

Jarvis (E.)

IMMIGRATION

INTO

THE UNITED STATES.

By EDWARD JARVIS, M. D.

REPRINTED FROM THE ATLANTIC MONTHLY FOR APRIL, 1872.



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IMMIGRATION.

THERE is a belief held by a few in both Europe and America, that the climate of the United States is unfavorable to the Caucasian constitution. This is put forth distinctly by Mr. Clibborne, in a paper which he read before the British Association for the Advancement of Science at Cheltenham, in 1856, entitled "The Tendency of the European Races to become extinct in the United States." This was published in the volume of Transactions of the society for that year.

The sum of Mr. Clibborne's idea is embraced in the following sentence: "From the general unfitness of the climate to the European constitution, coupled with the occasional pestilential visitations which occur in the healthier localities, on the whole, on an average of three or four generations, extinction of the European races in North America would be almost certain, if the communication with Europe were entirely cut off." Knox repeats this opinion in his English lectures on the races of men.*

The existence and rapid increase of the large population in the United States are held not to conflict with this theory, for these facts are explained by the supposition that our people are composed mostly of strangers from abroad and their children, whose families are extraordinarily fertile in the first generation in America, although they soon become sterile, and in course of a century or less, yield their places to new arrivals, as their predecessors had done for ages before them, and as their successors will do forever after them.

Mr. Louis Schade, in his work published at Washington, in 1856, affirms this principle of American deterioration of human life, and says that the power of natural increase of those who were here eighty-two years ago is reduced to the annual rate of 1.38 per cent,

while all the rest of the growth of population within that period is due to new immigrants and their very fruitful families.

Mr. Frederic Kapp, in an address read before the American Social Science Association and printed in their Journal for 1870, warmly supports this doctrine, and says that "it is the great merit of Mr. Schade to have first applied the true principle of computing the gain of population."*

M. A. Carlier, a French traveller in this country, and writer, in his *Mémoire sur l'Acclimatement des Races en Amérique*, read before the Société d'Anthropologie, of Paris, and printed in their Transactions, endeavors to sustain the same doctrine of the decadence of population in America, and quotes Mr. Schade in proof of his opinion.

In harmony with these views, are some seemingly wild opinions as to the number of people of foreign birth living now in the United States. The Bishop of Cassel said in the House of Lords, of Great Britain, "There are seven million natives of Ireland in the United States." A speaker in a public meeting of Germans in New York said, "We have four millions of our countrymen here." Disraeli, in "Lothair," makes Monsignore Berwick, who is represented as a man of rare intelligence, say, "We have twelve million Catholics in the United States."

To meet these opinions and to determine, as far as the attainable records will permit, exactly or approximately, the numbers of these foreigners and their descendants living in the United States, in the several decennial years of this century, 1800 to 1870, is the purpose of this article.

Immigration into the United States.

No organized system of ascertaining and recording the number and charac-

* Page 57.

* Page 16.

ter of the persons who came here from abroad existed previous to October 1, 1819. From that time the law of Congress required that all who come to the sea and lake ports should be registered at the custom-houses. Their names, ages, sex, nativity, occupation, and destination are ascertained and reported to the national government.

Since the law went into operation, in 1819, the State Department at first, and the Treasury Department latterly, have published annual reports of the number and character of the immigrants. So far as these documents go, they may be received with confidence. But there were manifest omissions at some ports in the earlier years, and they could give no account of foreigners who entered this country through other channels than the sea and lake ports.

No official account has been given of the arrivals, before October 1, 1819. Some statistical writers, however, made careful inquiries and estimated the extent of immigration. Mr. Blodgett thought the arrivals did not exceed four thousand a year, from 1789 to 1794. Dr. Seybert supposed there were six thousand a year, from 1790 to 1810.* Professor Tucker fixed the number at fifty thousand in the period 1790 to 1800, seventy thousand from 1800 to 1810, one hundred and fourteen thousand from 1810 to 1820, and two hundred thousand from 1820 to 1830.† The Professor's estimates are now admitted as correct by the best authorities.

European Immigration through the British Provinces.

There is no difficulty in determining the number who landed at our sea-ports and the lake-ports since October 1, 1819. But the doubtful problem is the number who came across the border, from and through Canada and New Brunswick, and escaped the notice of our national officers.

The censuses of Canada for 1842, 1851, and 1861, and those of Nova

Scotia and New Brunswick for 1851 and 1861, show the numbers of foreigners that were then living in the British North American Provinces. The British emigration reports show the numbers that left the United Kingdom for these colonies in the intervals of those enumerations. Calculating the mortality of these emigrants at the usual annual rate, we have the numbers of their probable survivors in the several years of the census. Comparing these surviving immigrants with the Europeans living in the Provinces, in 1842, 1851, and 1861, the last were found insufficient to account for the first.

The survivors of those who left the United Kingdom for the British North American colonies exceeded the numbers of Europeans living there

Previous to 1842 by	110,518
Interval between 1842 and 1851 by	75,245
Interval between 1851 and 1861 by	9,053
	<hr/>
	194,816

All others had either died or were absorbed into the provincial populations.

No account is given of these 194,816. Some of them may have returned to Europe. Probably most of them came across our border, and thus swelled our foreign population.

Immigration of British Provincials.

The number of natives of British Provinces, recorded in our immigration reports, do not account for all that appear in our censuses of 1850 and 1860. The custom-houses do not reach those who come directly by land. In the census of 1850 there are 100,692 British Provincials more than could be accounted for by the previous immigrant records. Besides the survivors of these in 1860, there were found by the enumerators of that year 72,286 more than had been officially reported. The last came between 1850 and 1860. The other 100,692 came previous to 1850, and probably arrived in periods similar to those in which other Provincials came by sea and by lake, and were registered in the custom-houses.

Those found living in 1850 and 1860

* Statistical Annals, p. 29.

† Progress of Population, Chap. X.

are the survivors of larger numbers, who had arrived in previous years. The actual arrivals include not only those living in 1850 and 1860, but also those who died after their passing the border, and before these dates.

Then the 100,692 British Provincials living in the United States in 1850 were the survivors of

5,325	who arrived between	1820 and	1830
26,623	" " "	1830 "	1840
85,576	" " "	1840 "	1850

A total of 117,524 " " " 1820 " 1850

And the 72,286 who were living here in 1860, in excess of those who survived from 1850, represent 82,487 Provincial immigrants by land across the border between 1850 and 1860.

Thus those natives of Europe and the British Provinces who came from and through Canada and New Brunswick unnoticed by the American officers and not included in the immigration reports were :—

In Periods.	Provincials.	Europeans.	Totals.
1815 to 1820		12,157	12,157
1820 to 1830	5,325	26,524	31,849
1830 to 1840	26,623	56,364	82,987
1840 to 1850	85,576	90,713	176,294
1850 to 1860	82,757	9,053	91,840
1815 to 1860	200,311	194,816	395,127

These should be added, in their respective periods, to the numbers of immigrants given in government reports.

For the rest, in this paper, the national records are assumed, except that, when not deducted and when stated, those passengers who were

natives of the United States, and also those who expressed an intention to reside elsewhere, are omitted, and 16,327 are added to the arrivals of 1820 to 1830, to compensate for the apparent deficiencies in some of the custom-house returns. These, with the 31,987 presumed to have come across the border, added to the sea-port and lake-port arrivals, make 200,000, the estimate of Professor Tucker.

By these means and from these sources, the following probable and certain numbers of foreign immigrants, from 1790 to 1860, are found :—

Period.	Immigrants.
Dec. 31, 1790 to Dec. 31, 1800,	50,000
Jan. 1, 1801 " " " 1810,	70,000
" " 1811 " " " 1820,	114,000
" " 1821 " " " 1830,	200,000
" " 1831 " " " 1840,	682,112
" " 1841 to May 31, 1850,	1,711,161
June 1, 1850 " " " 1860,	2,766,495
" " 1860 " " " 1870,	2,424,390
	8,018,156

Number of Foreigners living in each decennial Year.

It was desirable to determine the number of foreigners who were living in the United States, at each of the census or decennial years. In order to reach this, the numbers of the survivors of those who arrived in each decade are calculated at the annual rate of 2.4 per cent mortality and .976 per cent surviving, for the periods 1790 to 1850, and 2.625 per cent mortality for the period 1850 to 1860, and 2.2 per cent mortality for the last decade, 1860 to 1870, with the following results :—

Immigrants arriving in Periods and surviving in Years.

Arrive.		Surviving in Years.							
Period.	Number.	1800.	1810.	1820.	1830.	1840.	1850.	1860.	1870.
1790—1800	50,000	44,282	34,732	27,241	21,364	16,755	13,135	10,272	8,179
1800—1810	70,000		61,993	48,623	38,137	29,912	23,796	18,237	14,600
1810—1820	114,000			100,961	79,107	62,109	49,409	37,868	30,315
1820—1830	200,000				177,141	138,940	110,518	84,704	67,810
1830—1840	682,112					486,450	372,829	298,499	248,499
1840—1850	1,711,161						1,552,709	1,190,036	952,685
1850—1860	2,766,495							2,421,944	1,938,742
1860—1870	2,424,390								2,253,548
1790—1870	8,018,156	44,282	96,725	176,825	315,830	859,202	2,236,217	4,135,890	5,564,378
Census,							2,240,535	4,136,175	5,566,546
Error,							— 4,218	— 285	— 2,168

The results of the logarithmic calculations show the approximate numbers of foreigners who were living in the United States in the several decennial years since 1790. They agree very nearly with the census returns of foreigners in the years 1850, 1860, and 1870, when they were separately reported. They fall short, less than one in 500 in 1850, less than one in 14,000 in 1860, and less than one in 2,500 in 1870. The actual rates of mortality were a very slight fraction less than the rates herein assumed. These correspond very nearly with the rates determined and reported in the mortality volume of the eighth census, pages lix and 277.

The numbers of foreigners stated in the censuses of 1850, 1860, and 1870 are fixed points, beyond which we cannot pass. If we assume that the immigration was greater, in any of the periods, than is here given, it will be necessary to increase the rate of mortality in order to reduce their numbers to those then determined by enumeration.

Rate of Mortality among Immigrants.

The rates of death, 2.4 per cent previous to 1850, and 2.625 per cent 1850 to 1860, and 2.2 per cent 1860 to 1870, are very large. It must be considered that the immigrants include but a small proportion of those in the perilous periods of life, the very young and the aged, but they are mostly in the healthy ages, when the rate of mortality is very low. Among all the immigrants, from 1819 to 1860, there were only 7.9 per cent under five, and 10.2 per cent over forty years old. In a fixed population, as in England, there were 13.3 per cent under five and 24.6 per cent over forty.

The rate of mortality for thirty years in England, for all classes and ages, was 2.333 for males and 2.151 for females. But reducing the proportions of infants, children, and old people to those of the immigrants, and increasing the proportions of those who are between ten and forty to those of the immigrants, and allowing

these, in their respective ages, the same rates of mortality that they now have in England, the general rate would be only 1.329 for males, and 1.338 for females. The rates thus assumed for the foreigners here (2.4, 2.625, and 2.2) are very high, almost double that of England, for persons in the same ages.

In these calculations, it is assumed that the immigrants of the first forty years were distributed in equal numbers over the years of the respective decades of their arrival, and that those who arrived in each year had a chance or hope of living through the remaining years of that, their first decade. Thus those who came in 1791 had a chance of living nine and a half years in that decade, to 1800; and the arrivals of 1795 a chance of four and a half years' life, and the average of the whole, in that decade, was five years. But in the subsequent decades, with the aid of the custom-house records, this average was determined precisely, by multiplying the arrivals of each year by the remaining years of the decade, and dividing the sum of the products by the whole number of arrivals. This gave five years for the arrivals, 1820-1830 and 1850-1860, four and a half years for those who came 1830-1840, and four years for those of 1840-1850, and four and one third years for the arrivals of the last decade.

The decades are assumed to end on the 31st of December, in 1800, 1810, 1820, 1830, and 1840. But afterward, in order to correspond with the census, they are assumed to end on the 31st of May. The period 1840 to 1850 is therefore only nine years and five months, all the others are ten years, and all the immigrants that enter on any decade, after that in which they arrived, are assumed to have a chance of living to its end.

Natural Increase of the American and Foreign Element of Population since 1790.

On this question there is probably a wider difference than in regard to the

numbers of the arrivals from abroad. And public opinion is singularly unsettled as to the extent of the foreign element, — the numbers of the natives of other countries who have come here since 1790, and of their children and grandchildren born in the United States.

Mr. Schade's Theory.

Mr. Schade supposed that the natural increase or excess of births over deaths in the American population was only 1.38 per cent a year; and all the surplus growth of the white population was due to the immigrants who came since 1790. Mr. Kapp and M. Carlier indorse Mr. Schade in this opinion.

This theory is founded on Table XVIII. in the Report of the seventh census, "Statistics of the United States, 1850," page xli. The table is entitled "Births, Marriages, and Deaths, Dwellings and Families." This table is repeated in the compendium of the seventh census, page III. Comparing the numbers of births and deaths, Mr. Schade found the excess of the births over the deaths to be equal to 1.38 per cent of the total white and free colored population in 1850, and thence inferred that this was their annual rate of increase.

If Mr. Schade had examined this volume a little further, he would have seen that the column headed "births" did not give these facts, but merely the number of children under one year old living on the first day of June. Moreover, he would have seen a star at the head of the column referring to a note under the table, which says, "The figures include only those who were surviving at the end of the year, and therefore are but approximate." If he had looked further through this volume, he would have seen that Mr. De Bow, fearing the world would put confidence in this statement of the table which is repeated in regard to each State, also repeats this caveat on every page where this table or any part of it appears, — forty-four times in all,

— and as often tells the reader that he must not believe his table, column, heading, or figures. And as if this were not sufficient, and there were still danger of misleading the people, he, on page xxxix, paragraph second, says, "The table of births, as is stated in the notes to each State, includes only those who were born in the year and were surviving at the end of it; in other words, it comprises the figures of the column of population under one year of age."

If Mr. Schade had looked at the law regulating the census of 1850, page xix, or the schedules, page xi, or the explanation of the schedules, page xxii, or the instructions to the marshals in the same volume, he would have seen that the facts of birth were not required by Congress, nor sought by the census department, nor asked by the marshals. Hence there is no ground for the statement or inference as to the number of births in the year 1849—50.

Numbers of Births and Children under one Year not identical.

Even supposing that this matter had been required by the law and reported by the marshals, the identity of the number of children under one and of the births would have thrown distrust over the statement. No allowance is made for the deaths in this the most dangerous period of life. All of them had passed through their most perilous months, except those born in May, 1850, and these had passed through the most perilous weeks and days of life.

The records of the experience of several nations show the number of children that were born in each month and year, and the number that died in each month of their first year. From these it is easy to determine the number and proportion of those born in any definite year who will die before the year ends, and the number and proportion that will then be alive. The clearest of these are the Dutch tables, in the *Statistisch Jaarboek*, X.

and XI., page 82, for the ten years 1850-1859, showing all the births 1,075,979, and the deaths in each month after birth. Another authority equally valuable is the monthly statement, in the large volume "English Life Table," No. 3, page 91.

According to the experience of the Netherlands, if 100,000 are born in any year, 13,139 of these will die before the 1st of the next January, and 86,871 will be alive on that day. The English statement is more favorable, and shows that of the 100,000 born in the year, only 9,910 will die before its end, and 90,090 will live to enter the next year.

The Dutch is the actual experience of a progressive population, where the births exceed the deaths. The English calculation excludes this excess, and is carefully reduced to the case of a strictly stationary population, in which the births and deaths are equal.

The American population is even more progressive than the Dutch; and, including the South, it has probably a higher rate of infant mortality. It will not then go beyond the truth to assume the experience of the Netherlands as the rate in this country, and that 100,000 children born here, within a year, were represented by only 86,871 survivors at its end, and, conversely, 100,000 children under one year old, living on any day, represent and are the survivors of 115,113 births within the year next preceding.

Applying these proportions to the numbers of children under one year of age, in the United States, quoted by Mr. Schade, from the census of 1850, we find that the

537,661 whites were the survivors of 618,917 births,	
11,176 free colored	12,862
80,607 slaves	92,791
629,444 white and colored	724,570

within the year. At least it was necessary, according to the law of mortality, that so many should have been born in the year next preceding June 1, 1850, to leave this reported number alive at that date.

Incomplete Enumeration of Children.

There is another element of error in this matter, which is equally if not more important. In the preparation of the mortality report of the eighth census, an attempt was made to obtain some light on the rate of mortality in this country, by comparing the numbers living at each age in 1850 with the numbers of the same persons who, ten years older, were living in 1860; as, for example, those under five in 1850 with those between ten and fifteen in 1860, those between ten and twenty at the first date with those between twenty and thirty at the second, and so on through all ages.*

The first step was to ascertain all the immigrants who had arrived in this interval, 1850 to 1860, and their numbers at each age; then, by the Life Table, to calculate the number of survivors of the arrivals of each year in their respective ages in 1860, and deduct these from the numbers of the whites of the same ages, as they appeared in the eighth census. The remainders were the survivors, in the several ages, of those who, ten years younger, were living here, in 1850, and the difference showed the probable loss by death in this period.

If the enumerations had been complete at both censuses, 1850 and 1860, and none had gone out except by death, and none had come in except by birth, the differences would show the exact mortality, and the rate at each age would be easily determined for that decade of years. But at the early ages of all classes there was no apparent loss; on the contrary, there were some gains. The 2,896,458 whites living, under five years old, in 1850, instead of losing any of their numbers by death, in course of the next ten years, according to the natural and necessary law of mortality, are represented by the eighth census as being 2,939,510 at the ages ten to fifteen, in 1860, and thus as having gained 43,052. There were similar discrepancies in the statements of the colored population of these ages. In

* See Eighth Census Mortality volume, p. 285.

the next period, passing from the ages between five and ten, in 1850, to those between fifteen and twenty, in 1860, there were also apparent errors, and the case was the same with the ages next beyond. But in the after ages, the representations of the numbers of the living were apparently more correct.

In seeking an explanation of these inconsistencies, it is necessary to assume, either that the numbers in the earlier ages, in 1850, were too small, or that those in the later ages, in 1860, were too large.

As the census was taken by name, and each person was described and recorded, it is hardly supposable that any names could have got into the record, unless they were those of persons really existing. But it is not difficult to suppose that some, especially infants and children, may have been unknown to, or forgotten by, the informants, or overlooked by the enumerators.

As the census of 1850 failed to give trustworthy information as to the numbers of children at that time, an attempt was made to determine, from the accepted statements of the eighth census, the number of children under five years old in 1850, in accordance with the known number between ten and fifteen years old in 1860.

For this purpose the censuses of other nations, which are taken decennially and represent their populations in quinquennial or decennial periods, were examined, and similar comparisons made of the numbers at the successive enumerations. Most of these are affected by emigration, and therefore they do not give sufficiently adequate data for a comparison of their populations at different periods.

The life tables of different countries were also examined for this end. These tables are exact representations of the progress of population through several periods of life. Of these, the English Life Table most nearly represents our people and their movements of life. According to this, 1,000,000 males, at the ages of 10 to 15, are the survivors of 1,204,197, at

the ages of 0 to 5; 1,000,000 females, at the ages of 10 to 15, are the survivors of 1,193,398, at the ages of 0 to 5; 1,000,000 of both sexes, at the ages of 10 to 15, are the survivors of 1,198,769, at the ages of 0 to 5.

In Mr. Meech's American Life Table* for males only, 1,000,000 at 10 to 15 are the survivors of 1,201,728 under 5.

Taking the English rate, which nearly coincides with our own, the 2,939,510 whites, aged 10 to 15, living in the United States in 1860, were the survivors and representatives of 3,523,793 children under 5, living in 1850. The 601,647 colored children aged 10 to 15, living in 1860, were the survivors and representatives of 721,235, under 5, living in 1850.

By the same Life Table it appears that 1,000,000 children, between the ages of 10 and 15, are the survivors of an annual average of 287,877 births, ten to fifteen years previous; then the 2,939,510 whites, aged 10 to 15, who were living June 1, 1860, represent an average of 846,217, and the 601,647 colored children of the same age living June 1, 1860, represent an average of 173,200, and the 3,541,157 of both colors, aged 10 to 15 in 1860, represent 1,019,417 annual births through the five years next preceding June 1, 1850.

Since, in accordance with the law of population and the law of mortality, there could not be any given number of boys and girls of the ages 10 to 15, unless a proportionately larger number had lived ten years previously at the ages 0 to 5, and unless these had been preceded by a still larger and due number of births; 5,097,085 children — an average of 1,019,417 a year — must have been born within the period, June 1, 1845, to May 31, 1850, and 4,245,028 of these must have been alive and under five years old on the first day of June, 1850, in order to meet the usual chances of death and leave the 3,541,157 survivors at the ages 10 to 15 on the 1st of June, 1860.

* Thirteenth Report of Life-Insurance Commissioners of Massachusetts, 1867, page cvi.

Number of Children omitted in the Census.

Comparing, then, the calculated with the reported numbers of children under 5, in 1850, we have,

	White.	Colored.	All Colors.
Calculated, Reported,	3,523,793	721,235	4,245,028
Difference,	2,896,458	601,647	3,498,105
	627,335	119,588	746,923

All these numbers in the last line, 627,335 white, 119,588 colored, in all 746,923 children under five years old, must have been overlooked and omitted in the census of 1850.

Children under one Year.

By the same law, the number of infants under one must have been 922,297, June 1, 1850, instead of 629,446 as stated in the census, showing a probable omission of 292,851.

Births.

The births, in the year June 1, 1849 to May 31, 1850, probably were 1,019,417, instead of 629,446,* as supposed by Mr. Schade, showing a difference of 389,971, or an excess of 61 per cent of his theory.

Deaths in 1850.

The deaths in 1849-50 were imperfectly returned. Some whole counties reported none; others made their reports so incompletely as to offer no indication of the numbers who died either in any State or in the whole country. Still less do these returns offer any sound basis for the determination of the rate of mortality in that year.

Having then no reports of births, but only a conjecture, — widely removed from the fact, — of their numbers, and no full return of deaths, the estimate or calculation of the annual natural increase, based upon these two classes of events, falls to the ground.

* Mr. Schade quotes only the whites and free colored. In this paper the whole are taken to show more completely the deficiencies of the seventh census. These are in the same proportion as Mr. Schade's statement.

Application of Mr. Schade's Theory.

After having formed this baseless theory of 1.38 per cent natural increase of population, Mr. Schade proceeds to apply it in a manner equally remarkable and equally groundless.

The statements in Mr. De Bow's volume (of the numbers of deaths and of children under one year wrongly assumed to represent the births) were made with reference to the whole population, both native and foreign. No distinctions were made as to origin; these events are given in their totality, of all the people of each State and of the nation. The only distinction relates to color and to civil freedom or bondage. If the births were few and the deaths many, these statements apply to the foreign as well as to the native families.

But Mr. Schade, finding the inferential rate of 1.38 per cent growth insufficient to account for all the actual increase, applied the rule to the American population exclusively, those who were here in 1790 and their descendants, and claimed all the surplus growth for the foreigners that came after 1790 and their posterity, — and for reasons entirely fallacious.

He says that the foreign population has a much larger proportion in the productive age than the American. This is true; but he overlooks one important fact. While in the American, as in all fixed populations, the sexes are nearly equal, allowing opportunity of marriage for nearly all; on the other hand, among the immigrants, from October 1, 1819, to December 31, 1850, whose ages were given, there were 3,264,781 males and 2,099,982 females, or for every 1,000 females 1,554 males, giving opportunity for only two thirds of the males to marry. This fact is somewhat qualified by their large preponderance in the middle and productive periods of life. Comparatively few women become mothers before they complete their twentieth or after their fortieth year. It is therefore safe to assume the period from twenty to forty as the productive age, and as the ground

of comparison between different peoples as to their productiveness.

The ratio of women twenty to forty years old was : —

	To all Persons.	To all Females.
Whites in United States, 1860, excluding immigrants, 1850 to 1860, . . .	13.4 per ct.	27.8 per ct.
Immigrants arriving 1819 to 1860, . . .	18.4 “	47.0 “
Population of England and Wales, 1861, . . .	15.6 “	30.7 “

Then the proportionate productive power to the whole population of each class is 13.4 per cent of the American, and 18.4 per cent of the immigrant, or as 100 of the former to 137 of the latter, so that the alien race, in this respect, exceeds the native by 37 per cent.

This excess of productive power among the foreigners in this country ceases with the first generation; for their children and remoter descendants are nearly equally divided as to sexes, and are distributed, like others, through the several ages, as they pass through life.

Mr. Schade's Calculations of Foreign Increase.

Mr. Schade shows the result of his calculation of the increase of the foreign element, and says, "According to the above calculation, the immigrants and their descendants number in 1850,

" Since 1790	12,432,150
" 1809	11,032,109
" 1810	9,277,230
" 1820	8,669,089
" 1830	5,656,847
" 1840	3,215,899" *

The difference between the numbers of the increase, from any two successive decennial years, to 1850 is the amount of increase during the intervening decade. By subtracting the gain, since each year, from the next preceding, we have the following numbers, supposed by Mr. Schade to have been gained in the intervals, by immigrants and their descendants : —

In period 1790 to 1800 this increase was	1,400,041
" " 1800 " 1810 " " "	1,754,879
" " 1810 " 1820 " " "	603,141
" " 1820 " 1830 " " "	3,012,242
" " 1830 " 1840 " " "	2,440,948
" " 1840 " 1850 " " "	3,215,899

Mr. Schade does not tell us what proportion of his supposed foreign element consists of immigrants born in other countries, and what proportion consists of their children and grandchildren born in the United States. He seems to believe that both numbers are very large. As evidence of a much greater immigration than is usually supposed, he refers on page 11 to Dr. Chickering's estimate that fifty per cent should be added to the number of recorded and officially reported immigrants, for those who come unnoticed by public authorities, from and through the British Provinces.

In support of his theory of large natural increase by births in foreign families Mr. Schade says: "The births were in Massachusetts in the three years 1849, 1850, and 1851, of American parents, 47,982, or 578 in 10,000 of their own race; foreign, 24,523, or 1,491 in 10,000 of their own race." *

In this statement of American and foreign births the figures are correct, but not so the numbers of the respective races that are assumed as the bases of comparison. The foreign race includes all of its own blood, parents and children, whether born abroad or born here. The American race includes only its own children. But Mr. Schade includes in the foreign race only those born in other lands; and in the American he includes not only its own children, but also those children of foreigners who, having been born in the United States since their parents' arrival, are legally but not ethnologically Americans. By transferring these children of the aliens from the American to the foreign class, we materially diminish the former and increase its birth-rate, while we increase the latter class and diminish its proportionate fertility; thus lessening the apparent preponderance of

growth of the foreign element in our population.

Irish Population.

Whatever may be the fertility of the foreign families in Massachusetts, the fact applies almost exclusively to the Irish, who constitute about 70 per cent of the foreign population in Massachusetts, but less than 40 per cent of the foreigners in the whole country. These Celts are very prone to marry, and their marriages are very productive. But it is yet doubtful whether their high birth-rate adds to the permanent population. Certainly their mortality, especially in infancy, is higher than that of American families. Most of them belong to the class whose straitened circumstances and improvident habits are most unfavorable to the development of sound constitutions and the maintenance of health and power in their children.

The British, the Germans, the Scandinavians and others, who constitute more than 60 per cent of the foreigners in this country, are generally of more cautious temperament and are more provident managers; they are less hasty in marrying, and probably less prolific, and they have a lower rate of mortality.

Increase of Population not in Ratio of Births.

In determining the rate of increase of any population, the birth-rate is but one of the elements to be considered. An equally important matter is the number of years during which the newborn shall remain in the community. In this respect, the numbers of people in a state are like those in a college in which a definite number enter yearly and as many leave at the end of the prescribed course. If a hundred enter and the course be three years, there will be three classes and three hundred students constantly present. But if the course be four years, there will be four classes and four hundred members of the college. A living octogenarian has been annually counted eighty times in the census, and a dead infant only once; and each of these and persons of all intermediate ages have added to the numbers of the people in proportion to the years they have lived.

With an equal number of births, the long-lived race adds most to the constant population. This is in ratio of the years they may enjoy. The life tables of various countries show the difference. Of 1,000,000, born in each country, the survivors will be:—

At Ages	Sweden.	England.	France.	Holland.	Belgium.	Austria.	Ireland.
20	669,800	662,756	629,901	609,020	534,500	521,300	501,500
40	567,000	538,584	464,869	489,840	408,890		396,200
60	384,900	367,827	205,006	311,730	272,420		189,500

One million births, in each year, through several generations, will support a constant population in England, 40,858,204; in France, 34,938,543; in Ireland, 22,505,101.

Deductions drawn from the bills of mortality are not so accurate as those drawn from the life tables; nevertheless they offer an approximation to the truth. The table, No. XXXV. in the mortality volume of the eighth census, page 275, contains the results of the analysis of the death records of thirty States and countries, showing the pro-

portion of the deaths that happened to youth before maturity at twenty. In Massachusetts, from 1841 to 1850 inclusive, this proportion was 4,687 in 10,000 of all ages. Until 1850, the population of that State was almost entirely American. But then the families of the immigrants began to multiply, their numerous children formed a larger proportion of the people, and they were of the perishable class; consequently, from 1851 to 1863 the proportion of youth who died grew to 5,733 in 10,000 of all.

Analysis of Mr. Schade's supposed Increase of the Foreign Element of the Population.

Mr. Schade does not state the parts which immigrants and their children have respectively contributed to the growth of the foreign element in the several decades of years, from 1790 to 1850. Yet his assertions that the Americans have increased at the annual rate of 1.38 per cent only, while all the rest of the growth of population has been due to the multiplication of foreigners and their children, and that the birth-rate is 5.78 per cent in American and 14.91 per cent, or 2.579 times greater, in foreign families, furnish means of approximately determining his rate of natural increase among the aliens. Assuming the excess of births over deaths in the two races to be in the same proportion as their birth-rates, his natural increase of the foreign element is 3.5597 per cent a year. This seems to be a fixed factor in Mr. Schade's theory of its growth, while immigration is a variable factor, changing according to the numbers required to complete the increase in the successive decades.

In the first decade, 1790 to 1800, Mr. Schade supposes the foreign increase to have been 1,400,041. This consisted exclusively of new immigrants and their children born after their arrival. The foreigners are presumed to have come in equal yearly numbers, and to have had a chance or hope of an average life of five years, before 1800, as well as an annual natural increase of 3.5597 per cent for the same period. On these data, an algebraic equation shows that the foreign element of our population, living at the end of 1800, consisted of 1,188,420 immigrants, who had arrived since 1790, with their 211,620 children who were born here. To these immigrants living in 1800 must be added those that died after landing here, at an annual rate of 2.4 per cent; these would make, with the survivors, 1,350,472 arrivals in the ten years 1790 - 1800.

In the period, 1800 to 1810, Mr. Schade's supposed increase of the foreign element was 1,754,879. They began with an assumed capital of 1,400,041, whose natural increase was 498,372 in these ten years; and 1,256,507 were to be gained by new immigrants and their children who should survive to 1810. By calculation, these were 1,066,667 natives of other lands and 189,840 born here; and the arrivals were 1,212,117.

The period 1810 to 1820 began with an acquired capital of 3,154,920 foreigners and their children. Mr. Schade's assumed gain was 608,141. The natural increase of only 1.9 per cent annually on those already here added all that was necessary to complete the theory, and no immigrants were required for that purpose in this decade.

The next period, 1820 to 1830, was supposed to open with 3,763,061 in the foreign element, and there were 3,012,242 to be added to these. Beside the natural increase of those already here, it was necessary that 1,613,981 new immigrants should arrive, whose survivors and children, in 1830, would complete the supposed gain in these ten years.

From this time forth there was little need of further immigration to fulfil Mr. Schade's idea of foreign increase. He had created so large a supply of foreigners in the early stages of this history, that their natural increase, at his assumed rate, made it necessary that only 11,055 new aliens should come in the period 1830 to 1840, and none in the period 1840 to 1850, to give all the enormous gain which his theory requires. Moreover, in the last period the natural increase at the presumed rate gave 64,805 more than was needed for his gain of 3,215,899.

In three of the decennial periods, Mr. Schade's increase of the foreign element is greater than the whole actual increase of white population as shown by the successive censuses, leaving no increase, but, on the contrary, a decrease, of the American element.

Period.	Increase of whites according to the censuses.	Increase of the foreign element by Mr. Schade's theory.
1790 - 1800	1,148,941	1,400,041
1800 - 1810	1,550,132	1,754,879
1820 - 1830	2,493,663	3,012,252

Mr. Kapp's Estimate of Foreign Increase.

Mr. Kapp's estimate of the increase of the foreign element of population differs in details from that of Mr. Schade, although he starts with the same theory, that the American increase is only 1.38 per cent, and that all the surplus has been derived from foreign sources since 1790. He sim-

ply calculates the American growth at this rate, subtracts the result from the total white and free colored population at each census, and assumes that the several remainders are immigrants since 1790 with their children, grandchildren, etc.* He says,† "The whole white and free colored population, in 1790, having been 3,231,930, it would have amounted, if increased only by the excess of births over deaths," to the numbers in the second column in the table below, "while, in fact, it was, exclusive of slaves," as in the third column, both of which are quoted from his address. The numbers in the fourth and sixth columns are deduced from his figures in the second and third.

Mr. Kapp's statement. †			Deductions from Mr. Kapp's statements.		
Year.	American population increasing at rate of 1.38 per cent a year.	Total population, exclusive of slaves.	Increase of the foreign element.		
			Total since 1790.	In periods of ten years each.	
				Period.	Number.
1800	3,706,674	4,412,896	706,222	1790 - 1800	706,222
1810	4,251,143	6,048,450	1,797,307	1800 - 1810	1,691,085
1820	4,875,600	8,100,056	3,224,456	1810 - 1820	1,420,149
1830	5,591,775	10,796,077	5,204,302	1820 - 1830	1,979,846
1840	6,413,161	14,582,008	8,168,847	1830 - 1840	2,904,545
1850	7,355,423	19,987,563	12,632,149	1840 - 1850	4,463,293
1860	8,435,882	27,489,662	19,053,780	1850 - 1860	6,421,640
1865	9,034,249	about 30,000,000 §	20,965,755	five years.	1,911,975
				1860 - 1865	

Mr. Kapp says, "Samuel Blodgett, a very accurate statistician, wrote, in 1806, that from the best records and estimates then attainable, the immigrants arriving, between 1784 and 1794, did not average more than 4,000 per annum. Seybert assumes that 6,000 persons arrived in the United States, from foreign countries, between 1790 and 1810. Both averages seem too large: 3,000 for the first, 4,000 for the second, period named is a very liberal estimate."* Mr. Kapp makes no objection to Professor Tucker's estimate of 114,000 arrivals, between 1810 and 1820. He quotes, with seeming approval, the government reports of the numbers that came, in subsequent years, except for the ten years 1844 to 1854, when he appears to think that the German

immigrants were 30 per cent, and the Irish 28 per cent, more than those given by national documents. For the rest there is no apparent difference between his estimates and the returns of the custom-house officers.

It is safe, then, to assume that the numbers estimated by Messrs. Seybert and Tucker and those reported by the government officials, with the exception of the ten years 1845 to 1855, include, at least, all the increase of the foreign element which Mr. Kapp credits to actual immigration from other countries; and that all the rest of this increase has been due, in his opinion, to births of foreigners' children and grand-

* Address, p. 16.

† Page 17.

‡ Page 17.

§ Estimated in round numbers.

* Address, p. 5.

children in the United States since 1790. With these assumptions and on the basis of Mr. Kapp's figures, the following calculations of the number and rate of births in foreign families in the several decennial periods are made:—

Period 1790—1800.

Mr. Kapp's assumed foreign gain was	706,222
Foreign Immigrants	50,000
Surviving to 1800	44,282
Leaving	661,940

to be supplied by children born in this period and living to 1800. Beside these 661,940 who survived to 1800, there were naturally others born, who died in the course of the period. These must be added to the survivors to complete the totality of births. The due proportion of these deaths was 26.976 per cent of the survivors, 173,564; add these to the survivors, 661,940, and there were 840,504 births necessary, in foreign families, to complete Mr. Kapp's supposed increase in this decade.

Sources of Natural Increase.

Mr. Kapp's theory of foreign increase includes, in its sources of births, only the immigrants who arrived after 1790, and their descendants, when they had reached the productive age. Hence all the children that enter into his estimate of the increase of this period were born of the 50,000, who came between 1790 and 1800. These strangers are presumed to have arrived in equal yearly numbers. They had a chance or hope of living an average of five years each before 1800, and the sum of all their lives is presumed to be 250,000 years in this decade.

Of the 50,000 immigrants, the females were 19,577; 47 per cent of these females, or 9,301, were twenty to forty years old, and therefore of the marriageable age.

If all these females were married at twenty, and lived in uninterrupted wedlock until they had completed their fortieth year, the whole enjoyed a productive life equal to 46,505 years in this decade, between 1790 and 1800.

The number of births necessary to complete Mr. Kapp's supposed increase in this decade was 840,504. The number of productive years of females between twenty and forty was 46,505. Dividing the number of births by the productive years shows that every female must have borne 18.07 children in each year in order to satisfy the theory.

Period 1800—1810.

Mr. Kapp's assumed foreign gain in this period was	1,091,085
The increase of foreigners was, by immigration	61,993
To be accounted for, by births of children living to 1810	1,029,092
Add the number who died, in course of the period	278,953
And we have	1,308,045

the number of births in this decade necessary to produce the increase assumed by Mr. Kapp.

There is another contingency to be provided for. According to the theory of Messrs. Schade and Kapp, the gains that accrued in each decade were permanent. That is, whatever losses happened by death, these were compensated by an equal increase of births.

In 1800, the beginning of this period, there were presumed to be 641,940 children surviving from the births in foreign families since 1790. These constituted the greater part of the gain at that time. They were subject to 2.4 per cent annual mortality, and thereby lost 138,446, in course of these ten years, and so many were needed to be born and survive to the end to fill their places. As the last were only the survivors of the compensating births, the number 37,347 who died among them must also be added to those born in this period, making 175,793 births necessary to supply the loss on the previous increase. Add these to those needed for the increase of this period, 1,308,103, and there was a total of 1,483,896 births necessary in this period to sustain and complete Mr. Kapp's supposed increase.

The sources of this increase or the productive power were, — 1. The 44,282

survivors of the immigrants of the previous period; 2. The 70,000 who arrived in this decade. Of the former, 17,338 were females, and 8,148 of these were of the productive age, twenty to forty, who had a chance or a hope of living ten years each, or a total of 81,480 years within this period.

Of those who arrived in this decade, 27,881 were females, and 12,881 were of the productive age. They had a chance or hope of an average of five years of life, and the whole of 64,405 years, within this period.

The productive years were, then, of the first class	81,480
Of the second class	64,405
Total	145,885

Dividing the total births required, 1,483,896, among the productive years, gives 10.13 births a year for each female between twenty and forty years old. This also presupposes that every woman was married at twenty, and lived in uninterrupted wedlock until she was past forty.

Period 1810 - 1820.

Mr. Kapp's assumed foreign gain, in this period, was	1,427,149
The increase of immigrants living in 1810 was	80,100
Leaving	1,347,049

to be supplied by births of children who would be alive in 1820.

For this addition to the living in 1820, and for the losses by death in the period, it was necessary that 1,710,428 should be born. To compensate for the losses among the children born in the two previous decades and surviving to 1810, 442,786 births were needed; making, in all, 2,153,214 births requisite in this period to provide for the assumed increase and to keep the former increase full.

The sources of these births were the foreigners who arrived previous to 1820 and their children born here and reaching the marriageable age in this period. The sum of their presumed productive years was 1,130,303; and in order that they should add the number of children living in 1820, needful to sustain Mr. Kapp's theory of the increase of the for-

eign element in this decade, every female between the ages of twenty and forty must have borne, on an average, 1.9 children a year.

In the next period, 1820 to 1830, Mr. Kapp's theory implies the necessity of 3,376,936 births for the new increase, and to compensate for losses by death among the immigrants and their children. There were 4,290,180 productive years among the females, consequently there must have been an average of one birth in every sixteen and a half months.

In the following period, 1830 to 1840, there was a need of 4,374,330 births. There were 7,742,897 productive years, and an average of one birth in one and a quarter years of female life, between the ages of twenty and forty.

With so large an accumulation of foreigners and their descendants assumed to be living in the United States in 1840, the proportions of births needed for Mr. Kapp's supposed increase, in the subsequent periods, do not exceed the bounds of possibility; and if his data thus far are correct, his deductions may also be admitted.

Rate of Natural Increase diminished with Increase of Foreigners.

It is a noteworthy fact, that the rate of natural increase has diminished with the increase of foreigners. By comparing the numbers of foreigners in our population with those of the total whites, at the several decennial years, or the average numbers of the foreigners with the average numbers of total whites during the decennial periods, we obtain the proportions between these classes at each period.

The difference between the total numbers of whites at each decennial year and the total whites, minus the arriving foreigners at the next following decennial year, shows the natural increase or excess of births over deaths in the intervening period. And hence the rate of natural increase is easily calculated.

By these means the following table is made: —

Proportion of Foreigners to total Whites and Natural Increase of Whites.

Decennial Years.				Decennial Periods.				
Year.	Total Whites.	Foreigners.	Whites to one Foreigner.	Period.	Average Whites.	Average Foreigners.	Whites to one Foreigner.	Rate of natural Increase.
1790	3,162,020			1790-1800	3,733,990	25,000	149	per cent.
1800	4,305,961	44,282	113	1800-1810	5,084,027	69,506	73	34.77
1810	5,862,093	96,725	60	1810-1820	6,953,004	136,775	51	34.72
1820	8,043,915	176,825	45	1820-1830	9,290,646	246,327	37	35.50
1830	10,537,378	315,830	33	1830-1840	12,363,243	587,516	22	28.92
1840	14,189,108	859,202	15	1840-1850	16,891,088	1,549,866	10.7	28.66
1850	19,553,068	2,240,535	8	1850-1860	23,255,299	3,188,353	7	26.77
1860	26,957,471	4,136,175	6	1860-1870	30,273,664	4,801,360	6.5	26.31
1870	33,586,989	5,566,546	6					15.97

In the twenty years 1790-1810, when the average foreign population was one ninety-third of the total whites, the rate of natural increase was 30.9 per cent greater than it was in the twenty years, 1840-1860, when they constituted two seventeenths of our people.

The theories of Messrs. Schade and Kapp, in respect to the increase of the foreign element of the population of the United States, being built without foundation, and being sustained by explanations at war with the recorded facts of the censuses, lead to deductions inconsistent with each other and at variance with the recognized laws of population and mortality. They imply an incredible immigration in the early periods, or an impossible birth-rate, to produce a sufficiency of the foreign element to complete their supposed increase in the several decades of years. Or if neither of these is admitted to the fullest extent herein calculated for Mr. Schade and Mr. Kapp, — if Mr. Schade is supposed to mean a larger birth-rate than he seems to indicate, and Mr. Kapp a larger immigration than he states, and consequently a smaller immigration is necessary for the former, and a lower birth-rate is needful for the latter, to establish their theories of foreign increase, — in whatever proportion they divide their supposed gains of the foreign element between these, the only

sources of population, they assume a fruitfulness of one or the other, or of both, beyond all human experience.

There is not only no ground for the theory of the limited growth of the American, and of the unlimited growth of the foreign, element in the population of the United States, but, on the contrary, the natural increase is at a lower rate in the foreign than in the American families.

The whole number of foreigners living in this country, January 1, 1870, was 5,566,546; and their families, parents and children, amounted to 9,734,843 persons. Add to these the grandchildren of the immigrants of the forty years 1790-1830, who came early enough for their children to be born here, grow to maturity, marry and become heads of families, and the whole will not much exceed 10,500,000; whereas if the rates of natural increase were equal for both races from 1790, the American element would have been 21,479,595, and the foreign 11,607,394, in 1870; and these classes severally would have been 19,110,078 and 7,847,373 in 1860, and 15,644,448 and 3,908,620 in 1850, and the numbers in native families would have been 80 per cent in 1850 and 71 per cent in 1860, instead of 36 and 29 per cent as supposed by Mr. Kapp. But the proportion of the whole white population is even more largely American than this.

Edward Jarvis.

