of products of woolen, worsted, and felt goods, and wool hats (Diagram 3), Massachusetts led, with $141,966,882; Pennsylvania was second, with $77,446,996; Rhode Island third, with $74,600,240; New Jersey fourth, with $33,938,637; and New York fifth, with $23,739,421, the only states reporting a value of products in excess of $20,000,000.

In Diagram 4, women's clothing, New York leads, with a total value reported of $272,517,792, nearly nine times that reported by Pennsylvania—the second state—$32,837,424. New York and Pennsylvania were the only states reporting products valued in excess of $20,000,000.

In Diagram 5, men's clothing, including shirts, New York leads, with $266,075,427; Illinois is second, with $89,472,755; Pennsylvania third, with $39,681,760; Maryland fourth, with $36,921,294; and Ohio fifth, with $24,869,437, the only states reporting products valued at more than $20,000,000 in 1909. A comparison of the bars for 1909 with those for 1899 shows that New York, which led in the production of men's clothing at both censuses, nearly doubled its value of products in 1909.

Diagram 1 on Plate No. 419 presents the value of products of cotton goods, including cotton small wares, for the leading states in 1909 and 1899. In 1909 Massachusetts led in this industry, with a value of products of $186,462,313. The state second in rank was North Carolina, with $72,680,385; South Carolina was third, with $65,929,585; Rhode Island fourth, with $50,312,597; and Georgia fifth, with $48,036,817. These were the only states reporting values in excess of $40,000,000. Each of the states represented on the diagram, with the exception of Maryland, reported large increases in the value of products from 1899 to 1909.

The map on Plate No. 419, cotton goods, including cotton small wares, value of products in 1909, shows, by dots, the location of the cotton goods industry. Each dot represents a production valued at $10,000,000. This industry is confined principally to the states touching the Atlantic coast, and Alabama on the Gulf of Mexico. The state with the greatest production is, of course, Massachusetts. The sketch on the lower right-hand corner shows, on a large scale, the distribution in the states of Massachusetts, Connecticut, and Rhode Island, as it could not be indicated on the map. Four states—Massachusetts, Rhode Island, North Carolina, and South Carolina—produced 59.7 per cent of the value of the total production reported for this industry in 1909.

Diagram 2, Plate No. 419, represents, by the bars, the value of products of silk and silk goods, including throwsters, for 1909 and 1899. The states presented on the diagram rank in the same order at both censuses, New Jersey leading, with Pennsylvania second, New York third, and Connecticut fourth, each of these states reporting products valued at more than $10,000,000 in both 1909 and 1899. The industry, as indicated by the states represented on the diagram, is confined almost entirely to the New England and Middle states, as almost nine-tenths of the total value of products were reported by the four states of New Jersey, Pennsylvania, New York, and Connecticut at the Thirteenth Census.

Plate No. 420 treats of the value of products of hosiery and knit goods for 1909 and 1899. Diagram 1 shows that New York leads at both censuses, with $67,130,296 in 1909; Pennsylvania being next, with $49,657,506; and Massachusetts third, with $14,736,025. These are the only states that reported products for this industry valued at more than $10,000,000.

The map, the second illustration on the plate, shows, by the dots, the geographical distribution of the industry and that it is practically localized in the states of New York, Massachusetts, and Pennsylvania.

Diagram 1 on Plate No. 421 presents the value of products of merchant flour mills and gristmills for leading states in 1909 and 1899. Minnesota leads, with $139,136,129; New York stands second, with $69,802,278; Kansas third, with $68,476,410; Illinois fourth, with $51,110,681; Ohio fifth, with $48,093,353; and Pennsylvania sixth, with $44,782,558; closely followed by Missouri, with $44,508,106, and Indiana, with $40,541,422. These are the only states that reported products valued at more than $40,000,000.

The small map (2) accompanying this diagram presents graphically the distribution of flour-mill and gristmill products in 1909, by states, and indicates that the industry is of wide distribution, as well as one of importance in two-thirds of the states.

Diagram 3, bread and other bakery products for the leading states in 1909 and 1899, shows that for this industry New York returned the greatest value of products, $86,232,985. Pennsylvania was second, with $45,850,070; Illinois third, with $36,117,986; Massachusetts fourth, with $26,146,044; Ohio fifth, with $23,007,131; and New Jersey sixth, with $20,085,629. These were the only states reporting products in excess of $20,000,000. Each of these states, except Massachusetts, increased from 1899 to 1909 over 100 per cent.

Diagram 1 on Plate No. 422 presents the value of products of butter, cheese, and condensed milk in 1909 and 1899. Wisconsin led in the value of products, with $53,843,249; New York was next, with $42,458,345; Iowa third, with $25,849,866; and Minnesota fourth, with $25,287,462, being the only states reporting value of products in excess of $20,000,000. All the states represented on the diagram show large increases in the returns of 1909 over 1899, Michigan, California, Nebraska, Washington, Oregon, Indiana, Missouri, and Colorado each increasing over 200 per cent, and three of them—Washington, Oregon, and Missouri—increasing over 500 per cent.

Map 2 shows, geographically, the distribution of the value of products of butter, cheese, and condensed milk, by means of dots, each dot equaling $2,000,000. The number of dots indicates the states in which the value of products was highest, Wisconsin and New York being practically covered. Iowa, Minnesota, and Illinois also have a large number of dots. This industry is of importance in only 18 states, all in the North and West.

In Diagram 1 on Plate No. 423, canning and preserving—value of products for leading states in 1909 and 1899, California leads, with a production in 1909 of $32,914,829; New York is second, with $19,039,735; and Maryland third, with $13,709,449. These are the only states reporting products valued at more than $10,000,000 in 1909. During the decade Wisconsin, Colorado, Kentucky, and Minnesota each increased its value of products over 200 per cent, and California and Indiana over 100 per cent. The majority of the states shown in the diagram had satisfactory increases in the value of their products, although in the case of Maryland a slight decrease was reported.

In Diagram 2, oil, cottonseed, and cake—value of products for leading states in 1909 and 1899, Texas leads, with products valued at $29,915,772; Georgia is second, with $23,640,779; Mississippi third, with $15,965,543; Louisiana fourth, with $13,084,586; and South Carolina fifth, with $10,902,935. These are the only states in which the value of the products exceeded $10,000,000. All the states shown on the diagram increased the value of their products with the exception of Kentucky, which showed a slight decrease in the value reported for 1909.

In the value of products of food preparations (Diagram 3) New York leads, with a product valued at $17,324,076; Michigan comes next, with $11,491,660; Ohio third, with $10,836,735; and Illinois fourth, with $10,402,669; these are the only states which reported products valued at over $10,000,000 in 1909. All the states represented on the diagram, with the exception of Massachusetts, show exceptionally large increases, the increases for Michigan, Georgia, Louisiana, Texas, Tennessee, Maryland, Kansas, and Kentucky being over 500 per cent.

On Diagram 4, confectionery—value of products for leading states in 1909 and 1899, New York was first, with products valued at $25,540,394; Massachusetts was second, with $15,266,453; Pennsylvania third, with $13,541,759; and Illinois fourth, with $12,798,077; these were the only states reporting values of products in excess of $10,000,000 in 1909. All other states on the diagram also show large increases in the value of the products returned in 1909 over the returns of 1899, New Jersey increasing 1,059.4 per cent; Oregon, 481.3 per cent; and Washington, Utah, and Nebraska each over 300 per cent.

Diagram 1 on Plate No. 424 illustrates the value of products of the slaughtering and meat-packing industry for leading states in 1909 and 1899. Illinois returned the greatest value of products, $389,594,906; the second state was Kansas, with $165,360,516; New York was third, with $127,130,051; Nebraska fourth, with $92,305,484; and Missouri fifth, with $79,581,294. These are the only states which reported products valued at more than $75,000,000 in 1909. Of all the states shown on the diagram, Kansas, New York, Iowa, Pennsylvania, Ohio, Texas, New Jersey, California, Maryland, and Michigan reported increases of more than 100 per cent in 1909. At both censuses Illinois reported products more than twice as large as the second state, Kansas.

The map (2) on this plate shows the distribution of the same industry, geographically, by means of dots, each dot representing $10,000,000. Illinois, Kansas, New York, and Nebraska are the states with the greatest production.

As indicated on Diagram 1 on Plate No. 425, Georgia led in the value of products of fertilizers, with a valuation of $16,800,301; Maryland was second, with $9,672,786; South Carolina third, with $9,024,900; Virginia fourth, with $8,034,543; New Jersey fifth, with $7,671,859; Pennsylvania sixth, with $6,542,844; Alabama seventh, with $6,423,233; and North Carolina eighth, with $6,316,485. These are the only states which reported products valued at more than $5,000,000. All the states named on the diagram show large increases, especially Florida, with 675.6 per cent; Georgia, with 399 per cent; Mississippi, with 331 per cent; North Carolina, with 321.6 per cent; and Connecticut, with 302.3 per cent. The small map (2) at the bottom of the plate shows the distribution of the value of products of fertilizers in 1909, and that the industry is of importance in the states bordering on the Atlantic Ocean and the Gulf of Mexico, the production in the other parts of the United States, with few exceptions, being of small value.

In Diagram 1 on Plate No. 426, gas, illuminating and heating—value of products for leading states, in 1909 and 1899, New York led, with a production of $42,346,726; Illinois was second, with $21,052,100; Penn-

sylvania third, with $15,839,612; and Massachusetts fourth, with $11,074,354. These were the only states reporting products in excess of $10,000,000 in 1909. All the states named on the diagram, except Ohio, which reported a decrease in value of products in 1909, showed large increases in 1909 over 1899.

In the value of products of turpentine and rosin (Diagram 2) Florida led, with a production of $11,937,518; Georgia was second, with $6,938,957; Alabama third, with $2,471,999; Mississippi fourth, with $1,474,629; and Louisiana fifth, with $1,173,848. These were the only states reporting value of products in excess of $1,000,000.

Diagram 3, chemicals—value of products for leading states in 1909 and 1899, indicates that New York led, with a production of $35,346,072; New Jersey was second, with $22,824,140; Pennsylvania third, with $15,978,162; and Michigan fourth, with $12,890,206; these being the only states reporting products in excess of $10,000,000 in 1909. All the states named on the diagram, except Maryland, show large increases in the returns in this industry over 1899, California, however, showing a decided decrease in the value reported for 1909 from that of 1899.

In foundry and machine-shop products for 1909 and 1899, as found on Diagram 1, Plate No. 427, Pennsylvania was first, with $210,746,257; New York second, with $154,370,346; Ohio third, with $145,836,648; and Illinois fourth, with $138,578,993; these were the only states reporting value of products in excess of $100,000,000 for 1909. All the states on the diagram show increases for 1909 over 1899.

On Diagram 2, copper, tin, and sheet-iron products, New York is first, with $38,452,127; Illinois second, with $22,822,810; Ohio third, with $19,086,462; Pennsylvania fourth, with $17,197,057; Maryland fifth, with $16,909,447; and New Jersey sixth, with $11,113,644, the only states reporting products valued at over $10,000,000. Every state on the diagram shows a large percentage of increase in value of products from 1899 to 1909.

In Diagram 3, brass and bronze products—value of products for leading states in 1909 and 1899, Connecticut was first, with products valued at $66,932,969; New York second, with $22,184,189; and Michigan third, with $13,890,220. These are the only states reporting products valued at more than $10,000,000. Increases for all the states are large, indicating a rapid growth in the industry.

Plate No. 428, blast furnaces—location of establishments in 1909, is a sketch map of the eastern portion of the United States on which the location of blast-furnace plants is indicated, approximately, by the dots. Pennsylvania had the largest number, 66; Ohio was second, with 40; Alabama third, with 19; Virginia fourth, with 14; Tennessee fifth, with 13; and Michigan sixth, with 11.

Diagram 1 on Plate No. 429, pig-iron production for leading states, 1909 and 1899, Pennsylvania led, with a production of 10,911,676 tons; Ohio was second, with 5,446,971 tons; Illinois third, with 2,468,772 tons; Alabama fourth, with 1,764,544 tons; and New York fifth, with 1,717,091 tons. These are the only states which reported a production of over 1,000,000 tons in 1909. The diagram shows that in most of the states represented the production of pig iron increased largely from 1899 to 1909. Two states, however—Virginia and Tennessee—show decreases. There was no report for Indiana in 1899.

The small map (2) shows the geographical distribution of the pig-iron production in 1909, by states, by means of dots, each representing 400,000 tons. The concentration in the states of Pennsylvania, Ohio, Illinois, New York, and Alabama is strikingly presented.

The location of establishments of steel works and rolling mills in 1909 is shown on a sketch map of the eastern part of the United States, Plate No. 430. The approximate location of each establishment is indicated by a dot, and the concentration of the industry in a few states is clearly represented. Pennsylvania, Ohio, New York, Illinois, Indiana, West Virginia, New Jersey, and Wisconsin, in the order named, have the largest number of these plants. There are a small number of establishments, however, in a few of the other states. Steel works are nearly all located near large cities; and wherever the dots are grouped, there cities of importance in manufactures and population will be found. The grouping of the dots in Pennsylvania indicates the large number in the vicinity of Pittsburgh and Philadelphia; in Ohio, in and around Cleveland and Youngstown; in Illinois the dense group is in and around Chicago; in Wisconsin, adjacent to Milwaukee; and in Alabama the dots indicate the establishments in the vicinity of the city of Birmingham. The counties having the largest number of steel works and rolling mills are Allegheny County, Pa., with 55; Westmoreland County, Pa., with 15; Cuyahoga County, Ohio, with 15; Milwaukee County, Wis., with 12; Mercer County, Pa., with 11; Cook County, Ill., with 11; and Berks County, Pa., with 10.

The nine states shown on Diagram 1, Plate No. 431, steel production, 1909 and 1899, are the only states in which steel production is an industry of any importance. According to the returns for 1909, Pennsylvania led, with a total of 12,206,608 tons, an increase over 1899 of 89.8 per cent; Ohio was second, with 4,713,869 tons; Illinois third, with 2,671,087 tons; and New York fourth, with 1,115,250 tons. These were the only states showing a production of over 1,000,000 tons. All the states represented on the diagram increased their product in 1909 over the returns of 1899 from 25 to over 1,000 per cent. For New York the per cent of increase was over 4,700.5.

In Diagram 2, finished rolled products and forgings, 1909 and 1899, Pennsylvania, with 9,903,162 tons, leads in the production reported; Ohio, with 3,097,426 tons, is second; and Illinois, with 2,086,120 tons, is third. These were the only states reporting a production of more than 1,000,000 tons. Each of the 10 states represented on the diagram increased their returns from 1899 to 1909 over 50 per cent, there being but 4 states with an increase of less than 100 per cent—Pennsylvania, Illinois, Maryland, and Wisconsin. The increases reported by the other states on the diagram vary from over 100 to over 500 per cent, the increase in production of New York for 1909 over that of 1899. The first 4 states ranked in the same order in 1899 as they did in 1909. Pennsylvania reported 51.4 per cent of the total production; Ohio, 16.1 per cent; Illinois, 10.8 per cent; and Indiana, 5 per cent, these 4 states reporting 83.3 per cent of the total production.

Plate No. 432 presents the value of products in 1909 and 1899, for states leading in the industries specified.

In Diagram 1, electrical machinery, apparatus, and supplies, New York led in 1909, with a value of products of $49,289,815; Pennsylvania was second, with $31,351,312; New Jersey third, with $28,365,377; Massachusetts fourth, with $28,142,889; Illinois fifth, with $26,826,177; and Ohio sixth, with $18,776,769, the only states having a production valued in excess of $10,000,000 in 1909. Each of the states represented on the diagram reported a large increase over the return for 1899.

In Diagram 2, cars and general shop construction and repairs by steam-railroad companies, Pennsylvania led in 1909, with a value of products of $76,035,180; Illinois followed, with $32,229,243; Ohio was third, with $28,690,287; and New York fourth, with $21,726,491, these being the only states reporting over $20,000,000 in 1909 in value of products. Each of the states on the diagram reported a considerable increase in the returns for 1909 over 1899.

In Diagram 3, brick and tile, Illinois was first in value of products, with $9,765,051; Ohio was second, with $9,357,730; Pennsylvania third, with $9,225,204; and New York fourth, with $8,432,804. These were the only states reporting products valued at over $5,000,000 in 1909. A majority of the states named on the diagram show fair increases over the returns of 1899, Washington, Oklahoma, Utah, Colorado, California, and Kansas, each with more than 200 per cent, leading in the percentage of increase. For Massachusetts, Wisconsin, and New Hampshire the value of products decreased.

Plate No. 433 presents the value of products of the the carriage and wagon industry. Diagram 1 gives the comparative figures for 1909 and 1899, and shows that the states leading in this industry were Ohio, with products valued at $21,949,459, closely followed by Indiana, with $21,655,440; Illinois third, with $16,831,283; New York fourth, with $13,292,531; Pennsylvania fifth, with $12,748,383; and Michigan sixth, with $10,158,883. These were the only states reporting products valued at more than $10,000,000 in 1909. The value of products reported in 1909 indicated a decrease from the returns of 1899 for the states of Ohio, New York, and Michigan. The states of New Jersey, Massachusetts, and Connecticut each reported a much smaller value of product in 1909 than in 1899.

The map (2) shows the distribution, by states, of the carriage and wagon industry in 1909, each dot representing products valued at $1,000,000. The groups of dots in the states of Ohio, Indiana, Illinois, New York, Pennsylvania, and Michigan indicate high values in these states. The map also indicates that this industry is of importance in only a small number of states and in a limited area.

Plate No. 434 presents the value of products of automobiles. Diagram 1 compares the value for 1909 and 1904 in 13 states in which this industry is of importance. Michigan, the state leading in this industry in 1909, was not reported separately in 1899, but was so reported in 1904, therefore the diagram has been made to show the returns for the censuses of 1904 and 1909, instead of 1899 and 1909. For a majority of the states shown on the diagram the industry was not of enough importance to be tabulated separately in 1899. Michigan reported the value of automobiles manufactured in 1909 as $96,651,451; Ohio was second, with products valued at $38,838,754; New York third, with $30,979,527; and Indiana fourth, with $23,764,070. These were the only states reporting products valued at more than $20,000,000 in 1909. The diagram presents very clearly, by the difference between the length of the black bar and the shaded bar, the tremendous increase in this industry in each of the states in which it was of importance.

The map (2) indicates, by means of the dots, the geographic location of the states in which this industry is prominent, each dot representing a value of $3,000,000. As shown in the comparative diagram, Michigan (confined to southern peninsula), Ohio, New York, and Indiana are the states leading in this industry and together reported 76.3 per cent of the total value returned in 1909.

Plate No. 435 indicates the value of products of the lumber industry. The diagram (1) shows, for 1909 and 1899, the value of production in the states leading in this industry, Washington appearing first in 1909, with a production valued at $89,154,820; New York was second, with $72,529,813; Louisiana third, with $62,837,912; Michigan fourth, with $61,513,560; Wisconsin fifth, with $57,969,170; and Pennsylvania sixth, with $57,453,583. These were the states each of which reported products valued at more than $50,000,000 in 1909. A comparison of the bars shows that there has been a great change in the production of the leading

states since 1899. Michigan, which led in 1899, was fourth in 1909; Wisconsin, second in 1899, was fifth in 1909; Washington, seventh in 1899, was first in 1909; and New York, fourth in 1899, was second in 1909. Of the 32 states listed on the diagram, 5 reported a decrease in their value of production in 1909. The total value of lumber products increased greatly from 1899 to 1909, due principally to the increase in the value of lumber.

The small map (2) shows, by the dots, the geographic distribution of the lumber and timber industry and directs attention to the fact that this industry was of importance in every state east of the one hundred and first meridian; in other words, it is a flourishing industry in all parts of the United States, except in the states of the Mountain division and North Dakota, South Dakota, Nebraska, Kansas, and Oklahoma.

Plate No. 436 is made up of small outline maps on which are indicated the boundaries of Richmond, Va., Columbus, Ohio, and Pueblo, Colo., the three maps forming a striking illustration of the tendency on the part of large manufacturing plants to locate adjacent to, but just outside of, the city boundary. A great majority of the employees live in the city and, as the plants enter largely into the business activities, are really part of the city, but, in making any statement of the manufactures of the city, these plants must be counted in the territory outside—in other words, in the county; consequently, many cities do not receive full credit for the manufacturing industries that should be included in any statement of their manufactures. There are other cities in which the same conditions exist, but the most striking examples that could be found are in the three cities specified.

## METROPOLITAN DISTRICTS.

In enumerating the population of cities and announcing the results of the enumeration, the Bureau of the Census must necessarily deal with the population contained within the corporate boundaries of each city. In many instances these boundaries do not give an adequate idea of the population grouped about the urban center, and many cities have suburban districts with dense population lying just outside the city limits. These suburban areas really form a part of the city, but are not under the jurisdiction of the municipal government. The condition in regard to population applies with even greater force to the collection of statistics of manufactures, for many large industrial plants lie just outside of the corporation lines. An example of this is shown on Plate No. 436, previously referred to.

In order that the magnitude of each of the principal urban centers taken as a whole might be shown, statistics were compiled comprising the population of the city and the adjacent suburbs, such areas being designated as metropolitan districts. In outlining the metropolitan districts the population of the civil divisions located within 10 miles of the city boundaries was considered, and, if one-half the area or one-half the population of a civil division lying partly within and partly without such a 10-mile limit was within the 10-mile limit, the entire civil division was considered as within the metropolitan district. State boundaries were disregarded so that, in some cases, the metropolitan district lies partly within two states.

The 13 maps on Plates Nos. 437 to 449, inclusive, show the extent of the metropolitan districts used for both population and manufactures. These districts are identical with the metropolitan districts given in the bulletin entitled "Population of Cities," and described on page 61 of the Abstract of the Thirteenth Census. The maps are presented in the order of the importance of the districts as manufacturing centers, and not of population, as follows: Plate No. 437, New York; Plate No. 438, Chicago; Plate No. 439, Philadelphia; Plate No. 440, Pittsburgh; Plate No. 441, Boston; Plate No. 442, St. Louis; Plate No. 443, Cleveland; Plate No. 444, Buffalo; Plate No. 445, Detroit; Plate No. 446, Cincinnati; Plate No. 447, Baltimore; Plate No. 448, Minneapolis-St. Paul; Plate No. 449, San Francisco-Oakland.

The statistical data compiled for each of these districts, presented on pages 903 to 975 of the Report on Manufactures, Volume X of the Thirteenth Census Reports, comprise the following items: 1. Territory included; 2. Summary for district; 3. Comparison with earlier censuses; 4. Leading industries; and 5. Comparative summary, by industries.

# MINES AND QUARRIES.

The census of mines and quarries, taken in connection with the Thirteenth Census, covered the United States proper, also Alaska, Hawaii, and Porto Rico, and included all classes of mines, quarries, and petroleum and gas wells that were in operation during any portion of the year 1909. This was the first census at which a general canvass of the operation of petroleum and gas wells was made by census agents, covering both producing enterprises and those whose operations were confined to developing. Mines, quarries, or wells that were idle during the entire year of 1909 were omitted from the canvass. The returns relate to the calendar year 1909, or the business year which corresponded most nearly to that calendar year.

Plate No. 450 presents the value of products of mining industries. Diagram 1 shows, by states, the value of products for 1909 and 1902, and is based on Table 2, page 318, of the Report on Mines and Quarries, 1909, but the figures differ slightly from the other tables; see explanation on page 24 of the report. Pennsylvania led, with $331,376,718, which formed 28.2 per cent, or more than one-fourth, of the total value of products reported in 1909. No other state approached it in importance. Illinois was second, with products valued at $77,214,343; West Virginia third, with $73,452,935; Michigan fourth, with $64,956,299; Ohio fifth, with $59,931,837; California sixth, with $59,012,946; and Minnesota seventh, with $58,975,781. These are the only states named on the diagram which reported products valued at more than $50,000,000 in 1909.

The circle accompanying the diagram indicates, by the size of the sectors, the per cent distribution by geographic divisions for 1909, the Middle Atlantic division leading, with 29.9 per cent of the total, and the East North Central, with 19.2 per cent, the two divisions having almost one-half of the entire production. The Mountain division was third, with 16.6 per cent, while the New England division reported the smallest production, forming only 1.4 per cent of the total production in 1909.

The map (2) on the lower half of the plate shows the geographic distribution of the value of products, as indicated by the dots, each dot representing products valued at $10,000,000. Pennsylvania is covered with these dots; the second state in point of production is Illinois; the third, West Virginia; the fourth, Michigan; the fifth, Ohio; and the sixth, California. The wide distribution of the dots indicates the extensive area covered by the mining industry, every state except Mississippi reporting products, but in only a dozen states is this industry of importance.

Diagram 1 on Plate No. 451 shows the value of products of the principal mining industries for 1909 and 1902, based on the following table:

**Table 1**

| PRODUCT. | VALUE OF PRODUCTS. | | Per cent of increase.[1] |
|---|---|---|---|
| | 1909 | 1902 | |
| All industries | $1,175,475,001 | $771,486,926 | 52.4 |
| Coal | 550,513,866 | 366,642,015 | 50.2 |
| Anthracite | 149,180,471 | 76,173,586 | 95.8 |
| Bituminous | 401,333,395 | 290,468,429 | 38.2 |
| Petroleum and natural gas | 175,527,807 | 102,034,590 | 72.0 |
| Iron | 106,947,082 | 65,460,985 | 63.4 |
| Copper | 99,493,799 | 51,178,036 | 94.4 |
| Precious metals | 87,671,553 | 82,482,052 | 6.3 |
| Deep mines | 77,434,301 | 77,154,326 | 0.4 |
| Placer mines | 10,237,252 | 5,327,726 | 92.2 |
| Lead and zinc | 28,568,547 | 14,600,177 | 95.7 |
| Quicksilver | 868,458 | 1,550,090 | −44.0 |
| Limestone | 47,784,479 | 30,278,877 | 57.8 |
| Granite and traprock | 24,576,293 | 18,042,943 | 36.2 |
| Sandstone | 9,290,829 | 10,954,634 | −15.2 |
| Marble | 6,239,120 | 5,044,182 | 23.7 |
| Slate | 6,054,174 | 5,696,051 | 6.3 |
| Clay | 2,945,948 | 2,061,072 | 42.9 |
| Gypsum | 5,812,810 | 2,089,341 | 178.2 |
| Phosphate rock | 10,781,192 | 4,922,943 | 119.0 |
| Sulphur and pyrite | 5,109,050 | 947,089 | 439.4 |
| Talc and soapstone | 1,174,516 | 1,138,167 | 3.2 |

[1] A minus sign (−) denotes decrease.

Bituminous coal was the leading industry in point of value of products, with $401,333,395; petroleum and natural gas was second, with $175,527,807; anthracite coal third, with $149,180,471; iron fourth, with $106,947,082; copper fifth, with $99,493,799; and precious metals sixth, with $87,671,553. These are the only industries which returned products valued in excess of $50,000,000. The black bars represent the value of these products for 1909 and the shaded bars for 1902. The difference in the length of the bars indicates that each of the industries listed on the diagram have increased in value of products, except sandstone and quicksilver. The increase in the precious metals is very small, compared with the increase in other leading industries.

The series of diagrams, 2 to 9, present graphically the value of products for selected industries in the principal states in 1909. Anthracite coal, as shown in Diagram 2, is produced almost exclusively in a comparatively small area in eastern Pennsylvania, the value of the product reported in 1909 from this state being $148,957,894. The value of product of anthracite coal reported from other states was $222,577.

Diagram 3 gives the value of products of bituminous coal for the leading states in 1909. Pennsylvania leads, with a value of products of $147,466,417; Illinois second, with $53,030,545; West Virginia third, with $46,929,592; Ohio fourth, with $27,353,663; Alabama fifth, with $18,459,433; Colorado sixth, with $15,782,197; and Indiana seventh, with $15,018,123. These were the only states that reported products valued at over $15,000,000 in 1909.

In the value of copper for the leading states, 1909 (Diagram 4), Montana leads, with $45,960,517; Arizona second, with $31,614,116; Michigan third, with $30,165,443; California fourth, with $10,104,373; and Utah fifth, with a product of $8,432,099.

Diagram 5 shows the states leading in the value of products of precious metals from deep mines in 1909. Colorado was first, with $27,325,847, Nevada being second, with $17,807,945. California, Utah, Idaho, and South Dakota followed, in the order named, each state reporting products valued at less than $10,000,000.

Diagram 6 presents the value of products of lead and zinc at the same date. Missouri produced 71.9 per cent of the United States total, the value of its product being $22,565,528 of the $31,363,094 reported from all states. Wisconsin, Kansas, and Oklahoma also produce these metals.

Diagram 7 gives the value of the products of limestone as reported for 1909. Pennsylvania leads, with $4,733,819; Illinois is second, with $3,977,359; Indiana third, with $3,616,696; Ohio fourth, with $3,363,149; New York fifth, with $2,656,142; and Missouri sixth, with $2,027,902.

Diagram 8, value of products of granite, for 1909, shows that Vermont leads with $2,829,522; Massachusetts second, with $2,185,986; Maine third, with $1,761,801; California fourth, with $1,518,916; Wisconsin fifth, with $1,433,105; and New Hampshire sixth, with $1,205,811.

Only three states made returns in 1909 for the value of products of phosphate rock, as indicated in Diagram 9. Florida led, with products valued at $8,488,801; Tennessee being second, with $1,395,942; and South Carolina third, with $862,409.

Plate No. 452 is an outline map on which the coal mining fields in the United States in 1909 are indicated by the shaded areas. The large areas in which the bituminous and subbituminous and lignite are found, as compared with the small, solid black areas for anthracite in eastern Pennsylvania, give an idea of the very small area of the anthracite field, as compared with the bituminous, though the value of the anthracite coal product was more than one-fourth (25.8 per cent) of the total value of coal mined.

The location and approximate extent of the anthracite coal fields of Pennsylvania for 1909 are indicated by the solid black areas on Map 1, Plate No. 453.

Map 2 on the same plate shows the relative production of bituminous coal, by states, in 1909. Pennsylvania is also the largest producer of bituminous coal, which, unlike anthracite coal, is found in a number of states, as it is an important industry in 17 states. The distribution of the production of coal is indicated by the dots, as described in the legend.

The United States map on Plate No. 454 is shaded to indicate approximately the location and area of the petroleum and natural gas fields in 1909, the proportion of production in each field being indicated on the circle, Diagram 2 on Plate No. 455.

Diagram 1 on Plate No. 455 indicates, by the rise and fall of the four lines, the production of iron ore in the principal producing regions each year, from 1889 to 1909, compared with the United States total. The Lake Superior region includes the states of Michigan, Minnesota, and Wisconsin, and the Southern the states of Alabama and Tennessee; the "all other" includes the remaining states. It will be noted that the line representing the United States is practically parallel with that of the Lake Superior region and just a little above it, and the marked increase and decrease in the Lake Superior region are also shown in the line representing the total production of the United States. As the Lake Superior region produces more than three-fourths (81 per cent) of all the iron ore reported, a change in its production was reflected in the United States total. The productions for the Southern region and for the "all other" states were very close each year, as indicated by the lines crossing each other several times. This diagram presents strikingly the fluctuation from year to year and the falling off of the production in the periods of financial depression, especially in the years 1904 and 1908. The tremendous increase in 1907 is also indicated.

In Diagram 2 on the same plate the entire area of the circle represents the total production of petroleum, by fields, in 1909, and the sectors the portion produced in each field. The Mid-Continent field produced 49,000,000 barrels, more than one-fourth of the total production. The California San Joaquin Valley field produced 41,000,000 barrels, these two fields reporting more than half of the product in 1909. The Illinois field was third in point of production, with 29,000,000 barrels; the Appalachian fourth, with 27,000,000 barrels; followed by the California Coastal and Southern, with 11,000,000 barrels; and the Gulf and Lima-Indiana fields, with 10,000,000 and 5,000,000 barrels, respectively.

In Diagram 3, production of natural gas for 1909, Pennsylvania led, with over one hundred and eighty-seven billions of cubic feet; West Virginia was second, with one hundred and fifty-six billions of cubic feet; Ohio third, with ninety-eight billions; and Kansas fourth, with sixty-nine billions. These were the only

states producing more than fifty billions of cubic feet in 1909.

In Diagram 4, value of products of petroleum and natural gas, by states, in 1909, Pennsylvania led, with product valued at $39,197,475; Ohio was second, with $29,620,959; California third, with $29,310,335; and West Virginia fourth, with $28,188,087. These were the only states reporting value of products in excess of $20,000,000.

Diagram 1 on Plate No. 456 presents the production of iron ore, by principal states in 1909, 1899, 1889, and 1879.

Minnesota, which made its first report on the production of iron ore in 1889, led in the production of this metal in 1909. The growth of the industry during each 10 years was remarkable, the increase from 1899 to 1909 being more than 250 per cent, and from 1889 to 1899 over 840 per cent. In both 1889 and 1899 Michigan led in the production of iron, but in 1909, was second to Minnesota. In 1879 Pennsylvania was the leading state, but the production of iron ore has decreased steadily with each decade and in 1909 it was the sixth state in production, having less than the state of New York. Alabama, the third state in 1909, had a very small production in 1879, but the increase has been regular at each census. New York, the fourth state in 1909, is shown by the diagram as having had a great decrease in the production from 1889 to 1899, but in 1909 the output had increased and was about equal to that of 1889, the production at each of the three enumerations, 1879, 1889, and 1909, being almost the same.

Diagram 2 compares, by the length of the bars, the value of products of iron ore in 1909, in the states which ranked highest in the value of their production.

The circle diagram (3) indicates, by the sectors, the per cent of production of iron ore in each state, Minnesota leading, with 56.1 per cent of the total product, and Michigan standing second, with 23.1 per cent. These two states represent 79.2 per cent, or more than three-fourths, of all iron ore production reported in 1909.

# ANNUAL AND SPECIAL REPORTS.

Plates Nos. 457 to 501 include a series of illustrations, divided as follows:

*Cotton*—Plates Nos. 457 to 469.
*Financial statistics of cities*—Plates Nos. 470 to 475.
*Vital statistics*—Plates Nos. 476 to 478.
*Religious bodies*—Plates Nos. 479 to 492.
*Marriage and divorce*—Plates Nos. 493 to 498.
*Insane in hospitals*—Plates Nos. 499 to 503.

These diagrams and maps were used to illustrate the annual reports of the Census Bureau, comprising statistics relating to the production and ginning of cotton in the United States, financial statistics of cities, and mortality statistics, and for the special reports covering statistics of religious bodies, as returned in 1906, marriage and divorce, for the same date, also the insane in hospitals as enumerated January 1, 1910.

## COTTON.

The left-hand circle in Diagram 1 on Plate No. 457 shows, by the size of the sectors, the proportion of the world's mill supply of cotton contributed by each country (growth of 1913). The United States produced 60.9 per cent of the total; India, 17.1 per cent; and Egypt, 6.6 per cent, these three countries contributing more than four-fifths of the world's supply. The circle on the right of the diagram represents the distribution of the total consumption, by countries (year ending August 31, 1913). The United States consumed the largest proportion, 26.9 per cent; the United Kingdom, with 20.6 per cent, was second, these two countries reporting nearly one-half of the world's consumption; Germany was third; British India, fourth; Russia, fifth; and Japan, sixth.

Diagram 2, at the bottom of the plate, indicates, by the length of the bars, the cotton production in specified years, from 1790 to 1913, the difference in the length of the bars showing in the years named, up to 1904, an increase in cotton production. In 1904 a large increase was shown over the production of 1900, but in 1907 the cotton crop showed a decrease of over 2,000,000 bales. The crop of 1908 was nearly as large as that of 1904, but a reduction was reported in 1909 of over 3,000,000 bales. In 1910 an increase was shown over 1909, and in 1911 the crop was the largest that had ever been reported for the United States, a gain of over 4,000,000 bales over the crop of 1910 being shown. In 1912 the crop was reduced from 15,692,701 to 13,703,421 bales, a reduction of nearly 2,000,000 bales. In 1913 an increase of over 450,000 bales was reported.

Plate No. 458 is a sketch map of a section of the United States, on which the cotton-producing counties in 1913 have been shaded, the difference in the shading separating the counties producing sea-island cotton from the others. The location of the center of cotton production in 1859, 1879, 1899, 1906, 1908, 1910, 1911, 1912, and 1913 is indicated by the stars. The limit of the region infested by the boll weevil each year, from 1909 to 1913, is indicated by lines differing in character for each year. These lines indicate the northern limit of the advance made by this pest from year to year.

The small circle in the southeast corner of the map shows, by the size of the sectors, the percentage of the cotton crop of 1913 grown in each state. Texas was the leading state, with 27.9 per cent of the total; Georgia was second, with 16.4 per cent; and Alabama third, with 10.6 per cent, the other states following in the order of size of their cotton crop, as indicated in the circle. Two states, Texas and Georgia, produced 44.3 per cent of the crop of 1913.

Plates Nos. 459 to 467 comprise maps of 11 cotton-producing states, classifying each county in those states, according to the production of cotton in 1913. The unshaded areas indicate that no cotton was reported. The classification of counties is based on the amount of cotton ginned, as follows: Less than 5,000 bales, 5,000 to 10,000 bales, 10,000 to 15,000 bales, 15,000 to 25,000 bales, 25,000 to 40,000 bales, and 40,000 bales and over. Those counties that reported 40,000 or more bales of cotton ginned in 1913 are indicated by the solid black. There were 62 counties that reported 40,000 or more bales ginned from the crop of 1913, distributed, by states, as follows: Texas, 29 counties; South Carolina, 10; Georgia and Mississippi, each 6; Arkansas, 4; Alabama, 3 counties; and Louisiana, North Carolina, Oklahoma, and Tennessee 1 county each.

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Diagram 1 on Plate No. 468 shows the proportion of the total supply of cotton in the United States for the year ending August 31, 1913, consumed, held in stocks, at the end of the year, and exported, with the distribution of exports by countries to which exported. The United States consumed 35.9 per cent, while 9.9 per cent was held in stocks and 54.2 per cent was exported, the largest proportion of the amount exported, 21.9 per cent, going to the United Kingdom; 14.8 per cent, to Germany; 6.3 per cent, to France; 3.1 per cent, to Italy; and 2.3 per cent, to Japan, the other countries receiving but a small proportion.

Diagram 2 represents, for a series of years, by the length of the bars, the exports of domestic cotton from 1830 to 1913. The exports vary almost with the size of the cotton crop, but a tremendous increase in the exports of cotton from the United States from 1830, when it was less than 1,000,000 bales of 500 pounds each, to 1912, when it was nearly 11,000,000 bales of 500 pounds each, is brought out by the difference in length of the bars.

The map (3) shows the classification of states according to the quantity of cotton and linters consumed in 1913. From the states marked with a star no consumption of cotton was reported, and those which consumed less than 10,000 bales are unshaded. The heaviest consumption, of 500,000 bales and over, was in Massachusetts and Rhode Island in the North and North Carolina, South Carolina, and Georgia in the South. These are the states which have the greatest number of spindles. The next group, with from 200,000 to 500,000 bales consumed, includes the states of New Hampshire, New York, and Alabama. Texas, which produced the largest amount of cotton, only consumed from 50,000 to 100,000 bales.

The map on Plate No. 469 shows the classification of counties according to the number of cotton spindles in 1913. It indicates the localization of the cotton industry, there being very few spindles shown west of the Mississippi River, except in the state of Texas. The heavy shading in the New England states indicates the large number of cotton factories in that area. North Carolina, South Carolina, and Georgia, also show a heavily shaded area, indicating the location of numerous factories in those states.

# FINANCIAL STATISTICS OF CITIES.

The Bureau of the Census collects annually the financial statistics of cities having an estimated population of 30,000 or more. The eleventh annual report for the fiscal year 1912 was issued in June, 1914. The maps and diagrams used to present graphically some of the statistical tables are reproduced on Plates Nos. 470 to 475. Plate No. 470, map of the United States on which is located each of the 195 cities having an estimated population of 30,000 or more on July 1, 1912, shows the cities for which the statistics were collected that year.

On Diagram 1, Plate No. 471, the total length of the bar represents the total population at each census, from 1790 to 1910, and the estimated population for the years 1911 and 1912. The solid black portion of the bar represents the population in cities with 30,000 inhabitants or more, and the part of the bar shaded with broad black and white lines represents the population in cities with 8,000 to 30,000 inhabitants. In other words, the diagram indicates the population in cities of the two classes—8,000 to 30,000 and 30,000 and over—also the population outside such cities. The rapid increase in the population of our cities has been discussed fully in the report on population.

Diagram 2 represents, by the different shading, the percentage of the population in cities with 30,000 or more population, the percentage in cities with 8,000 to 30,000 population, and the percentage of population outside such cities. It will be noted that, based on the estimates of population for 1912, 39.5 per cent of the population is in cities with 8,000 or more inhabitants. At the census of 1910 there was reported in such cities 38.8 per cent of the population, and at the First Census, in 1790, the percentage was 3.3. In 1912, 30.7 per cent of the estimated population was in cities with more than 30,000 population, while in 1790 there was but one city in that class, which formed only 0.8 per cent of the total population. The increasing importance of the cities with over 30,000 population is apparent.

Diagram 3 presents graphically, for the 195 cities and for the five groups, the per capita revenue receipts and the per capita payments for expenses and interest, and for outlays, in five groups of cities with specified excess of revenue receipts over payments for expenses and interest, in 1912. It will be noted, by the difference in the length of the bars on this diagram, that the per capita revenue receipts are largest in the first group (more than 40 per cent), and that they are larger in the fourth group (10 to 20 per cent) than in any other group except the first. Expenses and interest are larger in the fourth group than in any other. Per capita outlays are largest in the first group and smallest in the fifth group.

Diagram 4 presents the net revenue receipts and net governmental cost payments of 146 cities, from 1902 to 1912, the bars for the latter being subdivided, by different shading, into expenses, interest, and outlays. The comparison is confined to 146 cities for the reason that statistics could not be secured for 11 years for more than 146 of the 195 cities to which the volume relates for the year 1912. The 49 cities for which comparative statistics are not given are listed on page 17 of the Report on Financial Statistics of Cities. A comparatively small increase for net governmental cost payments was shown each year from 1902 to 1906, but from 1906 to 1907 the increase was much larger than during any previous year. From 1907 to 1908 the increase was almost as great as for the previous year, but from 1908 to 1909 it was practically the same, showing no increase. The increase each year since 1909 has been almost uniform. The increase in net revenue receipts was regular, being nearly the same each year. The difference in length of bars, between 1902 and 1912, measures the enormous increase in both, the receipts and governmental cost payments having practically doubled in the 11 years.

Diagram 1 on Plate No. 472 presents the net governmental cost payments of the United States and of 146 cities for each year from 1902 to 1912. The bar representing the cost payments of the United States is divided by different shading into two parts, one representing pensions and the remainder of the bar other purposes. It will be noted, by comparing the length of the bars, that the cost payments of the United States decreased from 1904 to 1905, also from 1909 to 1910. The payments for 146 cities indicate a uniform increase, with the exception of 1908 and 1909, the expenditures for these years being practically the same. In 1902 the cost payments for the United States exceeded those of the 146 cities by $220,817,044, but in 1912 the cost payments of the cities had increased more rapidly than

those of the United States, and there was only a difference of $58,276,351, the cost payments for the United States being greater by that amount.

Diagram 2 on this plate sets forth the net payments for outlays for the United States and New York city from 1902 to 1912. In 1902 the outlays for New York city were double those for the United States, but the increase in the outlays of the United States was very rapid from 1903 to 1904, when they exceeded the outlays for New York city by more than $15,000,000. In 1905 the outlays for both the United States and New York had decreased, but in that year the outlays of New York city exceeded those of the United States by more than $20,000,000. Both increased rapidly until 1908, when they were very nearly equal, the outlay for New York city being slightly larger than that for the United States. In 1909 the outlays of the United States were more than $10,000,000 larger than the outlays for New York city. Since that date the outlays for the United States have increased gradually each year, while in New York city the outlays for 1911 were much larger than for 1912.

Diagram 3, Plate No. 472, compares the following items: Net indebtedness of 146 cities, the United States, and New York city, for 11 years, 1902 to 1912, the bars being shaded to represent the net indebtedness for each of the three divisions.

In 1902 the net indebtedness of New York city was much less than that of the United States or the 146 cities, the United States having a larger debt than the 146 cities. In 1903 the debt of New York city had grown slightly, the indebtedness of the United States had decreased, and the indebtedness of the 146 cities had increased, so that the 146 cities had a greater debt than the United States; the bar representing the net debt of the 146 cities increased steadily each year from 1902 until 1912, when it was $1,932,547,533. The net indebtedness for New York city also increased steadily until in 1912 it was $792,927,021. The net indebtedness of the United States decreased from 1902 to 1903 and from 1905 to 1907, increased gradually to 1910, and decreased from 1910 to 1911, but showed a slight increase in 1912, at which date it was $1,027,574,697.

Diagram 4 on the same plate is of great interest, as it presents the per capita net indebtedness for the same units for which the total net indebtedness was shown in Diagram 3. The per capita debt of the United States did not in any year, from 1902 to 1912, exceed $13, the highest per capita being $12.24 for the year 1902. The per capita net indebtedness of the 146 cities in 1902 was $44.19; this gradually increased each year until in 1912 it had reached $70.47. The per capita net indebtedness of New York city far exceeded that of both the United States and the 146 cities combined. In 1902 it was $76.45, and from that date it increased much more rapidly than the per capita indebtedness of the 146 cities, until in 1912 it reached $156.57, having more than doubled in the 11 years, while the per capita debt of the 146 cities had increased 59.5 per cent, and that for the United States had shown a slight decrease. The per capita debt of New York city in 1912 was more than double the per capita debt for the 146 cities.

Diagram 1 on Plate No. 473 shows the per capita net revenue receipts and governmental cost payments for groups of cities with specified population in 1912. The five groups of cities are from 30,000 to 50,000 population, 50,000 to 100,000, 100,000 to 300,000, 300,000 to 500,000, and 500,000 and over. The cost payments and net revenue receipts both increase regularly from the lowest group (30,000 to 50,000 population) to the highest group (500,000 and over), the per capita in the highest population group being almost double that of the smallest group. This proves that the per capita governmental cost payments in large cities is far higher than in smaller cities.

Per capita net revenue receipts and governmental cost payments for cities with highest and lowest per capita governmental cost payments, in groups of cities with specified population, in 1912, are presented in Diagram 2. The diagram shows for each population group the difference between the highest and lowest cities in each group, the comparison being specially noticeable in the group 50,000 to 100,000 population by comparing the bar for Johnstown, having the lowest per capita in that class, with that for Tacoma. The difference between the pair of cities with the smallest population, Quincy and San Diego, is much greater than between the pair of large cities, New York and Philadelphia, the difference between the latter cities being less than between the highest and lowest cities in any other population group.

In Diagram 3, per capita net payments for the principal governmental costs of 146 cities from 1902 to 1912, the length of the bars shows the total per capita, and the shaded portions represent four different items of expense. The black part of the bar, indicating the largest item, represents the expenses of general departments; the next largest item was outlays, with interest next, expenses of public service enterprises having the smallest proportion. The total length of the bars on the diagram shows that the increases from year to year are not regular; for instance, 1904 and 1905 show practically the same length of bar, while from 1908 to 1909 there is a marked decrease, a decrease being indicated for each of the items making up the total.

On Diagram 4, per capita net receipts from the principal revenues from 1902 to 1912, the bars are divided into sections representing eight different items. The largest item of the net receipts was the general property tax; the second was for public service enterprises; special assessments were third; taxes on liquor

traffic were fourth; while the smallest amount received was from license taxes other than liquor. The differences in the length of the bars show that there was a gradual increase each year, except from 1908 to 1909, when a slight decrease was reported.

Diagram 5 presents the per capita net payments for specified general departmental expenses of cities with the highest and lowest per capita, by groups of cities with specified population in 1912. In the lowest class of cities, with from 30,000 to 50,000 population, Newton, Mass., and Charlotte, N. C., are compared, the net payments of Newton ($25.29) being practically four times as large as those of Charlotte ($6.44). In the class 50,000 to 100,000 population the per capita for Springfield, Mass. ($20.51), is more than three times as large as that for Allentown, Pa. ($6.47). In the class 100,000 to 300,000 the per capita for Denver ($20.13) is more than double that of Birmingham ($8.64). In the class of 300,000 to 500,000 the per capita for Washington is practically double that of New Orleans, the former having a per capita of $25.43 and the latter of $12.79. In the highest class of cities—those over 500,000—Boston, with a per capita of $28.06, and Baltimore, with $15.14, are compared, Boston's per capita exceeding that of Baltimore by nearly $13.

Diagram 6 illustrates the increase in the per capita payment for the principal general departmental expenses, from 1902 to 1912, for the 146 cities covered by the different census reports for the 11 years. The differences in the length of the bars indicate the gradual increase in the per capita payments for the seven items indicated in the legend. The increase from $13.02 in 1902 to $17.34 in 1912 is a gain during the 11 years of 33.2 per cent. Each per capita gains slightly over the previous year, except for 1908 and 1909, when a slight decrease is shown.

Diagram 1 on Plate No. 474 shows the per cent distribution of principal general departmental expenses, from 1902 to 1912, of 146 cities. Each bar represents 100 per cent, and the difference in the shading for each division indicates the percentage in each of the eight items specified, the shading indicating that the items have varied very little from year to year, the proportion in each of these groups being nearly the same.

Diagram 2 on the same plate, revenue receipts and payments for expenses of the water-supply systems of 146 cities from 1902 to 1912, presents graphically two items and indicates that the revenue receipts were much in excess of the payments for expenses. A regular increase is shown from year to year in the revenue receipts. The payments for expenses show a slight decrease from 1904 to 1905, but an increase for each of the other years, although the increase from 1908 to 1909 was very small.

Diagram 3, Plate No. 474, per capita increases in net indebtedness and net payments for interest by 146 cities from 1902 to 1912, is a double diagram, the upper diagram representing net indebtedness and the lower, net payments for interest, for a series of 11 years. A study of the diagrams shows that the increase in net indebtedness and in net payments for interest has been steady, the length of the bars indicating that in every year the per capita net indebtedness increased, but in the lower diagram it will be noted that the net payments for interest decreased from 1908 to 1909, all other years having steadily increased.

Diagram 4 on this plate presents the increase of per capita indebtedness with increase in size of cities in 1912. The lower bar in each group represents the net debt, while the upper bar is shaded to indicate the indebtedness for general departments and municipal service, also public service. The per capita indebtedness is smallest for the cities with the least population and the debt increases, group by group, to that of the cities with the largest number of inhabitants. As has been shown on all the other diagrams, the per capita net debt increases as the size of the city increases.

Diagram 5, Plate No. 474, per capita net indebtedness of cities with highest and lowest per capita, in groups of cities with specified population, in 1912, strikingly presents, by the difference in the length of the bars, the tremendous difference between the lowest and highest per capita indebtedness in the cities in each group. The greatest disparity is shown between the per capita debt of Springfield, Mo. ($3.75), and that of Galveston, Tex. ($113.24), in the group with the smallest population. In the group over 500,000 the per capita net debt of Detroit ($18.09) is compared with that for New York ($156.57).

Diagram 1 on Plate No. 475 shows the increase of property tax levies, with increase in size of cities, in 1912. The per capita for the group with the greatest population was $23.42, nearly twice that of the group with the smallest population, $11.93.

Diagram 2 on the same plate presents the averages per 100 inhabitants of the expenses of stated kinds of schools, in groups of cities with specified population, in 1912. The difference in the length of the bars shows the gradual increase of the expenses for the four items and indicates that the increase is gradual from the group with 50,000 to 100,000 population to the group with the greatest population, the two lower groups, 30,000 to 50,000 and 50,000 to 100,000 population, being nearly equal. The expenses vary but little in the several groups, the elementary day schools having the highest average as well as the greatest increase from the lowest population group to the highest.

Diagram 3 on this plate gives the per cent distribution of the expenses of schools for stated objects, in groups of cities with specified population, in 1912. The percentages for the operation of school plants and general administration exhibit a number of differences and indicate that in these items the expense is greater in the small cities than in the large cities, the other items showing very slight differences.

Diagram 4, Plate No. 475, averages per 100 inhabitants of the expenses for stated objects of the schools, in groups of cities with specified population, in 1912. The length of the bars and shaded divisions representing the five items are practically the same for the cities in the two groups with the smallest population. The averages in each group follow the general trend of other diagrams, increasing with the size of the city. Instruction shows a greater proportional increase than any other item and forms the greatest portion of the total expense.

Diagram 5 on this plate represents the per cent distribution of the expenses of three kinds of schools in groups of cities with specified population in 1912. The bars are the same length and each represents 100 per cent, the shading indicating the proportion for each kind of school. The percentage for the secondary day schools reverses the usual procedure, and is higher in the cities with the smaller population and forms a smaller proportion of the total in the cities with the largest population. The elementary day schools are practically the same. The percentages for night schools and all other schools increase from the small cities to the large.

The map (6) on Plate No. 475 indicates, by the different shading, the percentage of the total estimated population of each of the states living in cities with 30,000 or more inhabitants in 1912. The percentages are based on the estimated population of the cities and of the United States for 1912. The dark shade marks the states which have a great preponderance of this urban element. Massachusetts, Rhode Island, New York, and New Jersey are the states which have more than 50 per cent of their population in cities with 30,000 or more inhabitants. In the next group, 40 to 50 per cent, we find a wide range geographically; Connecticut, Delaware, Maryland, and Illinois in the East and California in the West are all in this class. There are nine states without a city of 30,000 inhabitants—two east of the Mississippi River—Vermont and Mississippi—and seven west of this river—North Dakota, South Dakota, Wyoming, New Mexico, Arizona, Nevada, and Idaho. There are four states—Maine, West Virginia, North Carolina, and South Carolina—east of the Mississippi River with less than 10 per cent of their population in cities of 30,000 or more inhabitants, and two states west of the Mississippi River in this class—Arkansas and Oklahoma.

# VITAL STATISTICS.

The act of March 2, 1902, established a permanent Census Office and provided for an annual report on mortality statistics. Under the terms of the law the statistics were restricted to states having adequate registration laws. The act providing for the Thirteenth Census, approved July 2, 1909, made no provision for the collection of mortality data by the enumerators, as at the previous censuses.

The four small maps on Plate No. 476 represent, by shading, the growth of the registration area for deaths from 1880 to 1913. The two small circles in the lower left corner of each map indicate the per cent of the population in the registration area and the proportion of the total area included in the registration area at the dates specified.

In 1880 the population in what are termed the registration states formed only 17 per cent of the total population, while the area of the states included in the registration area was only 0.6 per cent of the total area of the United States. In 1880 only two states were included in the registration area—Massachusetts and New Jersey.

In 1890 the registration area had been extended to include—in addition to Massachusetts and New Jersey—New Hampshire, Vermont, Connecticut, Rhode Island, New York, and Delaware, and included 31.4 per cent of the total population and 3 per cent of the total area of the United States.

In 1900 the registration area was enlarged and included 40.5 per cent of the total population and 7.1 per cent of the area, Maine, Michigan, and Indiana having been added and Delaware dropped.

In 1913 the registration area had expanded to include 65.1 per cent of the total population and a little more than one-third of the total land area—that is, 38.6 per cent. In 1913 the collection of mortality statistics from registration states included the following states: California, Colorado, Connecticut, Indiana, Kentucky, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Montana, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Utah, Vermont, Virginia, Washington, and Wisconsin, also the District of Columbia. In addition to these states the registration area included 41 cities in nonregistration states, and all municipalities in North Carolina having a population of 1,000 or more in 1900.

Plate No. 477 compares the death rate of the United States for the registration area with those of certain foreign countries for each year from 1900 to 1911. The countries of New Zealand, Australia, and Sweden each had a lower death rate than the United States from 1900 to 1911, except in 1908, when the death rate for the United States was 14.8 and that of Sweden 14.9. England and Wales in the earlier periods had a higher death rate than that reported for the United States, but in 1903, and in later periods until 1908, its death rate was slightly below that of the United States. In 1908 they were the same, the lines crossing again shortly after 1909, and again crossing just before 1911. All the other countries show a higher death rate than that of the United States, that of Chile being especially marked as having the highest death rate of all the countries reported. Hungary and Spain are the next in order, their lines crossing at five different periods. The death rate of Austria is below both that of Hungary and Spain but above that of Italy, except in 1908, when it fell below the Italian death rate; for subsequent years a higher death rate was reported. Japan is represented from 1900 to 1909 only. Its death rate is below that of Italy, except in 1909, but above that of France, except in 1900 and 1906, when it was slightly lower. For the early years, from 1900 to 1905, the French and German death rates were very close but after 1905 the German death rate was below that of France at every year reported. The general death rate of Ireland was below that of Germany, except between 1909 and 1911, and above that of England and Wales and the United States.

Plate No. 478 represents, by the rise and fall of the lines, the death rates from important causes of death in the registration area of the United States for each of the years from 1900 to and including 1912. The heavy black line, representing the death rate from tuberculosis, indicates a striking decrease from 1900 to 1912, and in the latter year was slightly below that of organic heart disease. The death rate from pneumonia was second from 1900 to 1907; between 1907 and 1908 it fell below the death rate from heart disease. Organic heart disease has shown a startling increase and in 1912 was higher than tuberculosis or pneumonia; it was third in rank in the death rates from 1900 to 1907; between 1907 and 1908 it crossed the pneumonia death rate line and continued above that cause of death until in 1912 it was highest among the causes of death. One peculiar fact brought out in the diagram is the closeness with which the lines representing the death rates from cerebral hemorrhage, apoplexy, and cancer approach each other from 1903 to 1912. The three lines indicating the lowest death rates shown on the diagram, those of measles, whooping cough, and scarlet fever, are very close and cross and recross each other from 1900 to 1912; for the latter year, scarlet fever had the lowest death rate of the three, whooping cough the highest, and measles just between the two.

# RELIGIOUS BODIES.

The Census Bureau collected in the year 1906 statistics of religious bodies in continental United States, no effort being made to include statistics of organizations in any portion of the outlying territory. Although the report was not printed until 1910, the data relate to the close of the year 1906. This report contained many illustrations and it has been deemed advisable to include them in this volume as Plates Nos. 479 to 492.

Wherever the designation "not church members" has been used it represents the difference between the number reported as communicants, or members, and the total population. It embraces, therefore, children too young to become church members, as well as that proportion of the population eligible to church membership, although not affiliated with any religious denomination.

Diagram 1 on Plate No. 479 shows the proportion of the population reported as Protestant, Roman Catholic, and "all other" church members, and the proportion not reported as church members, in 1890 and 1906. The areas of the two circles are in proportion to the total population returned in 1890 and 1906, the circles being divided into sectors in proportion to the four classes specified. The Roman Catholic and Protestant bodies include nearly all of the church membership, the "all other" religious denominations being a very small proportion of the total population of the United States. The large proportion in the class "not church members" is due to the inclusion of all persons, including children, not reported as church members. (See note at head of diagram.)

In Diagram 2 on Plate No. 479, distribution of communicants or members, by principal families or denominations, in 1890 and 1906, the areas of the two circles are in proportion to the number of communicants or members returned at the dates specified. The sectors of the circles indicate the proportion each of the principal denominations formed of the total. In 1890 the Roman Catholic was first, Methodist second, Baptist third, Presbyterian fourth, and Lutheran fifth; in 1906 the Catholic, Methodist, and Baptist occupied the same places, but the Lutheran was fourth and the Presbyterian fifth, the Lutheran having increased more rapidly than the Presbyterian. The other denominations had practically the same proportions at each census.

Plates Nos. 480 to 483 each consist of a series of twelve circles, each circle representing a state, arranged in alphabetical order; each circle is divided into sectors in the proportion each of the principal denominations bears to the total number of communicants, or members, of all religious bodies in the state. The Roman Catholic denomination leads in 30 states, is second in 6 states, third in 7 states, and fourth in 2 states, there being only 3 states—North Carolina, South Carolina, and Tennessee—in which it did not appear as fourth or higher. The Baptist leads in 11 states, is second in 6 states, third in 4 states, and fourth in 8 states. The Methodist leads in 5 states, is second in 25 states, third in 9 states, and fourth in 8 states. The Latter-day Saints is the only other denomination leading in any state, being first in 2 (Idaho and Utah), second in 2, and third in 1. The Lutheran is second in 4 states, third in 5 states, and fourth in 5 states, while the Presbyterian is third in 16 states and fourth in 9 states. The next denomination in importance is the Congregationalist, which is second in 4 states, third in 1 state, and fourth in 3 states.

**Table 1**

| STATE OR TERRITORY. | PERCENTAGE OF TOTAL POPULATION REPRESENTED IN 1906 BY MEMBERS OF— | | | |
|---|---|---|---|---|
| | All religious bodies. | Protestant bodies. | Roman Catholic Church. | All other bodies. |
| New Mexico | 63.3 | 6.7 | 56.2 | 0.4 |
| Utah | 54.6 | 2.6 | 2.6 | 49.4 |
| Rhode Island | 54.0 | 13.1 | 40.0 | 0.9 |
| Massachusetts | 51.3 | 14.8 | 35.5 | 1.1 |
| Louisiana | 50.6 | 19.4 | 31.0 | 0.1 |
| Connecticut | 50.0 | 19.5 | 29.8 | 0.7 |
| South Carolina | 45.8 | 45.0 | 0.7 | 0.1 |
| District of Columbia | 44.4 | 29.7 | 14.2 | 0.5 |
| Wisconsin | 44.3 | 21.7 | 22.3 | 0.2 |
| New Hampshire | 44.0 | 14.9 | 27.7 | 1.4 |
| New York | 43.7 | 15.0 | 27.8 | 0.8 |
| Pennsylvania | 43.0 | 24.8 | 17.5 | 0.7 |
| Georgia | 42.1 | 41.2 | 0.8 | 0.1 |
| Vermont | 42.0 | 18.2 | 23.5 | 0.3 |
| Minnesota | 41.2 | 22.2 | 18.7 | 0.3 |
| Alabama | 40.8 | 38.5 | 2.1 | 0.2 |
| Virginia | 40.2 | 38.6 | 1.5 | 0.1 |
| North Carolina | 40.0 | 39.8 | 0.2 | 0.1 |

On Plate No. 484, proportion of the population reported as Protestant, Roman Catholic, and "all other" church members, and proportion not reported as church members, for each state and territory in 1906, the highest percentage of Protestant church members was found in South Carolina (45 per cent), and the lowest percentage in Utah (2.6 per cent). The highest percentage of Roman Catholic Church members was found in New Mexico (56.2 per cent), and the lowest percentage in North Carolina (0.2 per cent). The "all other" religious bodies had the largest pro-

portion (largely comprising Latter-day Saints) in Utah and the smallest proportion (less than one-tenth of 1 per cent) in North Carolina. New Mexico shows the largest proportion (63.3 per cent) of its population reported as communicants, or church members; Utah the next largest proportion (54.6 per cent); Rhode Island third (54 per cent); while Oklahoma had the lowest per cent (18.2) of its population reported as church members, and the highest per cent (81.8) reported as not church members.

Plates Nos. 485 and 486 consist of a series of 12 small maps which show the number of communicants, or members, per thousand of the population for 12 principal families, or denominations, for each state and territory, in 1906. In the states left unshaded none of the denominations specified are reported. The states are shaded in groups, as follows: The first group, less than 10 per thousand of population; the second group, 10 to 25 per thousand; the third group, 25 to 50 per thousand; the fourth group, 50 to 100 per thousand; and the fifth and last group, 100 or over to each thousand of population.

The first map shows the proportion of Roman Catholics to the total population of each state. The states covered with black have 100 persons and over of this denomination in each thousand of population. A comparison of the 12 maps reveals the fact that the Roman Catholics have the largest number of communicants, or members, of any of the denominations.

On Map 2, Methodist bodies, the solid black shading in the South indicates the states in which the Methodists are most prominent.

The Baptists are more numerous in a larger number of the Southern states than the Methodists, as is shown by the solid black covering the states indicated on Map 3.

The Lutheran bodies are strongest in the Northwest, as indicated by the solid black areas on Map 4, due to the large number of Scandinavians and Germans in the states of North Dakota, Minnesota, and Wisconsin. The uncolored areas in Arizona and New Mexico indicate no churches of this denomination.

The Presbyterian bodies, as shown on Map 5, are scattered and do not show any proportion above the group 25 to 50 per thousand in any state.

Map 6 indicates that the largest proportion of Disciples, or Christians, is found in the state of Kentucky.

Map 1 on Plate No. 486 presents the distribution of the Protestant Episcopal bodies. Only 4 states—Connecticut, Rhode Island, Maryland, and Nevada—are shaded to fall in the group 25 to 50 per thousand.

On Map 2, distribution of the Congregationalists, the shading indicates that Connecticut and Vermont had the highest proportion of this element. The map also shows 7 states unshaded, indicating that no churches of Congregationalists were reported.

As indicated on Map 3, for Reformed bodies, about half the states are unshaded, indicating that no churches of this denomination were reported. Pennsylvania was the state reporting the highest proportion of this denomination.

On Map 4, United Brethren, all the states reported are in the class less than 25 per thousand, more than one-half of the states being unshaded, indicating no churches reported for this denomination.

On Map 5, German Evangelical Synod of North America, 26 states in New England, the South, and the far West have no churches of this religious denomination. In only 2 states—Illinois and Missouri—are they reported with from 10 to 25 communicants per thousand of population.

The Latter-day Saints (Map 6) have churches reported from 29 of the states, but the highest proportion of members is in the states of Idaho and Utah, these states reporting over 100 per thousand of population. Wyoming, with 50 to 100 per thousand, and Nevada and Arizona, with 25 to 50 per thousand, are the only states reporting more than 10 per thousand of population. Nineteen states are unshaded, indicating no churches of this denomination.

Plates Nos. 487 and 488 consist of 12 diagrams, giving the number of communicants, or members, per thousand population, arranged according to proportional strength for twelve principal families or denominations, for each state and territory, in 1906. The length of the bar represents the number of communicants of that body per thousand in each state, arranged in order, with the highest proportion first.

Diagram 1 on Plate No. 487, Roman Catholic, illustrates the fact that New Mexico has the largest proportion of Roman Catholics, followed by Rhode Island, Massachusetts, Louisiana, and Connecticut, in order. The smallest proportion of Roman Catholics indicated on the diagram was reported from South Carolina.

Diagram 2, Baptist, indicates that they are strongest in Georgia, South Carolina, Alabama, Mississippi, and Virginia; in fact, the leading states for this denomination are Southern states. The smallest proportion indicated on this diagram was for Montana.

Diagram 3, Lutheran, shows that the largest proportion of this denomination was found in Minnesota, with North Dakota, Wisconsin, and South Dakota following in the order named. The smallest proportion reported from the states represented on the diagram is for Rhode Island.

The largest proportion of United Brethren, as shown on Diagram 4, appears in Indiana, followed by West Virginia, Ohio, Kansas, and Pennsylvania, in the order named.

In Diagram 5, Reformed Bodies, Pennsylvania leads, with New Jersey, Ohio, Michigan, and Maryland following in the order named. This, like the United

Brethren, is, in numbers, one of the smaller religious denominations.

Plate No. 488 is comprised of seven diagrams. On Diagram 1, Methodist, South Carolina had the highest proportion, followed by Delaware, Georgia, North Carolina, and Florida, in the order named. The smallest proportion among the states represented on the diagram is shown for Utah.

In Diagram 2, Disciples, the largest proportion shown is for the state of Kentucky; Missouri, Indiana, Kansas, and Iowa follow. Of the states listed on the diagram, New Mexico reported the smallest proportion.

The state leading in Presbyterians, as shown in Diagram 3, was Pennsylvania. Tennessee was second, New Jersey third, Ohio fourth, and Colorado fifth. The state with the lowest proportion represented on the diagram was Vermont.

In Diagram 4, Protestant Episcopal communicants, the District of Columbia reported the highest proportion of members; Connecticut was second, Rhode Island third, Nevada fourth, and Maryland fifth. Of the states shown on the diagram, North Dakota had the lowest proportion.

The New England states led in the proportion of Congregationalists, as indicated on Diagram 5. Connecticut was first, Vermont second, New Hampshire third, Massachusetts fourth, Maine fifth, and Rhode Island sixth. New York reported the lowest proportion.

The German Evangelical Synod is one of the smaller denominations in number, as shown on Diagram 6. Illinois had the highest proportion, Missouri was second, Wisconsin third, and Indiana fourth.

Latter-day Saints are of importance in only the 5 states indicated on Diagram 7. Utah had by far the highest proportion of any state. Idaho was the state second in the proportion of members, with Wyoming third, Arizona fourth, and Nevada fifth.

On Plate No. 489, distribution of communicants, or members, in each principal family or denomination, for cities of 25,000 inhabitants or more in 1900 (arranged in four classes), and outside of cities, in 1906, each bar represents, first, cities with 300,000 inhabitants and over; second, cities with 100,000 to 300,000 inhabitants; third, cities with 50,000 to 100,000 inhabitants; fourth, cities with 25,000 to 50,000 inhabitants; and outside cities with 25,000 inhabitants or more. The Jewish Congregations led with 88.7 per cent of their communicants in cities with 25,000 inhabitants or more; they also had 57.5 per cent in cities with 300,000 inhabitants or more. The smallest per cent outside of cities (11.3) was also reported for Jewish Congregations. The Church of Christ, Scientist, also shows an exceptionally large proportion (61.1 per cent) in cities of 300,000 and over, and a very small proportion (17.4 per cent) outside of cities of 25,000 inhabitants and over. The Eastern Orthodox is next in proportion of members in cities of 25,000 or more, and a large proportion of this membership (34.1 per cent) is in cities of 300,000 and over. The Roman Catholic shows that 52.2 per cent of the members are in cities of 25,000 and over. The Protestant Episcopal shows that the membership is about evenly divided, 51.2 per cent being in cities of 25,000 and over and 48.8 per cent being outside. All the other denominations show less than half their members in cities of 25,000 inhabitants or more, the Mennonites showing the smallest proportion in this class, only 2.1 per cent.

Plates Nos. 490 and 491 are made up of a series of twenty-four circles representing 24 of the principal cities of the United States, arranged in alphabetical order, each circle being divided to show the distribution of the communicants, or members, of the principal families or denomination in 1906. The Roman Catholic Church has the largest number of communicants, or members, in each of the cities shown, with the Methodists next in rank, as the latter are second in 6 cities, third in 14, and fourth in 1, there being only 3 cities of the 24—Providence, Buffalo, and Boston—where they do not appear among the first four. The Lutherans are next in rank, being second in 7 cities, followed by the Baptists and Presbyterians.

Plate No. 492 presents the per cent of the population reported as Protestant, Roman Catholic, and "all other" church members, and the per cent not reported as church members, for 35 principal cities, in 1906, arranged in order of the proportion of Protestants, the city with the highest per cent being first. The highest per cent of Protestants was reported for Washington, D. C., with Louisville, Ky., and Memphis, Tenn., following in order. The smallest proportion of Protestants is shown for Fall River, Mass. The largest proportion of Roman Catholics is found in Fall River, with Providence second, New Orleans third, and Boston fourth. Worcester, Pittsburgh, Providence, and Omaha reported the largest percentages for "all other" bodies. St. Joseph, Mo., shows the largest proportion of persons not attending church, with Omaha, Nebr., second, and Toledo, Ohio, third.

# MARRIAGE AND DIVORCE.

In 1909 the Census Bureau published a special report on marriage and divorce. The report presented the results of two Federal investigations into these subjects; the first, made by the Bureau of Labor, covered the period from 1867 to 1886, while the second, made by the Bureau of the Census, covered the period from 1887 to 1906. As the report made by the Bureau of Labor was out of print, the Census Bureau's report was compiled to cover a period of 40 years, from 1867 to 1906.

It is deemed a matter of interest to reproduce in the Statistical Atlas the maps and diagrams used for illustrating the statistics on marriage and divorce for the period covered by the report.

## MARRIAGE.

The statistics on marriage, for the period from 1887 to 1906, gave the total number of marriages recorded in the counties covered by the investigation as 12,832,044. The number recorded for each year, with the increase, as compared with the preceding year, is shown in the following table, and the data graphically presented in Diagram 1 on Plate No. 493:

**Table 1**

| YEAR. | MARRIAGES. Number. | MARRIAGES. Increase over preceding year. | YEAR. | MARRIAGES. Number. | MARRIAGES. Increase over preceding year. |
|---|---|---|---|---|---|
| Total | 12,832,044 | ..... | 1897 | 622,350 | 8,477 |
| | | | 1896 | 613,873 | 15,018 |
| 1906 | 853,290 | 48,503 | 1895 | 598,855 | 32,694 |
| 1905 | 804,787 | 23,642 | 1894 | 566,161 | [1] 12,512 |
| 1904 | 781,145 | [1] 4,987 | 1893 | 578,673 | 803 |
| 1903 | 786,132 | 39,399 | 1892 | 577,870 | 15,458 |
| 1902 | 746,733 | 30,112 | 1891 | 562,412 | 19,875 |
| 1901 | 716,621 | 31,337 | 1890 | 542,537 | 11,080 |
| 1900 | 685,284 | 34,674 | 1889 | 531,457 | 26,927 |
| 1899 | 650,610 | 24,955 | 1888 | 504,530 | 21,461 |
| 1898 | 625,655 | 3,305 | 1887 | 483,069 | ..... |

[1] Decrease.

Diagram 1 on Plate No. 493 illustrates, by the length of the bars, the annual number of marriages for 20 years, from 1887 to 1906, the number having increased from 483,069 in 1887 to 853,290 in 1906. The greatest increase (48,503) shown in one year was that from 1905 to 1906. The two years 1894 and 1904 reported a decrease in the number of marriages, compared with the number during the previous years, proving that the number of marriages depends, to some extent, on economic conditions, increasing in periods of prosperity and declining after a commercial crisis. Especially noticeable is the small increase shown for the year 1893, and the actual decrease in the succeeding year, 1894. The panic prior to 1904 was not as severe as that of 1893; the decrease for 1904, therefore, was not as great as the decrease from 1893 to 1894.

Diagram 2 indicates, by the curves, the number of marriages per 10,000 estimated population for geographic divisions, by single years, from 1887 to 1906. As this diagram is reproduced from the Census Report on Marriage and Divorce for 1906, the geographic divisions used do not coincide with the geographic divisions at the Thirteenth Census; they are, therefore, listed below:

North Atlantic division:
- Maine.
- New Hampshire.
- Vermont.
- Massachusetts.
- Rhode Island.
- Connecticut.
- New York.
- New Jersey.
- Pennsylvania.

South Atlantic division:
- Delaware.
- Maryland.
- District of Columbia.
- Virginia.
- West Virginia.
- North Carolina.
- South Carolina.
- Georgia.
- Florida.

North Central division:
- Ohio.
- Indiana.
- Illinois.
- Michigan.
- Wisconsin.
- Minnesota.
- Iowa.

North Central division—Contd.
- Missouri.
- North Dakota.
- South Dakota.
- Nebraska.
- Kansas.

South Central division:
- Kentucky.
- Tennessee.
- Alabama.
- Mississippi.
- Louisiana.
- Arkansas.
- Indian Territory.
- Oklahoma.
- Texas.

Western division:
- Montana.
- Idaho.
- Wyoming.
- Colorado.
- New Mexico.
- Arizona.
- Utah.
- Nevada.
- Washington.
- Oregon.
- California.

These marriage rates are based on estimated population for geographic divisions for all years, except the census years. As will be observed from the lines on the diagram, the average number of marriages in the South Central division was larger than for any other division, except for the year 1906, for which year the Western division reported a higher proportion. The

lines in many places cross each other, showing that the marriage rates for the different divisions are not constant from year to year. Some of the fluctuations in the lines are due to the fact that the estimated population was not a true statement of the population of each of the divisions; several of the geographic divisions grew more rapidly during the period from 1900 to 1906 than they did during the decade from 1890 to 1900. The growth in the divisions was computed on the same basis, but the actual growth was not uniform, the Western division evidently having a more rapid growth than estimated. The Western division shows the most striking change, the number of marriages per 10,000 population starting at the lowest point in 1887 and ending in 1906 with the highest number. This, in a measure, is due to an underestimate of the population. The heavy black line represents the average for the entire United States. The average for the South Central division is above the United States average at each year; the North Central division average is above the United States average from 1887 to 1895, after which year it is below, but follows closely the average for the United States. The South Atlantic division, from 1887 to 1896, was below the United States average, but after the year 1896 it reported more marriages per 10,000 population than the United States.

The Western division, referred to above, had the lowest average in 1887, with 71 marriages per 10,000 of population, but rapidly increased its average to 1891, when it reached 90 per 10,000; its average decreased to 1894. In fact, the lines of every division, except the South Atlantic and South Central, showed a decrease in 1894, as compared with the previous year, being affected by the unsatisfactory economic conditions. From 1894 the average for the Western division increased rapidly, except for a decrease reported in 1896, until between 1901 and 1902 it crossed the line of the United States average, and, in 1906, reached an average of 127 marriages per 10,000 population, the highest average of any division. This was due to the rapid increase in the population and the fact that a large proportion of the migration, both interstate and foreign, was of adults of marriageable age.

There is a peculiarity about the increase for the different divisions as shown for the years 1903 and 1904. The average for the North Atlantic division, the North Central division, the United States, and the South Atlantic division all decreased from 1903 to 1904; the the Western division returned the same average; the South Central division increased from 1903 to 1904, but reported a decided decrease for the next year, 1904 to 1905, at the time when all the other divisions reported increases, the Western division especially having a very large increase from 1904 to 1905 and from 1905 to 1906.

Diagram 3, average annual number of marriages per 10,000 adult unmarried population, for states and territories, in 1900. The Indian Territory, which is now a part of Oklahoma, led, with 555 per 10,000, and is first on the diagram. Arkansas was second, with an average of 544 marriages to each 10,000 unmarried adults; Texas third, Florida fourth, and Oklahoma, exclusive of the Indian Territory, fifth. The average for California was the lowest, with 228 per 10,000 unmarried adults, and Connecticut was just above California, with an average of 232 per 10,000.

The first illustration on Plate No. 494 is a small map showing the average annual number of marriages per 10,000 adult unmarried population, for the states and territories, in 1900. The solid black areas indicate the states that averaged 450 or more marriages per 10,000 unmarried adults. Florida, Mississippi, Arkansas, Oklahoma and Indian Territory (now Oklahoma), and Texas are the only states in this group. The next group, with an average of 350 to 450, includes the states of West Virginia, Indiana, Tennessee, Georgia, Alabama, Louisiana, Kansas, Utah, and Nevada. Six states, excluding South Carolina, which had no marriage records, reported averages of less than 250 marriages per 10,000 adult unmarried population. Geographically the states were almost equally divided, three of them—Montana, Wyoming, and California—in the West; and Connecticut, Massachusetts, and Delaware in the East. As South Carolina had no marriage records, it should not be included with any class.

## DIVORCE.

The data concerning divorce, which were secured from the court records, fall into three main classes. The first class consists of the number of divorces granted; the second class consists of the statistics in regard to the legal proceedings, and embraces the data concerning the party, whether husband or wife, to whom the divorce was granted, the cause, the facts as to contest, the residence of the libellee, the form of service of notice, and the question of alimony; the third class comprises the figures in regard to the character of the marriage dissolved and embraces the subjects of the place of marriage, the duration of marriage, the condition as to children, and the occupation of the parties.

For the 20 years from 1887 to 1906, 945,625 divorces were granted. The number from 1867 to 1886 was 328,716, hardly more than one-third of the number reported for the second 20 years. Every five-year period since 1867 witnessed a marked increase in

the number of divorces, as shown in the following table:

**Table 2**

| PERIOD OF YEARS. | DIVORCES. | | |
|---|---|---|---|
| | Total number. | Increase over preceding five-year period. | |
| | | Number. | Per cent. |
| 1902 to 1906 | 332,642 | 71,922 | 27.6 |
| 1897 to 1901 | 260,720 | 65,781 | 33.7 |
| 1892 to 1896 | 194,939 | 37,615 | 23.9 |
| 1887 to 1891 | 157,324 | 40,013 | 34.1 |
| 1882 to 1886 | 117,311 | 28,027 | 31.4 |
| 1877 to 1881 | 89,284 | 20,737 | 30.3 |
| 1872 to 1876 | 68,547 | 14,973 | 27.9 |
| 1867 to 1871 | 53,574 | ..... | ..... |

The enormous increase in divorces is shown by the figures in the following table, which supplies the total number reported for each year from 1867 to 1906:

**Table3**

| YEAR. | DIVORCES. | | | YEAR. | DIVORCES. | | |
|---|---|---|---|---|---|---|---|
| | Total number. | Increase over preceding year. | Number per 100,000 of estimated population. | | Total number. | Increase over preceding year. | Number per 100,000 of estimated population. |
| 1906 | 72,062 | 4,086 | 84 | 1886 | 25,535 | 2,063 | 44 |
| 1905 | 67,976 | 1,777 | 81 | 1885 | 23,472 | 478 | 41 |
| 1904 | 66,199 | 1,274 | 80 | 1884 | 22,994 | [1] 204 | 42 |
| 1903 | 64,925 | 3,445 | 80 | 1883 | 23,198 | 1,086 | 43 |
| 1902 | 61,480 | 496 | 77 | 1882 | 22,112 | 1,350 | 42 |
| 1901 | 60,984 | 5,233 | 78 | 1881 | 20,762 | 1,099 | 40 |
| 1900 | 55,751 | 4,314 | 73 | 1880 | 19,663 | 2,580 | 39 |
| 1899 | 51,437 | 3,588 | 69 | 1879 | 17,083 | 994 | 35 |
| 1898 | 47,849 | 3,150 | 65 | 1878 | 16,089 | 402 | 34 |
| 1897 | 44,699 | 1,762 | 62 | 1877 | 15,687 | 887 | 34 |
| 1896 | 42,937 | 2,550 | 61 | 1876 | 14,800 | 588 | 32 |
| 1895 | 40,387 | 2,819 | 58 | 1875 | 14,212 | 223 | 32 |
| 1894 | 37,568 | 100 | 55 | 1874 | 13,989 | 833 | 32 |
| 1893 | 37,468 | 889 | 56 | 1873 | 13,156 | 766 | 31 |
| 1892 | 36,579 | 1,039 | 56 | 1872 | 12,390 | 804 | 30 |
| 1891 | 35,540 | 2,079 | 55 | 1871 | 11,586 | 624 | 29 |
| 1890 | 33,461 | 1,726 | 53 | 1870 | 10,962 | 23 | 28 |
| 1889 | 31,735 | 3,066 | 51 | 1869 | 10,939 | 789 | 29 |
| 1888 | 28,669 | 750 | 47 | 1868 | 10,150 | 213 | 27 |
| 1887 | 27,919 | 2,384 | 47 | 1867 | 9,937 | ..... | 27 |

[1] Decrease.

Plate No. 496 presents graphically the divorces per 100,000 estimated population for geographic divisions, by single years, from 1867 to 1906. The Western division reported the largest number of divorces per 100,000 of population, and presents a striking series of increases and decreases, the line for this division being the most irregular of any on the diagram. Except in 1868, 1870, and 1871, the average increased each year up to 1877, when the rate reached 126 per 100,000. There was a sharp decline in 1878 to 85 per 100,000, and in 1879 the average was 78 per 100,000. A continuous rise is shown to 1883, after which, except for 1886, there was a decrease to 82 per 100,000 in 1887; 1892, with an average of 117, was another high year, followed by a decrease to 1893, then a gradual increase to 1902, when it reached 142 per 100,000; a slight decrease for two years was followed by a rapid increase until 1906, when it reached 168 per 100,000; this average was the highest shown for any year by any division. This rate was more than four times that reported from the North Atlantic division (41), and almost four times that reported from the South Atlantic division (43).

The South Central division, the North Central division, and the Western division, since 1884, have all shown a larger number of divorces per 100,000 population than the United States, the North Atlantic division and the South Atlantic division being below the number for the United States. All the divisions, however, show an alarming increase from 1867 to 1906.

The ratio for the South Atlantic division was the lowest at each year until 1905 and 1906, when it passed the North Atlantic division, after which they were very close together, the South Atlantic having a ratio of 43 and the North Atlantic a ratio of 41 per 100,000. The divisions in the West, therefore, show a much higher divorce rate and a more rapid increase in the divorce rate than do the North Atlantic and the South Atlantic divisions.

Map 2 on Plate No. 494, average annual number of divorces per 100,000 married population, for states and territories, in 1900. The map is shaded in four groups—under 100 per 100,000 married population; 100 to 200; 200 to 300; 300 to 400; and 400 and over, the highest group. The three states falling in the group 400 and over are Washington, Montana, and Colorado. The next group, 300 to 400 divorces per 100,000 married population, comprises Oregon, Idaho, Wyoming, Nevada, Arizona, Texas, Oklahoma, Indian Territory, Arkansas, and Indiana. The unshaded areas, indicating states having a rate under 100 per 100,000, include New York, Pennsylvania, New Jersey, Delaware, North Carolina, South Carolina, and Georgia.

Diagram 1 on Plate No. 495, average annual number of divorces per 100,000 married population, for states and territories, in 1900. The states and territories, arranged in the order of their average annual number, with the largest first, show a wide variation geographically. Washington leads, with 513 divorces per 100,000 married population; Montana is second, with 497; Colorado third, with 409; Arkansas fourth, with 399; Texas fifth, with 391; Oregon sixth, with 368; Wyoming seventh, with 361; and Indiana eighth, with 355. These 8 states each have an annual average of more than 350 divorces per 100,000 married population

The state with the lowest average, excluding South Carolina, in which state all laws permitting divorces were repealed in 1878, is Delaware, with 43 per 100,000. New York and New Jersey are very close, each with 60 per 100,000. It is very difficult to explain why there should be such a wide disparity between the average annual number of divorces in the state of Washington and that of Delaware.

In Diagram 2 on Plate No. 495, annual number of divorces in the United States from 1867 to 1906, the increase is strikingly shown by the gradual increase in

the length of the bars for each year, the advance being from 9,937 in 1867 to 72,062 in 1906, or more than seven times the number reported for 1867. The population of the United States from 1870 to 1900 (almost the same period) had increased only 97.1 per cent, while the number of divorces increased 408.6 per cent, showing that the divorces are increasing much more rapidly than the population.

Diagram 3 compares the average annual number of divorces per 100,000 population for the United States with the averages for certain specified foreign countries. The United States average of 73 is more than double that of the next country, Switzerland, with 32, followed in order by France, with 23; Denmark, with 17; and Germany, with 15, the only countries which reported an average annual number of 15 or more divorces per 100,000 of population. Ireland had the smallest average of the countries presented in the diagram—less than 1 per 100,000 of population.

Plate No. 497 consists of four small United States maps on which the states are shaded to show, in five groups, the average annual number of divorces per 100,000 population, for states and territories, for 1870, 1880, 1890, and 1900. A comparison of the four maps brings out the rapid increase in the average annual number of divorces, as indicated by the increased number of states with the darker shadings; the difference between the shading on the map for 1870 and that of 1900 is most striking. In 1870 a large number of states were unshaded, falling in the group under 25, but in 1900 there were only five states in that group, all in the East. The Western states, with the exception of New Mexico, are all in the highest groups, with averages of 75 to 100 and 100 and over. With a few exceptions, the states east of the Mississippi River are in the lower groups, those having less than 75 divorces per 100,000 of population.

On Plate No. 498, number of divorces granted for certain specified causes, from 1867 to 1906, the lines indicate the number granted each year for each of the specified causes. The most prevalent cause was divorce to the wife for desertion. The rapid increase shown in this cause is startling. The next most important cause was divorce granted to the wife for cruelty on the part of the husband; the third cause represents the number of divorces granted to the husband for desertion. The line representing the number of divorces to the husband for cruelty on the part of the wife shows the smallest number of divorces from 1867 to 1896. Of the eight causes represented on the diagram, five represent divorces granted to the wife and three to the husband, indicating that the wives secure more divorces than the husbands. The rapid increase in the number of divorces granted to the wife for desertion and for cruelty, and to the husband for desertion, is strikingly illustrated on the diagram, the first cause having increased from 2,012 divorces in 1867 to 15,895 in 1906. The next cause, to the wife for cruelty, advanced from 994 in 1867 to 14,368 in 1906. The number of divorces to the husband for desertion advanced from 1,382 in 1867 to 11,512 in 1906.

# INSANE IN HOSPITALS.

The Census Bureau issued in 1914 a special report based on the returns of the insane in hospitals in 1910. The following table presents a summary of the results by classes:

**Table 1**

| RACE AND NATIVITY. | Total population: 1910. | INSANE IN HOSPITALS: 1910. | | | | PER CENT DISTRIBUTION. | | |
|---|---|---|---|---|---|---|---|---|
| | | Enumerated Jan. 1. | | Admitted during the year. | | Total population: 1910. | Insane in hospitals: 1910. | |
| | | Number. | Per 100,000 population. | Number. | Per 100,000 population. | | Enumerated Jan. 1. | Admitted during the year. |
| Total | 91,972,266 | 187,791 | 204.2 | 60,769 | 66.1 | 100.0 | 100.0 | 100.0 |
| White | 81,731,957 | 174,224 | 213.2 | 56,182 | 68.7 | 88.9 | 92.8 | 92.5 |
| Native | 68,386,412 | 115,402 | 168.7 | 39,629 | 57.9 | 74.4 | 61.5 | 65.2 |
| Foreign born | 13,345,545 | 54,096 | 405.3 | 15,523 | 116.3 | 14.5 | 28.8 | 25.5 |
| Nativity unknown | | 4,726 | | 1,030 | | | 2.5 | 1.7 |
| Negro | 9,827,763 | 12,910 | 131.4 | 4,384 | 44.6 | 10.7 | 6.9 | 7.2 |
| Other colored | 412,546 | 657 | 159.3 | 203 | 49.2 | 0.4 | 0.3 | 0.3 |

The total number of inmates reported in insane asylums on January 1, 1910, was 187,791, of which number 28.8 per cent were whites of foreign birth, and of the 60,769 persons admitted to institutions during the year 1910, 25.5 per cent were of the same class.

Diagram 1 on Plate No. 499, number of insane admitted during 1910 and number enumerated January 1, 1910, by age periods, is based on the following table:

**Table 2**

| AGE GROUP. | INSANE IN HOSPITALS: 1910. | | | |
|---|---|---|---|---|
| | Enumerated Jan. 1. | | Admitted during the year. | |
| | Number. | Per cent distribution. | Number. | Per cent distribution. |
| Total | 187,791 | | 60,769 | |
| Age reported | 184,557 | 100.0 | 59,812 | 100.0 |
| Under 15 years | 341 | 0.2 | 327 | 0.5 |
| 15 to 19 years | 2,312 | 1.3 | 2,539 | 4.2 |
| 20 to 24 years | 7,801 | 4.2 | 5,701 | 9.5 |
| 25 to 29 years | 14,083 | 7.6 | 7,027 | 11.7 |
| 30 to 34 years | 19,091 | 10.3 | 7,295 | 12.2 |
| 35 to 39 years | 22,856 | 12.4 | 7,495 | 12.5 |
| 40 to 44 years | 23,321 | 12.6 | 6,469 | 10.8 |
| 45 to 49 years | 22,874 | 12.4 | 5,681 | 9.5 |
| 50 to 54 years | 20,885 | 11.3 | 4,877 | 8.2 |
| 55 to 59 years | 16,383 | 8.9 | 3,368 | 0.6 |
| 60 to 64 years | 12,729 | 6.9 | 2,872 | 4.8 |
| 65 to 69 years | 9,545 | 5.2 | 2,191 | 3.7 |
| 70 to 74 years | 6,263 | 3.4 | 1,776 | 3.0 |
| 75 to 79 years | 3,596 | 1.9 | 1,180 | 2.0 |
| 80 years and over | 2,477 | 1.3 | 1,014 | 1.7 |
| Age unknown | 3,234 | | 957 | |

The bars on the left of the central line represent the number of insane enumerated January 1, 1910, and the bars on the right of the central line represent the insane admitted during 1910. The longest of the bars, representing the number enumerated January 1, 1910, 23,321, is that for the age period 40 to 44 years. The age period 45 to 49 years, with 22,874, ranks second in point of numbers. The shortest bar represents the number under 15 years of age, for which only 341 were returned, and for the highest age period, 80 years and over, there were 2,477 enumerated January 1, 1910. The bars on the right of the diagram represent the number of insane admitted during the year, the longest bar indicating the 7,495 insane reported for the age period 35 to 39 years. The period 30 to 34 years is next in point of number returned, with 7,295. The shortest bar is shown for the age period under 15 years, representing 327 insane. For the highest age period, 80 years and over, 1,014 insane were reported as admitted during the year.

Diagram 2 on Plate No. 499, number of white and negro insane admitted to hospitals in the North and South per 100,000 population, by age periods, in 1910, represents each of the classes specified on the diagram by a line which indicates, by its rise or fall, the increase or decrease of each of the specified age periods at the top of the diagram, over the previous age period. Under 15 is the first vertical line on the left, and 65 years and over is represented by the line on the extreme right. The vertical scale represents the ratio per 100,000 of population. The number in the age period under 15 years was 0.9 per 100,000, almost zero, for the whites in the North. An increase is indicated over the preceding age period for each age group until the ratio of 140.6 per 100,000 is reached at the

age period 45 to 49 years, when a slight decrease is indicated to the age period 55 to 59 years, then a rise for the age periods 60 to 64 and 65 years and over, when the ratio was 166.4 per 100,000. For the negroes in the North the ratio for the period under 15 years was 5 per 100,000 population; from this point the rise was rapid, until the age period 25 to 29 years, when the ratio per 100,000 was 133.8. A slight fall is shown for the next age period, 30 to 34 years (127.2), then a rapid rise in the line to the age period 45 to 49 years, 158.2 per 100,000. A decline is then shown for two age periods, to 137.8 for the age period 55 to 59 years, then a rapid rise for the age period 60 to 64, to 228.6 per 100,000, and a further rise in the next age group, 65 years and over, to 250.2 per 100,000.

The ratios represented on the diagram for the South, both whites and negroes, as indicated by the lines, are much lower than for the same classes in the North. The ratio of the whites in the South under 15 years is 1.5 per 100,000, from which point a rise is shown for each age period until 99.2 is reached at the age period 35 to 39 years, then a slight decrease is followed by a rise until 102.6 is reached at the age period 45 to 49 years; then the line falls to 92.3 for the age period 55 to 59 years; a rather rapid increase is again shown to the age period 65 years and over, of 128.6 per 100,000.

The ratios for the negroes in the South were lower at every age period than for the whites, therefore the line representing the negroes is below the whites, thus reversing the relative positions of the two classes as shown for the North. The ratio per 100,000 population for the negroes in the South was 1.2 for the age period under 15 years; the ratio increased gradually to 76.2 at the age period 30 to 34 years; then, except for the slight increase at the age period 40 to 44 years, there was a decline, until at the age period 55 to 59 years it was 60 per 100,000; from that point a rapid increase is shown to 98.2 for the age period 65 years and over. The following table supplies the data upon which the diagram is based.

**Table 3** — ADMITTED TO HOSPITALS FOR THE INSANE: 1910.

| AGE AT ADMISSION. | White. | | Negro. | |
|---|---|---|---|---|
| | Number. | Per 100,000 population. | Number. | Per 100,000 population. |
| **UNITED STATES.** | | | | |
| All ages | 56,182 | 68.7 | 4,384 | 44.6 |
| Under 15 years | 272 | 1.1 | 54 | 1.5 |
| 15 to 19 years | 2,215 | 27.8 | 320 | 30.2 |
| 20 to 24 years | 5,101 | 63.9 | 579 | 56.2 |
| 25 to 29 years | 6,394 | 88.1 | 601 | 68.2 |
| 30 to 34 years | 6,696 | 106.8 | 568 | 85.0 |
| 35 to 39 years | 6,945 | 121.2 | 529 | 79.7 |
| 40 to 44 years | 6,046 | 126.5 | 388 | 85.2 |
| 45 to 49 years | 5,349 | 131.7 | 316 | 81.9 |
| 50 to 54 years | 4,609 | 129.6 | 253 | 77.6 |
| 55 to 59 years | 3,208 | 125.1 | 150 | 71.6 |
| 60 to 64 years | 2,706 | 130.8 | 163 | 87.4 |
| 65 years and over | 5,807 | 159.5 | 348 | 118.3 |
| Age unknown | 834 | ..... | 115 | ..... |
| **THE NORTH.** | | | | |
| All ages | 41,118 | 75.3 | 1,105 | 107.5 |
| Under 15 years | 140 | 0.9 | 12 | 5.0 |
| 15 to 19 years | 1,552 | 29.6 | 56 | 65.0 |
| 20 to 24 years | 3,619 | 67.5 | 130 | 114.1 |
| 25 to 29 years | 4,561 | 92.9 | 167 | 133.8 |
| 30 to 34 years | 4,776 | 111.9 | 133 | 127.2 |
| 35 to 39 years | 5,059 | 128.2 | 143 | 145.7 |
| 40 to 44 years | 4,504 | 133.6 | 105 | 148.1 |
| 45 to 49 years | 4,050 | 140.6 | 87 | 158.2 |
| 50 to 54 years | 3,449 | 139.3 | 67 | 154.6 |
| 55 to 59 years | 2,450 | 136.7 | 39 | 137.8 |
| 60 to 64 years | 1,983 | 137.2 | 49 | 228.6 |
| 65 years and over | 4,423 | 166.4 | 90 | 250.2 |
| Age unknown | 552 | ..... | 27 | ..... |
| **THE SOUTH.** | | | | |
| All ages | 10,161 | 49.5 | 3,193 | 36.5 |
| Under 15 years | 114 | 1.5 | 41 | 1.2 |
| 15 to 19 years | 507 | 23.5 | 263 | 27.1 |
| 20 to 24 years | 1,079 | 55.2 | 439 | 48.2 |
| 25 to 29 years | 1,246 | 74.6 | 422 | 56.3 |
| 30 to 34 years | 1,275 | 90.3 | 425 | 76.2 |
| 35 to 39 years | 1,258 | 99.2 | 376 | 71.0 |
| 40 to 44 years | 962 | 99.0 | 271 | 71.3 |
| 45 to 49 years | 837 | 102.6 | 221 | 67.5 |
| 50 to 54 years | 769 | 98.7 | 180 | 64.2 |
| 55 to 59 years | 528 | 92.3 | 108 | 60.0 |
| 60 to 64 years | 473 | 102.2 | 111 | 67.7 |
| 65 years and over | 932 | 128.6 | 252 | 98.2 |
| Age unknown | 181 | ..... | 84 | ..... |
| **THE WEST.** | | | | |
| All ages | 4,903 | 74.9 | 86 | 169.8 |

Diagram 3 on Plate No. 499, proportion of insane enumerated January 1 to adult population, 1904 and 1910. The large squares are drawn proportional to the adult population—that is, the population 15 years of age and over, as returned in 1910, and the estimated adult population for 1904. The small, solid black square in the lower right-hand corner of each large square represents the insane in hospitals in proportion to the total adult population returned, and presents strikingly the very small proportion of the insane in hospitals as compared with the total adult population.

Diagram 1 on Plate No. 500 presents, by the rise and fall of the two lines, the ratio of the male and female insane admitted to hospitals in 1910 per 100,000 population of the same age and sex. The ratio for the males exceeds that for the females at each age period. The line for the males rises regularly from the age period under 15 years to the period 45 to 49 years; a slight fall is then shown to the age period 50 to 54 years, after which the rise in the ratio for each age period is rapid, until at the age period 80 years and over, it reaches 224 per 100,000 males. The line representing the ratio of the females for each age period increases almost parallel to that of the males, except that the males show a slight fall from the period 45 to 49 years to the period 50 to 54 years, while the females show a slight increase. In the next age group, 55 to 59 years, the ratio shows a decided falling off, but for each period thereafter it rises rapidly, reaching for the age period 80 years and over the ratio of 192.7, an increase in the last two age periods from 150 to 192.7 per 100,000 females, a much more rapid rise than is shown for the males in the same age periods. Table 5, on which this diagram is based, follows the description of the diagrams on Plate No. 501.

Diagram 2 on Plate No. 500 indicates, by the two lines, the ratio per 100,000 population of the native white and foreign-born white insane admitted to hospitals in 1910. The age periods and scale are the same as on Diagram 1. The line for the foreign-born white shows a rapid increase in the ratio per 100,000 from the age period under 15 years to the period 50 to 54 years, then a slight decline for the period 55 to 59 years, after which each age period shows a rapid increase over the previous period, to the ratio of 264.7 per 100,000 at the period 80 years and over. The ratio for the native white is lower than that of the foreign-born white at each age period. The line rises for each age period from under 15 years to the period 45 to 49 years, then there is a decline for two age periods, 50 to 54 and 55 to 59 years; after this period the increase is very slight for the age periods 60 to 64 and 65 to 69 years; the succeeding age periods show increases almost parallel to the increases for the foreign-born white, the ratio for the last age group, 80 years and over, being 197.6. The following table (No. 4) supplies the figures upon which the diagram is based:

**Table 4**

| AGE GROUP. | NATIVE WHITE: 1910. | | | FOREIGN-BORN WHITE: 1910. | | |
|---|---|---|---|---|---|---|
| | Total number. | Admitted to hospitals for the insane. | | Total number. | Admitted to hospitals for the insane. | |
| | | Number. | Per 100,000 population. | | Number. | Per 100,000 population. |
| All ages | 68,386,412 | 39,629 | 57.9 | 13,345,545 | 15,523 | 116.3 |
| Under 15 years | 24,957,149 | 256 | 1.0 | 759,345 | 10 | 1.3 |
| 15 to 19 years | 7,294,630 | 1,871 | 25.6 | 673,761 | 320 | 47.5 |
| 20 to 24 years | 6,556,030 | 3,966 | 60.5 | 1,430,381 | 1,074 | 75.1 |
| 25 to 29 years | 5,594,440 | 4,749 | 84.9 | 1,662,696 | 1,568 | 94.3 |
| 30 to 34 years | 4,761,561 | 4,841 | 101.7 | 1,505,715 | 1,777 | 118.0 |
| 35 to 39 years | 4,323,752 | 4,999 | 115.6 | 1,408,093 | 1,848 | 131.2 |
| 40 to 44 years | 3,476,797 | 4,201 | 120.8 | 1,303,475 | 1,755 | 134.6 |
| 45 to 49 years | 2,914,702 | 3,656 | 125.4 | 1,146,360 | 1,605 | 140.0 |
| 50 to 54 years | 2,630,258 | 3,197 | 121.5 | 925,055 | 1,341 | 145.0 |
| 55 to 59 years | 1,870,686 | 2,178 | 116.4 | 693,520 | 982 | 141.6 |
| 60 to 64 years | 1,441,740 | 1,728 | 119.9 | 627,583 | 928 | 147.9 |
| 65 to 69 years | 1,061,557 | 1,282 | 120.8 | 488,397 | 765 | 156.6 |
| 70 to 74 years | 693,917 | 1,009 | 145.4 | 336,967 | 610 | 181.0 |
| 75 to 79 years | 412,780 | 694 | 168.1 | 208,212 | 407 | 195.5 |
| 80 years and over | 288,400 | 570 | 197.6 | 149,773 | 370 | 264.7 |
| Age unknown | 108,013 | 432 | ..... | 26,211 | 163 | ..... |

On Plate No. 501, insane admitted to hospitals suffering from general paralysis or alcoholic psychosis and all other causes in 1910, Diagram 1 indicates, by the rise and fall of the lines, the ratio per 100,000 population of same age, for the males, the solid line representing the "all other" causes, and the broken line those having general paralysis or alcoholic psychosis. The line representing the insane having general paralysis or alcoholic psychosis starts practically at zero for the age period under 15 years, rising rapidly to the age period 40 to 44 years, when it reaches the point 48.6 per 100,000, the highest point reached. From this age period there is a gradual decrease, except at the period 75 to 79 years, until at the age period 80 years and over the number admitted was 14.8 per 100,000. The line representing admissions from all other causes shows a continuous and rapid rise from 1.1 per 100,000 at the age period under 15 years to the age period 30 to 34 years, when a slight decrease is noted for the period 35 to 39 years, then it rises very slowly to the age period 50 to 54 years, after which the rise is nearly vertical to the age period 80 years and over, with a ratio per 100,000 of 209.1.

Diagram 2 furnishes similar data for the females. The line representing the number admitted from paralysis and alcoholic psychosis is very much lower than for the males, the highest point reached being at the same age period, 40 to 44 years, 12.2 per 100,000 population of same age. It gradually decreased to the age period 70 to 74, when it was 5.4 per 100,000 population. A slight increase was noted for the next age period, 75 to 79 years, to 7.7 per 100,000, then a decrease to 5.8 for 80 years and over. The line representing all other causes does not show a continuous increase, as for the males. Starting at 0.9 for the age period under 15 years, it advances rapidly to the age period 50 to 54 years, when a slight decrease followed to the age period 55 to 59 years, then a

steady rise for every other period, the period 80 years and over having a ratio of 187 per 100,000, as compared with 209.1 for the males. The figures upon which these two diagrams are based will be found in the following table:

**Table 5** INSANE ADMITTED TO HOSPITALS: 1910.

| AGE GROUP. | Total. | | Having general paralysis or alcoholic psychosis. | | All other. | |
|---|---|---|---|---|---|---|
| | Male. | Female. | Male. | Female. | Male. | Female. |
| | NUMBER. | | | | | |
| All ages [1] | 34,116 | 26,653 | 8,356 | 1,851 | 25,760 | 24,802 |
| Under 15 years | 181 | 146 | 12 | 9 | 169 | 137 |
| 15 to 19 years | 1,471 | 1,068 | 52 | 31 | 1,419 | 1,037 |
| 20 to 24 years | 3,234 | 2,467 | 268 | 95 | 2,966 | 2,372 |
| 25 to 29 years | 3,911 | 3,116 | 679 | 155 | 3,232 | 2,961 |
| 30 to 34 years | 4,018 | 3,277 | 1,091 | 221 | 2,927 | 3,056 |
| 35 to 39 years | 4,090 | 3,405 | 1,411 | 289 | 2,679 | 3,116 |
| 40 to 44 years | 3,618 | 2,851 | 1,353 | 303 | 2,265 | 2,548 |
| 45 to 49 years | 3,163 | 2,518 | 1,131 | 231 | 2,032 | 2,287 |
| 50 to 54 years | 2,712 | 2,165 | 905 | 173 | 1,807 | 1,992 |
| 55 to 59 years | 1,975 | 1,393 | 582 | 105 | 1,393 | 1,288 |
| 60 to 64 years | 1,698 | 1,174 | 360 | 79 | 1,338 | 1,095 |
| 65 to 69 years | 1,255 | 936 | 211 | 59 | 1,044 | 877 |
| 70 to 74 years | 994 | 782 | 84 | 30 | 910 | 752 |
| 75 to 79 years | 676 | 504 | 62 | 26 | 614 | 478 |
| 80 years and over | 513 | 501 | 34 | 15 | 479 | 486 |
| | NUMBER PER 100,000 POPULATION OF SAME SEX AND AGE. | | | | | |
| All ages [1] | 72.1 | 59.7 | 17.7 | 4.1 | 54.4 | 55.6 |
| Under 15 years | 1.2 | 1.0 | 0.1 | 0.1 | 1.1 | 0.9 |
| 15 to 19 years | 32.5 | 23.5 | 1.1 | 0.7 | 31.3 | 22.9 |
| 20 to 24 years | 70.6 | 55.1 | 5.9 | 2.1 | 64.8 | 53.0 |
| 25 to 29 years | 92.1 | 79.2 | 16.0 | 3.9 | 76.1 | 75.2 |
| 30 to 34 years | 109.9 | 98.8 | 29.8 | 6.7 | 80.0 | 92.2 |
| 35 to 39 years | 121.5 | 112.4 | 41.9 | 9.5 | 79.6 | 102.9 |
| 40 to 44 years | 129.8 | 115.2 | 48.6 | 12.2 | 81.3 | 102.9 |
| 45 to 49 years | 133.0 | 120.5 | 47.5 | 11.1 | 85.4 | 109.4 |
| 50 to 54 years | 128.5 | 120.9 | 42.9 | 9.7 | 85.6 | 111.2 |
| 55 to 59 years | 132.7 | 107.3 | 39.1 | 8.1 | 93.6 | 99.2 |
| 60 to 64 years | 143.2 | 108.6 | 30.4 | 7.3 | 112.8 | 101.3 |
| 65 to 69 years | 145.3 | 114.8 | 24.4 | 7.2 | 120.8 | 107.5 |
| 70 to 74 years | 177.0 | 141.6 | 15.0 | 5.4 | 162.0 | 136.2 |
| 75 to 79 years | 204.1 | 150.0 | 18.7 | 7.7 | 185.3 | 142.3 |
| 80 years and over | 224.0 | 192.7 | 14.8 | 5.8 | 209.1 | 187.0 |

[1] Includes age unknown.

Map 1 on Plate No. 502 indicates, by the shading, the ratio of insane enumerated per 100,000 of population in 1910, in six groups. The group with the lowest ratio, less than 100 insane per 100,000 of population, covers five states—Alabama, Arkansas, Oklahoma, New Mexico, and Utah. The darkest shade, indicating a ratio of 300 or more insane per 100,000 of population, covers only three states—Massachusetts, Connecticut, and New York. The shade indicating a ratio of 250 to 300 insane per 100,000 population covers the states of Vermont, Wisconsin, Nevada, and California. The remaining states all fall in the three groups with ratios between 100 and 250 insane per 100,000 population.

Map 2 indicates, by the eight groups of shading, the number of insane admitted to hospitals in 1910 to each 100,000 population. The states having the highest ratio, 100 and over per 100,000, are Massachusetts, Connecticut, and Wisconsin. The next group, 90 to 100 insane admitted to each 100,000 population, covers the states of Rhode Island, New York, Maryland, and Colorado. The lowest group, less than 40 insane admitted per 100,000 population, includes 11 states, while the next group, 40 to 50, includes 8 states.

Diagram 1 on Plate No. 503 shows, by the rise and fall of the heavy black line, the ratio per 100,000 population of the insane admitted to hospitals in 1910, by age periods. The line starts at the first age period, under 15 years of age, with 1.1 per 100,000, and rises rapidly to 127.1 per 100,000 at the age period 45 to 49 years; a decline follows for two age periods to 120.8 in the age period 55 to 59 years; from this point a rapid rise is shown to 207.4 in the last age period, 80 years and over.

Diagram 2 represents, by the rise and fall of the four lines, the number of insane admitted to hospitals in 1910 per 100,000 population of the same age, race, and nativity for four classes of the population—native white of native parentage, native white of foreign or mixed parentage, foreign-born white, and negro. The lines representing the foreign-born white and the native white of foreign or mixed parentage are very close together, indicating that there is only a slight difference in the number of insane admitted for these two classes at each age period. It will also be noted that the lines for all of the four classes for the age period under 15 years to the age period 20 to 24 years are very close together. After the age period 20 to 24 years they separate, and for the foreign-born white and the native white of foreign or mixed parentage the ratio increases much more rapidly than for the native white of native parentage and the negroes. The line for the native white of native parentage runs almost midway between the lines representing the negroes and the other two classes. The ratio for the native white of native parentage increases from the first age period, under 15 years, regularly to the age period 45 to 49 years; then a sharp decline is indicated for two age periods to the age period 55 to 59 years; from this age period it increases to the age period 65 years and over, the last shown on the diagram. The line representing the negro insane is nearly parallel to the lines of the native white of native parentage and the native white of foreign or mixed parentage for the first three age periods, but after the age period 20 to 24 years it does not rise as rapidly as for the other three classes of the population. From the age period 25 to 29 years, when it reaches 68.2 per 100,000 population, a further rise is noted to 85 per 100,000 population in the next age period, after which it declines to 79.7 at the age period 35 to 39 years; the line again rises to 85.2 for the age period 40 to 44 years; then falls for three age periods to the age period 55 to 59 years, when it reaches the

low point of 71.6. For the next two age periods, 60 to 64 years and 65 years and over, a sharp rise is shown. The highest ratio for any age period of the negroes was 118.3 per 100,000 population for the age period 65 years and over. This is far below the ratio for the other classes at the same age period, which rank as follows: Native white of native parentage, with 139.3 per 100,000 population of the same age, race, and nativity; foreign-born white, with 181.9; and native white of foreign or mixed parentage, with 190.9.