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APPENDIXES

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APPENDIX A.

ESTIMATES OF THE NATIVE WHITE STOCK:

1900, 1910, AND 1920.

The numerical equivalents of the native white stock and the foreign white stock which together constituted the white population of the United States in 1900, 1910, and 1920, estimated as explained herein, together with the proportions which the two kinds of stock formed of the total white population, were as follows:

| CENSUS YEAR. | Total white population. | NATIVE WHITE STOCK. | | FOREIGN WHITE STOCK. | |
|--------------|-------------------------|---------------------|--------------------------|----------------------|--------------------------|
| | | Number. | Per cent of total white. | Number. | Per cent of total white. |
| 1900..... | 66,809,196 | 37,290,000 | 55.8 | 29,520,000 | 44.2 |
| 1910..... | 81,731,957 | 42,420,000 | 51.9 | 39,310,000 | 48.1 |
| 1920..... | 94,820,915 | 47,330,000 | 49.9 | 47,490,000 | 50.1 |

The estimates for the native white stock also represent the numbers of white persons who presumably would have been living in the United States in the years specified if there had been no immigration nor emigration since 1790 and if the rates of increase for the white population had been the same as the rates representing the *natural* increase, due to excess of births over deaths, which took place in the white population as it actually existed.

DEFINITION OF "NATIVE WHITE STOCK."

The term "native white stock" as here used refers to white persons who were living within any area now a part of continental United States at the time that area was first enumerated, and to the descendants of such persons. By far the greater part of the native white stock is descended from persons enumerated in 1790 in the New England states, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, North Carolina, South Carolina, Georgia, Kentucky, and Tennessee; but a small proportion is made up of persons whose ancestors were living, or who were themselves living, in other areas when those areas were first enumerated. The original populations of such new areas, however, were very sparse. Moreover, the inhabitants of these added areas consisted in part of migrants from the original area of the United States, or the descendants of such migrants, so that it would be impossible to estimate separately the French and Spanish stock. It has been necessary, therefore, to define native white stock as explained above, with no further subdivision.

It would, of course, be utterly impossible to determine the number of white persons enumerated in 1920 or any other recent census year who

were of absolutely pure native stock—that is, all of whose foreign-born ancestors came to this country prior to 1790. A very considerable but indeterminable number of persons classed by the census as native whites of native parentage are of mixed native and foreign stock. These persons would not have existed had there been no immigration, but in their place there would have existed a smaller number of persons representing approximately the same amount of native stock unmixed with foreign blood. For example, if each of four natives of native parentage had one foreign-born grandparent and three grandparents of pure native ancestry, the four persons together would represent the same amount of native stock as would exist in three persons of pure native ancestry. All that can be estimated, therefore, is the numerical equivalent of the amount of native white stock in the country, stated in terms of units representing the amount of native white stock in one person of pure native white ancestry. The actual number of persons whose native blood is included in this total is, of course, much larger, inasmuch as any person who had at least one white ancestor enumerated in 1790 has in his veins some native white blood. For example, it is possible that not more than, say, 20,000,000 persons in this country are of absolutely pure native white stock, while the remaining 27,000,000 of the total of 47,000,000 estimated as the numerical equivalent of the native white stock might be made up of varying proportions of native stock in 45,000,000 persons (native whites of native parentage or of mixed native and foreign parentage). Moreover, it would be theoretically possible for every native white person of native parentage in the United States in 1920 to be of mixed native and foreign stock.

BASIC DATA.

In making these estimates the following data were employed:

(1) *Foreign stock, roughly estimated at 500,000, included in native white population of native parentage in 1853.*—The number of foreign-born white enumerated in 1850 was 2,240,535. In the Compendium of the Seventh Census (1850) the number of the foreign born and the progeny of foreigners arriving after 1790 was estimated at 3,000,000 or 3,200,000 in 1853.¹ On the basis of this approximation (made at a time when a reason-

¹ "Estimating the survivors in 1850 of the foreigners who had arrived in the United States since the census of 1790 upon the principle of the English life tables, and making the necessary allowances for the less proportion of the old and very young among them, and for reemigration, etc., their number is stated in the abstract of the census published in 1853, p. 15, at 2,460,000. From this, a deduction is then made of 10 per cent, on account of the greater mortality of emigrants and their lower expectation of life, which brings the actual survivors very nearly to the figures of the census. The deduction of 10 per cent seems hardly sufficient and does not accord with the deductions that are generally made in the reasonings of vital statisticians. It would be safer to assume 15 per cent than 10, which would reduce the survivors to a little more than 2,000,000. To this add 50 per cent for the living descendants of foreigners who have come into the country since 1790 (observing that nearly four-fifths of the number have arrived since 1830, and could not have both children and grandchildren born in the country, and more than half have arrived since 1840 and must have had comparatively few native-born children, it would not be safe to add any more), and the number of foreigners and their descendants in 1853 is not likely to exceed 3,000,000 or 3,200,000." Compendium of the Seventh Census, p. 119.

able approximation should have been possible), the descendants of white immigrants arriving subsequently to 1790 and prior to 1853 must have numbered about 1,000,000 in the latter year. Since the majority of the immigrants prior to 1850 had arrived in this country during the decade 1840-1850, it is practically certain that not more than one-half of this number were native whites of native parentage, that is to say, were grandchildren of immigrants. The remaining 500,000, consisting of native whites of foreign or mixed parentage, were, in the main, very young and therefore presumably did not contribute to any great extent to the native white population of native parentage prior to 1870. The survivors of these 500,000 native whites of foreign or mixed parentage were, of course, included in the native whites of foreign or mixed parentage in 1870 (*infra*). The omission of the contribution of this group to the native whites of native parentage prior to 1870 is probably approximately counterbalanced by the liberality of the estimate of 500,000 as the contribution by the immigrants to the native whites of native parentage prior to 1853.¹

(2) *Native whites of foreign or mixed parentage, 1870, equivalent to 4,745,683 native whites of foreign parentage.*—This number is made up of 4,167,098 native whites of foreign parentage and one-half of the 1,157,170 native whites of mixed native and foreign parentage and represents the amount of foreign white stock in the first group plus the foreign white stock derived from the foreign parents of the second group. (The native parents of the second group who were wholly or in part of foreign stock are assumed to have been included in the 500,000 native whites of native parentage in 1853 who were descended from immigrants arriving subsequently to 1790.)

(3) *Foreign-born white persons enumerated in 1870, 5,193,712.*

(4) *Excess of white immigration over white emigration² from 1870 to 1920, as follows—*

| | |
|----------------|-----------|
| 1871-1880..... | 2,395,000 |
| 1881-1890..... | 4,192,000 |
| 1891-1900..... | 3,143,000 |
| 1901-1910..... | 5,365,000 |
| 1911-1920..... | 3,600,000 |

(The above figures have been adjusted so as to make them relate as closely as possible to the exact periods elapsing between census dates.)

(5) *Total white population in 1900, 66,809,196, and in 1920, 91,820,915.*

RATES OF INCREASE.

In estimating rates of natural increase, due to excess of births over deaths, it has been assumed that these rates have been the same for both the native and the foreign white stock.⁴ This assumption may at first

¹ A Century of Population Growth, p. 87.

² For method of estimating white emigration, see Appendix C.

³ Estimated net white immigration and progeny surviving on January 1, 1920.

⁴ This assumption was suggested by Miss Elbertie Poudray, of the division of vital statistics, Bureau of the Census, who made a careful study of the subject.

seem improbable and contrary to the generally accepted belief that the foreign stock is the more prolific. It is true that in the immigrant families in this country the average number of children is larger than in the native families, but the difference is probably less than it is commonly believed to be. A computation made from the returns from the birth-registration area in 1919 yielded the following results, which relate only to those mothers who gave birth to children during the calendar year 1919. The birth-registration area in that year comprised 22 states and the District of Columbia, whose aggregate population was estimated at 58.6 per cent of the total population of the United States.

| | |
|--|-----|
| Number of children ever born per native white mother..... | 3.2 |
| Number of children ever born per foreign white mother..... | 4.0 |
| Number of surviving children per native white mother..... | 2.8 |
| Number of surviving children per foreign white mother..... | 3.4 |

In view of the fact that the birth rate for the native white population is undoubtedly somewhat higher in the Southern states, of which only five were included in the birth-registration area in 1919, than in the remainder of the country, it is almost certain that the figures given above show a somewhat greater difference between average numbers of children per native and foreign white mother than would appear if the figures had been based on returns for the entire United States.

Moreover, it appears from the census reports that the proportions of married persons are considerably smaller among native whites of foreign or mixed parentage than among native whites of native parentage. This is true not only for the United States as a whole but for urban and rural communities considered separately, so that the explanation is not to be found wholly in the fact that a much larger proportion of the native whites of foreign or mixed parentage than of the native whites of native parentage live in urban communities, where the marriage rates are lower than in rural communities.

Thus, while the birth rate among the foreign-born whites is somewhat higher than among the native whites, a factor opposite in effect is found in a lower marriage rate for the native white population of foreign parentage than for the native whites of native parentage. As there are no statistics in regard to the number of children born to the native whites of foreign or mixed parentage who do marry, there is no definite basis for an assumption that the third generation of the foreign white stock is relatively any more numerous than the contemporaneous generation of the native white stock.

For these reasons it is believed that the most logical and defensible method of estimating the native and foreign white stock is that based on the assumption that their rates of natural increase are the same, considering not only the first but subsequent generations. (See Appendix B for expansion of discussion.)

In calculating these rates the net white immigration during each decade is assumed to have been distributed uniformly throughout the decade, so that the average length of time elapsing between arrival in the United States and the end of the decade was five years. Thus the natural increase among the immigrants arriving during a given decade would be equal to one-half the natural increase among the same number of persons present at the beginning of the decade; that is to say, one-half the decennial rate for the white population at the beginning of the decade could be applied to the net white immigration as a whole, or the entire decennial rate could be applied to one-half the net white immigration. Hence the total natural increase—in other words, the total increase less the net white immigration—represents a rate based on the total white population enumerated at the beginning of the decade plus one-half the net white immigration arriving during the decade. This rate can therefore be easily calculated by the following method:

Deduct net white immigration during decade from total numerical increase in white population and divide remainder by white population enumerated at beginning of decade plus one-half net white immigration. (For a description of the method employed in estimating net immigration, see Appendix C.)

To illustrate: The numerical increase in the white population between 1890 and 1900 was 11,707,938. Deducting the net white immigration during the decade, 3,143,000, from this increase leaves 8,564,938 as the increment due to natural increase in the population enumerated at the beginning of the decade and in the immigrant population arriving during the decade. The white population enumerated in 1890 was 55,101,258. Adding to this number one-half the net white immigration gives a total of 56,672,758 as the base on which to compute the percentage of increase; and the division of this number into the 8,564,938 representing the natural increase gives a rate of 15.1 per cent.

Thus computed, the rates of natural increase in the white population during the 10 decades from 1820 to 1920 were as follows:

| | Per cent. |
|----------------|-------------------|
| 1820-1830..... | 31.9 |
| 1830-1840..... | 28.7 |
| 1840-1850..... | 25.1 |
| 1850-1860..... | 22.8 |
| 1860-1870..... | ¹ 18.3 |
| 1870-1880..... | ¹ 18.8 |
| 1880-1890..... | 16.5 |
| 1890-1900..... | 15.1 |
| 1900-1910..... | 13.8 |
| 1910-1920..... | ² 11.6 |

¹ Estimated corrected total for white population in 1870 used in computing rates for 1860-1870 and 1870-1880.

² Calculated as explained in Appendix C.

ESTIMATE FOR 1910.

The estimates for the native white stock in 1900 and 1920 having been made, it was possible to calculate the corresponding one for 1910 in a very simple manner, as follows:

The estimate for the native white stock in 1900, 37,290,000, was multiplied by 1.138 (1 plus the rate of natural increase in the white population during the decade 1900-1910); the corresponding estimate for 1920, 47,330,000, was divided by 1.116 (1 plus the rate of natural increase in the white population during the decade 1910-1920); and the two results, 42,436,000 and 42,410,000 (the difference being due to the fact that the percentages of increase were not computed to a greater number of decimal places), were averaged to the nearest ten thousand, giving 42,420,000 as the estimated native white stock in 1910.

TEST BY ALTERNATIVE METHOD.

The results obtained by the foregoing method have been tested to some extent by the employment of an alternative method. Both the original and alternative methods were based upon the same fundamental assumption, namely, that the rates of natural increase in the native and the foreign white stock are the same; but the difference between the two is such that the results of the test are of value as indicating the substantial accuracy of the census data as to foreign white stock in 1853 and 1870, used in the foregoing calculations.

The test was made by roughly estimating the population derived in 1820 from white immigration between 1790 and 1820, deducting this from the total white population enumerated in 1820, and applying to the remainder the rates of natural increase from decade to decade, estimated as already described. (See p. 191.)

The immigration for the period 1790 to 1820, the first year in which the immigration was recorded, was estimated on the assumptions that it had gradually increased from 4,000 in 1790 to 8,000 in 1820; that the natural increase during each decade in the total white population enumerated at the beginning of the decade was one-third; and that the natural increase during each decade in the families of the immigrants arriving during that particular decade was equal to one-sixth of their total number. During the seven years from 1820 to 1826, inclusive, the immigration, beginning with 8,385, fluctuated without showing any pronounced upward movement, but after 1826 it increased much more rapidly, although irregularly, from year to year. It seems probable, therefore, that there had been no sharp increase during the few years or the decade immediately preceding 1820, but rather that there had been a slow and irregular increase between 1790 and 1820. For the purposes of this calculation, however, it has been assumed that the increase was steady. If the several assumptions above set forth were substantially

correct, the population derived in 1820 from the net white immigration between 1790 and 1820 was approximately 275,000, or $3\frac{1}{2}$ per cent of the total white population in 1820. This estimate, of course, is really nothing more than a guess; but, in view of the small proportion which the population derived from immigration since 1790 constituted of the total population in 1820, the margin of error is necessarily very small in comparison with the total native white stock.

The subtraction of the estimated 275,000 foreign white stock from the total white population enumerated in 1820, 7,866,797, leaves approximately 7,590,000 as the estimated native white stock in that year; and by applying to this number, in series, the estimated decennial rates of natural increase in the white population from 1820 to 1920 (see p. 191) there are obtained the following estimates of the native white stock:¹

| | | | |
|-----------|------------|-----------|------------|
| 1820..... | 7,590,000 | 1880..... | 27,820,000 |
| 1830..... | 10,010,000 | 1890..... | 32,410,000 |
| 1840..... | 12,880,000 | 1900..... | 37,300,000 |
| 1850..... | 16,120,000 | 1910..... | 42,450,000 |
| 1860..... | 19,790,000 | 1920..... | 47,370,000 |
| 1870..... | 23,420,000 | | |

The differences between the estimates made by the two methods for the years 1900, 1910, and 1920 are remarkably slight. Of course, if the basic theory, namely, that the rates of natural increase have been the same for both the native and the foreign white stock, is erroneous, the error in the results of both sets of estimates would be the same in kind

¹ The following excerpt from the Abstract of the Seventh Census, page 131, is of interest in this connection:

"According to Doctor Seybert, an earlier writer upon statistics, the number of foreign passengers from 1790 to 1810 was, as nearly as could be ascertained, 120,000; and from the estimates of Doctor Seybert and other evidence, Hon. George Tucker, author of a valuable work on the census of 1840, supposes the number, from 1810 to 1820, to have been 114,000. These estimates make, for the 30 years preceding 1820, 234,000. If we reckon the increase of these immigrants at the average rate of the whole body of white population during these three decades, they and their descendants, in 1820, would amount to about 360,000."

It has been assumed that this estimate is unduly liberal, since it would imply an average annual immigration, during the 30 years from 1790 to 1820 (which included the period of the War of 1812), slightly larger than the average for the five years from 1820 to 1824, inclusive, as shown by the immigration reports for those years. Furthermore, these early records, which relate to *incoming alien passengers*, not to *immigrants* alone, overstate somewhat the actual immigration. If, however, the estimate of 360,000 persons of foreign white stock in 1820 were accepted as substantially correct, the estimated native white stock in 1820 would be 7,510,000 instead of 7,590,000. This reduction of 1.1 per cent would reduce the estimates for 1900, 1910, and 1920 in the same proportion, that is, to 36,850,000 for 1900, 41,980,000 for 1910, and 46,850,000 for 1920.

and approximately the same in degree. Thus the test supplies no corroboration of this basic theory. But the original estimates were based on census data as to the foreign white stock present in the United States in 1853 and 1870 and on the net white immigration from 1870 to 1920, whereas the test estimates took into account the net white immigration from 1820 to 1920 but made no use of any census data except for the total white population. The test, therefore, corroborates the original estimates so far as the substantial accuracy of the census data in question is concerned.

APPENDIX B.

RATE OF NATURAL INCREASE IN FOREIGN WHITE STOCK:

1900-1920.

The natural increase between 1900 and 1920 in the foreign white stock of native birth (that is, the total foreign white stock less the foreign-born white) may be estimated by deducting the number of surviving persons born in this country during the 20-year period to foreign parents, together with a suitable proportion of those having mixed parents, from the total increase in the foreign white stock of native birth during the 20-year period.

The numerical equivalents of the foreign white stock in 1900 and in 1920 were 29,520,000 and 47,490,000, respectively (Appendix A). Deducting the numbers of foreign-born whites enumerated in those years (10,213,817 in 1900 and 13,712,754 in 1920) leaves, in round tens of thousands, 19,310,000 and 33,780,000 as the numerical equivalents of the foreign white stock of native birth as constituted in 1900 and 1920, respectively. The natural increase in this class of the population between 1900 and 1920 is represented by excess of births (native whites of native parentage) over deaths. The total increase, however, includes all natives of foreign parentage, together with a proper proportion of natives of mixed parentage, born between 1900 and 1920 and surviving in 1920. In order to obtain the natural increase, therefore, this group must be deducted from the total increase.

The number of native whites of foreign parentage under 20 years of age in 1920, and therefore born since January 1, 1900, was 7,424,449; and the number of native whites of mixed parentage under 20 years of age in 1920 was 3,246,874. Reducing these two numbers by the estimated numbers of persons born between January 1, 1900, and June 1, 1900 (the Twelfth Census date), leaves 7,310,421 and 3,185,942, respectively, as the numbers born between the Twelfth and Fourteenth Census dates and surviving on the latter date. The total number of native whites of foreign parentage represents foreign white stock; but only an indeterminate proportion of the native whites of mixed parentage represents foreign stock. If each of the native parents were of pure native stock, the numerical equivalent of the amount of foreign white stock in the native whites of mixed parentage would be exactly one-half of the total number; but as a matter of fact many of the native parents are of wholly foreign stock, others are of mixed native and foreign stock, and still others are of pure native stock. For the purposes of this

calculation it is arbitrarily assumed that the numerical equivalent of the foreign stock in the native parents of the native whites of mixed parentage is equal to one-half the total number of native parents. This is a larger proportion than the corresponding one for native whites generally, but it is reasonable to assume that the proportion of foreign stock in the native whites who marry foreign whites is somewhat larger than the average. On the basis of this assumption, the amount of foreign stock in the native whites of mixed parentage born between the Twelfth and Fourteenth Census dates would, therefore, be three-fourths their total number (one-half from the foreign parents and one-fourth from the foreign stock in the native parents), or 2,389,455. The addition of this number to the 7,310,421 native whites of foreign parentage in the same age group gives a total of 9,699,876, or approximately 9,700,000, as the numerical equivalent of the foreign white stock in the native whites of foreign or mixed parentage born between the Twelfth and Fourteenth Census dates and surviving on the latter date. The subtraction of this number (representing persons whose parents were not included in the foreign white stock of native birth) from the total increase of 14,470,000 between 1900 and 1920 in the foreign white stock of native birth leaves 4,770,000 as the natural increase within the foreign white stock of native birth as constituted in 1900. This represents a rate of 24.7 per cent, which is less than the estimated rate of natural increase, due to excess of births over deaths, in the total white population of the country during the 20-year period, 27 per cent. (Rates for 1900-1910, 13.8 per cent, and 1910-1920, 11.6 per cent, compounded; see table, p. 191.)

APPENDIX C.

ESTIMATION OF NET IMMIGRATION.

[Data used in computing rates of natural increase in population: See Table 39 and Appendix A.]

NET IMMIGRATION, 1820 TO 1910.

Immigration, 1820 to 1910.—The earliest immigration records are those for 1820. For the period from October 1 of that year to December 31, 1867, the figures relate to *incoming alien passengers*, and for the subsequent years, to *immigrants*.

Prior to July 1, 1898, alien arrivals were not recorded by race or people, but the records of the Bureau of Immigration show arrivals by country of last permanent residence since 1820. In order, therefore, to approximate the white immigration, the number of immigrants from Asia, Africa, and the Pacific Islands was deducted from the total for each decade to June 30, 1900; and for the subsequent period the white immigration was obtained by deducting the numbers of Africans, Chinese, Japanese, Koreans, and Pacific Islanders from the total.

Emigration, 1820 to 1870.—Until July 1, 1907, emigration was not recorded; and, as the foreign-born population was not separately reported at censuses prior to 1850, no data are available on which to base an estimate of the emigration which took place during the first half of the nineteenth century. It may be safely assumed, however, that the emigration up to 1850 was negligible; and an examination of the census statistics and of the immigration statistics for the period from 1850 to 1870, due account being taken of mortality, indicates that the emigration between 1850 and 1870 was also negligible. The total immigration from 1820 to 1870 has, therefore, been treated as the net immigration. During the succeeding decades, however, considerable emigration took place, and it is therefore necessary to estimate it in order to secure an estimate of the net immigration.

Emigration, 1870 to 1910.—In order to expedite the work, the white emigration was assumed to represent the total emigration during the decades from 1870 to 1910, the difference being so slight that the resultant error was deemed negligible. The estimate was made by adding the number of white immigrants during the decade to the number of foreign-born white persons enumerated at the beginning of the decade, deducting the estimated mortality, subtracting from the remainder the number of foreign-born white persons enumerated at the end of the decade, and treating the result as representing the number of surviving foreign-born white emigrants. The numbers of foreign-born white persons were ascertained from the census reports, and the numbers of white immigrants were estimated as explained above.

There is no way of estimating the amount of native emigration for the decades prior to 1910, but such emigration was probably so small as to be negligible for the purposes of these calculations.

Death rate of foreign-born white.—The following statement shows the death rates per 1,000 for the foreign-born white population and the total white population for 1919 (the year which terminated on the day preceding the Fourteenth Census date), 1910, 1900, and 1890:

| YEAR. | Foreign-born white. | Total white. | Area. |
|-----------|---------------------|--------------|--|
| 1919..... | 17.5 | 12.4 | Registration states, not including cities in nonregistration states. |
| 1910..... | 17.2 | 14.6 | Do. |
| 1900..... | 19.4 | 17.3 | Registration area. |
| 1890..... | 19.4 | 19.1 | Do. |

Since the death rate for the foreign-born white population in 1890 was only slightly higher than that for the total white population, it has been assumed, for the purposes of these calculations, to have been the same as the rate for the total white population in earlier years. The rate for the total population of the registration area in 1880, 19.8 per 1,000, was assumed to represent the rate for the white population; and for 1870 the death rate for the white population was estimated at 20.3 per 1,000, this estimate being based on the mortality records of Massachusetts.

Estimate of mortality during given decade among foreign-born white population enumerated at beginning of decade.—In making this estimate account must be taken of the increase in the average age of the group during the decade, and of the decrease from year to year in the number to which the rate is applied. During the decade the younger element is depleted only slightly by death, whereas the older element is depleted much more rapidly. Moreover, while the minimum age of the group advances by 10, the maximum age remains practically unchanged. It may be assumed, therefore, for the purposes of this calculation that the average age of the group increases by about 5 during the decade.

The Life Tables¹ show that, on the average, the death rate for the foreign-born white population at a given age is about 30 per cent greater than that at the age five years younger. (Of course, the increase in the rate from one year of age to another through the various quinquennial periods is far from uniform and is greater at the older ages than at the younger. No attempt was made to work out an exact ratio of increase applicable to the average death rate for the foreign-born white population of all ages, for the reason that the element of uncertainty in the entire calculation is necessarily so great that the resort to an exact method in order to determine this one factor would not increase the accuracy of the

¹ Compiled by Prof. James W. Glover, of the University of Michigan. The tables used in this calculation are based on the mortality in 1909, 1910, and 1911 in the "original registration states," namely, Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Indiana, Michigan, and the District of Columbia.

result to a sufficient extent to justify the labor involved. It was estimated, therefore, after a careful inspection of the rates for each fifth year of age from 15 to 70, that the increase in the general rate for the entire foreign-born population during a period in which the average age advanced by 5 would be about 30 per cent.)

If the rate was 30 per cent greater at the end of the decade than at the beginning, the average rate for the entire decade may be assumed to have been 15 per cent greater than the rate at the beginning of the decade. The decrease during the decade in the total number to which the rate was applied was approximately one-fifth, and therefore the average was approximately nine-tenths of the number at the beginning of the decade.

Thus, in order to obtain a decennial rate applicable to the foreign-born white population enumerated at the beginning of a decade, the normal rate should be increased by 15 per cent to account for the effect of the advance in age, and the result should be decreased by 10 per cent to account for the effect of the reduction in number. This would yield a net increase of only 3.5 per cent ($1.15 \times 0.90 = 1.035$) in the decennial rate applicable to the number enumerated at the beginning of the decade.¹

Estimate of mortality during given decade among white immigrants arriving within that decade.—To obtain a rate applicable to the total number of white immigrants arriving during the decade, the normal annual death rate for the foreign-born white population was multiplied by 5, it being assumed that the immigration was distributed uniformly throughout the decade and that therefore the average length of time elapsing between arrival in this country and the end of the decade was five years, and the result was arbitrarily reduced by one-fourth to account for the lower average age of immigrants than of the entire foreign-born population.

Final calculation.—The remainder of the process was as follows: The estimated number of survivors, at the end of the decade, among the white

¹ A subsequent estimate of the mortality, during the 10-year period beginning Apr. 15, 1910, among the foreign-born whites enumerated in 1910, based on the age distribution as shown by the Thirteenth Census and the death rates as shown by the Life Tables, indicates a decennial rate of 178 per 1,000 applicable to the number enumerated at the beginning of the decade, as against an average annual rate of 16.4 per 1,000 for the years 1909, 1910, and 1911. The decennial rate was thus 8.5 per cent, or about one-twelfth, greater than 10 times the average annual rate for 1909, 1910, and 1911. The death rate for the total white population of the registration area in 1910, however, showed a decline of about 12 per cent, or nearly one-eighth, as compared with the average for 1909, 1910, and 1911. If it be assumed that the rate for the foreign-born white population, disregarding the effect of advancing age, also declined by approximately one-eighth between 1910 and 1919, and if it be further assumed that this indicated a decline of one-sixteenth, or about 6 per cent, in the average annual rate for the decade, the net excess of the decennial rate applicable to the foreign-born white population over 10 times the average annual rate at the beginning of the decade would be 2 per cent. (Increase due to advancing age, 8.5 per cent. Decrease due to general reduction in rate, 6 per cent. 108.5 per cent reduced by 6 per cent—that is, 1.085×0.94 —equals 102 per cent.)

immigrants arriving during the decade was added to the estimated number of survivors among the foreign-born whites enumerated at the beginning of the decade. The result represented the estimated number of foreign-born whites who would have been present in the country had there been no emigration during the decade, and the difference between this number and the number actually enumerated represented the reduction due to emigration—in other words, the number of surviving white emigrants. It was assumed that the emigration was uniform throughout the decade, and that therefore the average length of time elapsing between emigration and the end of the decade was five years. Accordingly the normal annual death rate for the foreign-born white population, expressed as a percentage, was multiplied by 5 and the product was subtracted from 100 per cent, leaving a percentage representing the proportion which the number of survivors at the end of the decade formed of the total number emigrating during the decade, and this percentage was divided into the estimated number of surviving emigrants. (The divisor used for the decades prior to 1900 was 0.9, and for 1900-1910, 0.909.)¹

NET IMMIGRATION AND ITS EFFECT ON POPULATION INCREASE, 1910-1920.

The estimate of the net white immigration between April 15, 1910, and December 31, 1919, was made in the following manner:

From the total number of white immigrants (5,153,489) who arrived in the United States during the period from July 1, 1910, to June 30, 1919, there was subtracted the estimated number of white emigrants (2,023,000) who departed during the same period, leaving approximately 3,130,000 as the excess of white immigration over white emigration during the 9-year period in question. The number of white emigrants was estimated by adding to the number of white alien emigrants, as shown by the immigration reports, the estimated numbers of native and naturalized emigrants. The numbers of such emigrants who departed prior to July 1, 1917, are not given in the reports of the Bureau of Immigration; but the excess of departures over arrivals of citizens during the period from July 1, 1910, to June 30, 1917, has been assumed to represent the number of citizens who emigrated during that period.

The immigration reports do not show, by months, the arrivals and departures of citizens nor the arrivals and departures of aliens classified according to race. Accordingly, the net immigration during the periods from April 15 to June 30, 1910, and from July 1 to December 31, 1919, was estimated as follows: For the period from April 15 to June 30, 1910, one-half the total excess of immigrants over alien emigrants during

¹ According to the reports of the Bureau of Immigration, the average annual alien emigration during the 7 years ended June 30, 1914—the only normal years for which emigration figures are available—was 281,967. If this average be accepted as fairly representative of the decade 1900-1910, it would indicate a total alien emigration (all races) of approximately 1,973,769. The estimate made by the method described above gives 3,058,000 as the number of white emigrants, both naturalized citizens and aliens.

April was added to the corresponding excess during May and June. This gave a total of 258,962. (The excess of citizen departures over citizen arrivals was disregarded, since, for so short a period, it might not supply a trustworthy approximation of the actual number of citizen emigrants.) For the 6-months period from July 1 to December 31, 1919, there was a slight excess, 3,329, of alien emigrants over immigrants. The number of citizen emigrants during this 6-months period was estimated at 31,000, approximately one-half of the total number of such emigrants during the fiscal year ended June 30, 1920.

The net white immigration from April 15, 1910, to December 31, 1919, thus estimated, was 3,355,000, or in round fifties of thousands, 3,350,000 ($3,130,000 + 259,000 - 3,000 - 31,000 = 3,355,000$).

The net immigration of all races was estimated by adding to the net white immigration the difference between the total nonwhite immigration and the total nonwhite alien emigration. (Beginning with July, 1907, the reports of the Bureau of Immigration show emigration by race or people.)

In estimating the effect of immigration on population increase during preceding decades it has been assumed that the net immigration was distributed uniformly throughout the decade, so that the average length of time elapsing between arrival in this country and the close of the decade would be five years, and the rate representing the natural increase in the families of the immigrants during that time, expressed as a decennial rate, would be equal to one-half the decennial rate applicable to the population present in the United States at the beginning of the decade. Such an assumption is not justified, however, in the case of the decade 1910-1920, inasmuch as about three-fourths of the immigrants who came to the United States between April 15, 1910, and January 1, 1920, arrived prior to July 1, 1914. Accordingly, the natural increase in the net white immigration of 3,350,000 was roughly estimated at 250,000, or a trifle more than two-thirds the natural increase which would have taken place if the entire 3,350,000 persons had been present in the United States at the beginning of the decade; and for the net immigration of all races, estimated at 3,470,000, the natural increase was roughly estimated at 260,000, or 10,000 more than that for the net white immigration. Thus the white population resulting in 1920 from immigration between 1910 and 1920 was approximately 3,600,000; and the population of all races resulting in 1920 from immigration during the decade was approximately 3,730,000.

In calculating the rate of natural increase in the population of all races, the net immigration plus its estimated natural increase was subtracted from the total population increase and the remainder (representing the increase which would have taken place if there had been no immigration nor emigration) was divided by the number of persons of all races enumerated in 1910; and a similar method was employed in calculating the rate of natural increase in the white population.

NET WHITE IMMIGRATION IN RELATION TO INCREASE IN FOREIGN-BORN
WHITE POPULATION: 1910-1920.

The estimate of the net white immigration to this country between the Thirteenth and Fourteenth Census dates, 3,350,000 (originally made for the purpose of determining the effect of immigration on the total white population, not on the foreign-born white population alone), by including emigration of native citizens, understates somewhat the net addition to the foreign-born white population resulting from excess of immigration over emigration. On the other hand, the emigration figures as given in the reports of the Bureau of Immigration may be somewhat incomplete, for the reason that during the war certain naturalized foreign whites may have left the country to escape compulsory military service, naturally departing in such a manner as to leave no actual record of their going. Moreover, citizens of enemy countries may have left in order to take part in the war under the flags of their native countries. In view of the impossibility of evaluating these uncertain factors, it is reasonable to assume that the possible understatement of alien emigration in the official records is offset by the inclusion of native emigrants in the estimate.

NET IMMIGRATION, ALL RACES, AND NET WHITE IMMIGRATION: 1820-1920.

The statement below shows the estimated net immigration of all races and the estimated net white immigration for the decades from 1820 to 1920. As previously explained, the total immigration of all races and the total white immigration were assumed to represent the net immigration of all races and the net white immigration, respectively, for the decades prior to 1870; for the decades from 1870 to 1910 the net immigration of all races was estimated by deducting the estimated white emigration (assumed to represent the total emigration) from the total immigration, and the net white immigration was estimated by deducting the estimated white emigration from the white immigration; and for the decade 1910-1920 the estimates were made in the manner described under the head "Net immigration and its effect on population increase, 1910-1920."

| DECADE ¹ | Net immigration, all races. | Net white immigration. |
|---------------------|--------------------------------|---------------------------|
| 1820-1830 | 137,000 | 137,000 |
| 1830-1840 | 558,000 | 558,000 |
| 1840-1850 | 1,599,000 | 1,599,000 |
| 1850-1860 | 2,663,000 | 2,621,000 |
| 1860-1870 | 2,168,000 | 2,291,000 |
| 1870-1880 | 2,330,000 | 2,395,000 |
| 1880-1890 | 4,273,000 | 4,192,000 |
| 1890-1900 | 3,249,000 | 3,143,000 |
| 1900-1910 | 3,558,000 | 3,365,000 |
| 1910-1920 | 3,467,000 | 3,355,000 |

¹ Adjusted to correspond to census dates.

APPENDIX D.

FERTILITY OF NATIVE WHITES.

By dividing the number of native white children under 10 years of age, excluding those of foreign parentage and one-half those of mixed parentage, enumerated in a given division or state, by the average number of native white persons in the same division or state during the decade (that is, a simple average of the numbers enumerated at the beginning and end of the decade), roughly comparable rates can be established for the native white element for the decade 1910 to 1920. These rates prove to be as follows for the various divisions:

| | Per cent. |
|-----------------------------|-----------|
| New England..... | 13.6 |
| Middle Atlantic..... | 15.5 |
| East North Central..... | 18.8 |
| West North Central..... | 20.7 |
| South Atlantic..... | 26.3 |
| East South Central..... | 26.7 |
| West South Central..... | 26.3 |
| Mountain..... | 21.1 |
| Pacific..... | 17.2 |
| Average, United States..... | 20.5 |

The foregoing percentages do not represent birth rates, since they refer to the numbers of children born between the Thirteenth and Fourteenth Census dates and surviving on the latter date. The total numbers born would, therefore, represent somewhat higher birth rates. Neither do they represent rates of increase, since deaths of persons born prior to the Thirteenth Census date are not taken into account.

As might be expected from the known trend of increase, the New England states showed the smallest proportion of children born to native whites, while the southern divisions showed the largest proportions, a fact also widely recognized, since the native white stock has continued to increase at a relatively rapid rate in the South, this great area as yet not having been invaded to any degree by the foreign element.

Considered by states, the northern New England states, Maine, New Hampshire, and Vermont, show proportions of 17, 14, and 17 per cent, while for each of the three lower states, Massachusetts, Rhode Island, and Connecticut, the proportion is distinctly smaller, 13 per cent. In general, the proportions for the agricultural states, even in New England, are higher than those for the distinctly industrial states. For example, the proportion for New York is the same as that for Massachusetts and Connecticut, namely, 13 per cent, while Ohio shows 10 per cent.

Wyoming 24 per cent, and California 16 per cent. Some light is thrown upon the reduced proportions shown by the industrial states, in which the numbers of native whites of foreign or mixed parentage are relatively large, by the fact that the proportion of such persons who marry is distinctly lower than the corresponding proportion for native whites of native parentage.

APPENDIX E.

CONSTRUCTION OF TABLES 62, 63, AND 64.

The number of persons engaged in agriculture and the value of agricultural products, as shown in Table 62, were used in the compilation of the corresponding percentages in Table 63. The number of persons engaged in manufactures and production of minerals, and the value added by manufacture plus value of products of mineral industries, as shown in Table 62, were obtained by appropriate combinations of the items on which were based the percentages in Table 63.

URBAN POPULATION.

The urban population for 1920 and 1910 was taken from the census reports. The urban population for 1850 was estimated in the following manner:

All towns having 2,500 inhabitants or more in Massachusetts, New Hampshire, and Rhode Island were treated as urban, in accordance with the present practice. Because of this practice the urban population of these three states in 1850 was overestimated to an extent somewhat greater than that to which it was overstated by the recent census figures, for the reason that in 1850 the population actually rural in the towns having 2,500 inhabitants or more formed a considerably larger proportion of the total population than was the case in 1910 or 1920. It seems logical, however, to apply the same rule for 1850 as for 1910 and 1920.

All places which in the 1850 report were shown separately from the townships or other minor civil divisions in which they were located and which in that year had 2,500 inhabitants or more were treated as urban, regardless of whether they were or were not incorporated. Probably nearly all such places were incorporated; and even if they were not, they were urban in character.

In most cases, however, the 1850 report did not show the smaller cities and villages separately from the minor civil divisions in which they were located. In each such case the place was assumed to have had a separate existence as an urban community in 1850 if shown separately in 1870 and if, from a comparison of the 1870 and 1920 population figures, it appeared that the population in 1850 was 2,500 or more.

The proportion which the urban population formed of the total for the minor civil division was almost invariably larger in 1920 than in 1870,

and it was assumed that the increase in the proportion between 1850 and 1870 was two-fifths as large as the increase between 1870 and 1920. For example, if the urban population formed 50 per cent of the total in 1870 and 60 per cent in 1920, it was assumed to have been 46 per cent in 1850.

In a few cases, where it appeared that extensive additions of territory had been made to the urban area since 1870, the proportion was assumed to have been the same in 1850 as in 1870.

For a very few places no separate figures for 1870 were given, and accordingly it was necessary to project the proportion through 1880.

In cases where an entire minor civil division—such as Watervliet town, Albany County, N. Y.—has been incorporated since 1850, its total population in that year, if 2,500 or more, was treated as urban.

Where the name of a place had disappeared since 1850, but where it was obvious that the place had been annexed to some city—for example, Williamsburgh, Kings County (Brooklyn), N. Y.—the population in 1850, if 2,500 or more, was treated as urban.

A large part of the population of Philadelphia County, Pa., in 1850 was enumerated in territory outside the city of Philadelphia. Between 1850 and 1860, however, the city limits were extended to include the entire county. Accordingly the population of every minor civil division in the county in 1850 which had 2,500 inhabitants or more in that year was treated as urban.

Population of cities of 100,000 and over and their adjacent territory.—The term "adjacent territory" refers to the area lying within a distance of approximately 10 miles beyond the boundaries of the central city. In cases where the city boundaries were extended between 1910 and 1920, the boundaries of the district as a whole were correspondingly extended. Accordingly the 1910 population shown for a given district in the census report for 1920 is not in all cases the same as the population shown for that district in the 1910 report, since the figures in the 1920 report relate to the area *as constituted in 1920*. The 1910 figures used as a basis for the percentages in Table 63 are taken from the 1910 report and of course relate to the areas as constituted in that year.

The total for 1920 (36,886,961) represents the population of 58 districts comprising 68 cities of 100,000 or more and their adjacent territory, and the total for 1910 (27,020,818) represents the population of 44 districts comprising 50 cities of 100,000 and over and their adjacent territory.

The 1920 distribution by states for those districts which lie in two or more states was made from the data on pages 65 to 71 and 73 to 75, Volume I, Fourteenth Census Reports. The 1910 population figures for the various minor civil divisions comprised in the districts *as constituted*

in 1920 were readily available, but no such figures were readily available for the districts as constituted in 1910. Accordingly, the 1910 distribution by states for each district lying in two or more states was made on the assumption that the proportions in the several states were the same for the 1910 population of the area as constituted in 1910 as for the 1910 population of the area as constituted in 1920.

VALUE OF PRODUCTS.

Agricultural products.—For 1919 and 1909 the total value of agricultural products was obtained by adding together the value of all crops, the value of all live-stock products (dairy products, eggs and chickens, wool and mohair, and honey and wax), and the value of domestic animals sold or slaughtered on farms. The total thus does not include forest products of farms nor products of greenhouses and other floral products. A considerable but indeterminable amount of duplication results from the feeding of crops to live stock, and some duplication also arises from the sale of domestic animals by one farmer to another and the subsequent resale or slaughter of such animals by the purchaser during the census year.

The value of agricultural products for 1849-1850 (12 months ended May 31, 1850) was determined by calculating average unit values from Tables CLXXXVI and CXC, pages 174 and 176, Compendium of the Seventh Census, and applying these values to the amounts of those agricultural products which were reported in quantity units. The total for each state was then ascertained by adding together the various items in Table CLXXXV, beginning with "Value of animals slaughtered," page 171, but omitting "Home-made manufactures." There are also included estimates for poultry, milk, and eggs, for which no reports were made in 1850. The poultry estimate was made by distributing the \$13,000,000 estimate for the United States given in Table CXC among the states on the basis of the distribution in 1840. The \$5,000,000 estimate for eggs made in Table CXC was distributed among the states on the assumption that the value of the egg product in each state was five-thirteenths as great as the value of the poultry product. The \$7,000,000 estimate for milk made in Table CXC, which was equal to approximately one-eighth the combined value of butter and cheese, was distributed among the states on the assumption that for each state the value of milk was equal to one-eighth the combined value of butter and cheese.

Following are the various items which made up the 1850 total:

Crops—Barley, buckwheat, cane sugar, clover seed, cotton, flax, flaxseed, grass seed (other than clover), hay, hemp, hops, Indian corn, maple sugar, market-garden products, molasses, oats, orchard products, peas and beans, potatoes (Irish), potatoes (sweet), rice, rye, tobacco, wheat, wine.

Other products—Animals slaughtered, beeswax and honey, butter, cheese, eggs, milk, poultry, silk cocoons, wool.

As the net result of various exclusions, adjustments, and corrections made in order to bring the figures into harmony with those for recent censuses, the amount used as representing the total value of agricultural products in 1850, \$974,387,000, is less by about \$325,000,000 than the total given in Table CXC of the Compendium for 1850. The most important exclusions and adjustments were the following:

(1) The exclusions of the items "Live stock, over 1 year old—annual product, \$175,000,000," and "Cattle, sheep, and pigs, under 1 year old—\$50,000,000." Such items are not now included as part of the total annual agricultural product.

(2) The substitution of \$111,703,142 as the value of animals slaughtered, which is given in Table CLXXXVI and represents the sum of the several state items, for the item "Animals slaughtered, \$55,000,000," in Table CXC.

(3) The exclusion of "Residuum of crops, not consumed by stock, corn fodder, cottonseed, straw, rice flour, and manure (Patent Reports), \$100,000,000." No reliable apportionment of these items among the states could be made.

Value added by manufacture.—The items under this head for 1919 and 1909 were taken from the manufactures reports for those years. For the year ended May 31, 1850 (the 12-month period covered by the report for 1850), the figures were calculated from the Digest of the Statistics of Manufactures. The state totals for cost of raw materials and value of products (Table 4 of the Digest) were reduced by subtracting from them the sums of the corresponding items for the following industries (Digest Tables 1 and 2): Blacksmiths, bleachers and dyers, carpenters and builders, chrome mining, coal mining, dyers, fisheries, flour and grist mills, gold mining, iron mining, lumber (sawing and planing), millstones, millstones (burr), slate quarries, stone and marble quarries, timber hewers, timber and wood, wood cutting and cording. (The "flour and grist mills" items doubtless included the output of some mills which would now be treated as merchant mills and included as manufacturing establishments, but probably the greater part of the output of this group of mills in 1849-1850 represented custom mills, which are not now treated as manufacturing establishments.)

The revised state totals for cost of raw materials were subtracted from the corresponding totals for value of products in order to obtain the value added by manufacture. This, rather than the value of products, has been used in comparison with the value of agricultural products and the value of mineral products, for the reason that the cost of the raw materials represents a much greater part of the total value of products in the case

of manufacturing industries than in the case of agricultural or mineral industries.

Mineral products.—The total value of mineral products was obtained by totalizing the following items in Tables 1 and 2 of the Digest of the Statistics of Manufactures for 1850: Chrome mining, coal mining, gold mining, iron mining, millstones, millstones (burr), slate quarries, stone and marble quarries.

PERSONS ENGAGED IN INDUSTRIES.

Agriculture.—The numbers of persons engaged in agriculture in 1920 and 1910 were obtained from the occupations reports. The number for each state was calculated by deducting the following items from the total for the group "Agriculture, forestry, and animal husbandry": Farmers, turpentine farms; farm foremen, turpentine farms; farm laborers, turpentine farms; florists; greenhouse laborers; landscape gardeners; fishermen and oystermen; foresters, forest rangers, and timber cruisers; foremen and overseers, log and timber camps; inspectors, scalers, and surveyors; managers and officials, log and timber camps; owners and proprietors, log and timber camps; teamsters and haulers, log and timber camps; other lumbermen, raftsmen, and woodchoppers.

The 1850 occupations data are not comparable with those for 1910 and 1920, as the earlier figures relate only to males 15 years of age and over and do not include slaves.

Manufactures.—The numbers of persons engaged in manufactures in 1919 and 1909 were taken from the manufactures reports for those years. Data for 1849-1850 are given in the report for that year, but have not been used because of the lack of corresponding figures for agriculture.

Production of minerals.—The numbers of persons engaged in the production of minerals in 1919 and 1909 were taken from the mines and quarries reports. As in the case of manufactures, data are available for 1849-1850, but have not been used because of the lack of corresponding figures for agriculture. (The number of persons engaged in the production of minerals in 1909 was taken from Table 8, Vol. XI, Thirteenth Census Reports. The United States total was reduced by deducting 974, representing certain persons who could not be distributed by states.)

COMPUTATION OF PERCENTAGES IN TABLE 64.

In compiling this table, two sets of percentages, one for increases and one for decreases, have been computed for each set of items for which some divisions or states showed increases and others showed decreases during the decade 1910-1920. It would be impossible, of course, to compute, from a decrease in a given division or state and an

increase in the United States as a whole, a percentage representing the proportion which the decrease in the given division or state formed of the increase in the United States. Moreover, it would have been bad practice to base the percentages for those divisions and states which showed increases on the net increase for the United States as a whole, since if this had been done the sum of the percentages of increase would have been more than 100.

Accordingly, the division percentages of increase and decrease are based, respectively, on the total increase in those divisions in which increases took place and the total decrease in those divisions in which decreases took place; and the state percentages of increase and decrease are based, respectively, on the total increase in those states in which increases occurred and the total decrease in those states in which decreases occurred. Thus the percentages of increase and the percentages of decrease total separately to approximately 100. A percentage for a given division does not, however, necessarily represent the sum of the percentages for the states composing that division, since in some cases certain states within a division show increases and others show decreases, so that the net increase or decrease for the division does not represent the sum of the increases for those states which showed increases, or of the decreases for those states which showed decreases. Moreover, the United States totals on which the division percentages are based are not the same as those on which the state percentages are based, so that, even if all the states in a division show increases or all show decreases, the sum of the state percentages is not necessarily the same as the division percentage, which has been computed on a different base. To illustrate: Suppose that in half the states the number of persons engaged in agriculture increased, the aggregate increase being 1,000,000, and that in the remaining states there were decreases aggregating 2,000,000. The state percentages for increase and decrease would, therefore, be computed on the bases of 1,000,000 and 2,000,000, respectively. Suppose, further, that the states which showed increases were so grouped that in, say, five divisions the increases were exactly offset by decreases, while in the remaining four divisions there would be aggregate decreases of 1,000,000 with no increases. In this event the division percentages for decrease would be based on 1,000,000 and would refer to only four of the divisions, while for the remaining five there would be no percentages for either increase or decrease.

APPENDIX F.

COMPUTATION OF AVERAGE NUMBERS OF CHILDREN PER NATIVE AND FOREIGN WHITE MOTHER.

The average numbers of children per native and foreign white mother in the birth-registration area, calculated for those mothers who gave birth to children in 1919, are as follows:

| | |
|---------------------------------------|-----|
| Average number of children ever born: | |
| Per native white mother..... | 3.2 |
| Per foreign white mother..... | 4.0 |
| Average number of surviving children: | |
| Per native white mother..... | 2.8 |
| Per foreign white mother..... | 3.4 |

The data employed in the calculation of these averages have been taken from the Census Bureau's annual report, Birth Statistics, 1919. The figures relate to the birth-registration area, which in that year comprised 22 states—Maine, New Hampshire, Vermont, Massachusetts, Connecticut, New York, Pennsylvania, Ohio, Indiana, Michigan, Wisconsin, Minnesota, Kansas, Utah, Washington, Oregon, California, Maryland, Virginia, North Carolina, South Carolina, and Kentucky—and the District of Columbia, with nearly three-fifths of the total population of the United States.

AVERAGE NUMBER OF CHILDREN EVER BORN PER NATIVE WHITE MOTHER.

| | |
|---|-----------|
| Total births to native white mothers in 1919..... | 912,792 |
| Deduct number in connection with which no data as to total number of children ever born were given..... | 47,041 |
| Number of births in connection with which total number of children ever born was stated..... | 865,751 |
| Divide by 1.0122 to account for plural births ¹ | 855,316 |
| Total number of children ever born to these mothers..... | 2,722,296 |
| Average number of children ever born per native white mother (2,722,296÷855,316)..... | 3.2 |

AVERAGE NUMBER OF SURVIVING CHILDREN PER NATIVE WHITE MOTHER.

| | |
|---|-----------|
| Total births to native white mothers in 1919..... | 912,792 |
| Deduct number in connection with which no data as to total number of children now living ² were given..... | 70,707 |
| Number of births in connection with which total number of children now living was stated..... | 842,085 |
| Divide by 1.0122 to account for plural births ¹ | 831,935 |
| Total number of children ever born to these mothers and now living ² | 2,363,396 |
| Average number of surviving children per native white mother (2,363,396÷831,935)..... | 2.8 |

¹ In 1919 plural births averaged 12.2 cases per 1,000 mothers in the registration area, for all races; not computed by race and nativity. As exceedingly few cases are of triplets, quadruplets, etc., there is only a very slight departure from accuracy in the assumption that the number of children born is 1.0122 times the number of mothers.

² The phrase "now living" refers to the time at which the last birth occurred.

AVERAGE NUMBER OF CHILDREN EVER BORN PER FOREIGN WHITE MOTHER.

| | |
|--|-----------|
| Total births to foreign white mothers in 1919..... | 354,956 |
| Deduct number in connection with which no data as to total number of children ever born were given..... | 47,416 |
| Number of births in connection with which total number of chil- dren ever born was stated..... | 307,540 |
| Divide by 1.0122 to account for plural births ¹ | 303,833 |
| Total number of children ever born to these mothers..... | 1,226,471 |
| Average number of children ever born per foreign white mother (1,226,471÷303,833)..... | 4.0 |

AVERAGE NUMBER OF SURVIVING CHILDREN PER FOREIGN WHITE MOTHER.

| | |
|--|-----------|
| Total births to foreign white mothers in 1919..... | 354,956 |
| Deduct number in connection with which no data as to total number of children now living ² were given..... | 56,323 |
| Number of births in connection with which total number of chil- dren now living was stated..... | 298,633 |
| Divide by 1.0122 to account for plural births ¹ | 295,031 |
| Total number of children ever born to these mothers and now living ² | 1,008,689 |
| Average number of surviving children per foreign white mother (1,008,689÷295,031)..... | 3.4 |

¹ In 1919 plural births averaged 12.2 cases per 1,000 mothers in the registration area, for all races; not computed by race and nativity. As exceedingly few cases are of triplets, quadruplets, etc., there is only a very slight departure from accuracy in the assumption that the number of children born is 1.0122 times the number of mothers.

² The phrase "now living" refers to the time at which the last birth occurred.