DEPARTMENT OF COMMERCE
BUREAU OF THE CENSUS
WASHINGTON

UNITED STATES ABRIDGED LIFE TABLES

1919-1920

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Illinois.	Massachusetts.	New York,	South Carolina.	Washington.
Indiana.	Michigan.	North Carolina.	Tennessee.	Wisconsin.
Kansas.	Minnesota.	Ohio.		

Aggregate of fourteen cities.

The separate cities of—

Baltimore.	Chicago.	Los Angeles.	Philadelphia.	San Francisco.
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DEPARTMENT OF COMMERCE,
BUREAU OF THE CENSUS,
Washington, D. C., June 30, 1922.

SIR:

I transmit herewith United States Abridged Life Tables, 1919–1920. These life tables, 92 in all, are based on the 1920 enumerated population and on the births and deaths which occurred during the calendar years 1919 and 1920 in 27 registration states, the District of Columbia, and the Territory of Hawaii, and relate to about 74 per cent of the total population of the United States and this Territory.

The preparation of these life tables was approved by the Census Advisory Committee, in order that 1919–1920 life tables might be quickly available as a supplement to the United States Life Tables, 1890, 1901, 1910, and 1901–1910, recently prepared in the Bureau of the Census by James W. Glover, professor of mathematics and insurance in the University of Michigan.

These abridged life tables were prepared under the direction of Dr. William H. Davis, chief statistician for vital statistics. The construction of these life tables was under the immediate supervision of Miss Elbertie Foudray, expert special agent of the Bureau of the Census, who selected the methods used, or devised them when necessary, and submitted methods and text for approval to Prof. James W. Glover, to whom acknowledgment is made. Acknowledgment is also made to Mr. Robert Henderson, actuary of the Equitable Life Assurance Society of the United States, who read the text and made the suggestions mentioned on pages 31, 32, and 34.

Respectfully,

W. M. STEUART,
Director of the Census.

Hon. HERBERT HOOVER,
Secretary of Commerce.

UNITED STATES ABRIDGED LIFE TABLES: 1919-1920.

INTRODUCTION.

GENERAL STATEMENTS.

1. This third official publication on life tables issued by the Bureau of the Census is called *abridged* life tables because of the abridged process of constructing them and because they show life table values, such as rates of mortality and expectations of life, only at every fifth year of age instead of at each year of age.

Four life table functions are shown: Rate of mortality per thousand, number of survivors to each age out of 100,000 born alive, number of deaths in each age interval out of 100,000 born alive, and complete expectation of life in years. Annual rates of mortality are given for the following ages in years: 0, 1, 2, 7, 12, 17, 22, and so on at 5-year intervals up to 92. These rates of mortality are for the midyear of the quinquennial age groups 5-9, 10–14, 15–19, and so on, and represent roughly the average rate for that age group. From these rates the number of survivors out of 100,000 born alive was determined at the exact ages 1, 2, 7, 12, 17, and so on, at each fifth year of age up to age 92. From the survivors the expectation of life in years was derived for these same ages. Then the number of deaths out of 100,000 born alive was determined for age intervals 0–1, 1–2, 2–7, 7–12, and so on for each quinquennial age group up to age 92–97.

Altogether the life tables relate to 74 per cent of the population of the United States, exclusive of outlying possessions, except Hawaii, as enumerated in the census of 1920. The 1910 life tables relate to about 28 per cent of the total population of the United States, of which not more than 2 per cent are Negroes. Under these circumstances, therefore, life tables for total populations and for white populations do not differ much. But in the various states and cities and other groups of population for which 1919–1920 life tables are constructed the per cent of colored population varies from 0.6 in Wisconsin to 51.4 in South Carolina. No true comparisons could be made between aggregate populations because of this varying per cent of colored population. Accordingly all the abridged life tables, except those for Hawaii, are for white or Negro populations and not for the aggregate. All the tables are also shown by sex.

To render comparison easy the values of each life table function are grouped in tables by sex. Thus all the expectations of life at every fifth year of age for white males in 23 states, 14 cities, and in 3 other large groups, and also for 4 groups of Negro males, and for the aggregate males and the Japanese males in Hawaii, are shown in one table.

The order or rank of each value of a function at any age or in any age interval is shown by small figures in a narrow column to the right. Thus in Table 3, page 12, in the column for the age 22 years, the figure 1 in the narrow column to the right of 3.93 shows that the lowest rate of mortality at this age was among Wisconsin white males. Also the 28 in the narrow column to the right of 5.17 in the same age column shows that rates of mortality among 27 male populations were lower than that among New Jersey white males at this age.

Abridged life tables for 1919–1920 were constructed for whites and for Negroes separately in the original registration states, which is the largest area upon which United States life tables have been based heretofore. To show the change in the ten-year period, the life table values for the period 1909–1911 are in italics just below the corresponding ones for 1919–1920. The 1919–1920 rates of mortailty show that there was marked improvement among white males for each age given, except 17, 27, and 92, and among white females for each age given except 17, 22, 27, and 32. See Tables 3 and 4, pages 12 to 15. The values for Negroes at the bottom of these tables show similar fluctuations at the same ages, and also some at ages 52 to 62, 72, and 82. This lack of improvement in adult years was due to the influenza epidemics of 1919 and 1920. Values taken from the life tables for the Japanese Empire for the period 1908–1913 [1] are in italics just below those for the Japanese in Hawaii in 1919–1920. From these values it appears that infant mortality is much lower among the Japanese in Hawaii than in the Japanese Empire. Possibly the desire for American citizenship influences the number of births registered among Japanese in the United States territory and this may be the cause for the differences in infant mortality rates among Japanese in Japan and in the United States. But after age 27 and up to old age mortality rates among Japanese appear to be more favorable in the Empire than in Hawaii. The number of Japanese over 50 years of age in Hawaii is too small to afford reliable life table values.

As the life table functions are shown for each sex separately, Table 11 permits a comparison of the rates of

[1] Résumé Statistique de L'Empire du Japon, Table 14, p. 17.

mortality of the two sexes in each area and age group. This table shows the excess of the rate of mortality among males over that among females in each age group in each area. Differences in bold-faced type indicate that the rate of mortality among females is greater than that among males in that age group and area. Thus, at age 27 it will be noted that the rate of mortality among white females exceeds that among white males by 0.89 in the state of Illinois; by 1.62 in Indiana; by 2.25 in Kentucky; by 2.04 in Michigan. It will also be seen that greater mortality among females than among males is more frequent in 1919–20 than in 1909–1911.

OUTLINE OF CONTENTS.

2. This report on life tables is divided into three parts, abridged life tables, description of the process used in computing them, and the original statistics on which these life tables are based.

In Part I each of the Tables 3 to 10 shows for one sex all the values for one life table function. Table 11 shows the excess of rates of mortality among males over those among females in the same area and age group. Bold-faced figures in any age group indicate that the rate of mortality among females is greater than that among males. Figures in italics in these tables are used for the values taken from the 1909–1911 life tables for whites and Negroes in the original registration states and for the values taken from the life tables for the Japanese Empire for the period 1908–1913 [1] which are given in these tables for the sake of comparison.

Part II includes a full explanation of the method used to compute these 1919–1920 abridged life tables and photographs of the actual computation by this method of an abridged life table for males in the state of New York, 1909–1911. The computation of a life table by the extended method for males in the state of New York, 1909–1911, is shown in Part VII of the United States Life Tables, 1890, 1901, 1910, and 1901–1910, and these computations by the abridged method show not only the differences between the two processes of computation but also the differences between the results obtained by the two methods when applied to the same original data. The photographs are accompanied by a detailed description of the computations shown in them.

In Part III are the three tables of original statistics on which these abridged life tables are based. The first one, Table 16, gives the statistics used which were not compiled in the Bureau of the Census, but were either copied from state reports on vital statistics, or were compiled especially for these life tables through the courtesy of the individual state departments. Discussion of the statistics shown in this table is given at the beginning of Part III, section 44. Table 17 shows the statistics used in obtaining rates of mortality up to 2 years of age. Table 18 shows the statistics used in obtaining the rates of mortality from age 7 to last age in table.

[1] Résumé Statistique de L'Empire du Japon, Table 14, p. 17.

POPULATIONS ON WHICH LIFE TABLES ARE BASED.

3. By means of these abridged life tables it was desired to obtain life table values for all parts of the United States for which reliable death statistics could be obtained, in order to study the varying mortality conditions in the different sections of the country. Accordingly not so much attention was given to the size of the population on which life tables are based as to the reliability of the death statistics available for the calendar years 1919 and 1920, and as to whether any birth statistics were available which could be used to estimate practically the same per cent of the actual number of births in each of these areas from 1916 to 1920. The largest population on which an abridged life table is based is that for aggregate white males, 37,026,026. The smallest populations are those for Hawaii, the Japanese female population in Hawaii being only 46,630. Consequently these last tables are far from smooth, but it is believed that they are reliable up to about 50 years of age. The size of the population and the number of deaths on which each life table is based are shown in Table 18, pages 62 to 71.

Fourteen tables are based on the sum of the populations in a number of states or cities. Six are for whites and eight are for Negroes. The populations on which the life tables for whites are based total 77.09 per cent of the white population of the United States exclusive of outlying possessions, while those on which the life tables for Negroes are based total 46.13 per cent of the Negro population. Four of these tables are for white males and females and for Negro males and females in the original registration states, which include the New England states, New Jersey, New York, Indiana, Michigan, and the District of Columbia. Two life tables for aggregate white males and females include the populations of the original registration states, and California, Illinois, Kansas, Kentucky, Maryland, Minnesota, Missouri, North Carolina, Ohio, Oregon, Pennsylvania, South Carolina, Tennessee, Utah, Virginia, Washington, and Wisconsin. Two life tables are for whites in fourteen large cities: Baltimore, Boston, Buffalo, Chicago, Cleveland, Detroit, Los Angeles, New Orleans, New York, Philadelphia, Pittsburgh, St. Louis, San Francisco, and Washington, D. C. Life tables for Negroes in states with less than 4 per cent Negro population [2] are based on the Negro population in sixteen states: California, Connecticut, Illinois, Indiana, Kansas, Massachusetts, Michigan, Minnesota, New Jersey, New York, Ohio, Oregon, Pennsylvania, Utah, Washington, and Wisconsin. Life tables for Negroes in states with more than 5 per cent Negro population [2] are based on the Negro population in seven states: Kentucky, Mary-

[2] No states for which life tables were computed had between 4 and 5 per cent Negro population.

land, Missouri, North Carolina, South Carolina, Tennessee, and Virginia. Two more life tables for Negroes are based on the Negro population in twelve cities: Baltimore, Boston, Buffalo, Chicago, Cleveland, Detroit, New Orleans, New York, Philadelphia, Pittsburgh, St. Louis, and Washington, D. C.

MORTALITY OF CHILDREN UNDER 3 YEARS OF AGE.

4. A study of the birth statistics available for these life tables showed that the number of births registered ranged from about 75 per cent to practically 100 per cent of the actual number of births. Consequently, unless corrected, it was impossible to use these birth statistics as a basis for comparing mortality under 3 years of age. The method used to obtain the computed number of births for the United States Life Tables, 1890, 1901, 1910, and 1901–1910 could not be used for the 1919–20 tables, since the deaths during the calendar years 1921 to 1923 were, of course, not available at the time the abridged life tables were prepared. Accordingly a method or plan had to be devised whereby the number of births could be determined from the statistics available at the time of the computations of the tables. Census returns for children under 1 year of age are recognized throughout the civilized world as practically always incomplete. Mr. George King says:

> The number of infants alive under one year of age should closely agree with the calculated number derived from the births and deaths, there having been no time for emigration to tell, whereas the number of children alive in each of the succeeding four years of age should progressively be a little less—the difference being an increasing one—than the number calculated from the births and deaths. It is, however, seen that the census returns do not comply with these conditions, and the conclusion seems to be inevitable that a large number of infants under two years of age escaped enumeration at both the censuses of 1901 and 1911, more especially so in 1911, although why that should be it is difficult to understand. Is there any other explanation? This is a matter that is well worthy of investigation before the next census comes to be taken.[1]

It was assumed that the ratio of the actual number of children under 1 year of age to the number obtained from census returns was uniform throughout the United States. To determine approximately the value of this ratio an investigation was made of the children born in Washington, D. C., during the calendar year 1919. The census returns for the District and its death records were searched for the children born there in 1919, and a form letter was sent to the parents of those children whose names did not appear either in the census schedules of January 1, 1920, or on the death records for the District for 1919. Between 500 and 600 answers to these inquiries were received and they were used as a basis for estimating the status on January 1, 1920, of the children whose names were missing from the schedules and about whom it was impossible to obtain definite information. Separate records were kept for white and Negro children, and the per cent of children whose names were missing from the census schedules, but who were actually living in the District on January 1, 1920, was found to be much greater among Negroes than among whites.

It was then assumed that the per cent of infants whose names were missing from the census schedules for the District was constant throughout the United States, and the per cent determined was used to obtain a close approximation to the actual number of children under 1 year of age in each community on January 1, 1920. Different constants were determined for white and Negro children. The constant per cent of infants whose names were missing was taken as 9 for whites and 25 for Negroes. When a close approximation to the number of children under 1 year of age in a community on January 1, 1920, was obtained, the number of births among whites or among Negroes, which occurred in the community during the calendar year 1919 was computed by the method described in section 109, page 340, of the United States Life Tables, 1890, 1901, 1910, and 1901–1910. Next it was necessary to determine the number of births in 1920 and in 1916, 1917, and 1918, as explained in section 8, page 32. Under present birth registration it may be assumed that the ratio between the number of births registered in 1919 and the actual number of births in that year should be very nearly equivalent to similar ratios for the years immediately preceding and following 1919. Accordingly the ratio between the computed number of births, based on corrected census returns for children under 1 year of age, and the number of births registered in 1919 in each area was determined and then this ratio was applied to the number of registered births by sex in each year from 1916 to 1920, inclusive, to determine a close approximation to the actual number of births in that community in each of those years.

Owing to the fluctuations in the birth and death rates since 1916 the populations by single years of age under 3 on January 1, 1919, and January 1, 1921, could not be estimated accurately by the usual methods. The 1920 Birth Statistics for the Birth Registration Area of the United States, page 8, shows the following birth rates from 1916 through 1920 in this area for each year. In 1920 the birth registration area included nearly 60 per cent of the population in the United States.

TABLE I.—BIRTH RATES IN BIRTH REGISTRATION AREA, 1916 TO 1920.

YEAR.	Total.	White.	Colored.
1920	23.7	23.5	27.0
1919	22.3	22.1	25.2
1918	24.6	24.6	24.5
1917	24.7	24.7	24.4
1916	25.0	25.1	20.4

From this table it will be seen that the number of white children at each age under 3 years on January 1, 1919, was probably greater than on January 1, 1920, and the number of children between 1 and 3 years of age

[1] Supplement to the Seventy-fifth Annual Report of the Registrar-General, 1912. England and Wales. Part I. Life Tables. Section 42, page 13.

on January 1, 1920, was probably greater than on January 1, 1921. The number of children at each year of age under 3 years according to the census returns of April 15, 1910, was less than the number at the corresponding age according to the census returns of January 1, 1920. Any form of interpolation between census returns would show a gradual increase in the number of children under 3 instead of the actual fluctuation that occurred, and therefore no interpolation between census returns could be used. The method adopted for determining the populations under 3 on January 1, 1919, and January 1, 1921, is a modification of the method used for determining the number of births for the United States Life Tables of 1890, 1901, 1910. and 1901–1910, section 109, page 340.

METHOD USED IN CONSTRUCTING ABRIDGED LIFE TABLES.

5. In deciding the method to be used for the construction of abridged life tables for the United States various methods were studied closely, and the one set forth by Mr. George King on pages 26 to 33 of the Supplement to the Seventy-fifth Annual Report of the Registrar-General of Births, Deaths and Marriages in England and Wales, Part I, Life Tables, was adopted with some modifications.

The process was shortened and methods for joining life table values at ages under 3 years with those at ages 12 years and over were devised so that expectations of life at birth and at other young ages could be obtained. The method used is explained fully in sections 9 to 13 of Part II, pages 33 to 35.

TABLE 2. LIFE TABLE FUNCTIONS FOR

BY THE EXTENDED AND BY THE ABRIDGED METHODS

EXACT AGE IN YEARS.	$1000q_x$ ANNUAL RATE OF MORTALITY PER THOUSAND AT AGE x.							
	By abridged method applied to 4–8 group.	In column 2 less corresponding rate in column 4.	By extended method applied to 4–8 group.	In column 6 less corresponding rate in column 4.	By abridged method applied to 5–9 group.	In column 6 less corresponding rate in column 8.	By extended method applied to 5–9 group.	In column 8 less corresponding rate in column 4.
1	2	3	4	5	6	7	8	9
0	127.49	+ .36	127.13	+ .36	127.49			
1	34.25	+ .61	33.64	+ .61	34.25			
2			15.56	+ .65	16.21			
6	4.53	+ .08	4.45					
7			3.70	+ .05	3.75			
11	2.30	.00	2.30					
12			2.32	− .04	2.28			
16	3.37	.00	3.37					
17			3.77	+ .11	3.88	−.05	3.93	+ .16
21	5.34	− .08	5.42					
22			5.63	− .16	5.47	−.04	5.51	− .12
26	6.27	+ .04	6.23					
27			6.48	+ .04	6.52	+.04	6.48	.00
31	7.98	+ .03	7.95					
32			8.47	− .01	8.46	+.03	8.43	− .04
36	10.67	− .05	10.72					
37			11.18	.00	11.18	−.07	11.25	+ .07
41	12.98	+ .01	12.97					
42			13.49	− .15	13.34	+.06	13.28	− .21
46	15.98	− .01	15.99					
47			16.70	+ .04	16.74	−.04	16.78	+ .08
51	19.90	+ .08	19.82					
52			20.90	− .01	20.89	+ .07	20.82	− .08
56	27.26	− .12	27.38					
57			29.35	− .35	29.00	−.13	29.13	− .22
61	38.08	− .01	38.09					
62			40.54	+ .02	40.56	+.03	40.53	− .01
66	51.61	+ .16	51.45					
67			54.87	− .19	54.68	+.15	54.53	− .34
71	72.05	− .02	72.07					
72			77.26	− .61	76.65	.00	76.65	− .61
76	103.11	− .44	103.55					
77			111.00	+ .88	111.88	−.84	112.72	+1.72
81	148.20	− .96	149.16					
82			160.89	−3.09	157.80	−.04	157.84	−3.05
86	211.79	+1.36	210.43					
87			221.70	+3.50	225.20			
91	263.46	+ .24	263.22					
92			274.62	+3.83	278.45			

AGE GROUP OF ORIGINAL STATISTICS.

6. At the time it was decided to begin the computation of the abridged life tables population statistics were not available by each single year of age, but only by single years under 5 and the quinquennial age group 5–9, 10–14, and so on up to age 100 years and over. Although it was desired to use the group 4–8, 9–13, and so on up to end of life, to wait for a compilation of populations in the quinquennial age group 4–8, 9–13, and so on, would have delayed the computation of these tables too long.

To show the variations produced in life table functions by applying the abridged process to the original statistics in different age groups, the abridged process was applied to the original statistics for the 1909–1911 New York male life table in the age group 4–8, 9–13, and so on as well as in the age group 5–9,10–14, and so on. The results are shown in Table 2.

To obtain the probability of living from ages 1 to 6 years for column 10 from rates of mortality at these ages, equation (iiia), page 35, with the coefficient of $\Delta^3 u_0$ changed from +1.0 to +1.2, was used. The coefficient +1.2 was derived in the same way as the coefficient +1.0. See section 12, page 34. Where the original statistics for both the extended and the abridged methods are based on the same age group, there is very close agreement. So any difference between several life tables for New York, males, 1909–1911, seems to be almost entirely due to the variation in the age groups of the original statistics from which they were derived.

MALES IN THE STATE OF NEW YORK: 1909–1911. TABLE 2.

WITH ORIGINAL STATISTICS IN GROUPS 4–8 AND 5–9.

l_x NUMBER OF SURVIVORS AT AGE x OUT OF 100,000 BORN ALIVE					$\mathring{e}_x$ COMPLETE EXPECTATION OF LIFE IN YEARS AT AGE x.					EXACT AGE IN YEARS.
Based on rates in column 2 by abridged method.	In column 10 less corresponding number in column 12.	Based on rates in column 4 by extended method.	In column 14 less corresponding number in column 12.	Based on rates in column 6 by abridged method.	Based on l_x in column 10 by abridged method.	In column 15 less corresponding $\mathring{e}_x$ in column 17.	Based on l_x in column 12 by extended method.	In column 19 less corresponding $\mathring{e}_x$ in column 17.	Based on l_x in column 14 by abridged method.	
10	11	12	13	14	15	16	17	18	19	20
100,000	0	100,000	0	100,000	47.87	−.02	47.89	−.08	47.81	0
87,251	− 36	87,287	− 36	87,251	53.79	−.03	53.82	−.10	53.72	1
		84,350	− 87	84,263			54.68	−.07	54.61	2
81,135	−151	81,286			52.69	.00	52.69			6
		80,924	−295	80,629			51.92	+.05	51.97	7
79,812	−152	79,964			48.53	+.01	48.52			11
		79,780	−270	79,510			47.63	+.05	47.68	12
78,796	−154	78,950			44.12	+.01	44.11			16
		78,684	−279	78,405			43.26	+.05	43.31	17
77,170	−134	77,304			40.00	+.01	39.99			21
		76,885	−244	76,641			39.21	+.04	39.25	22
74,988	−119	75,107			36.09	.00	36.09			26
		74,639	−223	74,416			35.31	+.03	35.34	27
72,444	−132	72,576			32.26	.00	32.26			31
		71,999	−233	71,766			31.51	+.04	31.55	32
69,232	−119	69,351			28.64	.00	28.64			36
		68,607	−199	68,408			27.94	+.04	27.98	37
65,314	−106	65,420			25.21	+.01	25.20			41
		64,572	−176	64,396			24.53	+.03	24.56	42
60,833	−104	60,938			21.87	.00	21.87			46
		59,964	−140	59,824			21.22	+.02	21.24	47
55,731	− 73	55,804			18.64	−.01	18.65			51
		54,698	−126	54,572			18.01	+.03	18.04	52
49,720	−102	49,822			15.58	+.01	15.57			56
		48,458	− 88	48,370			15.00	+.02	15.02	57
42,400	− 67	42,467			12.83	.00	12.83			61
		40,849	− 34	40,815			12.31	+.02	12.33	62
34,015	− 38	34,053			10.37	.00	10.37			66
		32,301	− 13	32,288			9.90	+.01	9.91	67
25,085	− 33	25,118			8.17	+.01	8.16			71
		23,307	+ 60	23,367			7.76	−.02	7.74	72
16,220	− 19	16,239			6.28	+.01	6.27			76
		14,557	+ 38	14,595			5.94	−.02	5.92	77
8,565	− 10	8,575			4.74	+.01	4.73			81
		7,296	+ 21	7,317			4.47	−.04	4.43	82
3,299	− 4	3,303			3.64	−.01	3.65			86
		2,608	+ 66	2,674			3.48	−.31	3.17	87
878	− 4	882			2.84	−.07	2.91			91
		650	− 74	576			2.78	−.75	2.03	92

TABLE 3.—Males. $1000q_x$.

ANNUAL RATE OF MORTALITY

No. of life table.	AREA AND COLOR.	EXACT AGE IN YEARS. 0		1		2		7		12		17		22		27		32	
		$1000q_x$	Rank.	$1000q_x$	Rank.	$1000q_x$	Rank.	$1000q_x$	Rank.	$1000q_x$	Rank.	$1000q_x$	Rank.	$1000q_x$	Rank.	$1000q_x$	Rank.	$1000q_x$	Rank.
	WHITE.																		
1	Aggregate [1]	84.33	22	17.59	18	8.45	17	3.01	15	2.20	*14	3.93	22	4.94	20	5.79	19	6.86	19
3	Original registration states [2]	92.43	28	18.80	23	9.06	23	3.32	25	2.25	*21	3.92	21	4.97	21	5.86	20	6.87	20
	Original registration states, 1909–1911	*123.26*	....	*28.21*	....	*12.73*	....	*3.40*	....	*2.29*	....	*3.55*	....	*5.39*	....	*5.82*	....	*7.31*	....
	STATES.																		
5	California	72.77	9	14.89	10	7.52	9	3.13	17	2.77	35	4.80	38	5.87	37	7.22	38	8.39	36
7	Connecticut	94.60	30	16.53	14	9.01	22	3.26	*20	2.22	19	3.88	*19	5.03	23	6.01	23	6.84	18
9	Illinois	84.14	21	19.68	26	9.35	28	3.12	16	2.20	*14	4.05	26	4.63	11	5.49	12	6.58	10
11	Indiana	81.23	19	16.38	13	8.41	16	2.95	13	2.13	10	4.26	29	4.74	13	5.26	6	5.95	3
13	Kansas	67.81	4	13.00	6	6.87	6	2.57	6	2.09	*7	3.71	13	4.22	2	4.92	2	5.81	1
15	Kentucky	69.28	6	17.61	19	8.30	13	2.83	10	2.20	*14	4.35	31	5.50	34	5.65	17	6.18	4
17	Maryland	95.99	33	17.69	20	9.10	24	2.93	12	2.21	*17	3.33	2	5.00	22	6.18	28	7.50	33
19	Massachusetts	98.62	36	19.22	25	9.16	25	3.28	22	2.05	*5	3.37	3	4.24	3	5.64	16	6.31	6
21	Michigan	93.45	29	17.74	21	8.96	20	3.59	30	2.46	31	4.32	30	4.71	12	5.43	*9	6.51	9
23	Minnesota	68.80	5	11.01	2	5.65	*1	2.55	5	2.12	9	3.61	8	4.52	*6	5.25	5	6.62	11
25	Missouri	74.43	12	18.15	22	8.38	15	3.24	19	2.18	12	4.10	28	5.23	29	5.51	13	6.46	8
27	New Jersey	88.13	23	19.72	27	8.88	19	3.31	24	2.14	11	3.58	7	5.17	28	5.99	22	7.08	22
29	New York	92.26	27	20.37	31	9.46	29	3.40	26	2.30	25	3.95	24	5.38	31	6.27	31	7.39	29
31	North Carolina	72.71	8	19.98	28	7.81	10	1.97	1	1.78	1	3.49	5	4.81	16	6.07	24	6.76	16
33	Ohio	80.52	18	15.72	11	7.93	11	2.98	14	2.09	*7	3.94	23	4.52	*6	5.29	7	6.71	14
35	Oregon	62.64	1	10.46	1	5.65	*1	2.62	8	2.53	32	4.71	37	4.56	9	6.28	32	6.78	17
37	Pennsylvania	96.94	34	20.18	29	8.98	21	3.15	18	2.21	*17	3.70	12	5.14	27	6.10	*25	7.31	27
39	South Carolina	74.85	13	20.30	30	9.33	27	2.16	2	1.90	3	3.69	11	5.88	38	5.66	18	7.15	24
41	Tennessee	63.35	3	16.68	15	8.37	14	2.40	4	1.87	2	3.83	*16	4.90	18	5.45	11	6.23	5
43	Utah	73.88	10	12.07	5	6.75	5	2.74	9	2.79	36	4.40	32	5.04	24	7.21	37	9.00	38
45	Virginia	78.02	15	15.96	12	8.81	18	2.22	3	2.00	4	3.77	14	5.37	30	5.54	14	6.91	21
47	Washington	63.11	2	11.16	3	6.03	3	2.87	11	2.40	*28	4.61	34	5.77	35	6.58	33	6.73	15
49	Wisconsin	78.51	17	11.18	4	6.28	4	2.58	7	2.05	*5	3.62	9	3.93	1	4.75	1	5.84	2
	CITIES.																		
51	Aggregate [3]	95.24	*31	22.05	34	10.77	34	3.94	37	2.38	27	3.88	*19	5.11	25	5.96	21	7.40	30
53	Baltimore	103.42	37	21.85	35	11.71	39	3.43	28	2.19	13	2.95	1	4.75	14	6.10	*25	7.43	32
55	Boston	108.69	40	23.18	38	9.90	30	4.29	*38	2.40	*28	3.38	4	4.76	15	6.15	27	7.90	34
57	Buffalo	116.88	42	21.63	33	13.03	43	5.00	42	3.03	38	3.98	25	4.92	19	6.25	30	7.33	28
59	Chicago	98.44	35	23.99	*40	11.29	36	3.81	34	2.28	24	3.79	15	4.59	10	5.22	3	6.64	12
61	Cleveland	92.19	26	19.05	24	10.13	32	3.79	33	2.33	26	3.86	18	4.25	4	5.43	*9	7.25	25
63	Detroit	108.11	38	22.49	36	12.05	40	4.79	40	2.55	33	4.64	36	4.52	*6	5.23	4	6.37	7
65	Los Angeles	77.45	14	17.56	17	8.17	12	3.84	35	3.20	40	4.86	39	5.79	36	7.14	*35	8.43	37
67	New Orleans	74.08	11	14.81	9	9.21	26	3.29	23	3.47	43	4.87	40	5.48	32	7.42	39	11.26	42
69	New York, N. Y.	89.45	25	23.07	37	10.55	33	3.65	*31	2.24	20	3.83	*16	5.49	33	6.21	29	7.41	31
71	Philadelphia	95.24	*31	21.27	32	10.92	35	3.65	*31	2.25	*21	3.53	6	4.83	17	5.62	15	7.11	23
73	Pittsburgh	120.79	43	27.45	43	12.70	42	4.89	41	2.61	34	4.54	33	7.09	40	7.59	40	9.93	41
75	St. Louis	82.57	20	17.17	16	10.07	31	5.61	45	2.25	*21	3.63	10	4.48	5	5.39	8	6.68	13
77	San Francisco	69.70	7	13.14	7	7.48	8	3.55	29	3.06	39	4.63	35	6.12	39	7.06	34	9.58	39
79	Washington, D. C.	78.33	16	13.31	8	7.30	7	4.29	*38	2.41	30	4.09	27	5.13	26	7.14	*35	7.28	26
	NEGROES.																		
81	States with less than 4 per cent Negroes [4]	141.69	44	45.89	44	20.14	45	5.58	44	4.79	44	11.63	45	13.14	46	11.79	45	13.30	44
83	States with more than 5 per cent Negroes [5]	109.19	41	26.21	42	11.70	38	3.41	27	3.28	42	8.28	43	12.24	44	12.47	46	14.32	46
85	Large cities [6]	154.40	46	49.83	46	23.47	46	5.72	46	5.59	46	11.71	46	11.99	43	11.34	42	14.19	45
87	Original registration states [2]	144.95	45	46.91	45	18.25	44	5.44	43	4.92	45	10.88	44	13.04	45	11.73	44	13.13	43
	Original registration states, 1909–1911	*219.56*	....	*66.82*	....	*32.14*	....	*6.22*	....	*5.58*	....	*9.75*	....	*12.47*	....	*12.82*	....	*16.22*	....
	HAWAII.																		
89	Hawaii (all races combined)	108.20	39	23.81	39	12.16	41	3.93	36	3.23	41	7.00	42	9.52	42	11.43	43	9.65	40
91	Japanese in Hawaii	89.10	24	23.99	*40	11.69	37	3.26	*20	2.96	37	6.39	41	8.34	41	8.85	41	8.03	35
	Japanese in Japan, 1908–1913	*160.50*	....	*44.10*	....	*23.57*	....	*4.49*	....	*3.12*	....	*6.82*	....	*9.11*	....	*8.07*	....	*7.74*	....

* Two or more rankings the same.

[1] Statistics for the aggregate tables are a compilation of those for the New England states, New York, New Jersey, Pennsylvania, Maryland, District of Columbia, Virginia, North Carolina, South Carolina, Tennessee, Kentucky, Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Missouri, Kansas, Utah, California, Oregon, and Washington.

[2] The original registration states include New England states, New York, New Jersey, District of Columbia, Indiana, and Michigan.

[3] The 14 cities included in aggregate white in cities are those shown in the table.

PER THOUSAND, 1919–1920. $1000q_x$. **Males.** TABLE 3.

EXACT AGE IN YEARS.																									No. of life table.
37		42		47		52		57		62		67		72		77		82		87		92			
$1000q_x$	Rank.	$1000q_x$	Rank.	$1000q_x$	Rank.	$1000q_x$	Rank.	$1000q_x$	Rank.	$1000q_x$	Rank.	$1000q_x$	Rank.	$1000q_x$	Rank.	$1000q_x$	Rank.	$1000q_x$	Rank.	$1000q_x$	Rank.	$1000q_x$	Rank.		
7.58	16	8.65	17	10.37	15	13.83	16	20.25	16	28.35	17	43.10	14	65.41	18	96.40	17	145.98	21	203.96	26	279.74	28		1
7.70	19	9.05	19	11.05	20	14.85	19	21.88	20	30.45	20	46.15	21	69.26	23	102.13	23	150.84	27	211.97	35	282.91	29		3
9.23	....	*11.04*	....	*13.83*	....	*17.21*	....	*25.08*	....	*35.41*	....	*50.23*	....	*72.30*	....	*108.04*	....	*158.33*	....	*215.45*	....	*282.56*	....		
9.63	37	10.66	33	11.91	25	15.96	26	22.33	21	30.78	21	44.16	15	62.05	14	91.42	10	139.91	14	204.85	29	248.60	13		5
8.11	23	9.62	23	11.02	19	15.51	22	24.17	26	30.12	19	45.75	20	67.30	19	105.34	28	135.73	7	207.77	31	222.37	6		7
7.39	15	8.45	15	10.89	18	14.25	17	20.56	17	28.53	18	44.21	17	64.56	16	93.35	14	141.75	17	204.19	27	269.31	25		9
6.79	8	7.44	7	8.45	6	11.11	5	16.79	7	23.71	6	39.45	9	61.24	13	94.81	16	143.58	19	217.41	38	294.21	35		11
5.68	1	6.30	1	6.75	1	9.44	1	14.40	1	20.66	1	32.95	1	56.04	3	86.00	6	132.69	5	190.19	13	308.31	40		13
6.54	4	7.02	4	8.55	7	10.40	2	16.18	5	23.47	5	35.27	2	60.16	12	83.61	4	139.02	11	175.80	4	302.97	38		15
8.12	24	9.08	20	11.51	23	15.59	25	22.61	22	31.39	23	47.36	24	73.72	28	101.99	22	147.95	22	199.43	20	272.82	26		17
7.25	13	8.56	16	10.73	17	14.73	18	21.36	18	30.97	22	48.57	27	72.75	26	103.20	25	152.03	30	211.55	34	267.28	23		19
6.85	9	7.71	11	9.04	11	11.92	9	18.44	12	26.39	*14	40.70	11	64.98	17	97.05	18	150.11	25	216.80	37	286.94	32		21
6.63	5	7.09	5	8.75	10	11.61	7	17.40	9	25.18	9	36.64	5	58.54	8	82.87	3	139.89	13	172.30	3	253.23	15		23
7.14	12	7.69	10	9.31	12	12.10	10	18.57	13	25.20	10	37.96	7	56.08	4	82.70	1	134.50	6	189.91	12	267.71	24		25
7.64	18	9.38	21	12.15	27	15.52	23	23.50	25	31.77	25	48.29	26	73.99	29	106.14	31	152.37	32	216.65	36	321.75	42		27
8.41	26	10.04	27	12.69	28	17.11	29	24.83	28	34.35	31	50.09	30	73.08	27	105.93	30	156.03	37	206.86	30	291.17	34		29
6.47	3	7.64	8	8.27	5	11.65	8	15.97	2	23.20	2	38.17	8	58.70	9	91.24	9	141.17	16	194.81	17	283.96	31		31
7.28	14	8.19	*13	9.56	13	12.61	13	18.24	11	26.76	16	42.30	13	63.49	15	98.37	19	152.10	31	202.56	23	319.62	41		33
7.83	22	6.96	3	8.71	8	12.24	11	17.74	10	25.55	11	41.45	12	60.12	11	92.66	13	142.61	18	202.75	24	242.92	10		35
8.43	28	9.80	25	11.78	24	15.44	21	22.94	23	31.55	24	47.18	23	72.23	24	104.52	26	154.83	36	219.79	39	298.15	36		37
7.61	17	8.19	*13	9.76	14	13.18	15	19.59	15	26.23	12	44.18	16	72.61	25	92.58	12	131.92	4	203.46	25	244.19	11		39
6.75	7	8.15	12	7.96	3	10.57	3	16.17	4	23.21	3	35.55	4	58.71	10	83.92	5	130.01	2	177.71	6	231.47	8		41
9.52	35	10.13	29	11.29	22	12.89	14	19.41	14	26.39	*14	46.74	22	57.01	6	92.56	11	139.32	12	185.16	8	256.60	17		43
6.70	6	7.31	6	8.04	4	11.13	6	17.10	8	24.39	7	39.67	10	68.49	20	100.05	20	156.77	38	222.57	41	277.58	27		45
6.98	10	7.68	9	8.72	9	12.25	12	16.56	6	26.36	13	37.74	6	58.43	7	94.30	15	124.74	1	201.61	22	230.19	7		47
5.84	2	6.48	2	7.70	2	10.87	4	16.04	3	23.29	4	35.33	3	56.88	5	88.34	7	137.51	9	192.62	14	283.07	30		49
8.71	31	10.60	32	14.05	34	18.71	35	27.91	38	38.18	36	56.15	35	79.29	35	109.02	35	151.79	29	200.51	21	267.00	22		51
8.38	25	11.09	37	14.46	35	18.52	34	26.74	32	36.79	34	56.56	37	82.00	39	108.53	33	153.54	34	188.70	10	218.72	5		53
8.60	30	10.98	36	15.10	38	19.64	36	27.57	35	39.08	38	56.81	38	84.04	41	113.51	41	159.84	40	219.83	40	192.02	1		55
8.91	33	12.42	39	12.84	29	18.36	33	27.98	39	37.96	35	56.45	36	77.61	32	113.15	40	167.69	42	227.28	42	450.71	45		57
7.81	21	9.65	24	13.54	33	17.49	32	25.65	30	35.70	33	52.05	31	74.30	30	101.24	21	140.56	15	182.09	7	265.17	21		59
9.23	34	10.83	35	13.43	32	17.18	30	25.52	29	35.39	32	55.65	34	77.70	33	112.77	39	158.04	39	189.22	11	350.66	44		61
6.99	11	8.83	18	10.62	16	14.91	20	21.56	19	32.57	27	49.04	28	77.32	31	107.50	32	150.26	26	204.26	28	249.56	14		63
9.53	36	10.10	28	12.13	26	16.13	27	23.37	24	31.99	26	47.52	25	55.64	2	82.76	2	130.64	3	194.07	16	248.06	12		65
12.44	41	13.36	41	21.19	45	25.64	43	42.76	45	55.31	45	75.71	45	102.84	46	120.88	43	172.29	44	304.81	45	302.45	37		67
8.83	32	10.57	31	14.88	36	20.16	37	29.65	40	39.70	39	58.79	40	82.38	40	111.20	38	154.52	35	192.86	15	262.05	20		69
8.42	27	10.75	34	12.94	30	17.29	31	27.56	34	38.33	37	54.06	33	80.25	36	108.72	34	149.09	24	186.34	9	259.32	19		71
11.89	40	14.00	42	17.12	42	21.21	39	31.93	41	40.55	41	58.13	39	89.35	44	125.50	45	148.53	23	266.47	44	255.05	16		73
8.49	29	9.60	22	13.05	31	16.74	28	27.68	36	39.95	40	60.93	41	80.79	38	118.62	42	160.44	41	210.57	32	329.81	43		75
10.74	38	12.22	38	15.61	39	22.43	41	33.31	42	44.30	42	62.03	43	78.28	34	125.09	44	171.11	43	232.18	43	259.14	18		77
7.75	20	9.91	26	11.20	21	15.54	24	24.71	27	33.25	29	53.01	32	87.13	42	110.48	37	152.41	33	210.90	33	302.98	39		79
16.07	45	18.59	45	21.02	44	28.01	45	35.30	43	45.89	43	61.95	42	80.50	37	105.51	29	144.30	20	176.91	5	214.24	3		81
14.43	43	15.71	43	16.67	41	22.85	42	27.75	37	33.36	30	45.58	19	68.87	21	89.01	8	138.06	10	166.15	2	236.57	9		83
17.64	46	19.32	46	23.95	46	34.92	46	43.26	46	56.79	46	76.50	46	96.18	45	110.30	36	136.94	8	161.45	1	210.79	2		85
15.25	44	18.01	44	20.94	43	27.35	44	36.40	44	48.71	44	65.70	44	88.89	43	103.06	24	151.27	28	198.34	19	216.98	4		87
18.38	....	*22.47*	....	*26.49*	....	*34.16*	....	*44.17*	....	*55.76*	....	*70.93*	....	*93.94*	....	*124.82*	....	*146.08*	....	*196.74*	....	*201.86*	....		
12.85	42	12.53	40	16.48	40	21.32	40	27.34	33	33.02	28	49.50	29	69.02	22	105.15	27	179.03	45	196.70	18	287.42	33		89
11.25	39	10.56	30	14.99	37	20.24	38	26.25	31	25.13	8	44.40	18	49.81	1	.....	....	.....	....	.....	....	.....	....		91
8.54	....	*10.51*	....	*13.67*	....	*18.61*	....	*26.38*	....	*38.05*	....	*55.44*	....	*80.98*	....	*116.67*	....	*169.00*	....	*244.81*	....	*354.65*	....		

[4] The states with less than 4 per cent Negro population are Connecticut, Massachusetts, New York, Michigan, Wisconsin, Minnesota, Washington, Oregon, California, Utah, Kansas, Illinois, Indiana, Ohio, Pennsylvania, and New Jersey.

[5] The states with more than 5 per cent Negro population are Maryland, Virginia, North Carolina, South Carolina, Tennessee, Kentucky, and Missouri.

[6] The 12 cities included in "large cities" for Negroes are Boston, Buffalo, Detroit, Chicago, St. Louis, New Orleans, Cleveland, Pittsburgh, Philadelphia, New York, Baltimore, and Washington.

TABLE 4. **Females.** $1000q_x$. ANNUAL RATE OF MORTALITY

No. of life table.	AREA AND COLOR.	EXACT AGE IN YEARS. 0		1		2		7		12		17		22		27		32	
		$1000q_x$	Rank.	$1000q_x$	Rank.	$1000q_x$	Rank.	$1000q_x$	Rank.	$1000q_x$	Rank.	$1000q_x$	Rank.	$1000q_x$	Rank.	$1000q_x$	Rank.	$1000q_x$	Rank.
	WHITE.																		
2	Aggregate [1]	67.32	22	15.82	16	7.74	17	2.60	16	1.89	16	3.45	*18	5.42	18	6.53	21	6.97	18
4	Original registration states [2]	73.61	25	16.93	21	8.19	23	2.81	24	1.94	*20	3.47	20	5.37	17	6.61	*24	6.89	17
	Original registration states, 1909–1911	*102.26*	....	*25.83*	....	*11.43*	....	*3.09*	....	*2.02*	....	*3.25*	....	*4.70*	....	*5.54*	....	*6.45*	....
	STATES.																		
6	California	59.67	11	13.54	9	7.14	8	2.78	*22	2.04	24	3.84	33	5.78	27	6.61	*24	7.12	23
8	Connecticut	73.79	27	17.70	28	8.20	24	2.62	18	1.67	4	2.82	2	5.06	5	6.21	9	6.69	11
10	Illinois	66.05	21	17.25	25	8.83	31	2.61	17	1.91	*18	3.45	*18	5.13	7	6.38	*14	6.49	*5
12	Indiana	64.88	18	14.80	13	7.41	12	2.45	13	2.10	29	4.15	38	6.34	36	6.88	31	7.59	31
14	Kansas	53.98	6	12.47	8	6.19	6	2.10	5	1.94	*20	3.00	3	4.47	2	5.71	2	6.66	10
16	Kentucky	56.47	7	16.94	*22	8.03	20	2.67	19	2.13	30	4.36	39	7.04	39	7.90	38	8.25	37
18	Maryland	79.26	36	17.80	30	8.12	22	2.43	12	1.88	15	3.32	12	6.03	32	6.78	29	7.40	29
20	Massachusetts	78.26	34	17.55	27	7.96	19	2.78	*22	1.74	8	3.06	*4	4.79	4	5.99	4	6.64	9
22	Michigan	74.58	28	16.37	*18	8.39	26	3.19	31	2.21	*32	4.01	37	6.11	34	7.47	36	7.37	27
24	Minnesota	53.15	4	9.75	3	4.73	2	2.26	9	1.79	10	3.13	*6	5.08	6	6.33	13	6.74	*12
26	Missouri	56.75	8	15.87	17	7.92	18	2.85	25	2.02	23	3.49	21	5.66	*24	6.46	*16	7.01	*20
28	New Jersey	70.84	23	16.94	*22	7.70	16	2.76	21	1.85	*12	3.33	13	5.15	*8	6.81	30	6.51	7
30	New York	73.78	26	17.99	31	8.75	30	2.88	26	1.98	22	3.43	*16	5.28	14	6.60	23	6.74	*12
32	North Carolina	60.29	13	17.43	26	7.16	9	1.83	*1	1.47	2	3.50	22	5.61	23	7.03	32	8.12	35
34	Ohio	65.42	20	14.48	12	7.34	11	2.49	*14	1.73	7	3.43	*16	5.34	16	6.18	8	7.01	*20
36	Oregon	45.30	1	7.86	1	5.73	4	2.03	3	2.09	28	3.64	27	5.79	28	6.38	*14	6.54	8
38	Pennsylvania	78.33	35	17.74	29	8.40	27	2.71	20	1.91	*18	3.31	11	5.49	21	6.54	22	7.26	26
40	South Carolina	60.71	14	18.50	32	8.05	21	2.04	4	1.44	1	3.15	*8	5.44	19	6.48	18	8.23	36
42	Tennessee	53.68	5	15.16	14	7.17	10	2.33	10	1.77	9	3.85	34	6.07	33	7.44	35	7.78	34
44	Utah	57.81	9	10.14	5	6.55	7	1.83	*1	2.46	38	3.73	30	5.73	26	7.19	33	9.12	39
46	Virginia	60.05	12	15.18	15	8.44	28	2.20	7	1.58	3	3.06	*4	5.29	15	6.14	7	6.85	15
48	Washington	49.90	2	9.31	2	4.70	1	2.49	*14	2.16	31	3.82	32	5.16	*10	6.10	6	6.06	3
50	Wisconsin	59.59	10	10.00	4	5.55	3	2.25	8	1.72	6	2.80	1	4.64	3	5.78	3	5.98	2
	CITIES.																		
52	Aggregate [3]	75.84	31	19.63	34	9.45	33	3.28	32	2.07	27	3.59	25	5.48	20	6.68	27	6.98	19
54	Baltimore	83.60	37	22.44	39	10.53	40	2.41	11	2.05	*25	3.34	14	6.15	35	6.52	20	6.86	16
56	Boston	86.69	38	19.62	33	8.21	25	3.94	38	2.30	36	3.16	10	5.99	31	7.41	34	7.65	33
58	Buffalo	94.13	41	19.97	35	10.81	42	4.53	43	2.58	39	3.72	29	5.86	30	6.49	19	7.38	28
60	Chicago	76.92	32	21.37	38	9.74	36	3.00	*27	1.90	17	3.56	24	5.15	*8	6.29	*10	6.43	4
62	Cleveland	74.76	*29	16.88	20	7.61	*14	3.42	34	1.70	5	3.70	28	5.16	*10	6.29	*10	7.13	24
64	Detroit	86.76	39	21.00	37	10.34	39	4.13	40	2.28	34	4.55	40	6.42	37	7.63	37	7.62	32
66	Los Angeles	65.40	19	14.38	11	7.61	*14	3.31	33	2.37	37	3.92	35	5.66	*24	6.30	12	7.07	22
68	New Orleans	62.64	17	13.91	10	8.51	29	2.11	6	1.85	*12	3.77	31	6.93	38	9.94	40	8.57	38
70	New York, N. Y.	71.60	24	20.59	36	9.64	35	3.03	29	2.05	*25	3.52	23	5.21	13	6.65	26	6.76	14
72	Philadelphia	74.76	*29	17.21	24	9.52	34	3.15	30	1.85	*12	3.61	26	5.84	29	6.73	28	7.21	25
74	Pittsburgh	97.33	43	24.42	43	10.79	41	3.89	37	2.92	40	3.97	36	7.38	40	8.62	39	9.53	40
76	St. Louis	62.26	16	16.37	*18	9.12	32	4.52	42	2.29	35	3.37	15	5.16	*10	6.07	5	6.49	*5
78	San Francisco	52.81	3	11.76	7	7.53	13	3.84	36	2.21	*32	3.15	*8	5.50	22	6.46	*16	7.55	30
80	Washington, D. C.	61.83	15	10.98	6	5.85	5	3.00	*27	1.82	11	3.13	*6	3.14	1	4.21	1	4.79	1
	NEGROES.																		
82	States with less than 4 per cent Negroes [4]	114.80	44	43.54	44	16.63	45	5.22	44	5.20	46	10.79	45	11.79	45	11.50	42	12.63	42
84	States with more than 5 per cent Negroes [5]	89.08	40	22.91	40	10.95	43	3.76	35	3.90	43	10.06	43	13.65	46	14.92	45	16.50	46
86	Large cities [6]	126.44	46	45.58	46	18.98	46	5.72	45	5.14	45	11.79	46	11.78	44	12.28	43	13.24	43
88	Original registration states [2]	120.35	45	44.01	45	16.15	44	5.73	46	4.86	44	10.76	44	10.72	41	11.40	41	12.53	41
	Original registration states, 1909–1911	*155.07*	....	*58.84*	....	*24.50*	....	*5.84*	....	*6.41*	....	*10.62*	....	*10.56*	....	*10.26*	....	*13.12*	....
	HAWAII.																		
90	Hawaii (all races combined)	96.95	42	24.30	42	9.79	37	4.06	39	3.36	42	9.96	42	11.10	43	15.15	46	15.22	45
92	Japanese in Hawaii	77.11	33	23.41	41	10.24	38	4.34	41	3.14	41	8.84	41	10.78	42	13.47	44	13.69	44
	Japanese in Japan, 1908–1913	*145.04*	....	*43.70*	....	*23.86*	....	*4.86*	....	*4.75*	....	*9.45*	....	*10.78*	....	*10.01*	....	*9.89*	....

* Two or more rankings the same.

[1] Statistics for the aggregate tables are a compilation of those for the New England states, New York, New Jersey, Pennsylvania, Maryland, District of Columbia, Virginia, North Carolina, South Carolina, Tennessee, Kentucky, Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Missouri, Kansas, Utah, California, Oregon, and Washington.

[2] The original registration states include New England states, New York, New Jersey, District of Columbia, Indiana, and Michigan.

[3] The 14 cities included in aggregate white in cities are those shown in the table.

PER THOUSAND, 1919–1920. $1000q_x$. **Females.** TABLE 4.

EXACT AGE IN YEARS.																								No. of life table.
37		42		47		52		57		62		67		72		77		82		87		92		
$1000q_x$	Rank.	$1000q_x$	Rank.	$1000q_x$	Rank.	$1000q_x$	Rank.	$1000q_x$	Rank.	$1000q_x$	Rank.	$1000q_x$	Rank.	$1000q_x$	Rank.	$1000q_x$	Rank.	$1000q_x$	Rank.	$1000q_x$	Rank.	$1000q_x$	Rank.	
7.02	21	7.55	15	9.30	20	12.40	20	17.85	20	25.26	18	39.37	19	60.09	18	90.10	18	135.79	22	191.03	28	271.33	24	2
6.91	17	7.81	22	9.96	27	13.36	24	19.26	23	27.54	26	43.05	25	64.02	26	94.60	27	139.37	27	196.00	33	273.19	27	4
7.50	....	*8.60*	....	*10.94*	....	*14.15*	....	*21.03*	....	*29.97*	....	*44.19*	....	*66.33*	....	*96.09*	....	*149.10*	....	*202.11*	....	*282.82*	....	
7.01	20	7.53	14	9.23	*15	11.96	15	16.00	10	23.45	13	34.48	7	53.01	8	83.67	12	127.07	9	173.13	10	266.19	19	6
6.85	15	7.71	19	9.25	*17	13.47	27	19.58	*25	29.06	31	43.02	24	62.86	23	86.21	15	132.60	16	190.95	27	250.84	12	8
6.68	9	7.28	10	9.04	14	12.44	21	17.76	19	23.96	15	39.36	18	58.76	15	85.34	14	131.26	15	191.45	29	270.53	23	10
7.14	25	7.49	13	9.23	*15	11.32	11	15.47	7	22.80	10	36.34	13	56.96	13	93.05	23	137.98	25	199.09	37	276.88	29	12
6.38	4	6.59	3	7.22	1	9.64	1	14.20	2	19.53	2	30.35	1	50.11	1	74.04	1	129.99	11	169.72	8	267.19	20	14
7.55	32	7.37	11	8.89	12	10.57	3	16.47	15	22.77	9	34.43	*5	56.28	12	84.74	13	130.47	13	190.16	25	251.18	13	16
7.18	26	7.79	21	9.84	*24	12.83	22	19.66	*27	26.04	20	38.97	17	69.61	33	101.34	36	140.12	29	205.56	42	287.06	32	18
6.79	*13	7.67	18	9.84	*24	13.49	28	18.35	21	27.45	24	42.76	23	63.23	24	91.43	21	140.90	32	190.44	26	268.50	21	20
7.41	31	7.87	23	9.85	26	12.33	19	17.17	18	25.04	17	38.96	16	59.57	16	93.83	25	142.22	35	202.65	41	298.83	36	22
6.78	12	6.86	4	8.42	7	10 75	4	16.22	12	20.76	3	32.76	3	50.36	2	80.02	4	115.76	3	183.84	18	240.94	7	24
6.95	18	7.08	7	8.28	5	10.79	6	15.25	5	21.20	5	35.20	9	52.09	7	81.82	8	121.43	6	173.36	11	243.57	8	26
6.58	7	7.60	17	9.69	*22	13.63	29	19.83	30	29.31	32	46.23	29	65 14	29	101.81	38	139.00	26	191.61	30	289.77	34	28
6.73	10	8.11	26	10.66	29	14.40	32	21.42	33	29.64	33	46.70	31	69.40	32	98.63	33	140.30	31	199.05	36	269.94	22	30
9.07	37	8.34	29	8.98	13	11.25	10	15.33	6	21.50	6	35.67	*10	61.46	21	91.08	19	139.73	28	165.70	7	254.32	14	32
6.74	11	7.04	6	8.68	*9	11.24	9	16.25	13	23.87	14	36.96	14	58.42	14	89.31	17	135.99	23	194.76	32	285.34	31	34
7.06	22	7.14	9	8.68	*9	10.99	8	15.64	9	22.87	11	34.24	4	51.55	4	82.73	11	133.27	19	181.98	17	376.70	43	36
7.28	28	7.95	25	9.69	*22	13.40	25	19.73	29	27.95	27	42.22	22	64.00	25	95.64	28	143.76	37	197.31	34	290.88	35	38
8.84	36	7.76	20	8.73	11	12.18	17	17.08	17	26.00	19	39.73	20	59.99	17	86.75	16	135.49	21	188.37	22	264.01	17	40
8.15	34	8.63	34	9.25	*17	10.95	7	15.60	8	21.13	4	35.68	12	53.71	9	82.23	10	132.95	17	176.21	12	210.53	4	42
9.33	38	8.50	31	7.74	3	11.33	12	14.84	3	19.29	1	35.67	*10	55.01	10	80.11	*5	145.49	38	170.46	9	339.60	41	44
7.91	33	7.02	5	8.31	6	11.92	14	16.16	11	24.01	16	37.08	15	60.73	19	93.12	24	141.29	33	200.20	38	271.68	25	46
6.55	5	7.11	8	8.45	8	10.77	5	16.37	14	21.87	8	34.43	*5	51.71	6	80.70	7	127.56	10	181.28	15	273.09	26	48
5.93	2	6.18	1	7.46	2	10.21	2	15.03	4	21.69	7	31.93	2	51.57	5	82.19	9	130.36	12	189.51	24	257.26	16	50
7.11	23	8.52	32	11.30	34	14.98	36	22.40	37	30.76	35	48.57	36	70.44	35	98.34	32	140.14	30	186.30	20	275.10	28	52
6.79	*13	9.09	37	11.25	33	13.86	30	23.18	38	27.14	22	43.80	26	72.86	38	103.30	41	131.21	14	210.72	43	287.86	33	54
8.68	35	9.51	39	12.51	38	16 32	39	21.97	36	32.76	37	51.08	39	70 26	34	94.53	26	153.89	42	187.28	21	246.54	10	56
6.57	6	8.16	27	11.44	35	13.44	26	20.47	31	30.72	34	48.51	35	81.34	45	103.82	42	154.79	43	221.70	44	247.12	11	58
6.65	8	8.17	28	10.26	28	14.63	34	21.74	35	28.79	29	46.51	30	66.87	30	91.36	20	133.26	18	185.23	19	265.99	18	60
7.19	27	7.94	24	10.72	30	14.76	35	20.48	32	27.18	23	44.90	27	64.93	28	106.38	44	142.82	36	181.69	16	335.08	39	62
7.33	30	8.87	36	11.73	36	13.35	23	19.58	*25	28.94	30	45.41	28	66.88	31	99.27	34	147.91	39	188.44	23	314.62	38	64
6.98	19	7.41	12	9.47	21	12.07	16	16.71	16	23.11	12	35.00	8	50.51	3	80.11	*5	121.64	7	149.72	4	235.75	6	66
9.95	39	10.71	40	12.81	40	18.00	42	24.35	40	35.20	41	51.65	40	73.20	39	97.72	31	158.69	45	194.36	31	393.87	44	68
6.87	16	8.60	33	11.75	37	15.75	38	24.41	41	32.92	38	53.86	41	77.04	41	103.10	40	136.26	24	177.80	13	255.70	15	70
7.12	24	8.48	30	11.19	31	15.12	37	23.41	39	32.17	36	47.16	32	71.69	37	100.28	35	142.06	34	178.44	14	284.89	30	72
10.74	40	10.84	41	13.03	41	17.51	40	25.17	42	35.25	42	54.64	42	74.57	40	106.82	45	152.13	40	227.77	45	369.14	42	74
7.28	*28	7.56	16	11.21	32	14.46	33	19 40	24	27.00	21	48.06	34	64.07	27	101.43	37	133.76	20	197.98	35	229.39	5	76
6.26	3	8.76	35	12.52	39	14.26	31	21.53	34	34.22	39	47.48	33	70.80	36	102.69	39	152.52	41	202.63	40	336.75	40	78
4.99	1	6.55	2	7.96	4	11.83	13	18.90	22	28.16	28	40.70	21	55.93	11	78.23	2	157.32	44	201.37	39	300.72	37	80
14.10	42	16.83	43	20.70	44	28.09	44	40.53	44	46.20	44	58.81	43	78.99	43	92.33	22	127.00	8	153.09	6	246 08	9	82
16.17	46	18.58	45	20.90	45	26.28	43	33.09	43	38.19	43	49.80	37	62.69	22	79.50	3	113.83	2	150.45	5	175.45	2	84
15.25	44	19.03	46	24.52	46	35.08	46	47.65	46	53.33	46	66.46	45	77.69	42	97.51	30	120.27	4	126.83	1	151.55	1	86
14.31	43	17.15	44	20.27	43	28.66	45	41.47	45	50.21	45	59.97	44	80.19	44	95.88	29	120.71	5	146.70	3	188.85	3	88
15.07	....	*19.03*	....	*23.13*	....	*27.82*	....	*40.30*	....	*49.98*	....	*66.54*	....	*75.74*	....	*98.44*	....	*136.81*	....	*169.98*	....	*176.82*	....	
15.42	45	12.67	42	14.37	42	17.84	41	19.66	*27	34.44	40	50.22	38	60.95	20	105.00	43	101.29	1	137.10	2	411.45	45	90
11.33	41	9.29	38	9.28	19	12.32	19	7.00	1	27.53	25	.....	....	.....	....	.....	....	.....	....	.....	....	.....	....	92
10.46	....	*10.63*	....	*11.29*	....	*14.56*	....	*19.90*	....	*28.60*	....	*45.34*	....	*60 88*	....	*98.26*	....	*145.79*	....	*216.91*	....	*322.73*	....	

[4] The states with less than 4 per cent Negro population are Connecticut, Massachusetts, New York, Michigan, Wisconsin, Minnesota, Washington, Oregon, California, Utah, Kansas, Illinois, Indiana, Ohio, Pennsylvania, and New Jersey.

[5] The states with more than 5 per cent Negro population are Maryland, Virginia, North Carolina, South Carolina, Tennessee, Kentucky, and Missouri.

[6] The 12 cities included in "large cities" for Negroes are Boston, Buffalo, Detroit, Chicago, St. Louis, New Orleans, Cleveland, Pittsburgh, Philadelphia, New York, Baltimore, and Washington.

TABLE 5. **Males.** l_x. NUMBER OF SURVIVORS OUT OF

No. of life table.	AREA AND COLOR.	EXACT AGE IN YEARS.															
		0	1		2		7		12		17		22		27		32	
		l_x	l_x	Rank.	l_x	Rank.	l_x	Rank.	l_x	Rank.	l_x	Rank.	l_x	Rank.	l_x	Rank.	l_x	Rank.
	WHITE.																	
1	Aggregate [1]	100,000	91,567	22	89,957	21	87,515	20	86,490	20	85,280	19	83,434	19	81,255	17	78,757	15
3	Original registration states [2]	100,000	90,757	28	89,050	25	86,411	24	85,321	25	84,121	25	82,299	25	80,129	26	77,650	24
	Original registration states, 1909–1911	*100,000*	*87,674*	....	*85,201*	....	*82,251*	....	*81,140*	....	*80,068*	....	*78,316*	....	*76,189*	....	*73,801*	....
	STATES.																	
5	California	100,000	92,723	9	91,342	9	89,033	9	87,856	11	86,320	13	84,076	14	81,419	16	78,337	17
7	Connecticut	100,000	90,541	30	89,044	27	86,433	23	85,358	23	84,172	24	82,351	24	80,136	25	77,631	25
9	Illinois	100,000	91,586	21	89,784	22	87,156	21	86,130	21	84,896	21	83,077	20	81,040	18	78,665	16
11	Indiana	100,000	91,877	19	90,372	19	87,907	19	86,944	17	85,676	16	83,758	16	81,711	14	79,479	12
13	Kansas	100,000	93,219	4	92,007	5	89,957	4	89,024	4	87,829	5	86,108	3	84,195	2	81,985	1
15	Kentucky	100,000	93,072	6	91,433	8	89,029	10	88,054	9	86,747	9	84,648	10	82,311	10	79,931	8
17	Maryland	100,000	90,401	33	88,802	31	86,398	25	85,347	24	84,260	23	82,592	23	80,353	22	77,685	22
19	Massachusetts	100,000	90,138	36	88,405	35	85,778	33	84,726	32	83,675	29	82,133	26	80,178	23	77,832	21
21	Michigan	100,000	90,655	29	89,046	26	86,311	26	85,142	26	83,811	27	81,932	30	79,915	29	77,593	27
23	Minnesota	100,000	93,121	5	92,095	4	90,246	3	89,290	3	88,107	2	86,357	1	84,308	1	81,881	2
25	Missouri	100,000	92,557	12	90,877	13	88,284	15	87,216	15	85,975	14	84,009	15	81,787	13	79,414	13
27	New Jersey	100,000	91,187	23	89,389	23	86,765	22	85,670	22	84,559	22	82,783	21	80,526	21	77,968	20
29	New York	100,000	90,774	27	88,925	29	86,206	28	85,082	27	83,871	26	81,979	27	79,650	31	77,011	32
31	North Carolina	100,000	92,730	8	90,876	14	88,947	11	88,218	8	87,163	6	85,417	7	83,160	7	80,528	6
33	Ohio	100,000	91,948	18	90,503	18	88,102	16	87,116	16	85,915	15	84,120	13	82,123	11	79,743	10
35	Oregon	100,000	93,736	1	92,756	1	90,885	1	89,882	1	88,362	1	86,317	2	84,085	3	81,384	5
37	Pennsylvania	100,000	90,307	34	88,484	33	85,960	30	84,900	28	83,756	28	81,971	29	79,729	30	77,142	29
39	South Carolina	100,000	92,515	13	90,637	16	88,422	14	87,617	13	86,519	11	84,529	11	82,097	12	79,571	11
41	Tennessee	100,000	93,665	3	92,102	3	89,845	5	89,015	5	87,868	4	85,989	4	83,803	4	81,415	4
43	Utah	100,000	92,612	10	91,494	7	89,534	6	88,405	6	86,906	8	84,910	8	82,451	8	79,207	14
45	Virginia	100,000	92,198	15	90,727	15	88,576	13	87,743	12	86,591	10	84,670	9	82,389	9	79,905	9
47	Washington	100,000	93,689	2	92,644	2	90,559	2	89,514	2	88,082	3	85,846	5	83,247	6	80,511	7
49	Wisconsin	100,000	92,149	17	91,118	11	89,163	8	88,248	7	87,088	7	85,459	6	83,670	5	81,510	3
	CITIES.																	
51	Aggregate [3]	100,000	90,476	*31	88,481	34	85,355	35	84,109	35	82,909	35	81,103	35	78,920	35	76,382	36
53	Baltimore	100,000	89,659	37	87,699	37	84,744	37	83,589	37	82,601	36	81,106	34	78,977	34	76,387	35
55	Boston	100,000	89,131	40	87,064	39	83,981	38	82,643	38	81,550	38	79,967	38	77,869	37	75,227	37
57	Buffalo	100,000	88,312	42	86,402	42	82,706	42	81,120	42	79,793	42	78,077	40	75,975	40	73,476	39
59	Chicago	100,000	90,156	35	87,994	36	84,853	36	83,671	36	82,510	37	80,813	36	78,885	36	76,637	34
61	Cleveland	100,000	90,781	26	89,052	24	86,055	29	84,857	29	83,646	30	81,973	28	80,079	27	77,657	23
63	Detroit	100,000	89,189	38	87,183	38	83,496	41	82,133	41	80,787	39	78,928	39	77,070	38	74,902	38
65	Los Angeles	100,000	92,255	14	90,636	17	88,010	18	86,577	19	84,945	20	82,741	22	80,162	24	77,137	30
67	New Orleans	100,000	92,592	11	91,221	10	88,794	12	87,388	14	85,648	17	83,491	18	80,965	20	77,391	28
69	New York, N. Y.	100,000	91,055	25	88,955	28	85,949	31	84,783	31	83,622	31	81,746	32	79,405	33	76,796	33
71	Philadelphia	100,000	90,476	*31	88,552	32	85,536	34	84,357	34	83,245	33	81,566	33	79,493	32	77,061	31
73	Pittsburgh	100,000	87,921	43	85,508	43	81,783	43	80,364	43	79,091	43	76,894	42	74,129	41	71,045	41
75	St. Louis	100,000	91,743	20	90,168	20	86,218	27	84,646	33	83,537	32	81,884	31	79,928	28	77,610	26
77	San Francisco	100,000	93,030	7	91,808	6	89,377	7	87,999	10	86,423	12	84,179	12	81,498	15	78,267	18
79	Washington, D. C.	100,000	92,168	16	90,940	12	88,027	17	86,676	18	85,397	18	83,496	17	81,035	19	78,137	19
	NEGROES.																	
81	States with less than 4 per cent Negroes [4]	100,000	85,832	44	81,893	44	77,093	45	75,513	44	72,745	45	68,290	45	64,095	45	60,271	45
83	States with more than 5 per cent Negroes [5]	100,000	89,081	41	86,746	41	83,695	40	82,572	39	80,481	41	76,514	43	71,880	43	67,255	43
85	Large cities [6]	100,000	84,560	46	80,346	46	75,364	46	73,617	46	70,711	46	66,537	46	62,758	46	58,988	46
87	Orlginal registration states [2]	100,000	85,505	45	81,494	45	77,109	44	75,465	45	72,789	44	68,514	44	64,323	44	60,509	44
	Original registration states, 1909–1911	*100,000*	*78,065*	....	*72,849*	....	*67,610*	....	*65,701*	....	*63,405*	....	*59,940*	....	*56,321*	....	*52,427*	....
	HAWAII.																	
89	Hawaii (all races combined)	100,000	89,180	39	87,057	40	83,771	39	82,497	40	80,614	40	77,409	41	73,446	42	69,612	42
91	Japanese in Hawaii	100,000	91,090	24	88,905	30	85,924	32	84,798	30	83,013	34	80,033	37	76,631	39	73,462	40

* Two or more rankings the same.

[1] Statistics for the aggregate tables are a compilation of those for the New England states, New York, New Jersey, Pennsylvania, Maryland, District of Columbia, Virginia, North Carolina, South Carolina, Tennessee, Kentucky, Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Missouri, Kansas, Utah, California, Oregon, and Washington.

[2] The original registration states include New England states, New York, New Jersey, District of Columbia, Indiana, and Michigan.

[3] The 14 cities included in aggregate white in cities are those shown in the table.

100,000 MALES BORN ALIVE, 1919–1920. l_x. **Males.** TABLE 5.

EXACT AGE IN YEARS.																						No. of life table.
37		42		47		52		57		62		67		72		77		82		87		92		
l_x	Rank.	l_x	Rank.	l_x	Rank.	l_x	Rank.	l_x	Rank.	l_x	Rank.	l_x	Rank.	l_x	Rank.	l_x	Rank.	l_x	Rank.	l_x	Rank.	l_x	Rank.	
75,982	15	73,003	15	69,690	15	65,751	15	60,590	15	53,892	15	45,406	15	34,879	15	23,401	15	12,685	16	5,051	12	1,348	5	1
74,899	22	71,879	21	68,441	20	64,311	19	58,886	19	51,896	19	43,170	19	32,583	18	21,311	20	11,242	21	4,224	19	924	13	3
70,858	....	*67,422*	....	*63,440*	....	*58,827*	....	*53,158*	....	*45,916*	....	*37,241*	....	*27,590*	....	*17,622*	....	*8,962*	....	*3,317*	....	*829*	....	
74,918	21	71,231	25	67,384	25	63,012	26	57,444	25	50,503	24	42,097	22	32,458	19	22,270	19	12,501	18	4,998	13	1,160	7	5
74,832	23	71,629	22	68,096	23	63,936	22	58,111	23	50,870	22	42,403	20	32,215	21	20,971	21	11,320	20	4,822	14	965	12	7
75,986	14	73,088	14	69,742	14	65,631	16	60,364	16	53,631	16	45,039	16	34,515	17	23,379	16	13,017	15	5,072	11	1,028	10	9
77,010	10	74,337	10	71,497	10	68,225	10	63,837	10	57,955	9	49,917	8	39,145	8	26,707	10	14,686	9	5,759	8	1,290	6	11
79,647	1	77,323	1	74,882	1	72,063	1	68,088	1	62,618	1	55,201	1	44,658	1	31,559	1	18,374	1	7,587	1	1,616	1	13
77,435	8	74,882	8	72,089	7	68,863	7	64,668	5	58,798	6	51,153	4	40,676	4	28,563	5	16,841	5	5,899	7	496	30	15
74,715	25	71,618	23	68,134	22	63,833	23	58,228	22	51,104	20	42,307	21	31,472	22	20,269	23	10,789	23	4,105	20	880	16	17
75,275	18	72,411	16	69,098	17	65,002	17	59,614	17	52,588	18	43,454	18	32,275	20	20,820	22	10,960	22	3,987	22	711	20	19
75,045	20	72,399	17	69,493	16	66,092	14	61,491	14	55,215	14	47,059	13	36,467	13	24,475	13	13,240	13	4,774	15	771	17	21
79,191	2	76,555	3	73,668	3	70,153	3	65,466	4	59,090	4	50,953	5	40,493	5	28,657	4	16,865	4	5,944	6	562	29	23
76,772	12	74,003	12	71,001	11	67,443	11	62,683	11	56,381	11	48,454	11	38,559	*10	27,502	7	16,207	6	6,375	5	1,093	9	25
75,173	19	72,125	18	68,444	19	64,015	21	58,304	21	50,987	21	42,078	23	31,215	24	19,906	25	10,304	25	3,921	23	903	15	27
74,061	30	70,789	29	66,986	28	62,347	28	56,359	29	48,819	28	39,782	28	29,412	27	18,849	27	9,710	28	3,502	27	700	21	29
77,895	6	75,245	6	72,357	6	68,994	6	64,551	6	58,816	5	50,855	6	40,253	6	27,971	6	15,471	8	5,571	9	919	14	31
77,008	11	74,121	11	70,971	12	67,286	12	62,502	12	56,137	12	47,594	12	36,826	12	24,841	12	13,045	14	4,226	18	564	28	33
78,473	5	75,591	5	72,804	5	69,246	5	64,444	7	58,120	7	49,528	9	38,679	9	26,764	9	14,397	10	4,389	17	421	33	35
74,199	28	70,940	27	67,293	26	63,024	25	57,481	24	50,372	25	41,686	24	31,157	25	20,077	24	10,451	24	3,731	25	651	24	37
76,681	13	73,737	13	70,582	13	66,808	13	61,752	13	55,313	13	46,879	14	35,230	14	23,203	17	13,401	12	5,253	10	649	25	39
78,839	4	75,989	4	72,988	4	69,843	4	65,542	3	59,635	3	51,875	3	41,351	3	29,100	3	17,279	2	6,986	3	1,126	8	41
75,609	16	72,000	20	68,280	21	64,373	18	59,602	18	53,427	17	44,840	17	34,660	16	24,383	14	12,606	17	3,201	30	221	36	43
77,203	9	74,575	9	71,819	9	68,621	8	64,161	8	58,103	8	49,988	7	38,559	*10	25,418	11	13,507	11	4,434	16	465	31	45
77,806	7	75,033	7	72,086	8	68,552	9	63,977	9	57,770	10	49,489	10	39,304	7	26,981	8	15,520	7	6,990	2	1,425	3	47
79,151	3	76,786	2	74,185	2	70,976	2	66,557	2	60,573	2	52,680	2	42,246	2	29,649	2	16,920	3	6,811	4	1,497	2	49
73,410	35	70,031	35	65,973	34	60,959	33	54,493	34	46,395	34	36,880	35	26,360	35	16,412	32	8,431	33	3,205	29	742	19	51
73,470	34	70,093	34	65,860	35	60,790	35	54,511	33	46,739	33	37,303	34	26,444	33	16,338	33	8,445	32	3,009	32	461	32	53
72,209	38	68,872	37	64,661	37	59,421	37	53,022	36	45,116	36	35,736	37	25,228	37	15,310	39	7,657	37	2,637	34	402	34	55
70,633	39	67,050	39	62,962	39	58,474	38	52,309	38	44,547	38	35,400	38	25,401	36	15,886	36	7,525	38	1,920	40	139	40	57
73,958	31	70,890	28	67,033	27	62,169	29	56,048	31	48,294	30	39,018	29	28,553	29	18,373	28	9,951	26	4,060	21	991	11	59
74,581	26	70,981	26	66,896	29	62,123	32	56,076	30	48,406	29	38,850	30	27,929	30	17,472	30	8,308	34	2,120	39	149	39	61
72,467	37	69,727	36	66,495	32	62,554	27	57,327	26	50,363	26	41,394	25	30,404	26	19,096	26	9,935	27	3,718	26	696	22	63
73,765	33	70,250	33	66,548	31	62,168	30	56,527	28	49,429	27	40,673	27	31,425	23	22,774	18	12,320	19	2,542	35	53	43	65
72,913	36	68,454	38	63,036	38	56,229	40	47,743	40	37,404	42	27,030	43	17,174	43	9,643	43	4,629	44	1,355	*43	113	41	67
73,790	32	70,384	31	66,211	33	60,838	34	53,943	35	45,543	35	35,835	36	25,218	38	15,469	38	7,854	36	2,899	33	600	27	69
74,176	29	70,785	30	66,791	30	62,133	31	55,835	32	47,540	32	37,961	32	27,262	31	16,911	31	8,776	30	3,348	28	678	23	71
67,318	41	63,155	41	58,508	41	53,307	41	46,891	41	39,220	41	30,882	41	21,493	42	12,396	41	6,142	40	2,272	36	202	37	73
74,777	24	71,521	24	67,714	24	63,034	24	56,752	27	48,188	31	37,667	33	26,462	32	16,269	34	7,193	39	1,355	*43	40	44	75
74,400	27	70,313	32	65,740	36	60,021	36	52,445	37	43,337	39	33,321	39	23,517	40	14,524	40	5,722	41	642	45	4	45	77
75,293	17	72,117	19	68,464	18	64,251	20	58,361	20	50,715	23	41,323	26	29,275	28	17,662	29	9,181	29	3,125	31	295	35	79
56,064	45	51,433	45	46,638	45	41,384	45	35,395	45	28,983	45	22,190	44	15,519	44	9,700	42	5,095	42	2,164	38	754	18	81
62,554	43	58,028	43	53,560	43	48,666	43	42,917	43	36,912	43	30,485	42	23,021	41	15,519	37	8,736	31	3,916	24	1,411	4	83
54,522	46	49,722	46	44,762	46	38,797	46	31,940	46	24,946	46	17,879	46	11,491	46	6,727	45	3,538	45	1,609	41	609	26	85
56,413	44	51,957	44	47,197	44	41,957	44	35,893	44	29,112	44	21,931	45	14,841	45	9,085	44	4,909	43	1,568	42	98	42	87
48,135	....	*43,436*	....	*38,602*	....	*33,188*	....	*27,383*	....	*21,546*	....	*15,538*	....	*10,261*	....	*5,851*	....	*2,917*	....	*1,161*	....	*380*	....	
65,908	42	61,831	42	57,651	42	52,558	42	46,619	42	40,201	40	32,937	40	21,625	39	16,120	35	7,996	35	2,207	37	199	38	89
70,105	40	66,358	40	62,441	40	57,303	39	51,034	39	44,906	37	38,816	31	26,428	34	.....	....	.....	....	.....	....	.....	....	91

[4] The states with less than 4 per cent Negro population are Connecticut, Massachusetts, New York, Michigan, Wisconsin, Minnesota, Washington, Oregon, California, Utah, Kansas, Illinois, Indiana, Ohio, Pennsylvania, and New Jersey.
[5] The states with more than 5 per cent Negro population are Maryland, Virginia, North Carolina, South Carolina, Tennessee, Kentucky, and Missouri.
[6] The 12 cities included in "large cities" for Negroes are Boston, Buffalo, Detroit, Chicago, St. Louis, New Orleans, Cleveland, Pittsburgh, Philadelphia, New York, Baltimore, and Washington.

TABLE 6. **Females.** l_x. NUMBER OF SURVIVORS OUT OF

No. of life table.	AREA AND COLOR.	EXACT AGE IN YEARS.															
		0	1		2		7		12		17		22		27		32	
		l_x	l_x	Rank.	l_x	Rank.	l_x	Rank.	l_x	Rank.	l_x	Rank.	l_x	Rank.	l_x	Rank.	l_x	Rank.
	WHITE.																	
2	Aggregate [1]	100,000	93,268	22	91,792	21	89,569	20	88,651	19	87,589	19	85,741	18	83,231	16	80,461	17
4	Original registration states [2]	100,000	92,639	25	91,070	24	88,703	24	87,739	24	86,673	24	84,849	24	82,364	25	79,615	24
	Original registration states, 1909–1911	*100,000*	*89,774*	....	*87,455*	....	*84,651*	....	*83,640*	....	*82,629*	....	*81,042*	....	*79,020*	....	*76,727*	....
	STATES.																	
6	California	100,000	94,033	11	92,760	11	90,514	10	89,532	11	88,352	14	86,313	14	83,683	15	80,857	15
8	Connecticut	100,000	92,621	27	90,982	26	88,690	25	87,795	23	86,919	23	85,315	22	82,957	18	80,320	18
10	Illinois	100,000	93,395	21	91,784	22	89,405	21	88,486	20	87,414	20	85,621	20	83,213	17	80,557	16
12	Indiana	100,000	93,512	18	92,128	18	90,023	17	89,114	17	87,864	18	85,653	19	82,856	19	79,913	22
14	Kansas	100,000	94,603	6	93,423	5	91,706	5	90,838	4	89,799	4	88,201	4	86,023	2	83,408	3
16	Kentucky	100,000	94,353	7	92,754	12	90,418	13	89,455	14	88,168	16	85,776	17	82,617	23	79,324	27
18	Maryland	100,000	92,074	36	90,435	34	88,286	28	87,395	27	86,383	26	84,487	28	81,812	31	78,962	30
20	Massachusetts	100,000	92,174	34	90,557	32	88,225	31	87,303	29	86,366	28	84,757	25	82,530	24	79,965	20
22	Michigan	100,000	92,542	28	91,027	25	88,467	27	87,376	28	86,156	31	84,079	33	81,284	35	78,290	35
24	Minnesota	100,000	94,685	4	93,762	3	92,111	3	91,248	3	90,234	2	88,482	2	86,016	3	83,240	5
26	Missouri	100,000	94,326	8	92,829	9	90,453	11	89,430	15	88,323	15	86,402	13	83,821	13	81,045	13
28	New Jersey	100,000	92,916	23	91,342	23	89,047	22	88,106	22	87,084	22	85,336	21	82,849	20	80,090	19
30	New York	100,000	92,622	26	90,955	28	88,493	26	87,501	25	86,434	25	84,644	26	82,185	27	79,464	25
32	North Carolina	100,000	93,971	13	92,333	15	90,445	12	89,814	8	88,839	8	86,916	10	84,248	9	81,141	11
34	Ohio	100,000	93,458	20	92,105	20	89,938	18	89,087	18	88,067	17	86,220	15	83,782	14	81,070	12
36	Oregon	100,000	95,470	1	94,720	1	93,075	1	92,196	1	90,993	1	88,948	1	86,267	1	83,524	2
38	Pennsylvania	100,000	92,167	35	90,532	33	88,203	32	87,254	31	86,233	30	84,440	29	81,950	29	79,173	29
40	South Carolina	100,000	93,929	14	92,191	17	90,093	16	89,401	16	88,507	11	86,708	11	84,189	10	81,204	9
42	Tennessee	100,000	94,632	5	93,197	7	91,090	7	90,277	7	89,159	7	87,055	8	84,181	11	81,024	14
44	Utah	100,000	94,219	9	93,264	6	91,737	4	90,808	5	89,493	6	87,488	6	84,760	7	81,419	8
46	Virginia	100,000	93,995	12	92,568	13	90,370	14	89,591	10	88,673	9	86,923	9	84,478	8	81,803	7
48	Washington	100,000	95,010	2	94,126	2	92,403	2	91,437	2	90,185	3	88,225	3	85,784	4	83,198	6
50	Wisconsin	100,000	94,041	10	93,100	8	91,351	6	90,499	6	89,572	5	88,000	5	85,752	5	83,248	4
	CITIES.																	
52	Aggregate [3]	100,000	92,416	31	90,602	31	87,855	34	86,769	34	85,665	34	83,814	35	81,320	34	78,577	34
54	Baltimore	100,000	91,641	37	89,584	37	87,171	36	86,247	36	85,202	36	83,302	36	80,671	36	78,015	36
56	Boston	100,000	91,331	38	89,539	38	86,771	37	85,451	37	84,403	37	82,617	37	79,901	37	76,940	37
58	Buffalo	100,000	90,587	41	88,778	41	85,410	41	83,959	41	82,761	40	80,878	39	78,416	39	75,746	38
60	Chicago	100,000	92,308	32	90,336	35	87,647	35	86,677	35	85,620	35	83,830	34	81,485	33	78,918	31
62	Cleveland	100,000	92,524	*29	90,962	27	88,274	*29	87,280	30	86,250	29	84,405	30	82,053	28	79,354	26
64	Detroit	100,000	91,324	39	89,406	39	86,120	39	84,885	39	83,601	38	81,391	38	78,590	38	75,617	39
66	Los Angeles	100,000	93,460	19	92,116	19	89,634	19	88,456	21	87,187	21	85,178	23	82,672	22	79,963	21
68	New Orleans	100,000	93,736	17	92,432	14	90,296	15	89,489	13	88,385	13	86,202	16	82,677	21	78,840	32
70	New York, N. Y	100,000	92,840	24	90,928	30	88,274	*29	87,241	32	86,142	32	84,349	31	81,910	30	79,185	28
72	Philadelphia	100,000	92,524	*29	90,932	29	88,164	33	87,162	33	86,115	33	84,178	32	81,574	32	78,775	33
74	Pittsburgh	100,000	90,267	43	88,063	43	85,117	42	83,699	43	82,383	41	80,211	40	77,062	40	73,663	40
76	St. Louis	100,000	93,775	16	92,240	16	88,933	23	87,491	26	86,376	27	84,622	27	82,286	26	79,750	23
78	San Francisco	100,000	94,719	3	93,605	4	90,833	8	89,506	12	88,424	12	86,631	12	84,091	12	81,194	10
80	Washington, D. C.	100,000	93,817	15	92,787	10	90,610	9	89,626	9	88,602	10	87,220	7	85,685	6	83,786	1
	NEGROES.																	
82	States with less than 4 per cent Negroes [4]	100,000	88,520	44	84,666	44	80,515	44	78,779	44	75,907	44	71,670	44	67,586	44	63,664	44
84	States with more than 5 per cent Negroes [5]	100,000	91,092	40	89,005	40	85,835	40	84,559	40	81,958	42	77,279	42	71,932	43	66,488	43
86	Large cities [6]	*100,000*	*87,356*	*46*	*83,375*	*46*	*78,656*	*46*	*76,961*	*46*	*74,014*	*46*	*69,668*	*46*	*65,607*	*46*	*61,576*	*46*
88	Original registration states [2]	100,000	87,965	45	84,094	45	79,702	45	77,992	45	75,230	45	71,201	45	67,389	45	63,504	45
	Original registration states, 1909–1911	*100,000*	*81,498*	....	*76,697*	....	*71,652*	....	*69,745*	....	*66,873*	....	*63,581*	....	*60,209*	....	*56,851*	....
	HAWAII.																	
90	Hawaii (all races combined)	100,000	90,305	42	88,110	42	84,833	43	83,701	42	81,248	43	77,064	43	72,270	42	66,898	42
92	Japanese in Hawaii	100,000	92,290	33	90,129	36	86,606	38	85,368	38	83,132	39	79,164	41	74,554	41	69,564	41

* Two or more rankings the same.

[1] Statistics for the aggregate tables are a compilation of those for the New England states, New York, New Jersey, Pennsylvania, Maryland, District of Columbia, Virginia, North Carolina, South Carolina, Tennessee, Kentucky, Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Missouri, Kansas, Utah, California, Oregon, and Washington.

[2] The original registration states include New England states, New York, New Jersey, District of Columbia, Indiana, and Michigan.

[3] The 14 cities included in aggregate white in cities are those shown in the table.

100,000 FEMALES BORN ALIVE, 1919–1920. l_x. **Females.** TABLE 6.

EXACT AGE IN YEARS.																						No. of life table.
37		42		47		52		57		62		67		72		77		82		87		92		
l_x	Rank.	l_x	Rank.	l_x	Rank.	l_x	Rank.	l_x	Rank.	l_x	Rank.	l_x	Rank.	l_x	Rank.	l_x	Rank.	l_x	Rank.	l_x	Rank.	l_x	Rank.	
77,689	17	74,947	13	71,944	12	68,283	12	63,504	17	57,266	19	49,081	18	38,575	18	26,677	19	15,111	19	6,451	12	1,861	6	2
76,917	24	74,194	24	71,070	23	67,188	24	62,132	23	55,540	24	46,902	24	36,131	24	24,425	23	13,521	23	5,628	20	1,575	10	4
74,117	....	*71,249*	....	*67,938*	....	*63,942*	....	*58,790*	....	*51,999*	....	*43,453*	....	*33,186*	....	*22,210*	....	*12,001*	....	*4,762*	....	*1,267*	....	
78,038	11	75,289	12	72,279	11	68,657	11	64,182	10	58,400	12	50,821	13	41,198	8	29,577	10	17,347	10	7,394	6	1,953	5	6
77,649	18	74,919	14	71,902	13	68,117	15	62,934	20	56,004	21	47,051	23	36,293	23	25,098	21	14,630	20	6,007	18	1,297	20	8
77,954	12	75,318	11	72,401	10	68,762	10	63,933	12	57,841	15	49,771	17	39,189	17	27,510	17	16,115	14	6,706	10	1,454	14	10
76,990	23	74,263	22	71,298	21	67,814	20	63,593	15	58,064	14	50,459	14	40,360	15	28,140	14	15,169	18	5,033	30	704	40	12
80,701	4	78,141	3	75,536	3	72,551	3	68,527	1	63,193	1	56,172	1	46,341	1	34,340	1	21,231	1	8,063	5	915	36	14
76,206	30	73,433	30	70,575	26	67,324	22	63,141	19	57,437	17	50,139	15	40,349	16	28,571	12	16,797	11	7,024	8	1,500	11	16
76,116	31	73,367	31	70,296	30	66,567	28	61,588	25	55,114	25	47,272	22	36,475	22	23,779	25	12,874	26	5,285	26	1,274	22	18
77,325	20	74,635	17	71,542	17	67,626	21	62,634	22	56,164	20	47,458	21	36,636	21	25,033	22	14,083	21	5,441	23	1,011	32	20
75,450	34	72,656	34	69,591	34	65,937	31	61,434	28	55,545	23	47,674	20	37,595	20	25,915	20	14,059	22	4,935	32	812	38	22
80,462	6	77,784	6	74,952	6	71,569	5	67,087	6	61,334	3	54,029	3	44,263	3	32,220	3	19,807	2	9,403	1	2,482	3	24
78,248	10	75,564	10	72,785	9	69,516	8	65,300	7	59,860	7	52,372	6	42,410	6	30,615	6	18,399	5	8,602	2	2,821	1	26
77,525	19	74,884	15	71,820	15	67,920	17	62,692	21	55,752	22	46,481	25	35,403	26	23,440	26	12,650	28	5,369	25	1,491	13	28
76,841	25	74,123	25	70,834	25	66,693	26	61,206	29	54,122	29	45,080	29	33,918	30	22,313	30	12,185	29	4,988	31	1,275	21	30
77,721	15	74,363	20	71,265	22	67,858	19	63,649	14	58,304	13	51,009	12	40,434	14	27,770	16	15,711	15	6,045	17	999	33	32
78,301	9	75,681	8	72,847	8	69,427	9	65,016	9	59,078	9	51,112	11	40,635	11	28,303	13	16,130	13	6,647	11	1,602	8	34
80,744	3	77,938	5	74,996	5	71,509	6	67,099	5	61,191	5	53,360	5	43,425	5	31,464	5	18,264	6	6,964	9	1,259	24	36
76,336	29	73,523	29	70,442	29	66,655	27	61,567	26	54,889	27	46,383	26	35,843	25	24,191	24	13,264	24	5,196	28	1,176	26	38
77,777	14	74,567	18	71,645	16	68,149	14	63,536	16	57,346	18	48,981	19	38,437	19	26,807	18	15,532	16	6,149	15	1,100	30	40
77,865	13	74,676	16	71,436	19	68,013	16	63,816	13	58,450	11	51,115	10	41,174	9	29,611	9	17,465	8	7,119	7	1,499	12	42
77,697	16	74,248	23	71,318	20	68,166	13	63,947	11	58,963	10	51,882	7	41,631	7	30,048	7	17,672	7	5,830	19	469	43	44
78,845	7	75,914	7	73,162	7	69,704	7	65,142	8	59,202	8	51,206	9	40,508	13	27,771	15	15,453	17	6,113	16	1,337	19	46
80,638	5	77,958	4	75,051	4	71,660	4	67,161	4	61,241	4	53,566	4	43,520	4	31,579	4	18,796	4	8,479	3	2,564	2	48
80,797	2	78,411	2	75,860	2	72,720	2	68,465	2	62,687	2	55,159	2	45,215	2	32,711	2	19,347	3	8,187	4	1,984	4	50
75,870	33	73,042	33	69,623	33	65,351	34	59,749	33	52,557	33	43,447	33	32,411	34	21,267	34	11,645	32	4,737	34	1,153	28	52
75,415	35	72,583	35	69,046	35	65,002	35	59,498	35	52,568	32	44,494	31	33,546	31	21,501	33	11,848	31	5,104	29	975	35	54
73,897	37	70,655	37	66,992	38	62,455	39	56,945	38	49,974	39	40,795	38	30,176	38	20,073	36	10,698	36	4,287	37	1,342	18	56
73,122	38	70,584	38	67,311	37	63,341	36	58,456	36	51,733	36	42,862	36	31,199	36	19,518	37	10,410	38	3,266	41	203	45	58
76,401	28	73,697	28	70,479	28	66,415	29	60,844	31	53,849	31	44,978	30	34,005	29	22,929	29	13,106	25	5,432	24	1,173	27	60
76,555	26	73,772	26	70,541	27	66,336	30	60,903	30	54,305	28	45,737	28	35,030	27	22,965	28	12,044	30	5,251	27	1,442	15	62
72,847	39	70,044	39	66,607	39	62,630	38	57,916	37	51,579	37	43,150	34	32,801	33	21,764	31	11,579	33	4,826	33	1,345	17	64
77,185	21	74,498	19	71,513	18	67,869	18	63,321	18	57,537	16	50,048	16	40,703	10	29,814	8	17,415	9	6,180	14	817	37	66
75,342	36	71,567	36	67,589	36	62,760	37	56,640	39	49,069	40	39,726	39	29,160	39	19,077	39	10,255	39	3,159	42	239	44	68
76,552	27	73,746	27	70,215	31	65,725	32	59,703	34	51,983	35	42,223	37	30,505	37	19,343	38	10,469	37	4,544	35	1,406	16	70
76,003	32	73,177	32	69,781	32	65,515	33	59,751	32	52,205	34	43,116	35	32,244	35	20,970	35	11,378	34	4,523	36	976	34	72
70,038	40	66,356	40	62,615	40	58,175	40	52,492	41	45,373	41	36,491	41	26,484	40	16,849	40	8,731	41	3,270	40	640	42	74
77,072	22	74,309	21	71,061	24	66,744	25	61,491	27	55,078	26	46,060	27	34,937	28	23,218	27	12,732	27	5,538	21	1,272	23	76
78,400	8	75,673	9	71,857	14	67,280	23	61,837	24	54,101	30	44,320	32	33,211	32	21,593	32	11,361	35	4,139	38	768	39	78
81,781	1	79,530	1	76,777	1	73,280	1	68,138	3	60,844	6	51,461	8	40,580	12	29,442	11	16,472	12	6,341	13	1,668	7	80
59,585	44	55,221	44	50,378	44	44,773	44	37,829	44	30,400	44	23,441	44	16,582	43	10,710	43	6,123	43	2,968	43	1,109	29	82
61,232	43	56,193	43	50,954	43	45,388	43	39,174	43	32,793	43	26,389	43	19,914	42	13,963	42	8,669	42	4,100	39	1,077	31	84
57,405	46	52,790	46	47,486	46	41,102	46	33,459	46	25,901	46	19,176	46	13,292	45	8,517	45	4,831	45	2,509	45	1,237	25	86
59,431	45	54,996	45	50,176	45	44,611	45	37,568	45	29,829	45	22,641	45	15,934	44	10,148	44	5,878	44	2,709	44	648	41	88
53,049	....	*48,772*	....	*43,973*	....	*38,789*	....	*32,887*	....	*26,281*	....	*19,616*	....	*13,663*	....	*8,825*	....	*4,855*	....	*2,118*	....	*825*	....	
61,899	42	57,610	42	53,933	42	49,816	42	45,466	42	40,055	42	32,502	42	24,712	41	16,341	41	9,448	40	5,501	22	1,578	9	90
65,211	41	61,884	41	59,124	41	56,025	41	53,416	40	50,800	38	36,616	40	.....	....	.....	....	.....	....	.....	....	.....	....	92

[4] The states with less than 4 per cent Negro population are Connecticut, Massachusetts, New York, Michigan, Wisconsin, Minnesota, Washington, Oregon, California, Utah, Kansas, Illinois, Indiana, Ohio, Pennsylvania, and New Jersey.

[5] The states with more than 5 per cent Negro population are Maryland, Virginia, North Carolina, South Carolina, Tennessee, Kentucky, and Missouri.

[6] The 12 cities included in "large cities" for Negroes are Boston, Buffalo, Detroit, Chicago, St. Louis, New Orleans, Cleveland, Pittsburgh, Philadelphia, New York, Baltimore, and Washington.

TABLE 7. **Males.** d_x. NUMBER OF DEATHS OUT OF

No. of life table.	AREA AND COLOR.	AGE INTERVAL IN YEARS. 0—1		1—2		2—7		7—12		12—17		17—22		22—27		27—32		32—37	
		d_x	Rank.	d_x	Rank.	d_x	Rank.	d_x	Rank.	d_x	Rank.	d_x	Rank.	d_x	Rank.	d_x	Rank.	d_x	Rank.
	WHITE.																		
1	Aggregate [1]	8,433	22	1,610	19	2,442	17	1,025	12	1,210	22	1,846	21	2,179	18	2,498	19	2,775	18
3	Original registration states [2]	9,243	28	1,707	23	2,639	26	1,090	20	1,200	*19	1,822	20	2,170	17	2,479	17	2,751	17
	Original registration states, 1909–1911	*12,326*	....	*2,473*	....	*2,950*	....	*1,111*	....	*1,072*	....	*1,752*	....	*2,127*	....	*2,588*	....	*2,943*	....
	STATES.																		
5	California	7,277	9	1,381	10	2,309	11	1,177	29	1,536	37	2,244	*39	2,657	38	3,082	36	3,419	37
7	Connecticut	9,459	30	1,497	13	2,611	21	1,075	19	1,186	17	1,821	19	2,215	21	2,505	21	2,799	20
9	Illinois	8,414	21	1,802	27	2,628	25	1,026	13	1,234	25	1,819	18	2,037	10	2,375	10	2,679	*11
11	Indiana	8,123	19	1,505	14	2,465	18	963	8	1,268	27	1,918	28	2,047	11	2,232	4	2,469	4
13	Kansas	6,781	4	1,212	6	2,050	6	933	6	1,195	18	1,721	11	1,913	4	2,210	3	2,338	1
15	Kentucky	6,928	6	1,639	21	2,404	*13	975	9	1,307	30	2,099	34	2,337	30	2,380	*11	2,496	5
17	Maryland	9,599	33	1,599	17	2,404	*13	1,051	15	1,087	4	1,668	6	2,239	24	2,668	31	2,970	30
19	Massachusetts	9,862	36	1,733	25	2,627	24	1,052	16	1,051	2	1,542	2	1,955	6	2,346	8	2,557	7
21	Michigan	9,345	29	1,609	18	2,735	28	1,169	28	1,331	32	1,879	*24	2,017	9	2,322	7	2,548	6
23	Minnesota	6,879	5	1,026	2	1,849	1	956	7	1,183	16	1,750	13	2,049	12	2,427	15	2,690	13
25	Missouri	7,443	12	1,680	22	2,593	20	1,068	18	1,241	26	1,966	30	2,222	22	2,373	9	2,642	10
27	New Jersey	8,813	23	1,798	26	2,624	22	1,095	21	1,111	8	1,776	14	2,257	*26	2,558	24	2,795	19
29	New York	9,226	27	1,849	29	2,719	27	1,124	23	1,211	*23	1,892	26	2,329	29	2,639	29	2,950	29
31	North Carolina	7,270	8	1,854	30	1,929	3	729	1	1,055	3	1,746	12	2,257	*26	2,632	28	2,633	9
33	Ohio	8,052	18	1,445	11	2,401	12	986	10	1,201	21	1,795	16	1,997	8	2,380	*11	2,735	16
35	Oregon	6,264	1	980	1	1,871	2	1,003	11	1,520	36	2,045	33	2,232	23	2,701	32	2,911	26
37	Pennsylvania	9,693	34	1,823	28	2,524	19	1,060	17	1,144	10	1,785	15	2,242	25	2,587	25	2,943	28
39	South Carolina	7,485	13	1,878	31	2,215	9	805	2	1,098	6	1,990	31	2,432	32	2,526	22	2,890	25
41	Tennessee	6,335	3	1,563	15	2,257	10	830	3	1,147	11	1,879	*24	2,186	20	2,388	13	2,576	8
43	Utah	7,388	10	1,118	5	1,960	5	1,129	25	1,499	35	1,996	32	2,459	33	3,244	40	3,598	38
45	Virginia	7,802	15	1,471	12	2,151	8	833	4	1,152	12	1,921	29	2,281	28	2,484	18	2,702	14
47	Washington	6,311	2	1,045	4	2,085	7	1,045	14	1,432	34	2,236	38	2,599	37	2,736	33	2,705	15
49	Wisconsin	7,851	17	1,031	3	1,955	4	915	5	1,160	13	1,629	4	1,789	1	2,160	1	2,359	2
	CITIES.																		
51	Aggregate [3]	9,524	*31	1,995	35	3,126	37	1,246	33	1,200	*19	1,806	17	2,183	19	2,538	23	2,972	31
53	Baltimore	10,341	37	1,960	34	2,955	30	1,155	26	988	1	1,495	1	2,129	16	2,590	26	2,917	27
55	Boston	10,869	40	2,067	37	3,083	36	1,338	35	1,093	5	1,583	3	2,098	14	2,642	30	3,018	33
57	Buffalo	11,688	42	1,910	32	3,696	41	1,586	44	1,327	31	1,716	10	2,102	15	2,499	20	2,843	22
59	Chicago	9,844	35	2,162	40	3,141	38	1,182	31	1,161	*14	1,697	9	1,928	5	2,248	5	2,679	*11
61	Cleveland	9,219	26	1,729	24	2,997	32	1,198	32	1,211	*23	1,673	7	1,894	3	2,422	14	3,076	34
63	Detroit	10,811	38	2,006	36	3,687	40	1,363	37	1,346	33	1,859	22	1,858	2	2,168	2	2,435	3
65	Los Angeles	7,745	14	1,619	20	2,626	23	1,433	41	1,632	39	2,204	37	2,579	36	3,025	35	3,372	36
67	New Orleans	7,408	11	1,371	9	2,427	15	1,406	39	1,740	40	2,157	35	2,526	35	3,574	41	4,478	45
69	New York, N. Y.	8,945	25	2,100	38	3,006	33	1,166	27	1,161	*14	1,876	23	2,341	31	2,609	27	3,006	32
71	Philadelphia	9,524	*31	1,924	33	3,016	34	1,179	30	1,112	9	1,679	8	2,073	13	2,432	16	2,885	24
73	Pittsburgh	12,079	43	2,413	43	3,725	42	1,419	40	1,273	28	2,197	36	2,765	40	3,084	37	3,727	40
75	St. Louis	8,257	20	1,575	16	3,950	43	1,572	42	1,109	7	1,653	5	1,956	7	2,318	6	2,833	21
77	San Francisco	6,970	7	1,222	7	2,431	16	1,378	38	1,576	38	2,244	*39	2,681	39	3,231	39	3,867	41
79	Washington, D. C.	7,832	16	1,228	8	2,913	29	1,351	36	1,279	29	1,901	27	2,461	34	2,898	34	2,844	23
	NEGROES.																		
81	States with less than 4 per cent Negroes [4]	14,168	44	3,939	44	4,800	45	1,580	43	2,768	45	4,455	46	4,195	45	3,824	44	4,207	43
83	States with more than 5 per cent Negroes [5]	10,919	41	2,335	42	3,051	35	1,123	22	2,091	43	3,967	43	4,634	46	4,625	46	4,701	46
85	Large cities [6]	15,440	46	4,214	46	4,982	46	1,747	46	2,906	46	4,174	44	3,779	42	3,770	42	4,466	44
87	Original registration states [2]	14,495	45	4,011	45	4,385	44	1,644	45	2,676	44	4,275	45	4,191	44	3,814	43	4,096	42
	Original registration states, 1909–1911	*21,985*	....	*5,216*	....	*5,389*	....	*1,809*	....	*2,296*	....	*3,465*	....	*3,619*	....	*3,894*	....	*4,292*	....
	HAWAII.																		
89	Hawaii (all races combined)	10,820	39	2,123	39	3,286	39	1,274	34	1,883	42	3,205	42	3,963	43	3,834	45	3,704	39
91	Japanese in Hawaii	8,910	24	2,185	41	2,981	31	1,126	24	1,785	41	2,980	41	3,402	41	3,169	38	3,357	35

* Two or more rankings the same.

[1] Statistics for the aggregate tables are a compilation of those for the New England states, New York, New Jersey, Pennsylvania, Maryland, District of Columbia, Virginia, North Carolina, South Carolina, Tennessee, Kentucky, Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Missouri, Kansas, Utah, California, Oregon, and Washington.

[2] The original registration states include New England states, New York, New Jersey, District of Columbia, Indiana, and Michigan.

[3] The 14 cities included in aggregate white in cities are those shown in the table.

100,000 MALES BORN ALIVE, 1919–1920. d_x. **Males.** TABLE 7.

AGE INTERVAL IN YEARS.																						No. of life table.
37—42		42—47		47—52		52—57		57—62		62—67		67—72		72—77		77—82		82—87		87—92		92—97		
d_x	Rank.	d_x	Rank.	d_x	Rank.	d_x	Rank.	d_x	Rank.	d_x	Rank.	d_x	Rank.	d_x	Rank.	d_x	Rank.	d_x	Rank.	d_x	Rank.	d_x	Rank.	
2,979	18	3,313	*16	3,939	16	5,161	16	6,698	20	8,486	22	10,527	25	11,478	31	10,716	31	7,634	28	3,703	29	1,154	40	1
3,020	19	3,438	19	4,130	20	5,425	20	6,990	25	8,726	28	10,587	28	11,272	27	10,069	28	7,018	26	3,300	27	838	32	3
3,436	....	*3,982*	....	*4,613*	....	*5,669*	....	*7,242*	....	*8,675*	....	*9,651*	....	*9,968*	....	*8,660*	....	*5,645*	....	*2,488*	....	*700*	....	
3,687	37	3,847	29	4,372	25	5,568	22	6,941	23	8,406	19	9,639	8	10,188	16	9,769	25	7,503	27	3,838	30	1,042	37	5
3,203	24	3,533	21	4,160	21	5,825	27	7,241	31	8,467	21	10,188	15	11,244	26	9,651	24	6,498	22	3,857	31	943	35	7
2,898	16	3,346	18	4,111	19	5,267	18	6,733	21	8,592	*25	10,524	*23	11,136	24	10,362	29	7,945	29	4,044	35	961	36	9
2,673	8	2,840	6	3,272	6	4,388	4	5,882	4	8,038	13	10,772	34	12,438	42	12,021	41	8,927	34	4,469	36	1,176	41	11
2,324	1	2,441	1	2,819	1	3,975	1	5,470	1	7,417	7	10,543	27	13,099	44	13,185	45	10,787	43	5,971	45	1,515	45	13
2,553	3	2,793	5	3,226	5	4,195	2	5,870	3	7,645	8	10,477	20	12,113	38	11,722	35	10,942	45	5,403	42	494	17	15
3,097	22	3,484	20	4,301	24	5,605	23	7,124	30	8,797	30	10,835	35	11,203	25	9,480	21	6,684	23	3,225	25	804	30	17
2,864	13	3,313	*16	4,096	18	5,388	19	7,026	27	9,134	34	11,179	41	11,455	30	9,860	27	6,973	25	3,276	26	677	28	19
2,646	6	2,906	9	3,401	8	4,601	9	6,276	12	8,156	16	10,592	29	11,992	36	11,235	32	8,466	31	4,003	34	743	29	21
2,636	5	2,887	7	3,515	9	4,687	10	6,376	16	8,137	15	10,460	18	11,836	33	11,792	37	10,921	44	5,382	41	559	20	23
2,769	10	3,002	12	3,558	*11	4,760	11	6,302	13	7,927	11	9,895	11	11,057	22	11,295	33	9,832	38	5,282	39	1,053	38	25
3,048	20	3,681	24	4,429	27	5,711	25	7,317	32	8,909	31	10,863	38	11,309	29	9,602	22	6,383	21	3,018	21	823	31	27
3,272	27	3,803	27	4,639	29	5,988	30	7,540	33	9,037	33	10,370	16	10,563	21	9,139	18	6,208	19	2,802	18	646	25	29
2,650	7	2,888	8	3,363	7	4,443	6	5,735	2	7,961	12	10,602	30	12,282	40	12,500	43	9,900	39	4,652	38	879	33	31
2,887	15	3,150	13	3,685	13	4,784	13	6,365	15	8,543	23	10,768	33	11,985	35	11,796	38	8,819	33	3,662	28	547	18	33
2,882	14	2,787	4	3,558	*11	4,802	14	6,324	14	8,592	*25	10,849	36	11,915	34	12,367	42	10,008	40	3,968	32	416	13	35
3,259	26	3,647	22	4,269	23	5,543	21	7,109	29	8,686	27	10,529	26	11,080	23	9,626	23	6,720	24	3,080	24	620	22	37
2,944	17	3,155	14	3,774	14	5,056	15	6,439	19	8,434	20	11,649	44	12,027	37	9,802	26	8,148	30	4,604	37	644	24	39
2,850	12	3,001	11	3,145	2	4,301	3	5,907	5	7,760	9	10,524	*23	12,251	39	11,821	39	10,293	42	5,860	44	1,100	39	41
3,609	36	3,720	26	3,907	15	4,771	12	6,175	10	8,587	24	10,180	13	10,277	18	11,777	36	9,405	36	2,980	20	219	10	43
2,628	4	2,756	3	3,198	3	4,460	7	6,058	8	8,115	14	11,429	43	13,141	45	11,911	40	9,073	35	3,969	33	461	15	45
2,773	11	2,947	10	3,534	10	4,575	8	6,207	11	8,281	17	10,185	14	12,323	41	11,461	34	8,530	32	5,565	43	1,394	44	47
2,365	2	2,601	2	3,209	4	4,419	5	5,984	6	7,893	10	10,434	17	12,597	43	12,729	44	10,109	41	5,314	40	1,378	43	49
3,379	30	4,058	33	5,014	35	6,466	42	8,098	41	9,515	40	10,520	22	9,948	13	7,981	10	5,226	10	2,463	13	666	27	51
3,377	29	4,233	39	5,070	36	6,279	37	7,772	39	9,436	39	10,859	37	10,106	14	7,893	9	5,436	12	2,548	16	448	14	53
3,337	28	4,211	38	5,240	*40	6,399	40	7,906	40	9,380	37	10,508	21	9,918	12	7,653	8	5,020	8	2,235	11	390	12	55
3,583	34	4,088	35	4,488	28	6,165	35	7,762	38	9,147	35	9,999	12	9,515	10	8,361	13	5,605	13	1,781	7	138	6	57
3,068	21	3,857	30	4,864	33	6,121	34	7,754	37	9,276	36	10,465	19	10,180	15	8,422	14	5,891	16	3,069	23	894	34	59
3,600	35	4,085	34	4,773	32	6,047	32	7,670	35	9,556	41	10,921	39	10,457	20	9,164	20	6,188	18	1,971	8	148	7	61
2,740	9	3,232	15	3,941	17	5,227	17	6,964	24	8,969	32	10,990	40	11,308	28	9,161	19	6,217	20	3,022	22	664	26	63
3,515	33	3,702	25	4,380	26	5,641	24	7,098	28	8,756	29	9,248	6	8,651	7	10,454	30	9,778	37	2,489	14	53	3	65
4,459	43	5,418	46	6,807	46	8,486	46	10,339	46	10,374	45	9,856	10	7,531	5	5,014	4	3,274	3	1,242	3	112	5	67
3,406	32	4,173	36	5,373	43	6,895	44	8,400	43	9,708	43	10,617	31	9,749	11	7,615	7	4,955	7	2,299	12	555	19	69
3,391	31	3,994	32	4,658	30	6,298	39	8,295	42	9,579	42	10,699	32	10,351	19	8,135	12	5,428	11	2,670	17	639	23	71
4,163	41	4,647	42	5,201	39	6,416	41	7,671	36	8,338	18	9,389	7	9,097	9	6,254	5	3,870	5	2,070	10	202	9	73
3,256	25	3,807	28	4,680	31	6,282	38	8,564	44	10,521	46	11,205	42	10,193	17	9,076	17	5,838	15	1,315	4	40	2	75
4,087	40	4,573	41	5,719	44	7,576	45	9,108	45	10,016	44	9,804	9	8,993	8	8,802	16	5,080	9	638	1	4	1	77
3,176	23	3,653	23	4,213	22	5,890	28	7,646	34	9,392	38	12,048	45	11,613	32	8,481	15	6,056	17	2,830	19	294	11	79
4,631	45	4,795	44	5,254	42	5,989	31	6,412	17	6,793	3	6,671	2	5,819	3	4,605	3	2,931	2	1,410	5	562	21	81
4,526	44	4,468	40	4,894	34	5,749	26	6,005	7	6,427	2	7,464	4	7,502	4	6,783	6	4,820	6	2,505	15	1,196	42	83
4,800	46	4,960	45	5,965	45	6,857	43	6,994	26	7,067	4	6,388	1	4,764	1	3,189	1	1,929	1	1,000	2	468	16	85
4,456	42	4,760	43	5,240	*40	6,064	33	6,781	22	7,181	5	7,090	3	5,756	2	4,176	2	3,341	4	1,470	6	98	4	87
4,649	....	*4,884*	....	*5,414*	....	*5,805*	....	*6,037*	....	*5,808*	....	*5,277*	....	*4,410*	....	*2,934*	....	*1,756*	....	*781*	....	*270*	....	
4,077	39	4,180	37	5,093	37	5,939	29	6,418	18	7,264	6	8,312	5	8,505	6	8,124	11	5,789	14	2,008	9	196	8	89
3,747	38	3,917	31	5,138	38	6,269	36	6,128	9	6,090	1	12,388	46	.....	....	.....	....	.....	....	.....	....	.....	....	91

[4] The states with less than 4 per cent Negro population are Connecticut, Massachusetts, New York, Michigan, Wisconsin, Minnesota, Washington, Oregon, California, Utah, Kansas, Illinois, Indiana, Ohio, Pennsylvania, and New Jersey.

[5] The states with more than 5 per cent Negro population are Maryland, Virginia, North Carolina, South Carolina, Tennessee, Kentucky, and Missouri.

[6] The 12 cities included in "large cities" for Negroes are Boston, Buffalo, Detroit, Chicago, St. Louis, New Orleans, Cleveland, Pittsburgh, Philadelphia, New York, Baltimore, and Washington.

TABLE 8. **Females.** d_x. NUMBER OF DEATHS OUT OF

No. of life table.	AREA AND COLOR.	AGE INTERVAL IN YEARS. 0–1 d_x	Rank.	1–2 d_x	Rank.	2–7 d_x	Rank.	7–12 d_x	Rank.	12–17 d_x	Rank.	17–22 d_x	Rank.	22–27 d_x	Rank.	27–32 d_x	Rank.	32–37 d_x	Rank.
	WHITE.																		
2	Aggregate [1]	6,732	22	1,476	16	2,223	16	918	14	1,062	19	1,848	21	2,510	22	2,770	22	2,772	*19
4	Original registration states [2]	7,361	25	1,569	21	2,367	23	964	22	1,066	20	1,824	18	2,485	17	2,749	20	2,698	14
	Original registration states, 1909–1911	*10,226*	....	*2,819*	....	*2,804*	....	*1,011*	....	*1,011*	....	*1,587*	....	*2,022*	....	*2,293*	....	*2,610*	....
	STATES.																		
6	California	5,967	11	1,273	9	2,246	17	982	25	1,180	30	2,039	32	2,630	27	2,826	27	2,819	27
8	Connecticut	7,379	27	1,639	*29	2,292	18	895	12	876	1	1,604	4	2,358	8	2,637	8	2,671	12
10	Illinois	6,605	21	1,611	25	2,379	25	919	15	1,072	22	1,793	*13	2,408	9	2,656	*9	2,603	7
12	Indiana	6,488	18	1,384	13	2,105	9	909	13	1,250	34	2,211	39	2,797	35	2,943	30	2,923	31
14	Kansas	5,397	6	1,180	8	1,717	4	868	9	1,039	14	1,598	3	2,178	2	2,615	7	2,707	*15
16	Kentucky	5,647	7	1,599	24	2,336	22	963	21	1,287	38	2,392	40	3,159	39	3,293	37	3,118	34
18	Maryland	7,926	36	1,639	*29	2,149	12	891	11	1,012	7	1,896	24	2,675	30	2,850	28	2,846	30
20	Massachusetts	7,826	34	1,617	26	2,332	21	922	16	937	5	1,609	5	2,227	3	2,565	4	2,640	11
22	Michigan	7,458	28	1,515	18	2,560	29	1,091	33	1,220	33	2,077	34	2,795	34	2,994	34	2,840	29
24	Minnesota	5,315	4	923	3	1,651	3	863	8	1,014	8	1,752	8	2,466	16	2,776	*23	2,778	*21
26	Missouri	5,674	8	1,497	17	2,376	24	1,023	30	1,107	27	1,921	26	2,581	25	2,776	*23	2,797	25
28	New Jersey	7,084	23	1,574	22	2,295	19	941	19	1,022	11	1,748	6	2,487	18	2,759	21	2,565	5
30	New York	7,378	26	1,667	31	2,462	27	992	27	1,067	21	1,790	*11	2,459	14	2,721	16	2,623	8
32	North Carolina	6,029	13	1,638	28	1,888	7	631	1	975	6	1,923	27	2,668	29	3,107	35	3,420	36
34	Ohio	6,542	20	1,353	12	2,167	13	851	6	1,020	9	1,847	20	2,438	10	2,712	15	2,769	17
36	Oregon	4,530	1	750	1	1,645	2	879	10	1,203	32	2,045	33	2,681	31	2,743	*18	2,780	23
38	Pennsylvania	7,833	35	1,635	27	2,329	20	949	20	1,021	10	1,793	*13	2,490	19	2,777	25	2,837	28
40	South Carolina	6,071	14	1,738	32	2,098	8	692	2	894	2	1,799	17	2,519	23	2,985	33	3,427	37
42	Tennessee	5,368	5	1,435	15	2,107	10	813	5	1,118	29	2,104	35	2,874	37	3,157	36	3,159	35
44	Utah	5,781	9	955	5	1,527	1	929	18	1,315	39	2,005	30	2,728	33	3,341	38	3,722	40
46	Virginia	6,005	12	1,427	14	2,198	15	779	3	918	3	1,750	7	2,445	13	2,675	12	2,958	32
48	Washington	4,990	2	884	2	1,723	5	966	23	1,252	35	1,960	29	2,441	12	2,586	6	2,560	4
50	Wisconsin	5,959	10	941	4	1,749	6	852	7	927	4	1,572	2	2,248	4	2,504	2	2,451	2
	CITIES.																		
52	Aggregate [3]	7,584	31	1,814	35	2,747	33	1,086	32	1,104	*25	1,851	22	2,494	20	2,743	*18	2,707	*15
54	Baltimore	8,359	37	2,057	39	2,413	26	924	17	1,045	15	1,900	25	2,631	28	2,656	*9	2,600	6
56	Boston	8,669	38	1,792	33	2,768	*34	1,320	39	1,048	17	1,786	10	2,716	32	2,961	31	3,043	33
58	Buffalo	9,413	41	1,809	34	3,368	42	1,451	43	1,198	31	1,883	23	2,462	15	2,670	11	2,624	9
60	Chicago	7,692	32	1,972	38	2,689	32	970	24	1,057	18	1,790	*11	2,345	6	2,567	5	2,517	3
62	Cleveland	7,476	*29	1,562	20	2,688	31	994	28	1,030	13	1,845	19	2,352	7	2,699	13	2,799	26
64	Detroit	8,676	39	1,918	37	3,286	40	1,235	36	1,284	37	2,210	38	2,801	36	2,973	32	2,770	18
66	Los Angeles	6,540	19	1,344	11	2,482	28	1,178	35	1,269	36	2,009	31	2,506	21	2,709	14	2,778	*21
68	New Orleans	6,264	17	1,304	10	2,136	11	807	4	1,104	*25	2,183	37	3,525	40	3,837	40	3,498	38
70	New York, N. Y.	7,160	24	1,912	36	2,654	30	1,033	31	1,099	24	1,793	*13	2,439	11	2,725	17	2,633	10
72	Philadelphia	7,476	*29	1,592	23	2,768	*34	1,002	29	1,047	16	1,937	28	2,604	26	2,799	26	2,772	*19
74	Pittsburgh	9,733	43	2,204	43	2,946	37	1,418	41	1,316	40	2,172	36	3,149	38	3,399	39	3,625	39
76	St. Louis	6,225	16	1,535	19	3,307	41	1,442	42	1,115	28	1,754	9	2,336	5	2,536	3	2,678	13
78	San Francisco	5,281	3	1,114	7	2,772	36	1,327	40	1,082	23	1,793	*13	2,540	24	2,897	29	2,794	24
80	Washington, D. C.	6,183	15	1,030	6	2,177	14	984	26	1,024	12	1,382	1	1,535	1	1,899	1	2,005	1
	NEGROES.																		
82	States with less than 4 per cent Negroes [4]	11,480	44	3,854	44	4,151	44	1,736	46	2,872	45	4,237	44	4,084	43	3,922	42	4,079	42
84	States with more than 5 per cent Negroes [5]	8,908	40	2,087	40	3,170	38	1,276	38	2,601	43	4,679	46	5,347	46	5,444	46	5,256	46
86	Large cities [6]	12,644	46	3,981	46	4,719	46	1,695	44	2,947	46	4,346	45	4,061	42	4,031	43	4,171	43
88	Original registration states [2]	12,035	45	3,871	45	4,392	45	1,710	45	2,762	44	4,029	42	3,812	41	3,885	41	4,073	41
	Original registration states, 1909–1911	*18,507*	....	*4,796*	....	*5,045*	....	*1,907*	....	*2,872*	....	*3,492*	....	*3,172*	....	*3,358*	....	*3,802*	....
	HAWAII.																		
90	Hawaii (all races combined)	9,695	42	2,195	42	3,277	39	1,132	34	2,453	42	4,184	43	4,794	45	5,372	45	4,999	45
92	Japanese in Hawaii	7,710	33	2,161	41	3,523	43	1,238	37	2,236	41	3,968	41	4,610	44	4,990	44	4,353	44

* Two or more rankings the same.

[1] Statistics for the aggregate tables are a compilation of those for the New England states, New York, New Jersey, Pennsylvania, Maryland, District of Columbia, Virginia, North Carolina, South Carolina, Tennessee, Kentucky, Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Missouri, Kansas, Utah, California, Oregon, and Washington.

[2] The original registration states include New England states, New York, New Jersey, District of Columbia, Indiana, and Michigan.

[3] The 14 cities included in aggregate white in cities are those shown in the table.

100,000 FEMALES BORN ALIVE; 1919–1920. d_x. **Females.** TABLE 8.

AGE INTERVAL IN YEARS.																					No. of life table.
37—42		42—47		47—52		52—57		57—62		62—67		67—72		72—77		77—82		82—87		87—92		92—97	
d_x	Rank.	d_x	Rank.	d_x	Rank.	d_x	Rank	d_x	Rank.	d_x	Rank.	d_x	Rank.	d_x	Rank.	d_x	Rank.	d_x	Rank.	d_x	Rank.		
2,742	19	3,003	17	3,661	21	4,779	21	6,238	21	8,185	25	10,506	22	11,898	32	11,566	28	8,660	26	4,590	27	1,588	40	2
2,723	15	3,124	26	3,882	25	5,056	26	6,592	27	8,638	30	10,771	32	11,706	28	10,904	21	7,893	22	4,053	20	1,337	32	4
2,868	....	*3,311*	....	*3,996*	....	*5,152*	....	*6,791*	....	*8,546*	....	*10,267*	....	*10,976*	....	*10,209*	....	*7,239*	....	*3,495*	....	*1,079*	....	
2,749	*20	3,010	18	3,622	17	4,475	13	5,782	12	7,579	15	9,623	7	11,621	22	12,230	35	9,953	35	5,441	37	1,693	41	6
2,730	18	3,017	19	3,785	23	5,183	29	6,930	*31	8,953	35	10,758	31	11,195	15	10,468	18	8,623	24	4,710	29	1,199	27	8
2,636	6	2,917	11	3,639	18	4,829	22	6,092	19	8,070	23	10,582	27	11,679	25	11,395	27	9,409	30	5,252	34	1,356	33	10
2,727	*16	2,965	15	3,484	13	4,221	8	5,529	8	7,605	16	10,099	18	12,220	40	12,971	42	10,136	37	4,329	25	681	6	12
2,560	4	2,605	2	2,985	1	4,024	2	5,334	3	7,021	4	9,831	10	12,001	36	13,109	43	13,168	45	7,148	45	907	11	14
2,773	23	2,858	9	3,251	5	4,183	3	5,704	9	7,298	8	9,790	9	11,778	30	11,774	29	9,773	33	5,524	38	1,409	36	16
2,749	*20	3,071	22	3,729	22	4,979	24	6,474	26	7,842	19	10,797	33	12,696	44	10,905	22	7,589	20	4,011	18	1,166	25	18
2,690	12	3,093	24	3,916	27	4,992	25	6,470	25	8,706	31	10,822	34	11,603	19	10,950	25	8,642	25	4,430	26	961	14	20
2,794	25	3,065	21	3,654	20	4,503	16	5,889	14	7,871	20	10,079	17	11,680	26	11,856	30	9,124	27	4,123	21	774	8	22
2,678	8	2,832	7	3,383	7	4,482	14	5,753	10	7,305	9	9,766	8	12,043	37	12,413	39	10,404	40	6,921	44	2,311	45	24
2,684	10	2,779	6	3,269	6	4,216	6	5,440	7	7,488	11	9,962	14	11,795	31	12,216	34	9,797	34	5,781	41	2,274	44	26
2,641	7	3,064	20	3,900	26	5,228	30	6,940	33	9,271	41	11,078	40	11,963	35	10,790	20	7,281	19	3,878	16	1,321	31	28
2,718	14	3,289	32	4,141	33	5,487	34	7,084	36	9,042	37	11,162	43	11,605	20	10,128	15	7,197	17	3,713	14	1,124	23	30
3,358	38	3,098	25	3,407	9	4,209	5	5,345	4	7,295	7	10,575	26	12,664	43	12,059	31	9,666	32	5,046	32	969	*15	32
2,620	5	2,834	8	3,420	10	4,411	12	5,938	17	7,966	21	10,477	21	12,332	41	12,173	33	9,483	31	5,045	31	1,440	37	34
2,806	*27	2,942	14	3,487	14	4,410	11	5,908	15	7,831	18	9,935	11	11,961	34	13,200	44	11,300	43	5,705	40	1,193	26	36
2,813	29	3,081	23	3,787	24	5,088	27	6,678	29	8,506	28	10,540	23	11,652	24	10,927	24	8,068	23	4,020	19	1,065	20	38
3,210	35	2,922	12	3,496	15	4,613	19	6,190	20	8,365	26	10,544	24	11,630	23	11,275	26	9,383	29	5,049	33	1,057	19	40
3,189	34	3,240	29	3,423	11	4,197	4	5,366	5	7,335	10	9,941	12	11,563	17	12,146	32	10,346	39	5,620	39	1,394	35	42
3,449	39	2,930	13	3,152	4	4,219	7	4,984	2	7,081	5	10,251	19	11,583	18	12,376	37	11,842	44	5,361	35	467	3	44
2,931	33	2,752	3	3,458	12	4,562	18	5,940	18	7,996	22	10,698	29	12,737	45	12,318	36	9,340	28	4,776	30	1,231	29	46
2,680	9	2,907	10	3,391	8	4,499	15	5,920	16	7,675	17	10,046	16	11,941	33	12,783	40	10,317	38	5,915	42	2,233	43	48
2,386	2	2,551	1	3,140	3	4,255	9	5,778	11	7,528	13	9,944	13	12,504	42	13,364	45	11,160	41	6,203	43	1,789	42	50
2,828	31	3,419	34	4,272	36	5,602	38	7,192	38	9,110	39	11,036	39	11,144	13	9,622	12	6,908	13	3,584	13	1,035	18	52
2,832	32	3,537	37	4,044	30	5,504	35	6,930	*31	8,074	24	10,948	37	12,045	38	9,653	13	6,744	9	4,129	22	954	13	54
3,242	36	3,663	38	4,537	40	5,510	36	6,971	34	9,179	40	10,619	28	10,103	8	9,375	10	6,411	8	2,945	6	1,100	22	56
2,538	3	3,273	31	3,970	28	4,885	23	6,723	30	8,871	*32	11,663	44	11,681	27	9,108	9	7,144	15	3,063	8	203	1	58
2,704	13	3,218	27	4,064	31	5,571	37	6,995	35	8,871	*32	10,973	38	11,076	11	9,823	14	7,674	21	4,259	23	1,099	21	60
2,783	24	3,231	28	4,205	34	5,433	32	6,598	28	8,568	29	10,707	30	12,065	39	10,921	23	6,793	11	3,809	15	1,378	34	62
2,803	26	3,437	35	3,977	29	4,714	20	6,337	22	8,429	27	10,349	20	11,037	10	10,185	16	6,753	10	3,481	11	1,262	30	64
2,687	11	2,985	16	3,644	19	4,548	17	5,784	13	7,489	12	9,345	6	10,889	9	12,399	38	11,235	42	5,363	36	798	9	66
3,775	41	3,978	42	4,829	42	6,120	42	7,571	43	9,343	42	10,566	25	10,083	7	8,822	7	7,096	14	2,920	5	238	2	68
2,806	*27	3,531	36	4,490	39	6,022	41	7,720	44	9,760	44	11,718	45	11,162	14	8,874	8	5,925	7	3,138	9	1,151	24	70
2,826	30	3,396	33	4,266	35	5,764	40	7,546	41	9,089	38	10,872	35	11,274	16	9,592	11	6,855	12	3,547	12	910	12	72
3,682	40	3,741	40	4,440	38	5,683	39	7,119	37	8,882	34	10,007	15	9,635	6	8,118	6	5,461	6	2,630	4	609	4	74
2,763	22	3,248	30	4,317	37	5,253	31	6,413	24	9,018	36	11,123	42	11,719	29	10,486	19	7,194	16	4,266	24	1,222	28	76
2,727	*16	3,816	41	4,577	41	5,443	33	7,736	45	9,781	45	11,109	41	11,618	21	10,232	17	7,222	18	3,371	10	725	7	78
2,251	1	2,753	4	3,497	16	5,142	28	7,294	39	9,383	43	10,881	36	11,138	12	12,970	41	10,131	36	4,673	28	1,508	38	80
4,364	43	4,843	44	5,605	45	6,944	44	7,429	40	6,959	3	6,859	4	5,872	3	4,587	3	3,155	2	1,859	2	969	*15	82
5,039	46	5,239	45	5,566	44	6,214	43	6,381	23	6,404	1	6,475	2	5,951	4	5,294	4	4,569	5	3,023	7	986	17	84
4,615	45	5,304	46	6,384	46	7,643	46	7,555	42	6,728	2	5,884	1	4,775	1	3,686	1	2,322	1	1,272	1	800	10	86
4,435	44	4,820	43	5,565	43	7,043	45	7,739	46	7,188	6	6,707	3	5,786	2	4,270	2	3,169	3	2,061	3	615	5	88
4,277	....	*4,799*	....	*5,184*	....	*5,902*	....	*6,606*	....	*6,665*	....	*5,953*	....	*4,838*	....	*3,970*	....	*2,737*	....	*1,293*	....	*548*	....	
4,289	42	3,677	39	4,117	32	4,350	10	5,411	6	7,553	14	7,790	5	8,371	5	6,893	5	3,947	4	3,923	17	1,560	39	90
3,327	37	2,760	5	3,099	2	2,609	1	2,616	1	14,184	46	27,371	46	.....	....	.....	....	.....	....	.....	....	.....	....	92

[4] The states with less than 4 per cent Negro population are Connecticut, Massachusetts, New York, Michigan, Wisconsin, Minnesota, Washington, Oregon, California, Utah, Kansas, Illinois, Indiana, Ohio, Pennsylvania, and New Jersey.

[5] The states with more than 5 per cent Negro population are Maryland, Virginia, North Carolina, South Carolina, Tennessee, Kentucky, and Missouri.

[6] The 12 cities included in "large cities" for Negroes are Boston, Buffalo, Detroit, Chicago, St. Louis, New Orleans, Cleveland, Pittsburgh, Philadelphia, New York, Baltimore, and Washington.

TABLE 9. **Males.** $\mathring{e}_x$. COMPLETE EXPECTATION OF

No. of life table.	AREA AND COLOR.	EXACT AGE IN YEARS. 0		1		2		7		12		17		22		27		32	
		$\mathring{e}_x$	Rank.	$\mathring{e}_x$	Rank.	$\mathring{e}_x$	Rank.	$\mathring{e}_x$	Rank.	$\mathring{e}_x$	Rank.	$\mathring{e}_x$	Rank.	$\mathring{e}_x$	Rank.	$\mathring{e}_x$	Rank.	$\mathring{e}_x$	Rank.
	WHITE.																		
1	Aggregate[1]	55.33	15	59.38	15	59.43	15	56.03	16	51.67	16	47.36	15	43.35	16	39.45	16	35.62	15
3	Original registration states[2]	54.05	20	58.51	19	58.62	18	55.34	18	51.02	18	46.71	19	42.69	19	38.77	18	34.93	18
	Original registration states, 1909–1911	*50.23*	....	*56.26*	....	*56.88*	....	*53.85*	....	*49.56*	....	*45.18*	....	*41.13*	....	*37.21*	....	*33.33*	....
	STATES.																		
5	California	54.51	18	57.75	24	57.61	25	54.05	*26	49.74	*26	45.58	26	41.73	26	38.01	25	34.40	23
7	Connecticut	53.88	21	58.45	20	58.43	21	55.13	19	50.79	20	46.47	20	42.44	20	38.54	20	34.70	21
9	Illinois	55.17	16	59.19	16	59.37	16	56.09	15	51.74	14	47.45	14	43.43	14	39.46	15	35.57	16
11	Indiana	56.91	10	60.90	7	60.90	7	57.55	7	53.17	7	48.91	6	44.97	6	41.04	5	37.12	7
13	Kansas	59.82	1	63.14	1	62.96	1	59.35	1	54.94	1	50.66	1	46.62	1	42.62	1	38.70	1
15	Kentucky	57.71	8	60.97	6	61.06	6	57.65	6	53.26	5	49.02	5	45.17	4	41.38	4	37.54	3
17	Maryland	53.76	24	58.42	21	58.46	20	55.03	21	50.68	21	46.30	21	42.18	22	38.28	22	34.51	22
19	Massachusetts	54.07	19	58.93	17	59.07	17	55.81	17	51.48	17	47.09	17	42.93	17	38.91	17	35.01	17
21	Michigan	55.12	17	59.76	13	59.83	13	56.65	11	52.40	10	48.19	10	44.24	11	40.29	11	36.42	12
23	Minnesota	58.57	4	61.86	3	61.55	4	57.76	5	53.36	4	49.04	4	44.98	5	41.01	6	37.15	6
25	Missouri	56.80	11	60.32	11	60.43	9	57.14	*8	52.81	8	48.54	8	44.61	8	40.76	8	36.90	9
27	New Jersey	53.86	22	58.02	22	58.18	22	54.87	22	50.55	22	46.17	23	42.11	23	38.22	23	34.39	24
29	New York	52.82	27	57.13	27	57.31	27	54.05	*26	49.74	*26	45.42	27	41.40	28	37.54	29	33.74	29
31	North Carolina	57.76	7	61.25	5	61.49	5	57.78	4	53.24	6	48.85	7	44.79	7	40.94	7	37.19	5
33	Ohio	56.23	12	60.11	12	60.06	12	56.64	12	52.26	12	47.95	13	43.92	13	39.93	13	36.04	13
35	Oregon	57.90	5	60.73	9	60.37	11	56.57	13	52.17	13	48.02	12	44.10	12	40.20	12	36.45	11
37	Pennsylvania	53.27	26	57.93	23	58.12	23	54.76	23	50.42	23	46.07	24	42.02	24	38.12	24	34.32	25
39	South Carolina	56.04	13	59.54	14	59.76	14	56.20	14	51.70	15	47.32	16	43.37	15	39.58	14	35.76	14
41	Tennessee	58.61	3	61.54	4	61.58	3	58.07	3	53.59	3	49.26	3	45.28	3	41.39	3	37.53	4
43	Utah	55.39	14	58.77	18	58.48	19	54.71	24	50.38	24	46.20	22	42.23	21	38.41	21	34.88	19
45	Virginia	56.97	9	60.75	8	60.72	8	57.15	*8	52.67	9	48.33	9	44.37	9	40.53	10	36.71	10
47	Washington	57.84	6	60.70	10	60.38	10	56.72	10	52.36	11	48.17	11	44.35	10	40.66	9	36.95	8
49	Wisconsin	58.81	2	62.77	2	62.48	2	58.80	2	54.39	2	50.08	2	45.98	2	41.91	2	37.95	2
	CITIES.																		
51	Aggregate[3]	51.65	34	56.03	33	56.28	33	53.27	34	49.02	34	44.69	34	40.63	34	36.68	33	32.82	*33
53	Baltimore	51.55	36	56.44	32	56.69	32	53.59	32	49.30	33	44.86	33	40.64	33	36.67	34	32.82	*33
55	Boston	50.56	37	55.67	35	55.98	*34	52.95	35	48.77	35	44.39	36	40.22	36	36.23	36	32.41	36
57	Buffalo	49.62	*38	55.12	37	55.33	37	52.71	37	48.69	36	44.46	35	40.38	35	36.43	35	32.58	35
59	Chicago	52.36	29	57.02	28	57.41	26	54.46	25	50.20	25	45.87	25	41.78	25	37.74	27	33.77	28
61	Cleveland	52.47	28	56.75	30	56.84	31	53.74	30	49.47	31	45.15	31	41.02	31	36.93	31	33.00	31
63	Detroit	52.06	32	57.31	25	57.62	24	55.07	20	50.95	19	46.75	18	42.79	18	38.76	19	34.81	20
65	Los Angeles	53.53	25	56.98	29	56.99	29	53.63	31	49.48	30	45.38	29	41.52	27	37.77	26	34.15	26
67	New Orleans	49.62	*38	52.55	41	52.33	42	48.70	42	44.44	42	40.30	42	36.27	43	32.32	43	28.69	43
69	New York, N. Y.	51.61	35	55.63	36	55.93	36	52.81	36	48.51	37	44.14	37	40.10	37	36 20	37	32.35	37
71	Philadelphia	52.22	31	56.66	31	56.88	30	53.81	29	49.53	29	45.16	30	41.04	30	37.04	30	33.13	30
73	Pittsburgh	47.18	42	52.59	40	53.06	40	50.38	40	46.23	39	41.93	40	38.06	41	34.38	41	30.76	42
75	St. Louis	52.34	30	56.01	34	55.98	*34	53.44	33	49.39	32	45.02	32	40.87	32	36.81	32	32.83	32
77	San Francisco	51.76	33	54.60	38	54.32	38	50.74	38	46.49	38	42.29	38	38.35	39	34 53	40	30.85	41
79	Washington, D. C.	53.77	23	57.30	26	57.07	28	53.88	28	49.69	28	45.39	28	41.37	29	37.55	28	33.85	27
	NEGROES.																		
81	States with less than 4 per cent Negroes[4]	40.46	44	46.05	45	47.24	45	45.06	*44	40.95	45	37.41	44	34.68	44	31.79	44	28.65	44
83	States with more than 5 per cent Negroes[5]	46.39	43	51.01	43	51.37	43	48.17	43	43.79	43	39.86	43	36.79	42	34.00	42	31.17	40
85	Large cities[6]	38.45	46	44.38	46	45.69	46	43.57	46	39.55	46	36.07	46	33.17	46	30.02	46	26.77	46
87	Original registration states[2]	40.45	45	46.23	44	47.48	44	45.06	*44	40.99	44	37.40	45	34.57	45	31.66	45	28.50	45
	Original registration states, 1909–1911	*34.05*	....	*42.53*	....	*44.55*	....	*42.94*	....	*39.05*	....	*35.37*	....	*32.26*	....	*29.18*	....	*26.16*	....
	HAWAII.																		
89	Hawaii (all races combined)	47.79	41	52.53	42	52.80	41	49.79	41	45.52	41	41.52	41	38.13	40	35.05	38	31.85	38
91	Japanese in Hawaii	49.53	40	53.32	39	53.62	39	50.41	39	46.05	40	41.98	39	38.45	38	35.04	39	31.44	39
	Japanese in Japan, 1908-1913	*44.25*	....	*51.61*	....	*52.97*	....	*51.22*	....	*47.12*	....	*43.10*	....	*39.79*	....	*36.47*	....	*32.88*	....

* Two or more rankings the same.

[1] Statistics for the aggregate tables are a compilation of those for the New England states, New York, New Jersey, Pennsylvania, Maryland, District of Columbia, Virginia, North Carolina, South Carolina, Tennessee, Kentucky, Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Missouri, Kansas, Utah, California, Oregon, and Washington.

[2] The original registration states include New England states, New York, New Jersey, District of Columbia, Indiana, and Michigan.

[3] The 14 cities included in aggregate white in cities are those shown in the table.

LIFE IN YEARS, 1919–1920. $\mathring{e}_x$. **Males** TABLE 9.

EXACT AGE IN YEARS.																						No. of life table.
37		42		47		52		57		62		67		72		77		82		87		92		
$\mathring{e}_x$	Rank.	$\mathring{e}_x$	Rank.	$\mathring{e}_x$	Rank.	$\mathring{e}_x$	Rank.	$\mathring{e}_x$	Rank.	$\mathring{e}_x$	Rank.	$\mathring{e}_x$	Rank.	$\mathring{e}_x$	Rank.	$\mathring{e}_x$	Rank.	$\mathring{e}_x$	Rank.	$\mathring{e}_x$	Rank.	$\mathring{e}_x$	Rank.	
31.83	15	28.02	15	24.23	16	20.53	16	17.06	14	13.85	13	10.96	14	8.49	13	6.43	11	4.82	5	3.59	4	2.55	4	1
31.12	18	27.32	*18	23.56	19	19.91	19	16.51	21	13.38	22	10.56	22	8.17	22	6.17	20	4.53	18	3.21	11	2.10	9	3
29.61	....	*25.99*	....	*22.46*	....	*19.02*	....	*15.77*	....	*12.85*	....	*10.25*	....	*7.95*	....	*6.04*	....	*4.56*	....	*3.49*	....	*2.70*	....	
30.86	22	27.32	*18	23.74	18	20.21	18	16.92	18	13.89	12	11.15	10	8.70	9	6.54	8	4.74	9	3.33	6	2.20	*6	5
30.91	20	27.18	21	23.45	20	19.81	21	16.53	20	13.52	21	10.71	*19	8.29	18	6.39	17	4.79	7	3.13	14	1.78	20	7
31.74	16	27.90	16	24.11	17	20.46	17	17.02	16	13.83	15	10.97	*12	8.54	12	6.42	*12	4.59	13	3.11	*16	1.87	17	9
33.23	7	29.33	7	25.40	7	21.49	9	17.79	9	14.33	9	11.21	9	8.58	11	6.41	*14	4.66	11	3.26	9	2.09	10	11
34.76	1	30.73	1	26.65	1	22.59	1	18.75	1	15.16	1	11.85	1	9.03	2	6.72	3	4.77	8	3.19	12	1.90	16	13
33.67	*3	29.73	4	25.79	4	21.87	4	18.12	4	14.67	5	11.47	7	8.76	8	6.40	16	4.14	32	2.38	35	0.33	*41	15
30.78	23	27.00	*23	23.25	23	19.64	23	16.28	*23	13.19	23	10.40	23	8.10	24	6.21	19	4.55	17	3.19	*18	2.04	11	17
31.11	19	27.24	20	23.42	21	19.74	22	16.28	*23	13.11	25	10.32	26	8.02	26	6.07	25	4.36	24	2.95	21	1.77	21	19
32.57	12	28.67	12	24.76	12	20.90	12	17.27	12	13.93	11	10.90	16	8.31	17	6.16	21	4.32	26	2.84	26	1.60	25	21
33.33	6	29.39	6	25.44	6	21.58	6	17.94	7	14.59	6	11.51	6	8.82	7	6.42	*12	4.17	*30	2.44	33	0.60	38	23
33.08	9	29.22	9	25.35	9	21.55	*7	17.99	5	14.71	4	11.69	2	9.04	1	6.65	6	4.57	*15	2.94	22	1.67	23	25
30.57	26	26.76	26	23.06	26	19.47	26	16.12	26	13.07	26	10.29	27	7.98	27	6.11	22	4.57	*15	3.28	8	2.11	8	27
29.98	28	26.25	27	22.59	27	19.08	28	15.83	28	12.88	30	10.22	28	7.94	29	6.00	*27	4.38	23	3.07	*18	1.92	15	29
33.37	5	29.45	5	25.53	5	21.64	5	17.95	6	14.45	8	11.30	8	8.60	10	6.26	18	4.33	25	2.86	25	1.66	24	31
32.23	13	28.39	13	24.54	13	20.74	13	17.13	13	13.77	16	10.77	18	8.18	21	5.91	*33	4.03	34	2.62	30	1.31	29	33
32.71	11	28.86	11	24.87	11	21.02	11	17.39	10	13.99	10	10.97	*12	8.33	16	5.91	*33	3.87	37	2.37	36	0.66	37	35
30.58	25	26.87	25	23.18	25	19.58	24	16.21	25	13.14	24	10.34	25	7.97	28	6.00	*27	4.31	27	2.91	23	1.74	22	37
32.01	14	28.19	14	24.34	14	20.56	15	17.03	15	13.71	18	10.71	*19	8.40	*14	6.48	10	4.45	22	2.66	29	1.11	32	39
33.67	*3	29.84	3	25.97	2	22.02	2	18.29	2	14.84	2	11.67	3	8.99	3	6.71	4	4.61	12	2.89	24	1.54	26	41
31.42	17	27.87	17	24.25	15	20.57	14	17.01	17	13.67	19	10.79	17	8.21	20	5.61	39	3.53	40	2.09	42	.....	....	43
32.90	10	28.98	10	24.99	10	21.03	10	17.31	11	13.84	14	10.66	21	8.06	25	5.93	*30	4.01	35	2.46	32	0.82	35	45
33.15	8	29.28	8	25.38	8	21.55	*7	17.91	8	14.55	7	11.55	5	8.87	5	6.77	2	4.98	4	3.17	13	1.80	19	47
34.01	2	29.98	2	25.94	3	22.00	3	18.28	3	14.83	3	11.66	4	8.90	4	6.60	7	4.72	10	3.24	10	2.02	12	49
29.04	32	25.32	33	21.72	35	18.29	35	15.16	35	12.35	33	9.88	33	7.82	31	6.08	*23	4.58	14	3.30	7	2.20	*6	51
29.03	33	25.30	34	21.76	34	18.36	34	15.18	34	12.27	34	9.73	34	7.69	35	5.93	*30	4.26	28	2.78	27	1.50	*27	53
28.66	36	24.93	38	21.38	38	18.04	37	14.90	37	12.06	38	9.56	39	7.50	39	5.77	36	4.17	*30	2.76	28	1.50	*27	55
28.79	35	25.19	36	21.66	36	18.12	36	14.95	36	12.11	36	9.58	38	7.36	41	5.29	43	3.50	*41	2.11	40	.....	....	57
29.90	29	26.08	29	22.43	29	18.98	29	15.77	30	12.89	*27	10.35	24	8.22	19	6.41	*14	4.80	6	3.41	5	2.22	5	59
29.25	31	25.61	30	22.01	31	18.51	32	15.22	32	12.22	35	9.60	*36	7.37	40	5.30	42	3.50	*41	2.10	41	.....	....	61
30.90	21	27.01	22	23.20	24	19.49	25	16.03	27	12.89	*27	10.12	30	7.86	30	6.06	26	4.44	*20	3.01	20	1.81	18	63
30.60	24	27.00	*23	23.36	22	19.83	20	16.55	19	13.55	20	10.92	15	8.40	*14	5.63	38	3.26	43	1.81	43	0.92	34	65
25.30	45	21.78	45	18.43	45	15.35	45	12.62	46	10.40	46	8.44	45	6.88	44	5.40	41	3.73	38	2.27	*38	0.33	*41	67
28.56	37	24.82	39	21.22	39	17.86	38	14.81	38	12.07	37	9.65	35	7.67	36	5.96	29	4.44	*20	3.12	15	1.94	*13	69
29.32	30	25.60	31	21.98	32	18.43	33	15.21	33	12.42	31	9.91	32	7.81	32	6.08	*23	4.52	19	3.11	*16	1.94	*13	71
27.32	*41	23.96	41	20.66	40	17.42	40	14.45	40	11.78	40	9.27	41	7.22	42	5.74	37	4.22	29	2.51	31	1.19	30	73
28.98	34	25.18	37	21.45	37	17.85	39	14.54	39	11.66	41	9.20	42	7.04	43	4.92	44	3.08	44	1.75	44	1.05	33	75
27.32	*41	23.76	42	20.23	42	16.91	43	13.98	43	11.38	43	9.05	44	6.79	45	4.46	45	2.60	45	0.94	45	0.75	36	77
30.03	27	26.24	28	22.50	28	18.81	30	15.44	31	12.38	32	9.60	*36	7.51	38	5.84	35	4.05	33	2.42	34	0.59	39	79
25.61	43	22.69	43	19.76	43	16.95	42	14.38	41	12.01	39	9.92	31	8.12	23	6.53	9	5.28	3	4.34	2	3.41	1	81
28.32	39	25.33	32	22.24	30	19.22	27	16.45	22	13.72	17	11.07	11	8.84	6	6.92	1	5.41	2	4.21	3	2.77	3	83
23.76	46	20.81	46	17.83	46	15.18	46	12.89	45	10.81	44	9.10	43	7.80	33	6.66	5	5.56	1	4.51	1	3.28	2	85
25.39	44	22.35	44	19.35	44	16.45	44	13.79	44	11.42	42	9.33	40	7.62	37	5.92	32	3.93	36	2.31	37	1.15	31	87
23.26	....	*20.48*	....	*17.75*	....	*15.23*	....	*12.93*	....	*10.88*	....	*9.02*	....	*7.39*	....	*6.15*	....	*5.06*	....	*4.26*	....	*3.75*	....	
28.49	38	25.21	35	21.85	33	18.72	31	15.78	29	12.89	*27	10.17	29	7.75	34	5.52	40	3.66	39	2.27	*38	0.54	40	89
27.83	40	24.26	40	20.62	41	17.23	41	14.04	42	10.62	45	6.86	46	3.80	46	2.15	46	1.02	46	.....	....	.....	....	91
29.07	....	*25.33*	....	*21.71*	....	*18.26*	....	*15.06*	....	*12.16*	....	*9.61*	....	*7.44*	....	*5.63*	....	*4.14*	....	*2.96*	....	*2.03*	....	

[4] The states with less than 4 per cent Negro population are Connecticut, Massachusetts, New York, Michigan, Wisconsin, Minnesota, Washington, Oregon, California, Utah, Kansas, Illinois, Indiana, Ohio, Pennsylvania, and New Jersey.

[5] The states with more than 5 per cent Negro population are Maryland, Virginia, North Carolina, South Carolina, Tennessee, Kentucky, and Missouri.

[6] The 12 cities included in "large cities" for Negroes are Boston, Buffalo, Detroit, Chicago, St. Louis, New Orleans, Cleveland, Pittsburgh, Philadelphia, New York, Baltimore, and Washington.

TABLE 10. Females. $\mathring{e}_x$. COMPLETE EXPECTATION OF

No. of life table.	AREA AND COLOR.	EXACT AGE IN YEARS. 0		1		2		7		12		17		22		27		32	
		$\mathring{e}_x$	Rank.	$\mathring{e}_x$	Rank.	$\mathring{e}_x$	Rank.	$\mathring{e}_x$	Rank.	$\mathring{e}_x$	Rank.	$\mathring{e}_x$	Rank.	$\mathring{e}_x$	Rank.	$\mathring{e}_x$	Rank.	$\mathring{e}_x$	Rank.
	WHITE.																		
2	Aggregate[1]	57.52	19	60.63	16	60.60	15	57.05	14	52.62	13	48.22	13	44.21	*14	40.46	16	36.77	17
4	Original registration states[2]	56.41	24	59.86	22	59.88	22	56 42	22	52 02	22	47.62	22	43.59	*22	39.83	23	36.12	23
	Original registration states, 1909–1911	*58.62*	....	*58.69*	....	*59.24*	....	*56.14*	....	*51.79*	....	*47.39*	....	*43.26*	....	*39.31*	....	*35.40*	....
	STATES.																		
6	California	58.44	11	61.12	11	60.95	10	57.41	11	53.01	10	48.69	9	44.77	9	41.10	8	37.45	8
8	Connecticut	56.84	20	60.33	19	60.41	*18	56.91	17	52.47	16	47.97	18	43.82	20	40.00	21	36.23	*21
10	Illinois	57.76	14	60.81	12	60.87	11	57.43	10	53.00	11	48.62	11	44.58	11	40.80	11	37.06	13
12	Indiana	57.55	18	60.51	17	60.41	*18	56.78	*19	52.33	*18	48.04	17	44.21	*14	40.62	15	37.02	14
14	Kansas	61.02	1	63.48	2	63.27	1	59.42	1	54.96	1	50.57	1	46.44	1	42.55	1	38.80	1
16	Kentucky	57.63	17	60.05	21	60.08	21	56.57	21	52.16	21	47.88	20	44.14	16	40.73	13	37.32	10
18	Maryland	55.99	27	59.77	24	59.84	24	56.25	25	51.80	25	47.37	27	43.38	26	39.71	24	36.05	24
20	Massachusetts	56.56	*21	60.32	20	60.39	20	56.93	16	52.51	15	48.05	16	43.91	19	40.03	19	36 23	*21
22	Michigan	56.01	26	59.48	26	59.46	26	56.12	26	51.79	*26	47.49	24	43.59	*22	40.01	20	36.44	19
24	Minnesota	60.59	3	62.97	3	62.58	3	58.67	4	54.20	4	49.78	4	45.71	4	41.95	3	38.26	3
26	Missouri	59.04	7	61.56	7	61.55	7	58.11	6	53.75	6	49.39	6	45.43	6	41.75	5	38.09	5
28	New Jersey	56.56	*21	59.83	23	59.86	23	56.34	23	51.92	23	47.50	23	43.42	24	39.65	25	35.92	26
30	New York	55.76	30	59.16	28	59.24	*28	55.83	30	51.44	30	47.04	30	42.98	30	39.19	30	35.44	30
32	North Carolina	58.03	13	60.72	14	60.79	13	57.01	15	52.40	17	47.94	19	43.94	18	40.25	18	36.70	18
34	Ohio	58.34	12	61.39	8	61.28	8	57.71	8	53.24	8	48.82	8	44.81	8	41.04	9	37.33	9
36	Oregon	60.45	*4	62.30	6	61.79	6	57.84	7	53.37	7	49.04	7	45.10	7	41.43	7	37.71	6
38	Pennsylvania	55.96	28	59.68	25	59.75	25	56.27	24	51.86	24	47.44	25	43.39	25	39.63	26	35.93	25
40	South Carolina	57.70	15	60.40	18	60.53	17	56.89	18	52.31	20	47.81	21	43.75	21	39.98	22	36.36	20
42	Tennessee	58.48	10	60.77	13	60.70	14	57.06	13	52.55	14	48.18	14	44.28	13	40.70	14	37.19	12
44	Utah	58.61	8	61.18	10	60.80	12	56.77	*19	52.33	*18	48.06	15	44.10	17	40.43	17	36.99	*15
46	Virginia	58.52	9	61.22	9	61.16	9	57.60	9	53.08	9	48.60	12	44.52	12	40.74	12	36.99	*15
48	Washington	60.45	*4	62.60	5	62.19	5	58.30	5	53.89	5	49.61	5	45.65	5	41.88	4	38.10	4
50	Wisconsin	60.73	2	63.55	1	63.19	2	59.35	2	54.89	2	50.43	2	46.28	2	42.43	2	38.63	2
	CITIES.																		
52	Aggregate[3]	54.87	33	58.34	33	58.49	32	55.26	32	50.92	32	46.54	32	42.51	32	38.74	33	35.00	33
54	Baltimore	54.70	35	58.64	31	58.98	30	55.55	31	51.12	31	46 72	31	42.72	31	39.03	31	35.28	32
56	Boston	53.31	38	57.33	38	57.47	38	54.23	38	50.03	38	45.62	38	41.55	38	37.87	38	34.23	38
58	Buffalo	53.01	39	57.47	*36	57.63	37	54.82	*36	50.72	34	46.42	33	42.44	34	38.69	34	34.97	34
60	Chicago	55.49	31	59.08	29	59.35	27	56.11	27	51.71	28	47.32	28	43.27	28	39.45	28	35.65	28
62	Cleveland	55.77	29	59.23	27	59.24	*28	55.98	28	51.59	29	47.18	29	43.15	29	39.31	29	35.56	29
64	Detroit	53.44	37	57.47	*36	57.70	36	54.82	*36	50.58	36	46.32	35	42.50	33	38.93	32	35.36	31
66	Los Angeles	57.68	16	60.69	15	60.56	16	57.18	12	52.91	12	48.64	10	44.73	10	41.01	10	37.31	11
68	New Orleans	54.22	36	56.81	39	56.60	39	52.89	39	48.35	39	43.92	39	39.96	39	36.56	39	33.21	39
70	New York, N. Y.	54.83	34	58.02	35	58.23	35	54.91	35	50.54	37	46.15	37	42.07	37	38.25	37	34.48	37
72	Philadelphia	54.92	32	58.32	34	58.33	33	55.09	33	50.70	35	46.29	36	42.29	36	38.56	35	34.84	35
74	Pittsburgh	50.51	40	54.90	40	55.27	40	52.10	40	47.95	40	43.67	40	39.78	40	36.30	40	32.86	40
76	St. Louis	56.14	25	58.83	30	58.80	31	55.91	29	51.79	*26	47.43	26	43.36	27	39.51	27	35.69	27
78	San Francisco	56.50	23	58.63	32	58.32	34	55.03	34	50.81	33	46.40	34	42.31	35	38.51	36	34.79	36
80	Washington, D. C.	59.81	6	62.72	4	62.41	4	58.86	3	54.48	3	50.08	3	45.83	3	41.60	6	37.49	7
	NEGROES.																		
82	States with less than 4 per cent Negroes[4]	42.77	44	47.25	44	48.38	44	45.76	44	41.72	*43	38.20	43	35.30	43	32.28	43	29.12	44
84	States with more than 5 per cent Negroes[5]	45.46	43	48.85	43	48.99	43	45.72	45	41.37	45	37.60	45	34.72	45	32.11	44	29.54	43
86	Large cities[6]	40.58	46	45.38	46	46.52	46	44.19	46	40.11	46	36.60	46	33.72	46	30.66	46	27.50	46
88	Original registration states[2]	42.35	45	47.08	45	48.22	45	45.77	43	41.72	*43	38.15	44	35.17	44	32.02	45	28.82	45
	Original registration states, 1909–1911	*37.67*	....	*45.15*	....	*46.95*	....	*45.13*	....	*41.29*	....	*37.95*	....	*34.90*	....	*31.61*	....	*28.38*	....
	HAWAII.																		
90	Hawaii (all races combined)	47.27	42	51.29	41	51.56	41	48.47	41	44.09	41	40.34	41	37.39	41	34.70	41	32.29	41
92	Japanese in Hawaii	47.66	41	50.60	42	50.80	42	47.79	42	43.45	42	39.54	42	36.39	42	33.48	42	30.71	42
	Japanese in Japan, 1908–1913	*44.73*	....	*51.24*	....	*52.55*	....	*50.85*	....	*46.90*	....	*43.38*	....	*40.56*	....	*37.62*	....	*34.41*	....

* Two or more rankings the same.

[1] Statistics for the aggregate tables are a compilation of those for the New England states, New York, New Jersey, Pennsylvania, Maryland, District of Columbia, Virginia, North Carolina, South Carolina, Tennessee, Kentucky, Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Missouri, Kansas, Utah, California, Oregon, and Washington.

[2] The original registration states include New England states, New York, New Jersey, District of Columbia, Indiana, and Michigan.

[3] The 14 cities included in aggregate white in cities are those shown in the table.

LIFE IN YEARS, 1919–1920. $\mathring{e}_x$. **Females.** TABLE **10.**

EXACT AGE IN YEARS.																						No. of life table.
37		42		47		52		57		62		67		72		77		82		87		92		
$\mathring{e}_x$	Rank.	$\mathring{e}_x$	Rank.	$\mathring{e}_x$	Rank.	$\mathring{e}_x$	Rank.	$\mathring{e}_x$	Rank.	$\mathring{e}_x$	Rank.	$\mathring{e}_x$	Rank.	$\mathring{e}_x$	Rank.	$\mathring{e}_x$	Rank.	$\mathring{e}_x$	Rank.	$\mathring{e}_x$	Rank.	$\mathring{e}_x$	Rank.	
32.99	18	29.11	19	25.21	18	21.43	17	17.84	17	14.50	*15	11.49	15	8.92	16	6.77	12	5.08	10	3.76	7	2.62	7	2
32.29	24	28.39	24	24.52	24	20.79	22	17.27	23	14.01	22	11.11	24	8.66	22	6.61	*19	4.98	14	3.70	9	2.63	6	4
31.56	....	*27.73*	....	*23.96*	....	*20.29*	....	*16.84*	....	*13.70*	....	*10.89*	....	*8.46*	....	*6.41*	....	*4.78*	....	*3.61*	....	*2.67*	....	
33.71	8	29.85	10	25.99	10	22.22	9	18.59	8	15.17	6	12.05	6	9.26	7	6.90	8	5.02	12	3.59	*11	2.49	9	6
32.39	21	28.48	21	24.56	22	20.78	*23	17.28	22	14.09	21	11.28	21	8.87	19	6.72	16	4.77	27	3.22	*25	1.99	26	8
33.22	16	29.29	16	25.37	16	21.57	16	18.00	15	14.63	14	11.57	*13	9.01	14	6.76	*13	4.81	*22	3.22	*25	1.94	*28	10
33.33	14	29.46	15	25.58	14	21.76	14	18.04	14	14.50	*15	11.29	20	8.47	*29	6.04	43	4.10	42	2.67	40	1.39	40	12
35.02	1	31.08	1	27.07	1	23.07	1	19.28	1	15.68	2	12.31	*2	9.37	5	6.76	*13	4.38	*38	2.59	42	0.97	43	14
33.74	7	29.92	*8	26.03	9	22.17	10	18.46	*10	15.03	10	11.84	10	9.09	9	6.79	11	4.82	21	3.22	*25	2.01	25	16
32.31	23	28.42	23	24.55	23	20.78	*23	17.25	24	13.98	24	10.86	*28	8.31	38	6.41	*34	4.80	*24	3.37	22	2.13	*19	18
32.38	22	28.46	22	24.58	21	20.85	21	17.30	21	14.00	23	11.09	25	8.61	26	6.44	*31	4.54	34	3.02	34	1.82	34	20
32.72	20	28.88	20	25.04	20	21.28	19	17.65	*19	14.25	20	11.17	23	8.47	*29	6.15	40	4.27	40	2.85	39	1.67	38	22
34.50	3	30.60	3	26.66	2	22.79	2	19.14	2	15.69	1	12.46	1	9.64	1	7.29	5	5.31	*5	3.55	15	2.12	21	24
34.36	4	30.49	4	26.56	4	22.69	*3	18.98	3	15.47	3	12.31	*2	9.59	2	7.31	4	5.53	4	4.12	3	2.99	2	26
32.03	26	28.07	26	24.16	26	20.40	28	16.88	*29	13.65	*31	10.86	*28	8.46	31	6.51	25	5.00	13	3.64	10	2.40	10	28
31.57	31	27.63	31	23.79	32	20.11	32	16.68	33	13.52	34	10.71	33	8.40	35	6.48	*26	4.85	19	3.50	16	2.37	11	30
33.20	17	29.59	13	25.76	12	21.93	12	18.21	12	14.64	13	11.35	18	8.64	25	6.43	33	4.48	36	2.89	38	1.60	39	32
33.56	*11	29.64	12	25.69	13	21.83	13	18.13	13	14.69	12	11.57	*13	8.89	*17	6.66	17	4.84	20	3.40	*20	2.23	14	34
33.92	6	30.05	7	26.13	8	22.27	8	18.57	9	15.11	8	11.94	7	9.08	10	6.57	22	4.51	35	2.99	*35	1.80	35	36
32.17	25	28.31	25	24.43	25	20.67	25	17.17	25	13.94	25	11.02	26	8.51	27	6.40	*36	4.66	*31	3.28	24	2.13	*19	38
32.85	19	29.15	18	25.24	17	21.40	18	17.77	18	14.40	19	11.42	17	8.84	20	6.59	21	4.59	33	2.99	*35	1.73	*36	40
33.59	10	29.92	*8	26.16	7	22.35	6	18.65	6	15.12	7	11.92	*8	9.17	8	6.76	*13	4.74	28	3.18	31	1.93	30	42
33.64	9	30.09	6	26.22	6	22.32	7	18.62	7	14.97	11	11.65	11	8.89	*17	6.33	39	4.01	43	2.33	43	0.23	44	44
33.28	15	29.47	14	25.48	15	21.62	15	17.95	16	14.49	17	11.34	19	8.65	*23	6.46	*28	4.67	30	3.22	*25	2.02	24	46
34.23	5	30.32	5	26.39	5	22.52	5	18.85	5	15.43	5	12.26	4	9.50	3	7.12	7	5.28	7	3.83	6	2.54	8	48
34.73	2	30.71	2	26.65	3	22.69	*3	18.94	4	15.44	4	12.19	5	9.30	6	6.89	9	4.93	*16	3.41	*18	2.21	16	50
31.16	33	27.27	33	23.48	33	19.84	34	16.46	34	13.36	35	10.62	*34	8.37	36	6.46	*28	4.80	*24	3.41	*18	2.24	13	52
31.41	32	27.53	32	23.81	31	20.13	31	16.75	32	13.62	33	10.62	*34	8.25	40	6.48	*26	4.81	*22	3.08	32	1.73	*36	54
30.54	38	26.82	37	23.15	38	19.64	38	16.29	36	13.20	37	10.59	36	8.44	*32	6.44	*31	4.96	15	3.93	5	2.87	4	56
31.13	34	27.16	34	23.36	35	19.66	*36	16.08	39	12.83	40	9.95	45	7.71	45	5.86	45	3.89	44	2.30	44	1.15	42	58
31.74	29	27.81	29	23.96	30	20.27	30	16.88	*29	13.74	*26	10.94	27	8.65	*23	6.63	18	4.78	26	3.21	29	1.92	31	60
31.77	28	27.88	28	24.03	29	20.39	29	16.98	27	13.73	28	10.82	31	8.34	37	6.40	*36	5.03	11	3.57	13	2.14	18	62
31.61	30	27.77	30	24.07	28	20.44	27	16.89	28	13.65	*31	10.81	32	8.41	34	6.41	*34	4.92	18	3.59	*11	2.22	15	64
33.56	*11	29.68	11	25.82	11	22.06	11	18.46	*10	15.06	9	11.92	*8	9.07	11	6.45	30	4.25	41	2.66	41	1.27	41	66
29.64	40	26.07	40	22.45	40	18.98	40	15.75	41	12.79	41	10.19	*42	7.97	43	5.88	44	3.85	45	2.26	45	0.07	45	68
30.58	37	26.65	39	22.86	39	19.24	39	15.92	40	12.89	39	10.28	41	8.26	39	6.61	*19	5.19	8	3.96	4	2.89	3	70
31.02	35	27.12	35	23.31	36	19.66	*36	16.30	35	13.29	36	10.54	37	8.24	41	6.34	38	4.66	*31	3.20	30	1.94	*28	72
29.43	41	25.92	41	22.32	41	18.83	41	15.59	42	12.62	42	10.07	44	7.93	44	6.05	42	4.46	37	3.06	33	1.87	32	74
31.84	27	27.93	27	24.09	27	20.48	26	17.01	26	13.69	*29	10.86	*28	8.50	28	6.54	23	4.93	*16	3.31	23	1.98	27	76
30.94	36	26.97	36	23.26	37	19.67	35	16.17	37	13.11	38	10.43	38	8.07	42	6.08	41	4.38	*38	2.99	*35	1.85	33	78
33.35	13	29.22	17	25.17	19	21.25	20	17.65	*19	14.45	18	11.62	12	9.06	12	6.52	24	4.70	29	3.48	17	2.26	12	80
25.94	44	22.79	44	19.74	44	16.88	43	14.52	43	12.45	43	10.41	40	8.70	21	7.13	6	5.70	3	4.28	2	2.65	5	82
26.86	43	24.04	42	21.26	42	18.55	42	16.09	38	13.74	*26	11.46	16	9.38	4	7.33	3	5.31	*5	3.56	14	2.20	17	84
24.31	46	21.22	46	18.30	46	15.74	46	13.76	45	12.05	45	10.42	39	8.95	15	7.62	1	6.63	1	5.65	1	4.14	1	86
25.62	45	22.49	45	19.40	45	16.50	44	14.11	44	12.12	44	10.19	*42	8.44	*32	6.88	10	5.15	9	3.40	*20	2.06	22	88
25.18	....	*22.16*	....	*19.30*	....	*16.55*	....	*14.05*	....	*11.96*	....	*10.17*	....	*8.55*	....	*6.91*	....	*5.59*	....	*4.86*	....	*4.14*	....	
29.69	39	26.72	38	23.38	34	20.10	33	16.78	31	13.69	*29	11.27	22	9.03	13	7.39	2	6.06	2	3.72	8	2.04	23	90
27.60	42	23.95	43	19.95	43	15.92	45	11.57	46	7.00	46	3.60	46	1.98	46	0.88	46	.....	....	.....	....	.....	....	92
31.07	....	*27.63*	....	*24.03*	....	*20.41*	....	*16.96*	....	*13.73*	....	*10.82*	....	*8.35*	....	*6.32*	....	*4.62*	....	*3.27*	....	*2.22*	....	

[4] The states with less than 4 per cent Negro population are Connecticut, Massachusetts, New York, Michigan, Wisconsin, Minnesota, Washington, Oregon, California, Utah, Kansas, Illinois, Indiana, Ohio, Pennsylvania, and New Jersey.

[5] The states with more than 5 per cent Negro population are Maryland, Virginia, North Carolina, South Carolina, Tennessee, Kentucky, and Missouri.

[6] The 12 cities included in "large cities" for Negroes are Boston, Buffalo, Detroit, Chicago, St. Louis, New Orleans, Cleveland, Pittsburgh, Philadelphia, New York, Baltimore, and Washington.

TABLE 11. EXCESS OF ANNUAL RATE OF MORTALITY AMONG MALES OVER THAT

[Bold-faced type indicates that the rate among females is in

No. of line.	AREA AND COLOR.	EXACT AGE IN YEARS.								
		0	1	2	7	12	17	22	27	32
	WHITE.									
1	Aggregate[1]	17.01	1.77	0.71	0.41	0.31	0.48	0.48	0.74	0.11
2	Original registration states[2]	18.82	1.87	0.87	0.51	0.31	0.45	0.40	0.75	0.02
3	*Original registration states, 1909–1911*	*21.00*	*2.38*	*1.30*	*0.31*	*0.27*	*0.30*	*0.69*	*0.28*	*0.86*
	STATES.									
4	California	13.10	1.35	0.38	0.35	0.73	0.96	0.09	0.61	1.27
5	Connecticut	20.81	1.17	0.81	0.64	0.55	1.06	0.03	0.20	0.15
6	Illinois	18.09	2.43	0.52	0.51	0.29	0.60	0.50	0.89	0.09
7	Indiana	16.35	1.58	1.00	0.50	0.03	0.11	1.60	1.62	1.64
8	Kansas	13.83	0.53	0.68	0.47	0.15	0.71	0.25	0.79	0.85
9	Kentucky	12.81	0.67	0.27	0.16	0.07	0.01	1.54	2.25	2.07
10	Maryland	16.73	0.11	0.98	0.50	0.33	0.01	1.03	0.60	0.10
11	Massachusetts	20.36	1.67	1.20	0.50	0.31	0.31	0.55	0.35	0.33
12	Michigan	18.87	1.37	0.57	0.40	0.25	0.31	1.40	2.04	0.86
13	Minnesota	15.65	1.26	0.92	0.29	0.33	0.48	0.56	1.08	0.12
14	Missouri	17.68	2.28	0.46	0.39	0.16	0.61	0.43	0.95	0.55
15	New Jersey	17.29	2.78	1.18	0.55	0.29	0.25	0.02	0.82	0.57
16	New York	18.48	2.38	0.71	0.52	0.32	0.52	0.10	0.33	0.65
17	North Carolina	12.42	2.55	0.65	0.14	0.31	0.01	0.80	0.96	1.36
18	Ohio	15.10	1.24	0.59	0.49	0.36	0.51	0.82	0.89	0.30
19	Oregon	17.34	2.60	0.08	0.59	0.44	1.07	1.23	0.10	0.24
20	Pennsylvania	18.61	2.44	0.58	0.44	0.30	0.39	0.35	0.44	0.05
21	South Carolina	14.14	1.80	1.28	0.12	0.46	0.54	0.44	0.82	1.08
22	Tennessee	9.67	1.52	1.20	0.07	0.10	0.02	1.17	1.99	1.55
23	Utah	16.07	1.93	0.20	0.91	0.33	0.67	0.69	0.02	0.12
24	Virginia	17.97	0.78	0.37	0.02	0.42	0.71	0.08	0.60	0.06
25	Washington	13.21	1.85	1.33	0.38	0.24	0.79	0.61	0.48	0.67
26	Wisconsin	18.92	1.18	0.73	0.33	0.33	0.82	0.71	1.03	0.14
	CITIES.									
27	Aggregate[3]	19.40	2.42	1.32	0.66	0.31	0.29	0.37	0.72	0.42
28	Baltimore	19.82	0.59	1.18	1.02	0.14	0.39	1.40	0.42	0.57
29	Boston	22.00	3.56	1.69	0.35	0.10	0.22	1.23	1.26	0.25
30	Buffalo	22.75	1.66	2.22	0.47	0.45	0.26	0.94	0.24	0.05
31	Chicago	21.52	2.62	1.55	0.81	0.38	0.23	0.56	1.07	0.21
32	Cleveland	17.43	2.17	2.52	0.37	0.63	0.16	0.91	0.86	0.12
33	Detroit	21.35	1.49	1.71	0.66	0.27	0.09	1.90	2.40	1.25
34	Los Angeles	12.65	3.18	0.56	0.53	0.83	0.94	0.13	0.84	1.36
35	New Orleans	11.44	0.90	0.70	1.18	1.62	1.10	1.45	2.52	2.69
36	New York, N. Y.	17.85	2.48	0.91	0.62	0.19	0.31	0.28	0.44	0.65
37	Philadelphia	20.48	4.06	1.40	0.50	0.40	0.08	1.01	1.11	0.10
38	Pittsburgh	23.46	3.03	1.91	1.00	0.31	0.57	0.29	1.03	0.40
39	St. Louis	20.31	0.80	0.95	1.09	0.04	0.26	0.68	0.68	0.19
40	San Francisco	16.89	1.38	0.05	0.29	0.85	1.48	0.62	0.60	2.03
41	Washington, D. C.	16.50	2.33	1.45	1.29	0.59	0.96	1.99	2.93	2.49
	NEGROES.									
42	States having less than 4 per cent Negroes[4]	23.89	2.35	3.51	0.36	0.41	0.84	1.35	0.29	0.67
43	States having more than 5 per cent Negroes[5]	20.11	3.30	0.75	0.35	0.62	1.78	1.41	2.45	2.18
44	Large cities[6]	27.96	4.25	4.49	0.00	0.45	0.08	0.21	0.94	0.95
45	Original registration states[2]	24.60	2.90	2.10	0.29	0.06	0.12	2.32	0.33	0.60
46	*Original registration states, 1909–1911*	*34.28*	*7.98*	*7.64*	*0.38*	*0.83*	*0.87*	*1.91*	*2.56*	*3.10*
	HAWAII.									
47	Hawaii (all races combined)	11.25	0.49	2.37	0.13	0.13	2.96	1.58	3.72	5.57
48	Japanese in Hawaii	11.99	0.58	1.45	1.08	0.18	2.45	2.44	4.62	5.66
49	*Japanese in Japan, 1908–1913*	*15.46*	*0.40*	*0.29*	*0.37*	*1.63*	*2.63*	*1.67*	*1.94*	*2.15*

[1] Statistics for the aggregate tables are a compilation of those for the New England states, New York, New Jersey, Pennsylvania, Maryland, District of Columbia, Virginia, North Carolina, South Carolina, Tennessee, Kentucky, Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Missouri, Kansas, Utah, California, Oregon, and Washington.

[2] The original registration states include the New England states, New York, New Jersey, District of Columbia, Indiana, and Michigan

[3] The 14 cities included in aggregate white in cities are those shown in the table.

AMONG FEMALES IN THE SAME AREA AND AGE GROUP DURING 1919–1920. TABLE 11.

excess of that among males in the same area and age group.]

EXACT AGE IN YEARS.											No. of line.
37	42	47	52	57	62	67	72	77	82	87	92	
0.56	1.10	1.07	1.43	2.40	3.09	3.73	5.32	6.30	10.19	12.93	8.41	1
0.79	1.24	1.09	1.49	2.62	2.91	3.10	5.24	7.53	11.47	15.97	9.72	2
1.73	*2.44*	*2.89*	*3.06*	*4.05*	*5.44*	*6.04*	*5.97*	*11.95*	*9.23*	*13.34*	*0.26*	3
2.62	3.13	2.68	4.00	6.33	7.33	9.68	9.04	7.75	12.84	31.72	17.59	4
1.26	1.91	1.77	2.04	4.59	1.06	2.73	4.44	19.13	3.13	16.82	28.47	5
0.71	1.17	1.85	1.81	2.80	4.57	4.85	5.80	8.01	10.49	12.74	1.22	6
0.35	0.65	0.78	0.21	1.32	0.91	3.11	4.28	1.76	5.60	18.32	17.33	7
0.70	0.29	0.47	0.20	0.20	1.13	2.60	5.93	11.96	2.70	20.47	41.12	8
1.01	0.35	0.34	0.17	0.29	0.70	0.84	3.88	1.13	8.55	14.36	51.79	9
0.94	1.29	1.67	2.76	2.95	5.35	8.39	4.11	0.65	7.83	6.13	14.24	10
0.46	0.89	0.89	1.24	3.01	3.52	5.81	9.52	11.77	11.13	21.11	1.22	11
0.56	0.16	0.81	0.41	1.27	1.35	1.74	5.41	3.22	7.89	14.15	11.89	12
0.15	0.23	0.33	0.86	1.18	4.42	3.88	8.18	2.85	24.13	11.54	12.29	13
0.19	0.61	1.03	1.31	3.32	4.00	2.76	3.99	0.88	13.07	16.55	24.14	14
1.06	1.78	2.46	1.89	3.67	2.46	2.06	8.85	4.33	13.37	25.04	31.98	15
1.68	1.93	2.03	2.71	3.41	4.71	3.39	3.68	7.30	15.73	7.81	21.23	16
2.60	0.70	0.71	0.40	0.64	1.70	2.50	2.76	0.16	1.44	29.11	29.64	17
0.54	1.15	0.88	1.37	1.99	2.89	5.34	5.07	9.06	16.11	7.80	34.28	18
0.77	0.18	0.03	1.25	2.10	2.68	7.21	8.57	9.93	9.34	20.77	133.78	19
1.15	1.85	2.09	2.04	3.21	3.60	4.96	8.23	8.88	11.07	22.48	7.27	20
1.23	0.43	1.03	1.00	2.51	0.23	4.45	12.62	5.83	3.57	15.09	19.82	21
1.40	0.48	1.29	0.38	0.57	*2.08*	*0.13*	*5.00*	*1.09*	*2.94*	1.50	20.94	22
0.19	1.63	3.55	1.56	4.57	7.10	11.07	2.00	12.45	6.17	14.70	83.00	23
1.21	0.29	0.27	0.79	0.94	0.38	2.59	7.76	6.93	15.48	22.37	5.90	24
0.43	0.57	0.27	1.48	0.19	4.49	3.31	6.72	13.60	2.82	20.33	42.90	25
0.09	0.30	0.24	0.66	1.01	1.60	3.40	5.31	6.15	7.15	3.11	25.81	26
1.60	2.08	2.75	3.73	5.51	7.42	7.58	8.85	10.68	11.65	14.21	8.10	27
1.59	2.00	3.21	4.66	3.56	9.65	12.76	9.14	5.23	22.33	22.02	69.14	28
0.08	1.47	2.59	3.32	5.60	6.32	5.73	13.78	18.98	5.95	32.55	54.52	29
2.34	4.26	1.40	4.92	7.51	7.24	7.94	3.73	9.33	12.90	5.58	203.59	30
1.16	1.48	3.28	2.86	3.91	6.91	5.54	7.43	9.88	7.30	3.14	0.82	31
2.04	2.89	2.71	2.42	5.04	8.21	10.75	12.77	6.39	15.22	7.53	15.58	32
0.34	0.04	1.11	1.56	1.98	3.63	3.63	10.44	8.23	2.35	15.82	65.06	33
2.55	2.69	2.66	4.06	6.66	8.88	12.52	5.13	2.65	9.00	44.35	12.31	34
2.49	2.65	8.38	7.64	18.41	20.11	24.06	29.64	23.16	13.60	110.45	91.42	35
1.96	1.97	3.13	4.41	5.24	6.78	4.93	5.34	8.10	18.26	15.06	6.35	36
1.30	2.27	1.75	2.17	4.15	6.16	6.90	8.56	8.44	7.03	7.90	25.57	37
1.15	3.16	4.09	3.70	6.76	5.30	3.49	14.78	18.68	3.60	38.70	114.09	38
1.21	2.04	1.84	2.28	8.28	12.95	12.87	16.72	17.19	26.68	12.59	100.42	39
4.48	3.46	3.09	8.17	11.78	10.08	14.55	7.48	22.40	18.59	29.55	77.61	40
2.76	3.36	3.24	3.71	5.81	5.09	12.31	31.20	32.25	4.91	9.53	2.26	41
1.97	1.76	0.32	0.08	5.23	0.31	3.14	1.51	13.18	17.30	23.82	31.84	42
1.74	2.87	4.23	3.43	5.34	4.83	4.22	6.18	9.51	24.23	15.70	61.12	43
2.39	0.29	0.57	0.16	4.39	3.46	10.04	18.49	12.79	16.67	34.62	59.24	44
0.94	0.86	0.67	1.31	5.07	1.50	5.73	8.70	7.18	30.56	51.64	28.13	45
3.31	*3.44*	*3.36*	*6.34*	*3.87*	*5.78*	*4.39*	*18.20*	*26.38*	*9.27*	*26.76*	*25.04*	46
2.57	0.14	2.11	3.48	7.68	1.42	0.72	8.07	0.15	77.74	59.60	124.03	47
0.08	1.27	5.71	7.92	19.25	2.40	----	----	----	----	----	----	48
1.92	*0.12*	*2.38*	*4.05*	*6.48*	*9.45*	*12.10*	*20.10*	*18.41*	*23.21*	*27.90*	*31.90*	49

[4] The states with less than 4 per cent Negro population are Connecticut, Massachusetts, New York, Michigan, Wisconsin, Minnesota, Washington, Oregon, California, Utah, Kansas, Illinois, Indiana, Ohio, Pennsylvania, and New Jersey.

[5] The states with more than 5 per cent Negro population are Maryland, Virginia, North Carolina, South Carolina, Tennessee, Kentucky, and Missouri.

[6] The 12 cities included in "large cities" for Negroes are Boston, Buffalo, Detroit, Chicago, St. Louis, New Orleans, Cleveland Pittsburgh, Philadelphia, New York, Baltimore, and Washington.

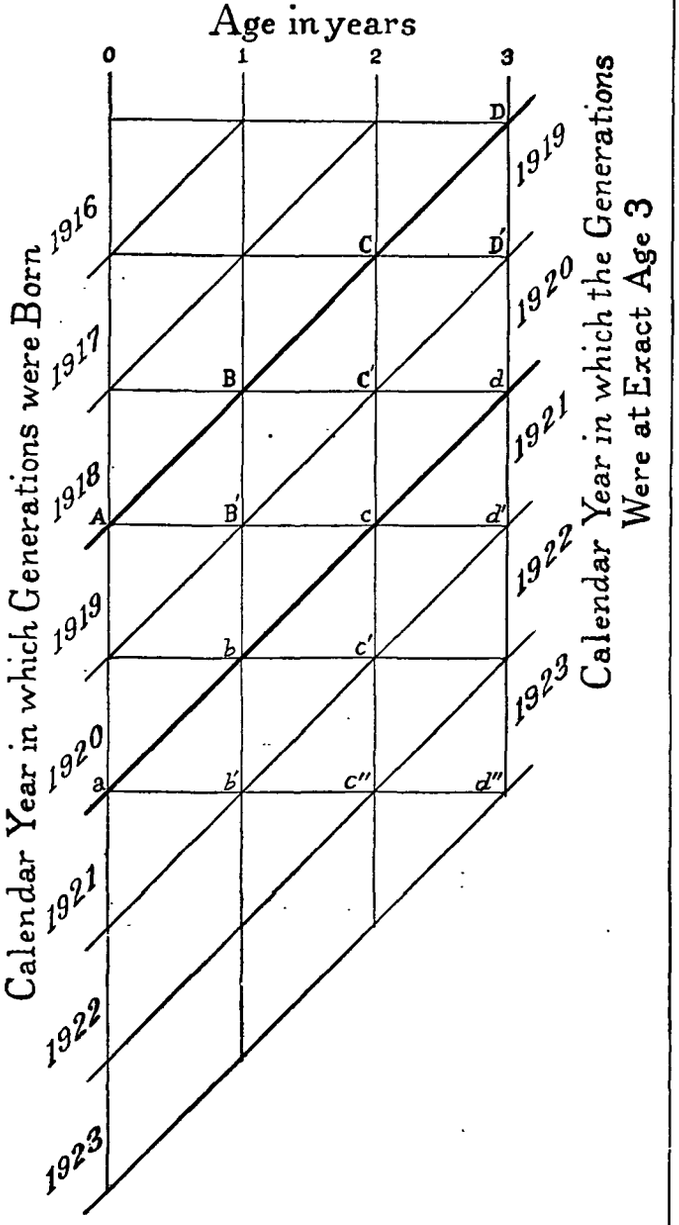
PART II.—METHODS USED AND ACTUAL COMPUTATION.

A.—EXPLANATION OF METHODS USED.

THEORY OF METHOD USED IN OBTAINING RATES OF MORTALITY AT AGES UNDER 3 YEARS.

7. Diagrams 1 to 3 represent the progress of generations. These diagrams are fully explained in sections 96, 106, and 109, pages 329, 338, and 340 of the United States Life Tables, 1890, 1901, 1910, and 1901–1910. In brief, the ages of the generations are measured by vertical lines along the horizontal axis. In the diagram, time in calendar years is measured by the diagonal lines which are at right angles to the bisector of the angle between the vertical and horizontal axes. This bisector is not drawn in these diagrams. Thus the generations begin along the vertical axis at age 0 and move horizontally to the right. See Diagrams 2 and 3, pages 33 and 37. In any generation many die under 1 year of age; for instance, of those born in 1916, E_0^{1916}, some die in 1916, lD_0^{1916}, and some in 1917, eD_0^{1917}. Of those who survive to exact age 1 year, E_1^{1916}, many die between exact ages 1 and 2 years, some in 1917, lD_1^{1917}, and some in 1918, eD_1^{1918}. Likewise, the deaths among the survivors to exact age 2 years, E_2^{1916}, occur in 1918, lD_2^{1918}, and some in 1919, eD_2^{1919}.

DIAGRAM 1.—MOVEMENT OF GENERATIONS REPRESENTED GRAPHICALLY.



If a census be taken of these generations at any time, for instance, January 1, 1919, the children under 3 years of age enumerated would be those who were born between January 1, 1916, and January 1, 1919, who had not died before January 1, 1919. Thus the children between 2 and 3 years of age on January 1, 1919, would be that part of the 1916 generation, E_0^{1916}, which was not included in $lD_0^{1916}+eD_0^{1917}+lD_1^{1917}+eD_1^{1918}+lD_2^{1918}$.

The method used to derive the formula for the annual rate of mortality at each year of age under 3 is a modification of the method suggested by Mr. Robert Henderson. The rate of mortality of the generation that attains age x during the calendar period is by definition $q_x=d_x/l_x$, where l_x is the number that attain age x during the calendar period and d_x is the number of deaths that occur among the l_x persons before they become aged exactly $x+1$ years. Part of these d_x occur in the year following the calendar period of years. An illustration of this is afforded in Diagram 2. Thus, $E_0^{1919}+E_0^{1920}$, or E_0, is the number of children born during the calendar period 1919–1920, or the number that attain age 0 during that period. Before this generation has become aged exactly 1 year, d_0 of them have died, lD_0^{1919} in 1919, $eD_0^{1920}+lD_0^{1920}$ in 1920, and eD_0^{1921} in 1921. On the other hand, some of the deaths under 1 year of age in 1919–1920, eD_0^{1919}, were of children born in 1918. Accordingly, it appears that the number of deaths under 1 year of age during 1919 and 1920 is

$$D_0=eD_0^{1919}+lD_0^{1919}+eD_0^{1920}+lD_0^{1920}$$

and that in the generation born in 1919–1920 before it attains exact age 1 year is

$$d_0=lD_0^{1919}+eD_0^{1920}+lD_0^{1920}+eD_0^{1921}.$$

Thus the difference between the number of deaths under 1 year of age in the calendar period 1919–1920 and in the generation born in that period is

$$D_0-d_0=eD_0^{1919}-eD_0^{1921}=r_0^{1919}P_{1919}^{0/1}-r_0^{1921}P_{1921}^{0/1},$$

where r_0^y is the ratio of the number of deaths under 1 year of age in the calendar year y among those born in the previous year, $y-1$, to $P_y^{0/1}$.

From Diagram 2 it appears that the deaths under 1 year of age in the calendar period 1919–1920 must occur among the $P_{1919}^{0/1}+E_0^{1919}+E_0^{1920}$ children and that the $P_{1919}^{0/1}$ and $P_{1921}^{0/1}$ children lived only a part of their lives between birth and 1 year of age in the period 1919–1920. Hence the rate of mortality under 1 year of age in the *calendar period* 1919–1920 must be

$$q_0^c = D_0/E_0',$$

where E_0' may be called the equivalent generation which corresponds to the deaths D_0.

In the special case where the force of mortality at each age in triangle AB′B, Diagram 1, is equal to that at the corresponding age in triangle $ab'b$ and in quadrilateral AabB′, the rates of mortality under 1 year of age in 1919–1920 and in the generation born in 1919–1920 would be the same, and r_0^{1919}, r_0^{1920}, r_0^{1921} would all be equal.

Then the equation

$$D_0 - d_0 = r_0^{1919}P_{1919}^{0/1} - r_0^{1921}P_{1921}^{0/1}$$

may be written

$$D_0 = d_0 + r_0^{1919}\delta_0, \text{ where } \delta_0 \text{ is } P_{1919}^{0/1} - P_{1921}^{0/1},$$

so that

$$E_0'q_0^c = E_0q_0 + r_0^{1919}\delta_0.$$

Then since $q_0 = q_0^c$,

$$E_0' = E_0 + k_0\delta_0, \text{ where } k_0 \text{ is } r_0^{1919}/q_0.$$

When k_0 equals $\frac{1}{2}$, this formula for the approximate value of the equivalent generation is that given in equation (22) of the United States Life Tables, 1890, 1901, 1910, 1901–1910, page 337.

By reasoning similar to the above approximate values for rate of mortality between exact ages 1 and 2 years and between 2 and 3 years in 1919–1920 are shown to be, respectively,

$$q_1^c = D_1/(E_1 + r_1\delta_1/q_1) \text{ and } q_2^c = D_2/(E_2 + r_2\delta_2/q_2),$$

where E_1 and E_2 are the numbers of children that attain ages 1 and 2 years, respectively, in the calendar period 1919–1920.

Where the rate of mortality does not change very rapidly between ages x and $x+1$, r_x/q_x is very nearly equal $\frac{1}{2}$. However, the rate of mortality under 1 year of age does change very rapidly, and for this reason k_0 was determined from infant mortality statistics given in Table 13 of Birth Statistics of the Birth Registration Area of the United States in each year from 1918 to 1921, published by the Bureau of the Census. The statistics from which the value for k_0 was determined were from the same area as that covered by the 1919–1920 life tables, except Rhode Island, Illinois, Missouri, Tennessee, and Hawaii, and should, therefore, be a very good average for these tables. The results obtained were 0.275 for males and 0.280 for females. While the rate of mortality under 1 year of age has been very much lowered between 1909 and 1919, that under 1 day of age has not changed much. The consequence is that the per cent of born and died in a calendar year has been raised, so that k_0 has changed from about 33⅓ per cent in 1909–1911 to about 28 per cent in 1919–1920.[1]

Unfortunately no statistics are available to determine k_1 and k_2. However, there is no evidence of irregularity in the lowering of the rates of mortality during the age periods 1 to 2 years and 2 to 3 years, and so k_1 and k_2 were set equal to $\frac{1}{2}$, the ratio used for the 1909–1911 life tables. See United States Life Tables, 1890, 1901, 1910, and 1901–1910, page 343, equations (30).

From Diagram 2 it will be seen that

$$E_1 = E_0 + P_{1919}^{0/1} - P_{1921}^{0/1} - D_0 = E_0 + \delta_0 - D_0,$$

while

$$E_2 = E_1 + P_{1919}^{1/2} - P_{1921}^{1/2} - D_1 = E_1 + \delta_1 - D_1.$$

For the convenience of the operator the three equations just derived were expanded. Let G_x represent the denominator in the equation $q_x = D_x/(E_x + k_x\delta_x)$. Then

$$\begin{aligned} G_0 &= E_0 + k_0\delta_0, \\ G_1 &= E_1 + \tfrac{1}{2}\delta_1 = E_0 + \delta_0 + \tfrac{1}{2}\delta_1 - D_0 \\ &= G_0 + (1-k_0)\delta_0 - D_0 + \tfrac{1}{2}\delta_1. \\ G_2 &= E_2 + \tfrac{1}{2}\delta_2 = E_1 + \delta_1 + \tfrac{1}{2}\delta_2 - D_1 \\ &= G_1 - D_1 + \tfrac{1}{2}(\delta_1 + \delta_2). \end{aligned}$$

Therefore, the three equations become

$$q_0 = D_0/G_0, \tag{1}$$

$$q_1 = D_1/[G_0 + (1-k_0)\delta_0 - D_0 + \tfrac{1}{2}\delta_1], \tag{2}$$

$$q_2 = D_2/[G_1 - D_1 + \tfrac{1}{2}(\delta_1 + \delta_2)]. \tag{3}$$

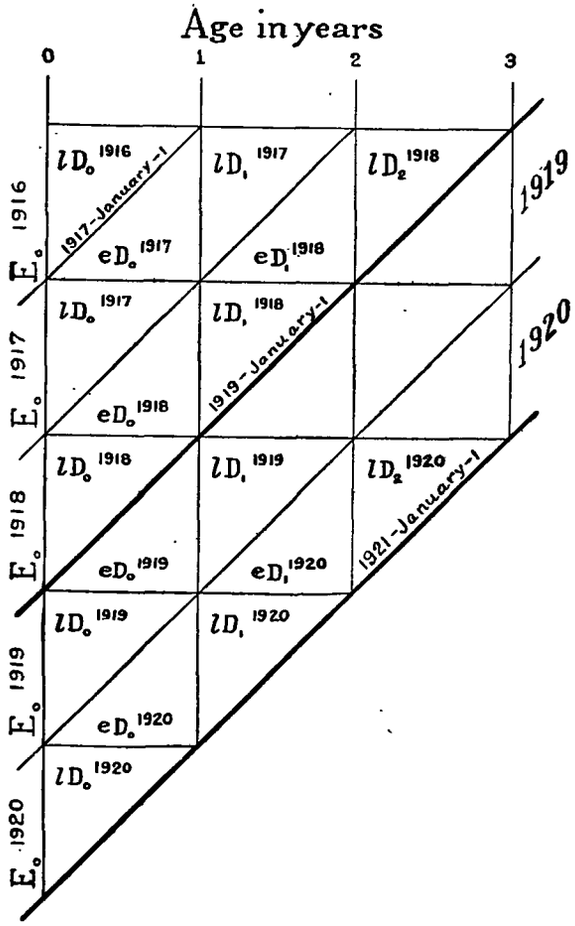
METHOD USED TO DETERMINE DIFFERENCE BETWEEN POPULATION IN SAME AGE INTERVAL AT BEGINNING AND END OF PERIOD.

8. Only the *differences* between the populations at corresponding ages on January 1, 1919, and on January 1, 1921, were used. Therefore, populations derived from birth and death statistics are sufficient since the effect of migration on the number of children under 1 year of age on January 1, 1919, should be about the same as that on the number of children under 1 year of age on January 1, 1921, and this effect would be cancelled out in a difference. The same is true of children between 1 and 2 years of age on January 1, 1919, and January 1, 1921, and also of children between 2 and 3 years on those dates. The method of determining these populations from birth and death statistics is based on the method used to determine the number of births for the United States Life Tables, 1890, 1901, 1910, 1901–1910,

[1] Mr. Henderson bases the ratio of the number of deaths under 1 year of age in the calendar year y among those born in the previous year, $y-1$, upon the statistics for two consecutive calendar years, so that he sets $r_0^{1920\text{-}21} = r_0^{1919\text{-}20} = r_0 = (eD_0^{1919} + eD_0^{1920})/(P_{1919}^{0/1} + P_{1920}^{0/1})$. The value for k_0 derived from this value of r_0 is 0.288 for males and 0.290 for females. While as a rule the value of k_0 seems to be decreasing with time, it probably varies considerably from locality to locality and from race to race. However, no statistics were available for the separate localities and races from which their values of k_0 could be determined.

explained in section 109, page 340. Instead of adding populations to deaths to find the number of births, deaths were subtracted from the births to obtain populations. E_0^y in Diagram 2 represents the number of births in any calendar year y; lD_x^y, the number of deaths between ages x and $x+1$ in that year of those who were born in the *later* calendar year, and eD_x^y, the number of deaths between ages x and $x+1$ in that year of those who were born in the *earlier* calendar year.

DIAGRAM 2. GRAPHIC REPRESENTATION OF RELATION BETWEEN BIRTH AND DEATH RECORDS AND CENSUS STATISTICS FOR 1919–1920 LIFE TABLES.



From this it appears that the population under 1 year of age on January 1, 1919, is $P_{1919}^{0/1} = E_0^{1918} - lD_0^{1918}$ and the population under 1 year of age on January 1, 1921, is $P_{1921}^{0/1} = E_0^{1920} - lD_0^{1920}$.

As in equations (1) to (3) on page 32, the expression $(P_{1919}^{x/x+1} - P_{1921}^{x/x+1})$, is designated by δ_x. Consequently,

$$\delta_0 = (-E_0^{1920} + E_0^{1918}) + (-lD_0^{1918} + lD_0^{1920}). \qquad (4)$$

The population between 1 and 2 years of age on January 1, 1919, is

$$P_{1919}^{1/2} = E_0^{1917} - lD_0^{1917} - eD_0^{1918} - lD_1^{1918}$$

and the population between 1 and 2 years of age on January 1, 1921, is

$$P_{1921}^{1/2} = E_0^{1919} - lD_0^{1919} - eD_0^{1920} - lD_1^{1920}.$$

Hence,

$$\delta_1 = (-E_0^{1919} + E_0^{1917}) + (-lD_0^{1917} + lD_0^{1919}) + (-eD_0^{1918} + eD_0^{1920}) + (-lD_1^{1918} + lD_1^{1920}). \qquad (5)$$

The population between 2 and 3 years of age on January 1, 1919, is

$$P_{1919}^{2/3} = E_0^{1916} - lD_0^{1916} - eD_0^{1917} - lD_1^{1917} - eD_1^{1918} - lD_2^{1918}$$

and the population between 2 and 3 years of age on January 1, 1921, is

$$P_{1921}^{2/3} = E_0^{1918} - lD_0^{1918} - eD_0^{1919} - lD_1^{1919} - eD_1^{1920} - lD_2^{1920}.$$

Accordingly,

$$\delta_2 = (-E_0^{1918} + E_0^{1916}) + (-lD_0^{1916} + lD_0^{1918}) + (-eD_0^{1917} + eD_0^{1919}) + (-lD_1^{1917} + lD_1^{1919}) + (-eD_1^{1918} + eD_1^{1920}) + (-lD_2^{1918} + lD_2^{1920}) \qquad (6)$$

Then each number of deaths in Table 17, pages 58 to 61 was divided into lD and eD by applying the percentages given in the United States Life Tables, 1890, 1901, 1910, 1901–1910, page 340, Table 109, and the resulting lD and eD were entered in different colored ink just below the D from which they were derived. The method of taking these values of lD, eD, and E_0^y from the table in computing infant mortality is illustrated in tape 16, page 39.

METHOD USED TO OBTAIN RATES OF MORTALITY FOR AGES BETWEEN ADOLESCENCE AND OLD AGE.

9. In obtaining graduated rates of mortality for each fifth year of age from 12 to 92, the formula used was that employed by Mr. George King [1] for finding the graduated central value of a fifteen term series. Equations (82) in the United States Life Tables, 1890, 1901, 1910, 1901–1910, page 390, section 180, were transformed for the convenience of operators as follows:

		$-\Delta T_{x-7}$	$-\Delta T_{x-2}$	$-\Delta T_{x+2}$
$-200\Delta T_{x-2}$	=		-200	
$-(-8\Delta^3 T_{x-7})$	=	-8	$+16$	-8

Since $-\Delta T_x$ is the sum of the population aged x to $x+4$ on January 1, 1920, the symbol $P_{1920}^{x/x+4}$ is used, and

$$10^3 L_{x+2} = (-10+2)\,(P_{1920}^{x-5/x-1} - 2P_{1920}^{x/x+4} + P_{1920}^{x+5/x+9}) + 200P_{1920}^{x/x+4}. \qquad (7)$$

[1] Supplement to the Seventy-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales, Part I—Life Tables, page 49, section 2.

Also since $-\Delta(2l)_x$ is the sum of the deaths occurring between ages x and $x+5$ during the two calendar years 1919 and 1920, the symbol $D^{1919-20}_{x/x+4}$ is used, and

$$10^3(2d)_{x+2} = (-10+2)\,(D^{1919-20}_{x-5/x-1} - 2D^{1919-20}_{x/x+4} + D^{1919-20}_{x+5/x+9}) + 200D^{1919-20}_{x/x+4}. \quad (8)$$

No knowledge of differencing, negative values, or fractions is required to use the equations in this form. The method of using them is illustrated on page 39, tapes 18 and 19.

METHOD USED TO JOIN MORTALITY OF CHILDREN UNDER 3 YEARS OF AGE WITH THAT IN THE MAIN TABLE.

10. The formula discussed in section 9 is for finding the central or eighth term of a fairly symmetrical series of fifteen values. The derivation of a formula for interpolating the third term in this series of fifteen values is similar to that for interpolating the eighth term of the series. If u_2 be the third term in a series of fifteen terms, u_0, u_1, and so on up to u_{14}, and $y_n = \sum_{x=n}^{x=14} u_x$, so that $\Delta y_n = -\sum_{x=n}^{x=n+4} u_x$, then

$$-u_2 = y_3 - y_2$$
$$y_3 = y_0 + \tfrac{3}{5}\Delta y_0 - \tfrac{3}{25}\Delta^2 y_0 + \tfrac{7}{125}\Delta^3 y_0$$
$$y_2 = y_0 + \tfrac{2}{5}\Delta y_0 - \tfrac{3}{25}\Delta^2 y + \tfrac{8}{125}{}^3y$$
$$-u_2 = \tfrac{1}{5}\Delta y_0 - \tfrac{1}{125}\Delta^3 y_0$$
$$= .2\Delta y_0 - .008\Delta^3 y_0$$

or

$$-10^3 u_2 = 200\sum_{x=0}^{x=4} u_x - 8\left(\sum_{x=0}^{x=4} u_x - 2\sum_{x=5}^{x=9} u_x + \sum_{x=10}^{x=14} u_x\right).$$

When L_7 and $(3d)_7$ are substituted for u_2, and $P^{x/x+4}_{1920}$ and $D^{1919-20}_{x/x+4}$ are substituted for Σu_x, and age 5 is taken as 0, the following two equations are obtained:

$$10^3 L_7 = 200P^{5/9}_{1920} + (-10+2)(P^{5/9}_{1920} - 2P^{10/14}_{1920} + P^{15/19}_{1920}) \quad (9)$$

$$10^3(3d)_7 = 200D^{1919-20}_{5/9} + (-10+2)(D^{1919-20}_{5/9} - 2D^{1919-20}_{10/14} + D^{1919-20}_{15/19}) \quad (10)$$

These formulas were used to determine graduated populations and deaths at age 7, and the results were found to be fairly good and served to join life table values of children under 3 years of age with those beginning at age 12. See values in Table 2, page 10.

METHOD USED TO EXTEND THE PROBABILITIES OF LIVING TO EXTREME OLD AGE.

11. The plan suggested by Mr. George King[1] was followed for the most part, in some cases a constant third difference being used when the fourth differences did not seem suitable. The logarithms of the last seven probabilities of living, given at quinquennial ages, were differenced four times and the largest negative fourth difference or the last negative fourth difference was used to extend these probabilities of living over periods of five years up to age 112. The processes used are illustrated in tapes 24 to 34, pages 43 and 45.

METHOD USED TO DERIVE $\log {}_5p_x$ FROM $\log p_x$ AT EVERY FIFTH YEAR OF AGE AND DETERMINATION OF l_x COLUMN.

12. The formulas used for this process are those given by Mr. George King,[1] but the equations were put in another form that requires no differencing and is better suited for machine work. For convenience and reference equations (i) and (iii) are copied here.

$$w_5 = 5u_0 + 7\Delta u_0 + 1.6\Delta^2 u_0 - .2\Delta^3 u_0 \quad (i)$$
$$w_0 = 5u_0 + 2\Delta u_0 - 0.4\Delta^2 u_0 + .2\Delta^3 u_0, \quad (iii)$$

where $w_5 = \sum_{x=5}^{x=9} u_x$ and $w_0 = \sum_{x=0}^{x=4} u_x$. These two equations were transformed by substituting for the leading differences of u_0 their equivalents in terms of the quinquennial values of u_x. This work is indicated below.

Transformation of equation (iii)

	u_0	u_5	u_{10}	u_{15}
$5.0u_0 =$	$+5.0$			
$2.0\Delta u_0 =$	-2.0	$+2.0$		
$-0.4\Delta^2 u_0 =$	-0.4	$+0.8$	-0.4	
$0.2\Delta^3 u_0 =$	-0.2	$+0.6$	-0.6	$+0.2$
Total, $w_0 =$	$+2.4u_0$	$+3.4u_5$	$-1.0u_{10}$	$+0.2u_{15}$

or

$$10w_0 = 24u_0 + 34u_5 - 10u_{10} + 2u_{15}$$
$$= 24(u_0 + u_5) + 10u_5 - 10u_{10} + 2u_{15} \quad (11)$$

Transformation of equation (i)

	u_0	u_5	u_{10}	u_{15}
$5.0u_0 =$	$+5.0$			
$7.0\Delta u_0 =$	-7.0	$+7.0$		
$1.6\Delta^2 u_0 =$	$+1.6$	-3.2	$+1.6$	
$-0.2\Delta^3 u_0 =$	$+0.2$	-0.6	$+0.6$	-0.2
Total, $w_5 =$	$-0.2u_0$	$+3.2u_5$	$+2.2u_{10}$	$-0.2u_{15}$

or

$$10w_5 = -2u_0 + 32u_5 + 22u_{10} - 2u_{15}$$
$$= 2[-u_0 + 11(u_5 + u_{10}) - u_{15}] + 10u_5 \quad (12)$$

Section 36, page 44, shows that the computations indicated in equations (11) and (12) may be readily performed upon an adding machine.

Mr. Robert Henderson suggested that the curve of probabilities of living between ages 2 and 7 is so skew that formula (iii) should be adjusted by determining the coefficient of $\Delta^3 u_0$ from known values of $\log {}_5p_2$.

[1] Supplement to the Seventy-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales, Part I—Life Tables, pages 26 to 28.

The values for the coefficient of $\Delta^3 u_0$, computed from a number of the United States 1910 life tables, varied slightly about unity. Values for the coefficient $\Delta^3 u_0$, computed in the same way from known values of $\log {}_5p_7$ in these same life tables, all varied only slightly from 0.2. Accordingly, $\log {}_5p_7$ was determined by using equation (11) and $\log {}_5p_2$ by using equation (11a), which is derived from a modification of equation (iii)—that is, from

$$w_0 = 5u_0 + 2\Delta u_0 - 0.4\Delta^2 u_0 + \Delta^3 u_0. \qquad \text{(iiia)}$$

Transformation of equation (iiia).

	u_0	u_5	u_{10}	u_{15}
$5u_0 =$	$+5.0$			
$2\Delta u_0 =$	-2.0	$+2.0$		
$-0.4\Delta^2 u_0 =$	-0.4	$+0.8$	-0.4	
$\Delta^3 u_0 =$	-1.0	$+3.0$	-3.0	$+1.0$
Total, $w_0 =$	$+1.6u_0$	$+5.8u_5$	$-3.4u_{10}$	$+1.0u_{15}$

or

$$10w_0 = +17\ (u_0 + 4u_5 - 2u_{10}) - u_0 - 10u_5 + 10u_{15}$$
$$= (20-3)(u_0 + 4u_5 - 2u_{10}) - u_0 - 10u_5 + 10u_{15}. \qquad \text{(11a)}$$

When $\log {}_5p$ is substituted for w and $\log p$ for u in equations (11a), (11), and (12), they become

$$10\log {}_5p_2 = (20-3)(\log p_2 + 4\log p_7 - 2\log p_{12}) - \log p_2 - 10\log p_7 + 10\log p_{17} \qquad (13)$$

$$10\log {}_5p_7 = 24(\log p_7 + \log p_{12}) + 10\log p_{12} - 10\log p_{17} + 2\log p_{22} \qquad (14)$$

$$10\log {}_5p_{12} = 2[-\log p_7 + 11(\log p_{12} + \log p_{17}) - \log p_{22}] + 10\log p_{12} \qquad (15)$$

$$10\log {}_5p_{17} = 2[-\log p_{12} + 11(\log p_{17} + \log p_{22}) - \log p_{27}] + 10\log p_{17} \qquad (16)$$

and so on.

100,000 was taken as the radix of the table, and to 5, its logarithm, $\log p_0$, $\log p_1$, $\log {}_5p_2$, $\log {}_5p_7$, and so on, were added, subtotals being taken after each addition. These subtotals are the logarithm of l_x.

METHOD OF DETERMINING EXPECTATION OF LIFE FROM SURVIVORS AT EVERY FIFTH YEAR OF AGE.

13. Equations (11) and (12) were transformed by substituting $\mathbb{N}'_{5|}$ for w and l for u, and the following equations were obtained:

$$10\mathbb{N}'_{2:5|} = 24(l_2 + l_7) + 10l_7 - 10l_{12} + 2l_{17} \qquad (17)$$

$$10\mathbb{N}'_{7:5|} = 2[-l_2 + 11(l_7 + l_{12}) - l_{17}] + 10l_7 \qquad (18)$$

$$10\mathbb{N}'_{12:5|} = 2[-l_7 + 11(l_{12} + l_{17}) - l_{22}] + 10l_{12} \qquad (19)$$

and so on to

$$10\mathbb{N}'_{(w-10):5|} = 2[-l_{w-15} + 11\ (l_{w-10} + l_{w-5}) - l_w] + 10l_{w-10}. \qquad (20)$$

w designates the age of the last l_x, determined by the method described above, which had a value as large as 0.5. Any value between 0.5 and 1.0 was taken as 1.0. It will be noted that $\mathbb{N}'_{(w-5):5|}$ and $\mathbb{N}'_{w:5|}$ can not be determined by this formula. The general rule for obtaining $\mathbb{N}'_{w-5:5|}$ was to use 0 for l_{w+5}, thus forming the equation

$$10\mathbb{N}'_{(w-5):5|} = 2[-l_{w-10} + 11(l_{w-5} + l_w) - 0] + 10l_{w-5}. \qquad (21)$$

Sometimes, however, a negative value was obtained by using this formula and in that case $\mathbb{N}'_{(w-5):5|}$ was determined as follows: $\log p_{w-5}$ was added four times to $\log l_{w-5}$, a subtotal being taken after each addition and a total at the end. These three subtotals and the total are the logarithms of the approximate values of

$$l_{w-4},\ l_{w-3},\ l_{w-2},\ l_{w-1}. \quad \text{Then } \mathbb{N}'_{(w-5):5|} = \sum_{x=w-5}^{x=w-1} l_x. \qquad (21a)$$

It was never necessary to use (21a) for $\mathbb{N}'_{(w-5):5|}$ except when $l_w = 1$. In that case $\mathbb{N}'_{w:5|}$ was simply taken as 1. When l_w was greater than 1, $\mathbb{N}'_{w:5|}$ was determined according to the process outlined for (21a). That is, $\log p_w$ was added four times to $\log l_w$, a subtotal being taken after each addition with a total at the end. Whenever any of these subtotals became less than 999|698980000, which is log 0.5, the additions were stopped, since all values of l_x lower than 0.5 were taken as 0. Since $l_w = 1$ in tape 39, page 49, $\mathbb{N}'_{w:5|}$ is taken as 1, and the process indicated by (21a) was not needed.

Then to obtain $\mathbb{N}'_x$, these values of $\mathbb{N}'_{x:5|}$ were summed, beginning with $\mathbb{N}'_{w:5|}$, and a subtotal was taken after each addition with a total at the end. The equation for the complete expectation of life is then

$$\mathring{e}_x = \mathbb{N}_x'/l_x - 0.5. \qquad (22)$$

B.—ACTUAL COMPUTATION OF ABRIDGED LIFE TABLE FOR MALES IN THE STATE OF NEW YORK: 1909–1911.

PRELIMINARY STATEMENT.

14. To illustrate the process of constructing these abridged life tables, photographs of the actual computation of the New York Male, 1909–1911, Life Table, are shown on pages 39 to 52. The work of compiling the original statistics and that indicated in Table 12 is not given, but no other part of these computations is omitted except the divisions performed on computing machines to obtain the 21 rates of mortality in tapes 17 and 22 and the 22 expectations of life in tape 43, the multiplication of δ_0 by k_0, and also the work of looking up the antilogarithms in tape 37. The computations are on 28 tapes, each tape being described in a section having same number as tape. Ages and complete headings were copied on many of the tapes which are not needed in actual computations.

Checks for the comparer are designated by numbers enclosed in circles. Thus the 1 and 2 opposite the totals in tapes 21 and 22, respectively, and also opposite the totals in tape 23 indicate that the numbers marked by the same symbol should agree.

Throughout this description the word "complements" is used freely to mean any two numbers whose sum is any power of ten instead of only for those whose sum is unity. The use of these "complements" is a great aid to speed and accuracy, for no attention need be given to signs.

PREPARATION OF STATISTICS FOR DETERMINATION OF RATES OF MORTALITY OF CHILDREN UNDER 3 YEARS OF AGE.

15. The first step in the computation of rates of mortality at ages under 3 years was to arrange the births and deaths as in Table 12. The numbers of registered births were copied from state reports. The adjusted number of births for the period 1909–1911 was taken from the computations by the extended method. (See United States Life Tables, 1890, 1901, 1910, 1901–1910, page 373, tape 142.) The ratio between this adjusted number of births and the sum of the number of births registered was determined, 346, 664/327, 314 =1.059117545, and this was applied to the numbers of registered births in 1906, 1907, and 1908 to obtain the adjusted number of births for each of these years.

The number of deaths by single years of age under 3 during each of the calendar years, 1906 through 1911, was obtained from the Mortality Statistics for each of these years, published by the Bureau of the Census. 72 per cent of the deaths under age 1 year were assumed to be born in the *later* calendar year, $l\mathrm{D}_0$, and 28 per cent in the *earlier* calendar year, $e\mathrm{D}_0$; 59 per cent of the deaths in age interval 1–2 years were assumed to be born in the *later* calendar year, $l\mathrm{D}_1$, and 41 per cent in the *earlier* year, $e\mathrm{D}_1$; 53 per cent of the deaths in age interval 2–3 years were assumed to be born in the *later* calendar year, $l\mathrm{D}_2$, and 47 per cent in the *earlier* year, $e\mathrm{D}_2$. This is in accordance with the constants used in construction of United States Life Tables, 1890, 1901, 1910, 1901–1910, given in Table 109, page 340, of the volume of this title.

TABLE 12.—STATISTICS FROM WHICH RATES OF MORTALITY OF CHILDREN UNDER 3 YEARS OF AGE WERE DETERMINED FOR THE NEW YORK MALE LIFE TABLE, 1909–1911.

Calendar year	1906	1907	1908	1909	1910	1911
Number of births registered	93,988	100,522	104,992	104,382	109,229	113,703
Adjusted number of births	99,544	106,465	111,199	111,666	115,948	119,050
Number of deaths, 0–1, D_0	15,209	15,432	14,632	14,569	15,234	14,040
Born in later year, $l\mathrm{D}_0$	10,950	11,111	10,535	10,490	10,968	10,109
Born in earlier year, $e\mathrm{D}_0$	4,259	4,321	4,097	4,079	4,266	3,931
Number of deaths, 1–2, D_1	.....	3,414	3,229	3,523	3,401	2,993
Born in later year, $l\mathrm{D}_1$	.....	2,014	1,905	2,079	2,007	1,766
Born in earlier year, $e\mathrm{D}_1$	.....	1,400	1,324	1,444	1,394	1,227
Number of deaths, 2–3, D_2	.....	.....	1,442	1,484	1,545	1,320
Born in later year, $l\mathrm{D}_2$	.....	.....	764	.....	.....	700
Born in earlier year, $e\mathrm{D}_2$	.....	.....	678	.....	.....	620

DIFFERENCES BETWEEN POPULATIONS AT CORRESPONDING AGES ON JANUARY 1, 1909, AND JANUARY 1, 1912.

16. It was necessary to determine first the difference between the populations at corresponding ages on January 1, 1909, and January 1, 1912. Formulas for this work, (4), (5), and (6), were derived on page 33. The New York Male, 1910, Life Table, is based on a three-year period, 1909–1911. Hence, to use these equations for the computations of this table, 1906 was substituted for 1916, 1907 for 1917, 1908 for 1918; then 1909 for 1918, 1910 for 1919, 1911 for 1920, and 1912 for 1921. (See Diagram 3.)

$$\delta_0 = (-\mathrm{E}_0^{1911} + \mathrm{E}_0^{1908}) + (-l\mathrm{D}_{0/1}^{1908} + l\mathrm{D}_{0/1}^{1911}) \tag{4a}$$

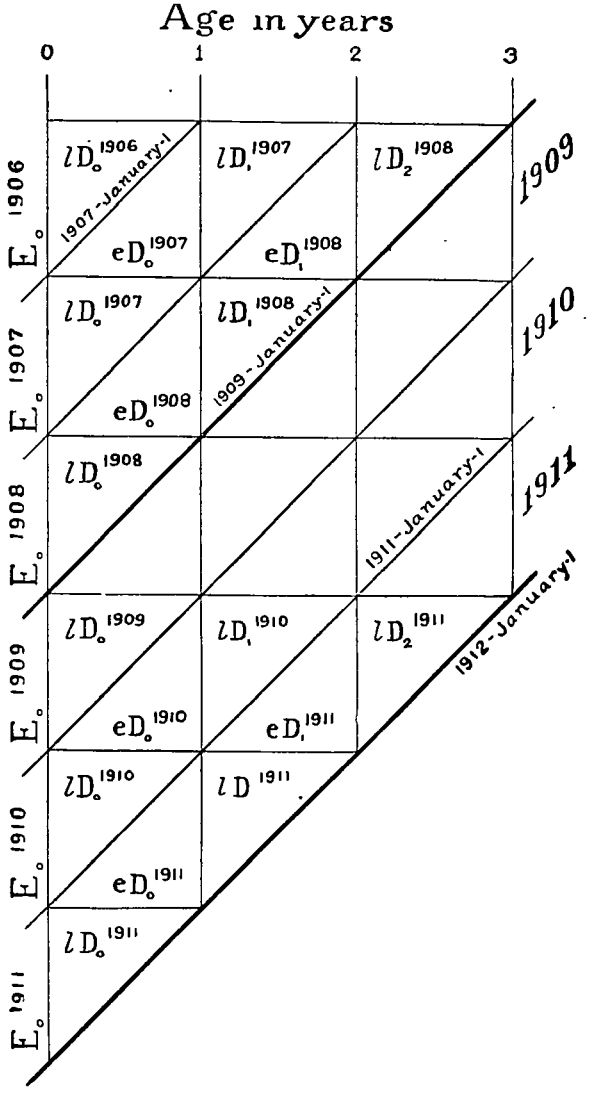
$$\delta_1 = (-\mathrm{E}_0^{1910} + \mathrm{E}_0^{1907}) + (-l\mathrm{D}_{0/1}^{1907} + l\mathrm{D}_{0/1}^{1910}) + (-e\mathrm{D}_{0/1}^{1908} + e\mathrm{D}_{0/1}^{1911}) + (-l\mathrm{D}_{1/2}^{1908} + l\mathrm{D}_{1/2}^{1911}) \tag{5a}$$

$$\delta_2 = (-\mathrm{E}_0^{1909} + \mathrm{E}_0^{1906}) + (-l\mathrm{D}_{0/1}^{1906} + l\mathrm{D}_{0/1}^{1909}) + (-e\mathrm{D}_{0/1}^{1907} + e\mathrm{D}_{0/1}^{1910}) + (-l\mathrm{D}_{1/2}^{1907} + l\mathrm{D}_{1/2}^{1910}) + (-e\mathrm{D}_{1/2}^{1908} + e\mathrm{D}_{1/2}^{1911}) + (-l\mathrm{D}_{2/3}^{1908} + l\mathrm{D}_{2/3}^{1911}). \tag{6a}$$

As will be noticed these equations are rather symmetrical and their values can be selected from Table 12 according to rule. The last group on the right is always $-l\mathrm{D}_{x/x+1}^{1908} + l\mathrm{D}_{x/x+1}^{1911}$, x being 0, 1, and 2. The next to the last group of deaths is always $-e\mathrm{D}_{x/x+1}^{1908} + e\mathrm{D}_{x/x+1}^{1911}$, x being 0 and 1; the second from the last group of deaths is always $-l\mathrm{D}_{x/x+1}^{1907} + l\mathrm{D}_{x/x+1}^{1910}$, x being 0 and 1; the third from the last group of deaths is $-e\mathrm{D}_{x/x+1}^{1907} + e\mathrm{D}_{x/x+1}^{1910}$; the fourth from the last group of deaths is $-l\mathrm{D}_{x/x+1}^{1906} + l\mathrm{D}_{x/x+1}^{1909}$. The group of E's is always for the same calendar years as the group of deaths adjoining, only the signs are changed. The additions were begun with the last

group in each equation. The adding machine was split between the banks 9 and 10, and the lD's and eD's were set up from Table 12 on the adding machine

DIAGRAM 3.—GRAPHIC REPRESENTATION OF RELATION BETWEEN BIRTH AND DEATH RECORDS AND CENSUS STATISTICS FOR 1909–1911 LIFE TABLES.



in the same order as they appear in the equations, while the E's were added in the reverse order because of the change of sign.

Diagram 4 contains three outlines of Table 12 to indicate how to obtain the values for equations (4a), (5a), and (6a).

In actual computations Table 12 was extended in a straight line as in Table 17, which form was convenient for the operator and also for those preparing the statistics for a number of tables at the same time. It will be noted that negative quantities were set up on the left side of the machine and positive on the right. Hence, when all the values on the right side of each equation were set up, a subtotal was taken and the complement of the sum on the left side was set up on

DIAGRAM 4.—OUTLINE SHOWING ORDER IN WHICH BIRTHS AND DEATHS IN TABLE 12 SHOULD BE ADDED TO OBTAIN VALUES FOR EQUATIONS (4a), (5a), AND (6a).

		1906	1907	1908	1909	1910	1911
Equation (4a)	Adjusted Births			3			4
	Deaths 0-1, D_0						
	lD_0			2			1
	eD_0						
Equation (5a)	Adjusted Births		7			8	
	Deaths 0-1, D_0						
	lD_0		6			5	
	eD_0			4			3
	Deaths 1-2, D_1						
	lD_1			2			1
	eD_1						
Equation (6a)	Adjusted Births	11			12		
	Deaths 0-1 D_0						
	lD_0	10			9		
	eD_0		8			7	
	Deaths 1-2 D_1						
	lD_1		6			5	
	eD_1			4			3
	Deaths 2-3 D_2						
	lD_2			2			1
	eD_2						

both sides of the machine and a total taken in the case of the additions for (4a) and (5a) and a subtotal after additions for (6a). The left side of the machine should be cleared if the correct complement is set up. The remainders on the right are δ_0, δ_1, and δ_2, respectively. δ_1 is then set up below δ_2 and a total taken. δ_0 is then multiplied by k_0, which in 1910 was about $\frac{1}{3}$, and the product entered in pencil just below δ_0, and the difference $(1-k_0)\delta_0$ is written just below the product $k_0\delta_0$. Then $\frac{1}{2}$ of δ_1 and also of $(\delta_1+\delta_2)$ is copied just below them.

DETERMINATION OF RATES OF MORTALITY OF CHILDREN UNDER 3 YEARS OF AGE.

17. In tape 17 the values from equations (1), (2), and (3) were set up. The deaths during the period 1909–1911 were added on the right of the adding machine and the corresponding number of children, or the equivalent generation, was obtained on the left. To obtain the values needed in equation (1) the deaths aged 0–1, D_0, for 1911, 1910, 1909, were added on the right side of the machine, and at the same time the number of births just above them in Table 12 were added on the left. To the left side was then added one-third of the first total in tape 16, 99997241, and a total taken.

To obtain the values needed in equation (2) the total just obtained on the left was added to the complement of the total on the right and to this was added the remainder (99994482) of the first total and one-half of the second total in tape 16. On the right side of the machine the deaths aged 1–2, D_1, in the calendar years 1911, 1910, and 1909 were set up and a total taken.

To obtain the values needed in equation (3) the total just obtained on the left was added to the complement of the total on the right, and to this one-half of the third total in tape 16 was added. On the right side of the machine the deaths 2–3, D_2, in the calendar years 1911, 1910, and 1909 were set up and a total taken. Then each total on the right was divided by the corresponding total on the left to obtain the rate of mortality at each age. The result to the nearest sixth decimal place was set up as a whole number under the heading $10^6 q_x$.

ORIGINAL STATISTICS FOR DETERMINING RATES OF MORTALITY AT AGES 7 YEARS AND OVER.

18. The original statistics, on which the life table for males in the state of New York, 1909–1911, was based, were obtained from the United States Life Tables, 1890, 1901, 1910, 1901–1910, page 450, Table 159. The populations in column 2 and the deaths in column 6 were summed in the quinquennial age groups 0–4, 5–9, 10–14, and so on through the group 95–99. The machine was split between banks 15–16 and 8–9, ages being entered in banks 16–17. Beginning with the age group 5–9, the populations were entered on the left side of the machine and the deaths on the right side, and a subtotal was taken after the group 95–99 was entered. To these subtotals the populations and deaths, respectively, 100 years of age and over, and the age groups 0–4, were added in order to check to the total populations and deaths as given in Table 159 mentioned above. The values in tape 18 are the $P^{x/x+4}_{1920}$ and the $P^{1919-20}_{x/x+4}$ required by equations (7) to (10), pages 33 and 34, to obtain the graduated values of L_x and $(3d)_x$ for $x = 7, 12, 17$, and so on. These are the central ages of the quinquennial age groups 5–9, 10–14, 15–19, and so on.

APPLICATION OF EQUATIONS (7) TO (10) TO THE STATISTICS IN TAPE 18.

19. For convenience of reference equations (7) to (10) are given with subscripts for period 1909–1911.

$$10^3 L_7 = (-10+2)\ (P^{5/9}_{1910} - 2P^{10/14}_{1910} + P^{15/19}_{1910}) + 200 P^{5/9}_{1910} \quad (9)$$

$$10^3 (3d)_7 = (-10+2)\ (D^{1909-11}_{5/9} - 2D^{1909-11}_{10/14} + D^{1909-11}_{15/19}) + 200 D^{1909-11}_{5/9} \quad (10)$$

$$10^3 L_{x+2} = (-10+2)\ (P^{x-5/x-1}_{1910} - 2P^{x/x+4}_{1910} + P^{x+5/x+9}_{1910}) + 200 P^{x/x+4}_{1910} \quad (7)$$

$$10^3 (3d)_{x+2} = (-10+2)\ (D^{1909-11}_{x-5/x-1} - 2D^{1909-11}_{x/x+4} + D^{1909-11}_{x+5/x+9}) + 200 D^{1909-11}_{x/x+4} \quad (8)$$

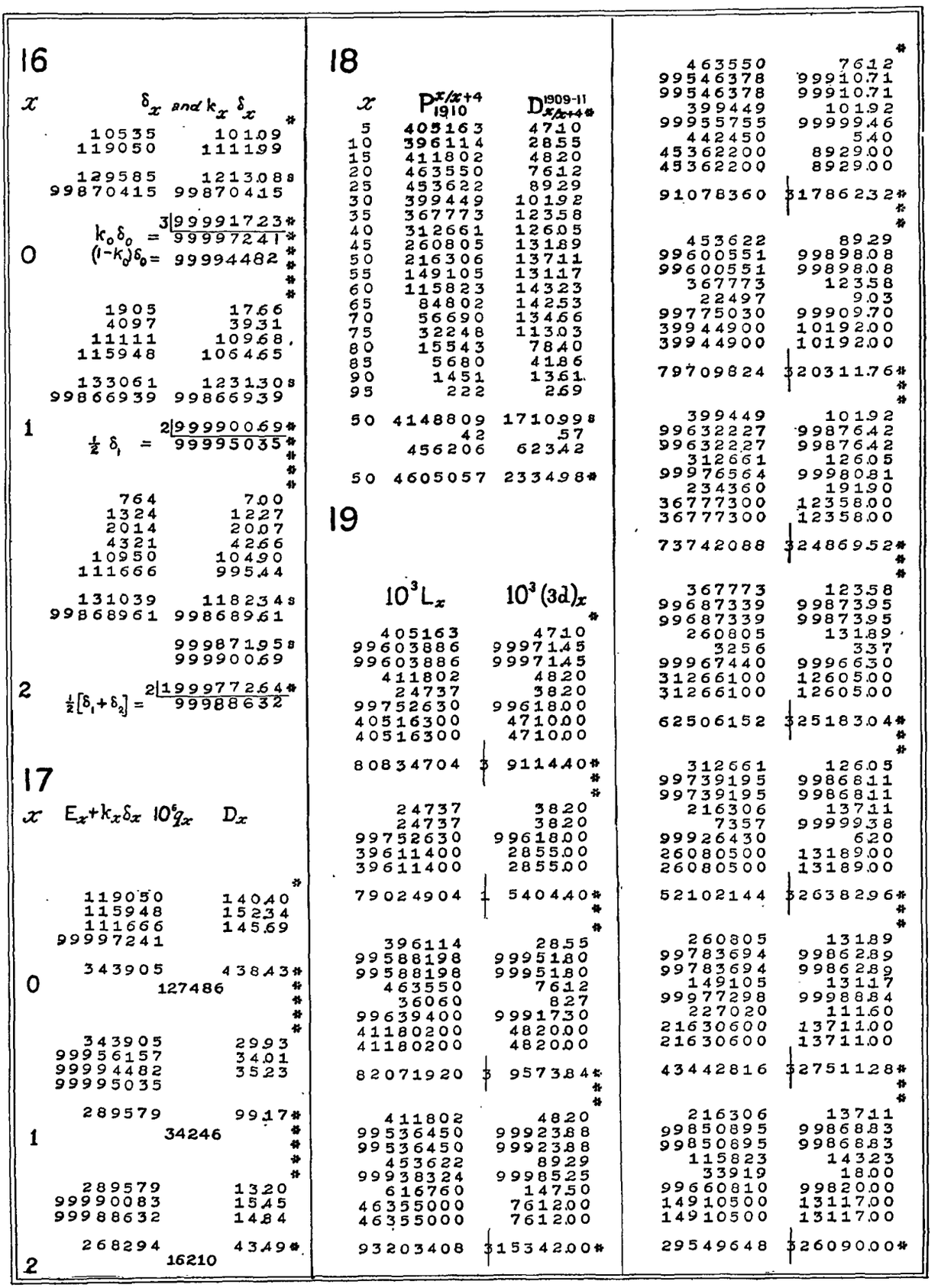
It was found convenient to split the adding machine between banks 9 and 10 and to apply equations (9) and (7) to the numbers on the left of tape 18 in banks 10 to 17 of the adding machine while applying equations (10) and (8) to the numbers on the right of tape 18 in banks 1 to 9. Accordingly, the first numbers in tape 18 (405163 and 4710) were set up in corresponding places on the adding machine and beneath them the complements of the second set of numbers in tape 18 were repeated twice and then the third set added. The numbers now appearing at the base of the adding machine, 24737 and 3820, are the values of the quantities in the second parentheses of equations (9) and (10), and are really second differences but may be called the operands. Since these operands are to be operated on by $+2$ and -10, they were added in unit's place and their complements in ten's place. In accordance with the last expressions in equations (9) and (10), the first numbers in tape 18 were added twice in hundred's place and a total taken. The sum on the right, 80834704, is $1000 L_x$ and that on the left, 911440, is $1000 (3d)_x$.

When 10 is substituted for x in equations (7) and (8), the left-hand members of the equations are $10^3 L_{12}$ and $10^3 (3d)_{12}$, while the operands are the same as in equations (9) and (10). Accordingly, the values for these operands, 24737 and 3820, were repeated twice in unit's place and their complements added in ten's place, and the second set of numbers in tape 18, 396114 and 2855, are repeated twice in hundred's place and a total taken. When 15 is substituted for x in equations (7) and (8), the left-hand members of the equations are $10^3 L_{17}$ and $10^3 (3d)_{17}$, while the first numbers in the operands are the 396114 and 2855 which appear in hundred's place just before the last total. To these are added the complements (repeated twice) of the numbers just below them in tape 18, 411802 and 4820, and then the fourth set of numbers in tape 18. The totals then appearing at the base of the adding machine, 36060 and 827, are set up in unit's place and their complements in ten's place in accordance with the operators $+2$ and -10, and to them are added the 411802 and 4820 in hundred's place (repeated twice), which are

RATES OF MORTALITY UNDER 3 YEARS OF AGE.

CALCULATION OF THE LIFE TABLE FOR MALES IN THE STATE OF NEW YORK: 1909–1911.

PHOTOGRAPHS OF ADDING MACHINE TAPES ON WHICH COMPUTATIONS WERE MADE.



16

x δ_x and $k_x\,\delta_x$

10535 10109
119050 111199

129585 1213088
99870415 99870415

$k_0\delta_0$ = 3|99991723 / 99997241
0 $(1-k_0)\delta_0$ = 99994482

1905 1766
4097 3931
11111 10968
115948 106465

133061 1231308
99866939 99866939

1 $\frac{1}{2}\delta_1$ = 2|99990069 / 99995035

764 700
1324 1227
2014 2007
4321 4266
10950 10490
111666 99544

131039 1182348
99868961 99868961

99987195
99990069

2 $\frac{1}{2}[\delta_1+\delta_2]$ = 2|19997264 / 99988632

17

x $E_x+k_x\delta_x$ $10^5 q_x$ D_x

119050 14040
115948 15234
111666 14569
99997241

343905 43843
0 127486

343905 2993
99956157 3401
99994482 3523
99995035

289579 9917
1 34246

289579 1320
99990083 1545
99988632 1484

268294 4349
2 16210

18

x	$P_{1910}^{x/x+4}$	$D_{x/x+4}^{1909-11}$
5	405163	4710
10	396114	2855
15	411802	4820
20	463550	7612
25	453622	8929
30	399449	10192
35	367773	12358
40	312661	12605
45	260805	13189
50	216306	13711
55	149105	13117
60	115823	14323
65	84802	14253
70	56690	13466
75	32248	11303
80	15543	7840
85	5680	4186
90	1451	1361
95	222	269
50	4148809	1710998
	42	57
	456206	62342
50	4605057	233498

19

$10^3 L_x$ $10^3 (3d)_x$

405163 4710
99603886 99971145
99603886 99971145
411802 4820
24737 3820
99752630 99618000
40516300 4710000
40516300 4710000

80834704 3 9114408

24737 3820
24737 3820
99752630 99618000
39611400 2855000
39611400 2855000

79024904 1 5404408

396114 2855
99588198 99951800
99588198 99951800
463550 7612
36060 827
99639400 99917300
41180200 4820000
41180200 4820000

82071920 3 9573848

411802 4820
99536450 99923888
99536450 99923888
453622 8929
99938324 99985250
616760 14750
46355000 7612000
46355000 7612000

93203408 31534200

463550 7612
99546378 99910710
99546378 99910710
399449 10192
99955755 99999460
442450 5400
45362200 8929000
45362200 8929000

91078360 31786232

453622 8929
99600551 99898080
99600551 99898080
367773 12358
22497 903
99775030 99909700
39944900 10192000
39944900 10192000

79709824 32031176

399449 10192
99632227 99876420
99632227 99876420
312661 12605
99976564 99980810
234360 19190
36777300 12358000
36777300 12358000

73742088 32486952

367773 12358
99687339 99873950
99687339 99873950
260805 13189
3256 337
99967440 99966300
31266100 12605000
31266100 12605000

62506152 32518304

312661 12605
99739195 99868110
99739195 99868110
216306 13711
7357 999938
99926430 62000
26080500 13189000
26080500 13189000

52102144 32638296

260805 13189
99783694 99862890
99783694 99862890
149105 13117
99977298 99988840
227020 11160
21630600 13711000
21630600 13711000

43442816 32751128

216306 13711
99850895 99868830
99850895 99868830
115823 14323
33919 18000
99660810 99820000
14910500 13117000
14910500 13117000

29549648 32609000

the second numbers in the operands. After a total is taken, the 411802 and 4820 are entered in unit's place to begin the next computation. The operator soon learns this routine of repeating twice in hundred's place the second numbers in the operands, whose complements were repeated twice, and then so soon as a total is taken, starting the next set of computations with the same set of numbers, and the results can be obtained very rapidly by a careful machine operator without his understanding negative values, differencing, or decimals.

DETERMINATION OF NUMBER EXPOSED TO RISK OF DEATH TO OBTAIN RATES OF MORTALITY.

20. The rates of mortality were determined according to equations $q_x = d_x/(L_x + .5d_x)$. Since the deaths were for a 3-year period, as indicated by the symbols $(3l)_x$ and $(3d)_x$, and it was desired to obtain average annual rates, either the deaths had to be divided by three or the population multiplied by three. The latter method was found to be more convenient. Accordingly the above equation was written:

$$q_x = (3d)_x/[3L_x + \tfrac{1}{2}(3d)_x]. \qquad (23)$$

In tape 20 the values of the denominator, $3L_x + \frac{1}{2}(3d)_x$, were determined by adding to the totals on the left side of tape 19, repeated three times, one-half of the corresponding totals on the right side of tape 19.

21. In order to check the work from tapes 18 to 20, and for convenience in dividing, the totals in tape 20 were added in tape 21. These totals are the $10^3[3L_x + \frac{1}{2}(3d)_x]$ of equation (23).

22. Also the totals on the right side of tape 19 were added and fastened to the right side of the values in tape 21. They are the $(3d)_x$ of equation (23). Where the populations are small and the period is for two years instead of for three, so that only $2L_x + \frac{1}{2}(2d)_x$ is needed for the denominator in equation (23), it is often convenient to add these two sets of values on the same tape, the $10^3[2L_x + \frac{1}{2}(2d)_x]$ on the left side and the $(2d)_x$ on the right.

With the two tapes, 21 and 22, side by side, the operator performs the divisions indicated in equation (23), and enters the quotients to the nearest sixth decimal between them. Then they were cleared of fractions by entering them under the heading $10^6 q_x$.

23. Table 13 shows how the values in tape 18 enter into the totals in tape 19. In this table the values in tape 18 are represented by w_x at the top of the columns, and the totals in tape 19 by u_y in the left-hand margin. The coefficients of w_x in the equation for u_y are in the same line with u_y and each coefficient is in the same column with the w_x to which it belongs.

NUMBER EXPOSED TO RISK OF DEATH FOR ONE YEAR.

CALCULATION OF LIFE TABLE FOR MALES IN THE STATE OF NEW YORK: 1909–11.

PHOTOGRAPHS OF ADDING MACHINE TAPES UPON WHICH CALCULATIONS WERE MADE.

149105	131.17
99884177	99856.77
99884177	99856.77
84802	142.53
2261	99987.24
99977390	127.60
11582300	14323.00
11582300	14323.00
23146512	$28748.08*
115823	143.23
99915198	99857.47
99915198	99857.47
56690	134.66
2909	99992.83
99970910	71.70
8480200	14253.00
8480200	14253.00
16937128	$28563.36*
84802	142.53
99943310	99865.34
99943310	99865.34
32248	113.03
3670	99986.24
99963300	137.60
5669000	13466.00
5669000	13466.00
11308640	$27042.08*
56690	134.66
99967752	99886.97
99967752	99886.97
15543	78.40
7737	99987.00
99922630	130.00
3224800	11303.00
3224800	11303.00
6387704	$22710.00*
32248	113.03
99984457	99921.60
99984457	99921.60
5680	41.86
6842	99998.09
99931580	19.10
1554300	7840.00
1554300	7840.00
3053864	$15695.28*
15543	78.40
99994320	99958.14
99994320	99958.14
1451	13.61
5634	8.29
99943660	99917.10
568000	4186.00
568000	4186.00
1090928	$ 8305.68*
5680	41.86
99998549	99986.39
99998549	99986.39
222	2.69
3000	17.33
99970000	99826.70
145100	1361.00
145100	1361.00
266200	$ 2583.36*

20 Additions to obtain

x	$10^3[3L_x+\frac{1}{2}(3d)_x]$
	808347.04
	808347.04
	808347.04
	4557.20
7	2429598.32*
	790249.04
	790249.04
	790249.04
	2702.20
12	2373449.32*
	820719.20
	820719.20
	820719.20
	4786.92
17	2466944.52*
	932034.08
	932034.08
	932034.08
	7671.00
22	2803773.24*
	910783.60
	910783.60
	910783.60
	8931.16
27	2741281.96*
	797098.24
	797098.24
	797098.24
	10155.88
32	2401450.60*
	737420.88
	737420.88
	737420.88
	12434.76
37	2224697.40*
	625061.52
	625061.52
	625061.52
	12591.52
42	1887776.08*
	521021.44
	521021.44
	521021.44
	13191.48
47	1576255.80*

	4344281.6
	4344281.6
	4344281.6
	137556.4
52	13170401.2*
	2954964.8
	2954964.8
	2954964.8
	130450.0
57	8995344.4*
	2314651.2
	2314651.2
	2314651.2
	143740.4
62	7087694.0*
	1693712.8
	1693712.8
	1693712.8
	142816.8
67	5223955.2*
	1130864.0
	1130864.0
	1130864.0
	135210.4
72	3527802.4*
	638770.4
	638770.4
	638770.4
	113550.0
77	2029861.2*
	305386.4
	305386.4
	305386.4
	78476.4
82	994635.6*
	109092.8
	109092.8
	109092.8
	41528.4
87	368806.8*
	26620.0
	26620.0
	26620.0
	12916.8
92	92776.8*

TABLE 13.—DERIVATION OF FORMULA FOR CHECK ON WORK IN TAPES 18 TO 22.

COMPUTATION OF CHECK IS GIVEN IN TAPE 23.

This table shows the coefficients of the values in tape 18 in the equations for the totals in tape 19, derived according to equations (7) to (10), page 38. The values in tape 18 are represented by w_x at the head of the columns and the totals in tape 19 by u_y in the left-hand margin. Any number in the table is the coefficient of the w_x at the head of its column in the equation for the u_y in the left margin of its line.

	w_5	w_{10}	w_{15}	w_{20}	w_{25}	w_{30}	{and so on to}	w_{75}	w_{80}	w_{85}	w_{90}	w_{95}
u_7	200−8	+16	− 8									
u_{12}	−8	200+16	− 8									
u_{17}	.....	− 8	200+16	− 8								
u_{22}	.....	.....	− 8	200+16	−8							
u_{27}	.....	.....	.....	− 8	200+16	− 8						
and so on to												
u_{82}	.....	.....	.....	.....	.....	.....	.....	−8	200+16	− 8		
u_{87}	.....	.....	.....	.....	.....	.....	.....	.....	− 8	200+16	− 8	
u_{92}	.....	.....	.....	.....	.....	.....	.....	.....	.....	− 8	200+16	− 8
Total..	200−16	200+24	200−8	200	200	200		200	200	200	200+ 8	− 8

Thus 200 times either sum in tape 18, ages 5 to 95 (4148809 and 171099), lacks $-16w_5+24w_{10}-8w_{15}+8w_{90}-8w_{95}-200w_{95}$ of being equal to the sum of the corresponding totals in tape 19. This expression may be written as $(+2-10)(2w_5-3w_{10}+w_{15}-w_{90}+w_{95})-200w_{95}$. Then the sum of u_y for $y=7$ to $y=92$ is equal to the sum of 200 times the totals, ages 5 to 95, in tape 18 plus $(+2-10)(2w_5-3w_{10}+w_{15}-w_{90}+w_{05})-200w_{95}$. These additions are performed in tape 23, those for populations under tape 21, and those for deaths under tape 22. As in tape 19 the values of the operands were first obtained, and these were then added in unit's place and their complements in ten's place; then the complements of w_{05} were added once and the subtotals in tape 18 (4148809 and 171099) twice in hundred's place. A subtotal was then taken in the addition for populations, and this subtotal repeated twice and one-half the total of the deaths ($\frac{1}{2}\times 34129336$) added to it. As indicated by the symbols ① and ② to the right of the totals in tapes 21 and 22, respectively, and of those beneath in tape 23, the corresponding totals agree, indicating that the computations from tapes 18 to 23 are correct.

PROCESS OF OBTAINING THE $\log p_x$ NEEDED TO COMPUTE $\log {}_5p_x$.

24. Formulas 13 to 16 for determining $\log_5 p_x$ required $\log p_x$. Accordingly the $10^6 q_x$ in tape 24 were copied on the left of the machine and at the same time their complements, p_x, or in this case, $1{,}000{,}000-10^6 q_x=10^6 p_x$, were set up on the right. After each addition the totals should be found to be complementary as are the totals at the end of the tape. To indicate this agreement the operator adds the subtotal on the left of the machine to that on the right. The total should be 0 in the first six places and 21 in the next two places. The 21 shows the operator how many terms he has set down.

25. Bauschinger and Peters eight-place logarithmic tables were used to obtain $\log p_x$. The mantissa of the logarithm of the first five digits of the p_x could be read directly from the book, and this was set up on the adding machine. Then the operator looked up the P. P. (proportional part) which corresponded to the sixth figure in p_x and added it to the mantissa of the first five digits, and took a total. Since the characteristics of all these $\log p_x$'s were -1, the characteristics are omitted here and in the tapes that follow until tape 37, the additions for $\log l_x$. Also the decimal point is omitted. Accordingly $10^8(\log p_x+1)$, is put in the headings of tapes 25 to 36, but in the discussion of the tapes simply $\log p_x$ is used.

To condense the work, the machine was split between banks 9–10, and the mantissas for two consecutive logarithms were set up side by side. That is, after the two parts of the mantissa of the first logarithm had been entered on the left of the adding machine, the platen was rolled back two places and the two parts of the mantissa of the second $\log p_x$ were added before a total was taken. Putting the logarithms on a tape in this form is of great convenience to the comparer and also tends to increase the accuracy of the computer.

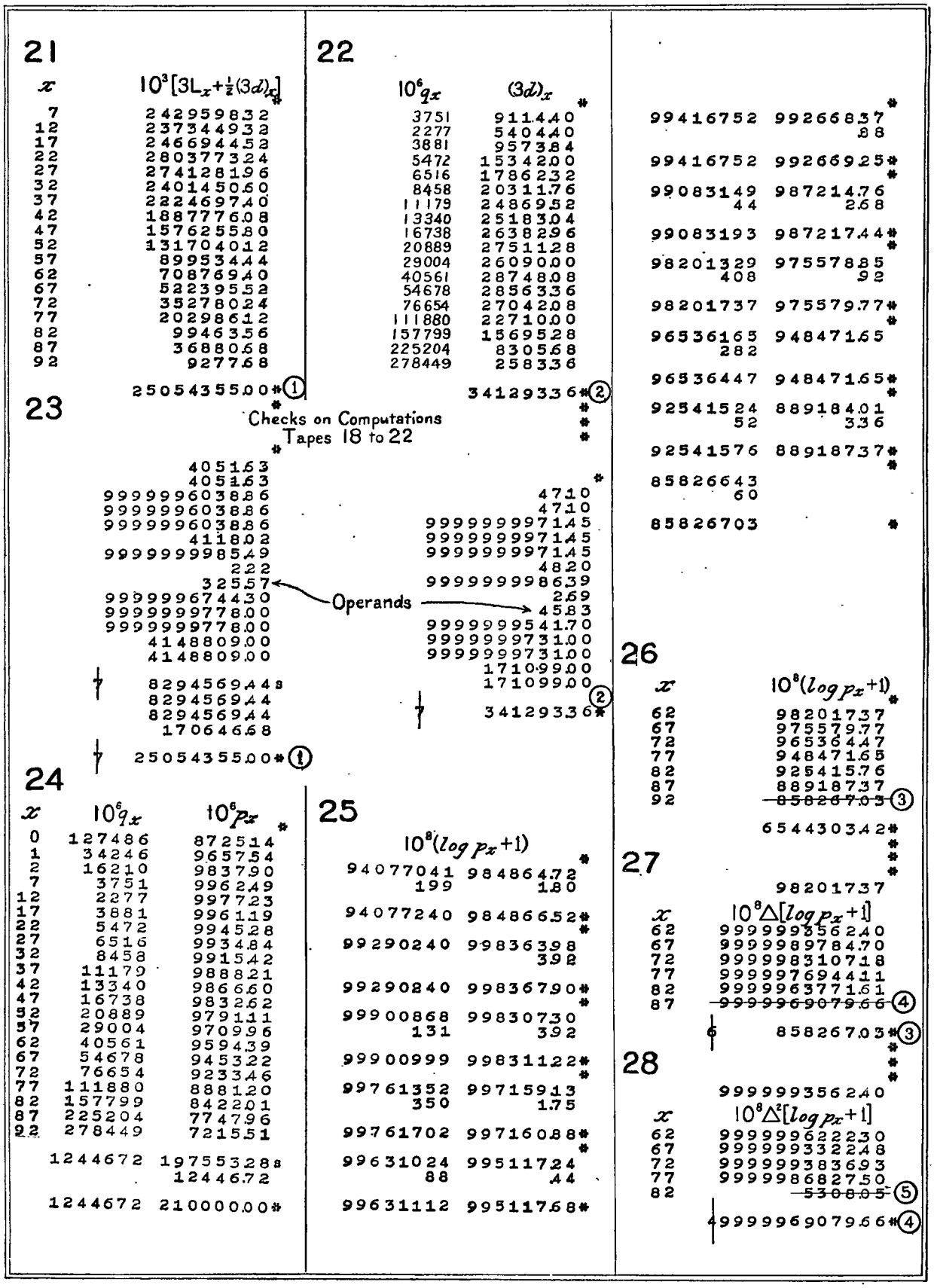
EXTENSION OF THE SERIES OF $\log p_x$ TO A VERY OLD AGE.

26–30. As explained in section 11, the mantissas of the last seven values of $\log p_x$ in tape 25 were copied on a separate tape and differenced four times in tapes 27 to 30. This includes the logarithms of p_x from $x=62$ to $x=92$. The method of making these tapes was as follows: The first value in the tape for $\Delta^n(\log p_x+1)$ was set up at the beginning of the tape for $\Delta^{n+1}(\log p_x+1)$, and then the operator mentally subtracted the first value in the $\Delta^n(\log p_x+1)$ tape from the one next below it and added the remainder under the first value which was set up at the beginning

RATES OF MORTALITY AND LOGARITHMS OF THE PROBABILITY OF LIVING ONE YEAR.

CALCULATION OF LIFE TABLE FOR MALES IN THE STATE OF NEW YORK: 1909–1911.

PHOTOGRAPHS OF ADDING MACHINE TAPES UPON WHICH CALCULATIONS WERE MADE.



of the $\Delta^{n+1}(\log p_x+1)$ tape. If the subtraction is correct, the second value appears through the glass at the base of the adding machine. This is in accordance with the equation $\Delta^n u_x+\Delta^{n+1}u_x=\Delta^n u_{x+5}$. If the first value in the $\Delta^n(\log p_x+1)$ is larger than the second, the subtraction is made as though the second value had been increased by 10^{12}, or whatever multiple of 10 is necessary to carry it beyond the split. This process of differencing is described fully in the United States Life Tables: 1890, 1901, 1910, 1901–1910, page 374, section 149.

31. An examination of tape 30 shows that these fourth differences are very rough. Either $\Delta^4\log p_{62}$ or $\Delta^4\log p_{72}$, if used as a constant $\Delta^4\log p_x$ for all older ages, would give the *greatest* probability of living at the *oldest* age. Only $\Delta^4\log p_{67}$ would produce reasonable results, if it were used as a constant $\Delta^4\log p_x$ for ages older than 67. Accordingly this assumption was made, and $\Delta^4\log p_{67}$ was added to the $\Delta^3\log p_{72}$ six times, a subtotal being taken after the first five additions and a total at the end. Tape 31 shows this work. The first subtotal is used as $\Delta^3\log p_{77}$ in place of 1,848,055 which produced such an irregular $\Delta^4\log p_{72}$. The other five subtotals are used as $\Delta^3\log p_{82}$ to $\Delta^3\log p_{102}$.

32. In tape 32 the five subtotals and the total in tape 31 were added to $\Delta^2\log p_{77}$, a subtotal being taken after each addition until the last when a total was taken. These subtotals and total serve as $\Delta^2\log p_x$ from $x=82$ to $x=107$.

33–34. In the same way the subtotals and the total in tape 32 were added to $\Delta\log p_{82}$ to obtain $\Delta\log p_x$ for $x=87$ to $x=112$ in tape 33, and in tape 34 these new values of $\Delta\log p_x$ were added to $\log p_{87}$ to obtain $\log p_{92}$ to $\log p_{117}$. As stated in section 11, these values of $\log p_x$ to a very old age were used to determine $\log {}_5p_x$ to ages old enough to reduce the radix of 100,000 to less than 0.5 or practically 0.

PROCESS OF OBTAINING $\log {}_5p_x$ NEEDED TO COMPUTE l_x AT FIVE YEAR INTERVALS.

35. The $10^8[\log p_x+1]$ obtained in tape 25 were copied in tape 35, except the last, for age 92, which was replaced by its estimated value in tape 34 The values in tape 25 were then followed by the other estimated $10^8[\log p_x+1]$ in tape 34. Since equations (13) to (16) and so on, page 35, do not require the logarithms of p_0 and p_1, they were added separately at the beginning of tape 35 and a total taken. The addition was begun with $\log p_2$ and continued through $\log p_{117}$.

36. In obtaining the value of $10^9\log {}_5p_2$ according to equation (13), ten times the value of the operand was obtained first. $10^8(\log p_2+1)$ in tape 35 was set up in ten's place, $10^8(\log p_7+1)$ repeated four times in ten's place, and the complement of $10^8(\log p_{12}+1)$ repeated twice in ten's place. This gave ten times the operand, which was read through the glass of the machine and set up again, and then one-tenth of its complement added three times. Then, in accordance with the other terms in equation (13), the complement of $10^8(\log p_2+1)$ was added in unit's place, that of $10^8(\log p_7+1)$ in ten's place, and $10^8(\log p_{17}+1)$ was added in ten's place, and a total taken. This total is $10^9(\log_5 p_2+5)$.

To obtain the value for $10^9\log {}_5p_7$ according to equation (14) $10^8[\log p_7+1]$ in tape 35 was added to $10^8[\log p_{12}+1]$ and a subtotal taken. Then the subtotal was set up and repeated three times in unit's place and set up again and repeated twice in ten's place, so that the total on the machine at the end of this step in the work may be represented by the expression $24[10^8(\log p_7+1+\log p_{12}+1)]$. This is in accordance with the first term on the right of equation (14). Then in accordance with the next three terms, $10^8(\log p_{12}+1)$ was set up in ten's place, the complement of $10^8(\log p_{17}+1)$ was set up in ten's place and $10^8[\log p_{22}+1]$ is repeated twice in unit's place, giving as a total,

$$10^8[24(\log p_7+\log p_{12})+10\log p_{12}-10\log p_{17}+2\log p_{22}+(48+10-10+2)]=10^8[24(\log p_7+\log p_{12})+10\log p_{12}-10\log p_{17}+2\log p_{22}]+5(10^9).$$

In other words the result obtained is $10^9\log {}_5p_7+5(10^9)$.

In the formulas (13) to (16) it will be noted that only four consecutive values of $\log p_x$ are used in each period. In this connection it was found convenient to use as a marker a cardboard with a rectangular opening cut in it just wide enough to allow four of the values on tape 35 to be seen.

Since the same ages appear in equation (15) as in equation (14), the cardboard was not moved, but the four values were added again in a different way. It will be noted that the values for ages 7 and 22, the first and last of the four values appearing in the opening of the cardboard, are in the first expression on the right of equation (15) with the coefficient -1, while the two middle values have the coefficient $+11$ in this expression. Accordingly the first and last values in the opening of the cardboard were added first and a total taken. Then the two middle values were added and their sum, appearing at the base of the adding machine, was set up in ten's place. This gave $10^8[11(\log p_{12}+1+\log p_{17}+1)]$. To this the complement of the first two values were added, giving 10^8 times the value of the expression—

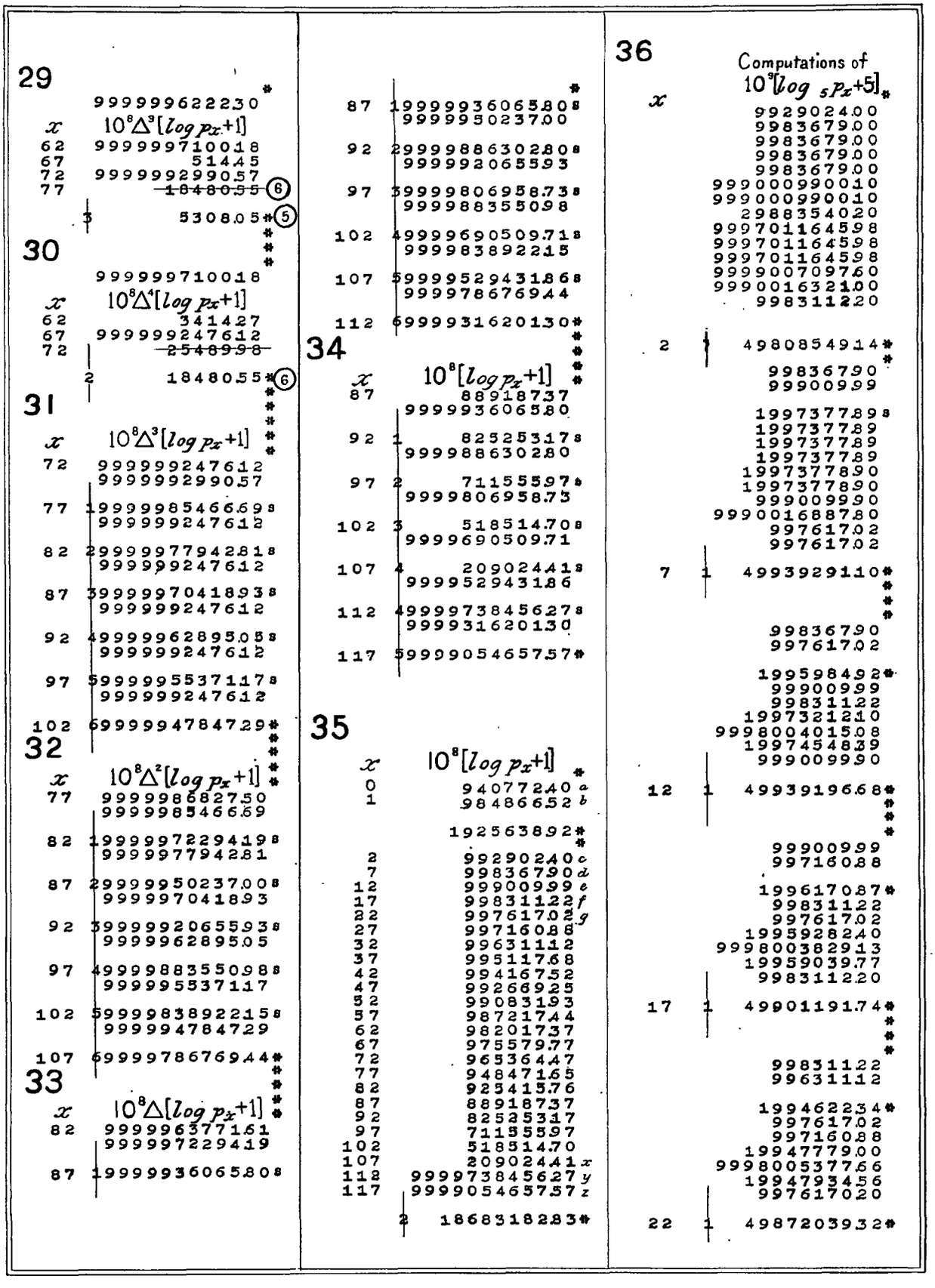
$$-\log p_7-1+11(\log p_{12}+1+\log p_{17}+1)-\log p_{22}-1=20+[-\log p_7+11(\log p_{12}+\log p_{17})-\log p_{22}]$$

The expression in brackets is the same as that in equation (15). Since twice this expression is required, the sum appearing at the base of the adding machine was

PROBABILITIES OF LIVING ONE YEAR AT VERY OLD AGES.

CALCULATION OF LIFE TABLE FOR MALES IN THE STATE OF NEW YORK: 1909–1911.

PHOTOGRAPHS OF ADDING MACHINE TAPES UPON WHICH CALCULATIONS WERE MADE.



set up again. In accordance with the last term in equation (15) the second value in the opening of the cardboard was added in ten's place and a total taken. The result is:

$$10^8\{2[20-\log p_7+11(\log p_{12}+\log p_{17})-\log p_{22}]+10(\log p_{12}+1)\}$$
$$=10^8\{2[-\log p_7+11(\log p_{12}+\log p_{17})-\log p_{22}]+10\log p_{12}\}+5(10^9)$$
$$=10^9\log {}_5p_{12}+5(10^9).$$

Then the cardboard was moved down one space and equation (16) applied to the next four consecutive values. It will be noted that equation (16) is the same general equation as (15). Hence the first and last values appearing in the cardboard were added and a total taken. Next the second and third values were added, their sum, appearing at the base of the adding machine, was set up in ten's place; the complement of the sum of the first and fourth just above was added; the sum appearing at the base of the adding machine was set up, and finally the second value in the opening was added in ten's place and a total taken. For reasons similar to the above, it will be found that this total is $10^9\log {}_5p_{17}+5(10^9)$. This same process was repeated on each four consecutive values in tape 35. These totals in tape 36 furnish the $\log {}_5p_x$ needed to obtain $\log l_x$ at every fifth year of age. The $\log {}_5p_x$ are in the following form: $10^9\log {}_5p_x+5(10^9)$.

$\log l_x$ AT EVERY FIFTH YEAR OF AGE.

37. Logarithms of l_x at every fifth year of age were obtained in tape 39 by adding to the logarithm of the radix $\log p_0$ and $\log p_1$ and then of each consecutive $\log {}_5p_x$, and taking a subtotal after each. Since the totals obtained in tape 36 are multiples of 10^9, the decimal point comes between banks 9 and 10 of the machine and may be indicated by a vertical line drawn between these banks. The radix is taken as 100,000, and since its logarithm is 5, this figure was added in the tenth bank of the adding machine.

Log p_0 is given in tape 35 as $10^8(\log p_0+1)$, and multiplying this expression by 10 changes it to $10^9\log p_0+10^9$. Accordingly 94,077,240, the first number in tape 35, was entered in ten's place. To remove the 10^9, 9's were set up from bank 10 to the split in the machine between banks 12 and 13, and a subtotal taken. This subtotal is $\log l_1$. In the same way $10^8(\log p_1+1)$, the second number in tape 35, was set up in ten's place, with 9's from bank 10 to bank 12. The subtotal taken here is $\log l_2$.

From age 2 the l_x are required at five-year intervals. Accordingly, $10^9\log {}_5p_2+5(10)^9$, the first total in tape 36, or 4,980,854,914, was added. To remove the $5(10)^9$, 5 was subtracted from the tenth bank of this first total, leaving 999 from banks 10 to 12 instead of 4 in bank 10. The subtotal taken here is $\log l_7$.

In this way each of the totals in tape 36 was added after 5 had been subtracted from the number in the tenth bank of the total, and a subtotal was taken after each addition. Since 4 is the number in the tenth bank of the totals in tape 36 from age 2 to 87, 999 is added in banks 10 to 12 for all these totals. The totals for age 92 and 97 contain 3 in the tenth bank, while those for ages 102 and 107 contain 2 and 0, respectively. Accordingly, for these four ages the numbers added in banks 10 to 12 in tape 37, were 998, 998, 997, 995, respectively.

Thus the series of subtotals in tape 37 are the logarithms of l_x. Whenever these subtotals became less than 999|698,000,000, which is log 0.5 on the adding machine tape, the remaining totals in tape 36 were added in without taking a subtotal, since all values in for l_x less than 0.5 were called 0.

Since 10^9 was subtracted from ten times each of the first two values in tape 35 before adding them in tape 37, and $5(10^9)$ was subtracted from each of the totals in tape 36 before they were added in tape 37, the total thus far obtained in tape 37 does not equal ten times the first two terms in tape 35 plus the totals in tape 36. Since there are always 22 totals in tape 36 and $5(10^9)$ was added at beginning of tape 37, this difference is $10^9(-5+2+5\times 22)=107(10^9)$. Therefore, for checking purposes 107 was added in banks 10 and 12 of tape 37 before the final total was taken. This final total is then ten times the first two values in tape 35 plus the totals in tape 36.

After this total had been checked, the antilogarithms of the subtotals in tape 37 were looked up in Bauschinger and Peters' logarithm tables and entered to the nearest integer to the left of the subtotal.

38. A check on the work in tapes 35 to 37 is derived in Table 14. In this table letters represent the $\log p_x$ for the values of x given just above them, and any number in the table is the coefficient of the $\log p_x$ at the top of its column in the equation for the $\log {}_5p_x$ on the left margin of the table in the same line with this number. These coefficients are taken from equations (13) to (16), and so on, page 35.

PROBABILITY OF LIVING FIVE YEARS.

CALCULATION OF LIFE TABLE FOR MALES IN THE STATE OF NEW YORK: 1909–1911.

PHOTOGRAPHS OF ADDING MACHINE TAPES UPON WHICH CALCULATIONS WERE MADE.

36 *Continued*

Computations of $10^9[\log {_5p_x}+5]$

```
        #
        99761702
        99511768

        199273470#
        99716088
        99631112
        1993472000
        999800726530
        1993545730
        997160880
27  1   4984252340#
        #
        #
        #
        99716088
        99416752

        199132840#
        99631112
        99511768
        1991428800
        999800867160
        1991438840
        996311120
32  1   4979188800#
        #
        #
        #
        99631112
        99266925

        198898037#
        99511768
        99416752
        1989285200
        999801101963
        1989315683
        995117680
37  1   4973749046#
        #
        #
        #
        99511768
        99083193

        198594961#
        99416752
        99266925
        1986836770
        999801405039
        1986925486
        994167520
42  1   4968018492#
        #
        #
        #
        99416752
        98721744

        198138496#
        99266925
        99083193
        1983501180
        999801861504
        1983712802
        992669250
47  1   4960094854#
```

```
        #
        99266925
        98201737

        197468662#
        99083193
        98721744
        1978049370
        999802531338
        1978385645
        990831930
52  1   4947603220#
        #
        #
        #
        99083193
        97557977

        196641170#
        98721744
        98201737
        1969234810
        999803358830
        1969517121
        987217440
57  1   4926251682#
        #
        #
        #
        98721744
        96536447

        195258191#
        98201737
        97557977
        1957597140
        999804741809
        1958098663
        982017370
62  1   4898214696#
        #
        #
        #
        98201737
        94847165

        193048902#
        97557977
        96536447
        1940944240
        999806951098
        1941989762
        975579770
67  1   4859559294#
        #
        #
        #
        97557977
        92541576

        190099553#
        96536447
        94847165
        1913836120
        999809900447
        1915120179
        965364470
72  1   4795604828#
```

```
        #
        96536447
        88918737

        185455184#
        94847165
        92541576
        1873887410
        999814544816
        1875820967
        948471650
77  1   4700113584#
        #
        #
        #
        94847165
        82525317

        177372482#
        92541576
        88918737
        1814603130
        999822627518
        1818690961
        925415760
82  1   4562797682#
        #
        #
        #
        92541576
        71155597

        163697173#
        88918737
        82525317
        1714440540
        999836302827
        1722187421
        889187370
87  1   4333562212#
        #
        #
        #
        88918737
        51851470

        140770207#
        82525317
        71155597
        1536809140
        999859229793
        1549719847
        825253170
92  1   3924692864#
        #
        #
        #
        82525317
        20902441

        103427758#
        71155597
        51851470
        1230070670
        999896572242
        1249649979
        711555970
97  1   3210855928#
```

TABLE 14.—DERIVATION OF FORMULA FOR CHECK ON WORK IN TAPES 35 TO 37.

COMPUTATION OF CHECK IS GIVEN IN TAPE 38.

In this table letters represent the log p_x for values of x given just above the letters, and any number in the table is the coefficient of the log p_x at the top of its column in the equation for the log ${}_5p_x$ on the left margin of the table in the same line with this number. These coefficients are taken from equations (13) to (16), and so on, page 35.

$10 \log {}_5p_x$ for x equals—	log p_x for x equals—																
	0	1	2	7	12	17	22	27	32	37	and so on to	92	97	102	107	112	117
	a	b	c	d	e	f	g	h	i	j		u	v	w	x	y	z
2			+16	+58	−34	+10											
7				+24	+34	−10	+ 2										
12				− 2	+32	+22	−. 2										
17					− 2	+32	+22	− 2									
22						− 2	+32	+22	− 2								
27							− 2	+32	+22	− 2							
32								− 2	+32	+22							
37									− 2	+32							
42										− 2							
and so on to																	
82												− 2					
87												+22	− 2				
92												+32	+22	− 2			
97												− 2	+32	+22	− 2		
102													− 2	+32	+22	− 2	
107														− 2	+32	+22	− 2
Total, $10 \sum_{x=2}^{x=107} \log {}_5p_x$			+16	+80	+30	+52	+52	+50	+50	+50	and so on to	+50	+50	+50	+52	+20	− 2
$50 \sum_{x=2}^{x=117} \log p_x$			+50	+50	+50	+50	+50	+50	+50	+50		+50	+50	+50	+50	+50	+50
$50 \sum_{x=2}^{x=117} \log p_x - 10 \sum_{x=2}^{x=107} \log {}_5p_x$			+34 =30+4	−30	+20	− 2	−2	0	0	0		0	0	0	− 2	+30	+52= 2(30−4)

Therefore to reduce the sum of the totals in tape 36 to 50 times the second total in tape 35, ten times this sum must be increased by:

$(30+4)c-30d+20e-2f-2g \ldots -2x+30y+2(30-4)z$,

or: $30(c-d+y+2z)+2(2c+10e-f-g-x-4z)$.

This formula was reduced to the following form, convenient for computation upon the adding machine:

$2[2(c-2z)+10e-f-g-x]+3[10(c-d+y+2z)]$.

Accordingly, the complete expression for the check on tapes 36–37 is:

I. Add c to complement of z repeated twice, and repeat total seen at the base of the machine. To this add e in ten's place and the complements of f, g, and x in unit's place and again repeat the total now seen at the base of the adding machine. Then clear machine.

II. Add $c-d+y+2z$ in ten's place and then set up the total seen in the glass at the base of the adding machine, repeating this total twice. To this add the total obtained in I just above, indicated by symbol ★, and then the total in tape 37.

III. Set up the second total in tape 35 and repeat 5 times; add to it, in ten's place, the first total in that tape, and take a total. The totals of II and III should agree. They are designated by the mark ⊙ to the right of each total.

Before starting his check the computer puts the letters a, b, c, d, e, f, g, and x, y, and z in the right margin of tape 35 to aid him in following the rule for the check. To preserve the first part of II, should his totals in II and III not agree, the operator takes a subtotal before adding the total in I.

39. No check was provided for the l_x determined by finding the antilogarithms of the subtotals in tape 37 except to compare them with the duplicate work. When this was done these l_x in pencil on tape 37 were added in tape 39. This put the l_x column in a more convenient form for deriving from it the $\mathbb{N}'_{x:\overline{5}|}$ according to equations (17) to (20), page 35.

DETERMINATION OF $\mathbb{N}'_{x:\overline{5}|}$ FROM l_x AND OF $\mathbb{N}'_x$ FROM $\mathbb{N}'_{x:\overline{5}|}$.

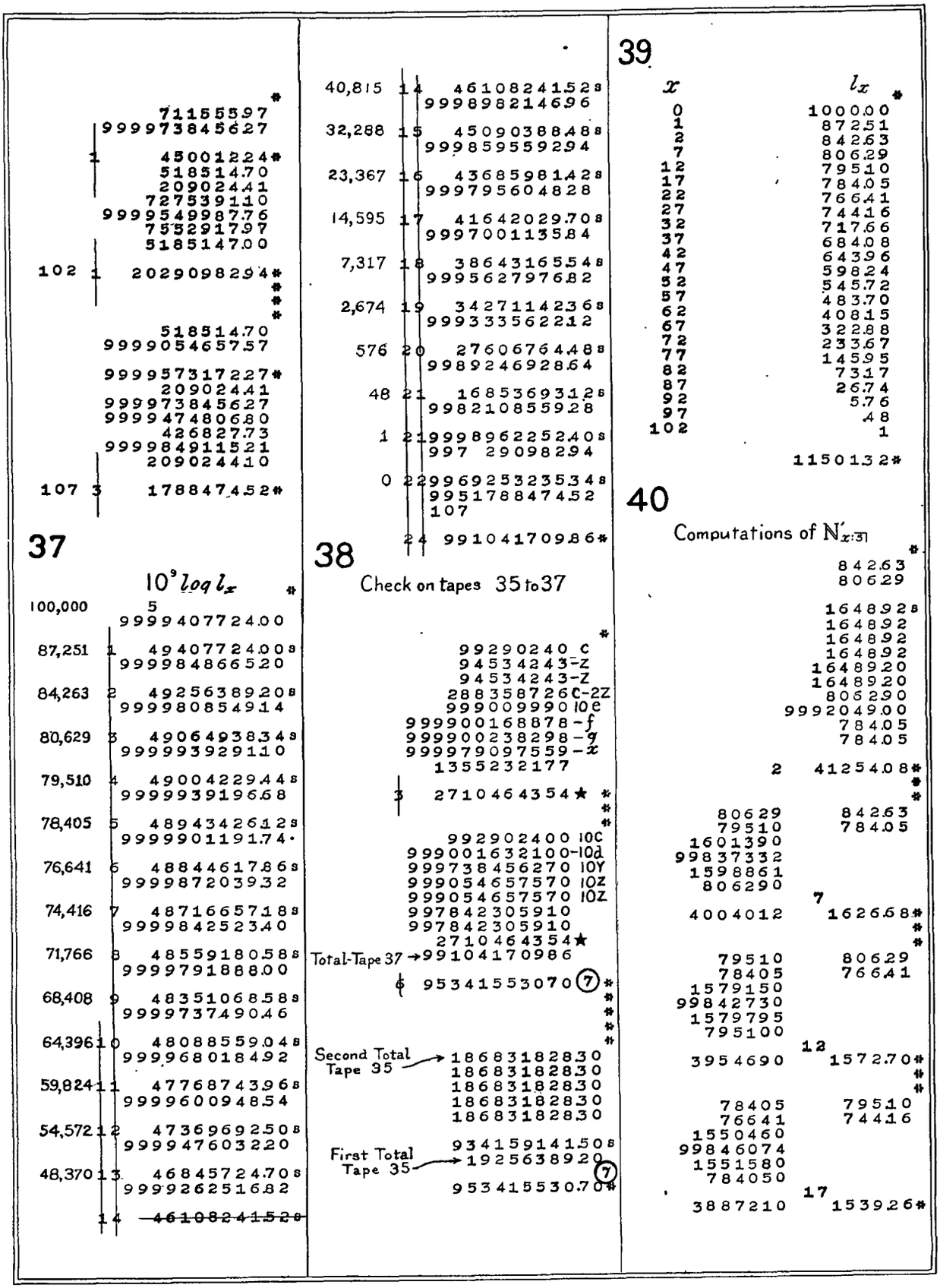
40. Equations (17) to (20) are the same general equations as (13) to (16) and accordingly the same general method was used in computing the $\mathbb{N}'_{x:\overline{5}|}$ from the l_x as was used in computing the log ${}_5p_x$ from the log p_x. The same cardboard was used to mark off the l_x to which the equation was being applied, and the addition was begun with the third number on the tape; the first two may be separated by a horizontal line. The method of computing $\mathbb{N}'_{2:\overline{5}|}$ is identical with that of computing log ${}_5p_2$, but this is the only value of $\mathbb{N}'_{x:\overline{5}|}$ obtained by the irregular formula.

However, since the l_x are much smaller numbers than the log p_x, it was found more convenient to add the first and last values appearing in the opening of the cardboard on the right of the adding machine and

NUMBER OF SURVIVORS.

CALCULATION OF LIFE TABLE FOR MALES IN THE STATE OF NEW YORK: 1909–1911.

PHOTOGRAPHS OF ADDING MACHINE TAPES UPON WHICH CALCULATIONS WERE MADE.



the second and third on the left, the machine being split between banks 9–10. Accordingly the first value in the opening was set up on the right and the second on the left and the adding machine lever struck. Then the third was set up on the left and the fourth on the right and the lever again touched. The total seen at the base of the machine on the left was set up in ten's place, the complement of the total seen through the glass on the right was added to this, and the total then seen through the glass on the left was added. Then ten times the second number appearing in the opening of the cardboard was added on the left and a total taken. This process was continued until a total had been obtained from each group of four consecutive l_x. A total was then obtained from the last three l_x according to equation (21), page 35, which gives $10\mathrm{N}'_{(w-5):5|}$. Since $l_w=1$, $\mathrm{N}'_{w:5|}$ was taken simply as 1. That is, $\sum_{x=w+1}^{x=w+4} l_x$ is zero in this table.

According to equations (17) to (21) the totals in tape 40 are $10\mathrm{N}'_{x:5|}$.

41. Then to obtain N'_x these $10\mathrm{N}'_{x:5|}$ were added, beginning with $10\mathrm{N}'_{w:5|}=10$ and taking a subtotal after each addition. After $10\mathrm{N}'_{2:5|}$ had been added and a subtotal taken, the $10\mathrm{N}'_{1:1|}$ and then the $10\mathrm{N}'_{0:1|}$ (=1,000,000) were added, a subtotal being taken after addition of the first and a total after addition of the last.

For the benefit of the reader the l_x were copied on tape 41 to the left of the N'_x for the same age. Thus, the dividends of equation (22), page 35, are given on the right side of tape 41 and the divisors in the center and the ages on the left margin of the tape. To aid the computer a vertical line between the first and second banks marks the decimal point in these N'_x.

42. The check on the work in tapes 39 to 41 is derived in Table 15. As in Table 14 any number in the table is the coefficient of the l_x at the top of its column in the equation for the $\mathrm{N}'_{x:5|}$ on the left margin of the page in the same line with the number. These equations for $\mathrm{N}'_{x:5|}$ are (17) to (21), page 35.

TABLE 15.—DERIVATION OF CHECK ON WORK IN TAPES 39 TO 41.

COMPUTATION OF CHECK IS GIVEN IN TAPE 42.

This table shows equations for $10\ \mathrm{N}'_{x:5|}$ in terms of l_x to l_{x+4} according to equations (17) to (21), page 35; $\mathrm{N}'_{0:1|}=l_0$ and $\mathrm{N}'_{1:1|}=l_1$.
Any number in the table from columns l_2 to $l_{w+5}=0$ is the coefficient of the l_x at the top of its column in the equation for the $10\,\mathrm{N}'_{x:5|}$ in first column in same line with the number.

$10\,\mathrm{N}'_{x:\overline{y}|}$	l_0	l_1	l_2	l_7	l_{12}	l_{17}	l_{22}	l_{27}	{and so on to}	l_{w-20}	l_{w-15}	l_{w-10}	l_{w-5}	l_w	$l_{w+5}=0$	
$10\mathrm{N}'_{0:1|}$	+10															
$10\mathrm{N}'_{1:1|}$		+10														
$10\mathrm{N}'_{x:5|}$ for x equals—																
2			+24	+34	−10	+ 2										
7			− 2	+32	+22	− 2										
12				− 2	+32	+22	− 2									
17					− 2	+32	+22	− 2								
22						− 2	+32	+22								
27							− 2	+32								
32								− 2								
37																
And so on to																
w−30										− 2						
w−25										+22	− 2					
w−20										+32	+22	− 2				
w−15										− 2	+32	+22	− 2			
w−10											− 2	+32	+22	− 2		
w−5												− 2	+32	+22	− 2	
w														+10		$+10\sum_{x=w+1}^{x=w+4} l_x$
Total $10\,\mathrm{N}'_0$	+10	+10	+22	+64	+42	+52	+50	+50	{and so on to}	+50	+50	+50	+52	+30	− 2	$+10\sum_{x=w+1}^{x=w+4} l_x$
$50\sum_{x=0}^{x=w} l_x$	+50	+50	+50	+50	+50	+50	+50	+50		+50	+50	+50	+50	+50	+50	
$50\sum_{x=0}^{x=w} l_x - 10\mathrm{N}'_0$	+40	+40	+28= (30−2)	−14= (−10−4)	+8= (+10−2)	− 2	0	0	0	0	0	0	− 2	+20	+52	$-10\sum_{x=w+1}^{x=w+4} l_x$

or $40(l_0+l_1)+30l_2-10l_7+10l_{12}+20l_w-2(l_2+2l_7+l_{12}+l_{17}+l_{w-5})-10\sum_{x=w+1}^{x=w+4} l_x$, when $l_{w+5}=0$.

SUM OF SURVIVORS IN FIVE-YEAR GROUPS AND AT EACH FIFTH YEAR OF AGE AND OVER.

CALCULATION OF LIFE TABLE FOR MALES IN THE STATE OF NEW YORK: 1909–1911.

PHOTOGRAPHS OF ADDING MACHINE TAPES UPON WHICH CALCULATIONS WERE MADE.

40 *Continued*

Computations of $N'_{x:\overline{5}|}$

76641	784.05	40815	483.70
74416	717.66	32288	233.67
1510570		731030	
99849829		99928263	
1511456		732396	
766410		408150	
22		62	
3789322	1501.71*	1872942	717.37*
	*		*
	*		*
74416	766.41	32288	40815
71766	684.08	23367	14595
1461820		556550	
99854951		99944590	
1462953		556795	
744160		322880	
27		67	
3670066	1450.49*	1436470	554.10*
	*		*
	*		*
71766	74416	23367	32288
68408	64396	14595	7317
1401740		379620	
99861188		99960395	
1403102		377977	
717660		233670	
32		72	
3523864	1388.12*	989624	396.05*
	*		*
	*		*
68408	717.66	14595	23367
64396	598.24	7317	2674
1328040		2191.20	
99868410		99973959	
1329254		2149.91	
684080		145950	
37		77	
3342588	1315.90*	575932	260.41*
	*		*
	*		*
64396	68408	7317	14595
59824	545.72	2674	576
1242200		99910	
99877020		99984829	
1243440		94730	
643960		73170	
42		82	
3130840	1229.80*	262630	151.71*
	*		*
	*		*
59824	64396	2674	7317
54572	483.70	576	48
1143960		32500	
99887234		99992635	
1145590		28385	
598240		26740	
47		87	
2889420	1127.66*	83510	73.65*
	*		*
	*		*
54572	59824	576	2674
48370	40815	48	1
1029420		6240	
99899361		99997325	
1031723		4189	
545720		5760	
52		92	
2609166	1006.39*	14138	26.75*
	*		*
	*		*
48370	545.72	48	5.76
40815	322.88	1	
891850		490	
99913140		99999424	
894175		99999963	
483700		480	
57		97	
2272050	868.60*	406	5.76*
	*		

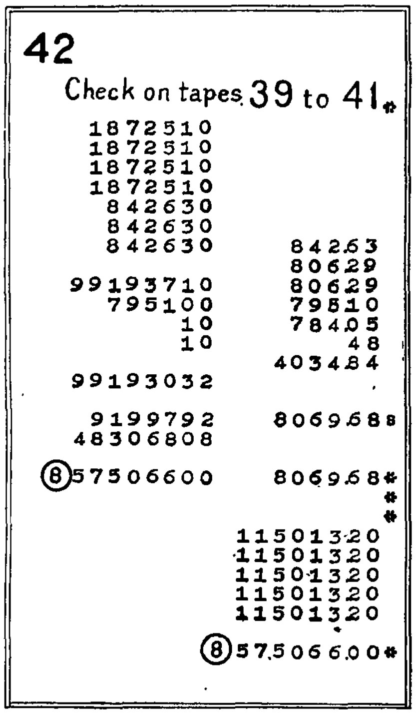
41

x	l_x	N'_x
		10 *
102	1	4.06
		4136s
97	48	14138
		145548
92	576	83510
		980648
87	2674	262630
		3606948
82	7317	575932
		9366268
77	14595	989624
		19262508
72	23367	1436470
		33627208
67	32288	1872942
		52356628
62	40815	2272050
		75077128
57	48370	2609166
		101168788
52	54572	2889420
		13 62988
47	59824	3130840
		161371388
42	64396	3342588
		194797268
37	68408	3523864
		23 35908
32	71766	3670066
		266736568
27	74416	3789322
		30462978 8
22	76641	3887210
		34350188 8
17	78405	3954690
		38304878 8
12	79510	4 4012
		42308890 8
7	80629	4125408
		46434298 8
2	84263	8725110
		47306808 8
1	87251	1
		48306808 *
0	100000	

COMPLETE EXPECTATION OF LIFE.

CALCULATION OF LIFE TABLE FOR MALES IN THE STATE OF NEW YORK: 1909–1911.

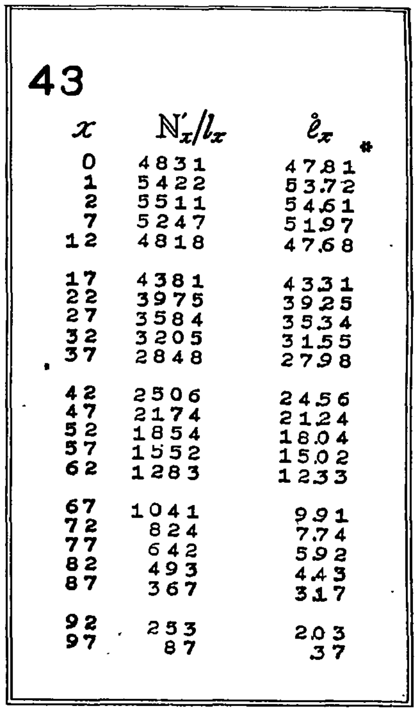
PHOTOGRAPHS OF ADDING MACHINE TAPES UPON WHICH CALCULATIONS WERE MADE:



42

Check on tapes 39 to 41*

1872510	
1872510	
1872510	
1872510	
842630	
842630	
842630	842.63
	806.29
99193710	806.29
795100	795.10
10	784.05
10	48
	4034.84
99193032	
9199792	80696.88
48306808	
(8) 57506600	80696.8*
	*
	*
	1150132.0
	1150132.0
	1150132.0
	1150132.0
	1150132.0
	(8) 5750660.0*



43

x	N'_x/l_x	$\overset{\circ}{e}_x$
0	4831	47.81
1	5422	53.72
2	5511	54.61
7	5247	51.97
12	4818	47.68
17	4381	43.31
22	3975	39.25
27	3584	35.34
32	3205	31.55
37	2848	27.98
42	2506	24.56
47	2174	21.24
52	1854	18.04
57	1552	15.02
62	1283	12.33
67	1041	9.91
72	824	7.74
77	642	5.92
82	493	4.43
87	367	3.17
92	253	2.03
97	87	.37

Accordingly the rule for checking the work in tapes 39 to 41 is as follows: Split machine between banks 9 and 10.

I.—(1) Set up l_0+l_1, that is, $100{,}000+l_1$, in ten's place on the left of the machine and repeat four times.

(2) Set up $10l_2$ on the left and repeat three times, adding it in unit's place on the right with the third repetition.

(3) Set up l_7 on the right of the machine, repeating twice, and with the second repetition setting up the complement of l_7 in ten's place on the left.

(4) Set up $10l_{12}$ on the left of the machine and l_{12} on the right.

(5) Set up $10l_w$ on the left of the machine and l_{17} on the right.

(6) Set up $10l_w$ on the left of the machine and l_{w-5} on the right.

(7) Repeat total seen at right through glass at base of machine.

(8) Set up on left of machine the complement of total now seen at right through the glass at its base.

(9) Set up complement of $10\sum_{x=w+1}^{x=w+4} l_x$ on right of machine. $\sum_{x=w+1}^{x=w+4} l_x$ is zero in this table. See end of section 40.

(10) Add total of tape 41, and take a total.

II.—Repeat total of tape 39 five times in ten's place and take a total. As indicated by the marks ⑧ to the left of each of the totals of I and II, they should agree.

The operator, to preserve the first part of his check should his totals not agree, takes a subtotal between steps (8) and (9).

DETERMINATION OF $\overset{\circ}{e}_x$.

43. The work on this tape is generally performed in pencil on the left margin of tape 41, since the l_x are not copied there in actual practice. By putting in the ages in the right margin of tapes 39 and 41, the operator can readily find the dividend in tape 41 and the corresponding divisor in tape 39, and he can enter his quotient from the computing machine to the left of the dividend in tape 43.

When the finished tapes were no longer needed for further computations, they were pasted on a large sheet of heavy manila paper and enough headings inserted to make easy any possible future reference to them. In this way all the computations for each life table were kept in order. This paper was also easy to file away.

No knowledge of algebraic processes is needed to compute life table by the methods described in sections 16 to 45. Under proper supervision any good adding machine operator can readily learn these steps and then do all the work of computing life tables.

PART III.—ORIGINAL STATISTICS.

SOURCES OF ORIGINAL STATISTICS.

44. The population statistics upon which these life tables are based are the census returns for January 1, 1920. Practically all the birth and mortality statistics used were compiled by the Bureau of the Census. The exceptions to this rule are shown in Table 16. Only the total number of deaths by color and sex in Buffalo in 1919 and 1920, and in Cleveland and Detroit in 1919 could be obtained, whereas deaths by color, sex, and age groups as compiled by the Bureau of the Census were needed to render life tables for these cities comparable with those for other cities.

Accordingly certain registrars were requested to furnish the mortality statistics for whites and for Negroes separately by sex for the following age groups: single years of age under 5 and the quinquennial age groups 5–9, 10–14, and so on, to age 100 and over. When the totals for deaths by sex and color furnished by the state did not agree with those compiled by the Bureau of the Census, the totals compiled by the Bureau were distributed into age groups proportionately to those furnished by the state department.

Since birth statistics by sex and color for many other states and cities were not available for all the years 1916 to 1920, it was necessary either to vary the method of computing rates of mortality at ages under 3 years or else to estimate the sex and color distribution of the births. After studying the statistics which could be obtained, it was decided not to vary the method of computing rates of mortality at ages under 3 years, but to use the birth statistics which were available and then to distribute these by sex and color according to the birth statistics of later years, or according to computed number of births for these years derived from population and death statistics. This last method was necessary only in the case of Chicago, Illinois, and New Jersey. It will be noted that it was necessary to make these distributions by sex and color for only a few areas in the years 1919 and 1920. Since only the differences between births in 1916 and 1918, 1917 and 1919, 1918 and 1920, were required by the formulas used, the errors introduced by these estimated distributions must be very small for the years 1916 to 1918.

For a few areas it was necessary to take from the state reports the deaths under 1 year of age in 1916 by sex and color or to estimate the distribution by sex and color of the total deaths under 1 year of age from state reports. In the case of Illinois the deaths under 1 year of age in 1916, and under 1 and from 1 to 2 years of age in 1917 had to be estimated from those in Chicago for these years. However, since but little weight is given to these deaths in the formulas it was possible to estimate for large areas with only slight errors in the rates of mortality under three years of age.

The populations and deaths at unknown ages are distributed in Tables 17 and 18, pages 58 and 62. This distribution was made by the usual method. That is, the population in each age group was multiplied by the constant ratio of total population to population at known ages to distribute the population at unknown ages among those of known ages, and the deaths at unknown ages were distributed among those of known ages by the same process.

TABLE 16. STATISTICS USED IN THE CONSTRUCTION OF LIFE TABLES

A.—BIRTH

No. of line.	AREA AND SEX.	1916						1917					
		Total.	Total white.	Total colored.	Negro.	Other colored.	Color not stated.	Total.	Total white.	Total colored.	Negro.	Other colored.	Color not stated.
	STATES.												
1	California: Total	50,638	46,272	.....	199	4,167	.....	52,230	47,313	.....	328	4,589	.....
2	Males	.....	23,928	.....	.....	.....	.....	.....	24,319	.....	.....	.....	.....
3	Females	.....	22,344	.....	.....	.....	.....	.....	22,994	.....	.....	.....	.....
4	Illinois: Total	116,283	.....	.....	.....	.....	.....	108,901	.....	.....	.....	.....	.....
5	Indiana: Total	.....	62,343	969	.....	.....	.....	.....	.....	.....	.....	.....	.....
6	Males	.....	31,893	528	.....	.....	.....	.....	.....	.....	.....	.....	.....
7	Females	.....	30,450	441	.....	.....	.....	.....	.....	.....	.....	.....	.....
8	Kansas: Total	41,163	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
9	Kentucky: Total	61,077	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
10	Missouri: Total	73,486	71,344	.....	2,129	13	.....	67,041	64,616	.....	2,425	.....	.....
11	Males	37,848	.....	.....	.....	.....	.....	34,402	.....	.....	.....	.....	.....
12	Females	35,638	.....	.....	.....	.....	.....	32,639	.....	.....	.....	.....	.....
13	New Jersey: Total	.....	68,283	.....	1,927	1	.....	.....	73,063	.....	2,243	3	.....
14	North Carolina: Males	.....	27,481	.....	11,950	.....	.....	.....	.....	.....	.....	.....	.....
15	Females	.....	25,965	.....	11,262	.....	.....	.....	.....	.....	.....	.....	.....
16	Ohio: Total	112,951	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
17	Oregon: Total	12,960	.....	.....	.....	.....	.....	13,149	.....	.....	.....	.....	.....
18	Males	6,644	.....	.....	.....	.....	.....	6,871	.....	.....	.....	.....	.....
19	Females	6,316	.....	.....	.....	.....	.....	6,278	.....	.....	.....	.....	.....
20	Rhode Island: Males	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
21	Females	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
22	South Carolina: Total	.....	22,385	.....	25,476	.....	35	.....	20,395	.....	22,080	.....	35
23	Males	.....	11,742	.....	13,045	.....	.....	.....	10,564	.....	11,368	.....	.....
24	Females	.....	10,643	.....	12,431	.....	.....	.....	9,831	.....	10,712	.....	.....
	Tennessee:												
25	Total (cities)	6,072	.....	.....	.....	.....	.....	6,304	.....	.....	.....	.....	.....
26	Males	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
27	Females	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
28	Total (rural)	44,659	.....	.....	.....	.....	.....	44,366	.....	.....	.....	.....	.....
29	Males	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
30	Females	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
31	Utah: Males	.....	6,753	.....	8	77	.....	.....	.....	.....	.....	.....	.....
32	Females	.....	6,400	.....	14	74	.....	.....	.....	.....	.....	.....	.....
33	Virginia: Total	.....	41,297	18,855	.....	.....	30	.....	.....	.....	.....	.....	.....
34	Males	.....	21,150	9,481	.....	.....	.....	.....	.....	.....	.....	.....	.....
35	Females	.....	20,147	9,374	.....	.....	.....	.....	.....	.....	.....	.....	.....
36	Washington: Total	23,831	22,685	.....	66	1,080	.....	.....	.....	.....	.....	.....	.....
37	Males	12,328	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
38	Females	11,503	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
39	Wisconsin: Total	58,921	.....	.....	.....	.....	92	.....	.....	.....	.....	.....	.....
40	Males	30,463	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
41	Females	28,458	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	CITIES.												
42	Chicago: Total	49,754	.....	.....	.....	.....	.....	49,561	.....	.....	.....	.....	.....
43	Cleveland: Total	18,662	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
44	Los Angeles: Males	.....	3,712	.....	.....	.....	.....	.....	3,802	.....	.....	.....	.....
45	Females	.....	3,612	.....	.....	.....	.....	.....	3,678	.....	.....	.....	.....
46	New Orleans: Total	.....	5,836	2,693	.....	.....	.....	.....	5,877	2,303	.....	.....	.....
47	Males	.....	3,001	1,394	.....	.....	.....	.....	3,030	1,226	.....	.....	.....
48	Females	.....	2,835	1,299	.....	.....	.....	.....	2,847	1,077	.....	.....	.....
49	St. Louis: Total	14,101	13,414	.....	678	9	.....	13,868	12,893	.....	975	.....	.....
50	Males	7,228	.....	.....	.....	.....	.....	7,091	.....	.....	.....	.....	.....
51	Females	6,873	.....	.....	.....	.....	.....	6,777	.....	.....	.....	.....	.....
52	San Francisco: Males	.....	3,827	.....	.....	.....	.....	.....	3,809	.....	.....	.....	.....
53	Females	.....	3,471	.....	.....	.....	.....	.....	3,595	.....	.....	.....	.....
	HAWAII.												
54	All races combined: Males	4,324	.....	.....	.....	.....	.....	4,880	.....	.....	.....	.....	.....
55	Females	3,846	.....	.....	.....	.....	.....	4,316	.....	.....	.....	.....	.....

No. of line.	AREA AND SEX.	NUMBER OF BIRTHS DURING			
		1916		1917	
		All races.	Japanese.	All races.	Japanese.
56	Hawaii: Total	.....	.....	.....	.....
57	Males	4,197	1,974	4,640	2,321
58	Females	3,702	1,688	4,067	1,939

BUT NOT COMPILED IN THE BUREAU OF THE CENSUS. TABLE 16.

STATISTICS.

1918						1919						1920						No. of line.
Total.	Total white.	Total colored.	Negro.	Other colored.	Color not stated.	Total.	Total white.	Total colored.	Negro.	Other colored.	Color not stated.	Total.	Total white.	Total colored.	Negro.	Other colored.	Color not stated.	
51,248	50,986	.....	262	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
.....	26,221	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2
.....	24,765	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3
118,368	.....	.....	.....	.....	.....	115,072	.....	.....	.....	.....	.....	128,992	.....	.....	.....	.....	.....	4
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	8
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	9
64,001	61,843	.....	2,143	15	.....	61,193	58,777	.....	2,416	.....	.....	65,416	62,656	.....	2,760	.....	.....	10
32,702	.....	.....	.....	.....	.....	29,730	.....	.....	.....	.....	.....	33,609	.....	.....	.....	.....	.....	11
31,299	.....	.....	.....	.....	.....	31,463	.....	.....	.....	.....	.....	31,807	.....	.....	.....	.....	.....	12
.....	72,216	.....	2,328	5	.....	.....	68,269	.....	2,655	11	.....	.....	73,471	.....	2,949	11	.....	13
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	14
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	15
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	16
13,295	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	17
6,780	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	18
6,515	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	19
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7,687	.....	159	.....	.....	20
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7,203	.....	149	.....	.....	21
.....	20,705	.....	23,414	.....	32	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	22
.....	10,653	.....	12,165	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	23
.....	10,052	.....	11,249	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	24
6,569	.....	.....	.....	.....	.....	7,202	.....	.....	.....	.....	.....	7,901	6,058	1,843	.....	.....	.....	25
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3,099	928	.....	.....	.....	26
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,959	915	.....	.....	.....	27
45,248	.....	.....	.....	.....	.....	40,470	.....	.....	.....	.....	.....	43,002	37,753	5,249	.....	.....	.....	28
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	19,627	2,746	.....	.....	.....	29
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	18,126	2,503	.....	.....	.....	30
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	31
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	32
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	33
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	34
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	35
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	36
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	37
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	38
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	39
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	40
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	41
51,020	.....	.....	.....	.....	.....	47,460	.....	.....	.....	.....	.....	54,879	.....	.....	.....	.....	.....	42
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	43
.....	4,063	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	44
.....	3,866	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	45
.....	6,064	2,298	.....	.....	.....	.....	6,153	2,381	.....	.....	.....	9,264	.....	.....	.....	.....	.....	46
.....	3,157	1,133	.....	.....	.....	.....	3,142	1,221	.....	.....	.....	.....	.....	.....	.....	.....	.....	47
.....	2,907	1,165	.....	.....	.....	.....	3,011	1,160	.....	.....	.....	.....	.....	.....	.....	.....	.....	48
13,432	12,510	.....	916	6	.....	12,701	11,614	.....	1,087	.....	.....	14,415	13,187	.....	1,228	.....	.....	49
6,876	.....	.....	.....	.....	.....	6,516	.....	.....	.....	.....	.....	7,260	.....	.....	.....	.....	.....	50
6,556	.....	.....	.....	.....	.....	6,185	.....	.....	.....	.....	.....	7,155	.....	.....	.....	.....	.....	51
.....	4,103	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	52
.....	3,877	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	53
4,758	.....	.....	.....	.....	.....	5,080	.....	.....	.....	.....	.....	2,657	January 1 to June 30, 1920					54
4,556	.....	.....	.....	.....	.....	4,532	.....	.....	.....	.....	.....	2,358						55

YEAR ENDED JUNE 30 OF CALENDAR YEARS—

1918		1919		1920		1921		
All races.	Japanese.	All races.	Japanese.	All races.	Japanese.	All races.	Japanese.	
.....	.....	.....	.....	.....	.....	.....	.....	
4,829	2,365	4,807	2,356	10,165	4,963	10,156	4,910	56
4,575	2,214	4,357	2,035	5,385	2,636	.....	.....	57
				4,780	2,327	.....	.....	58

TABLE 16. STATISTICS USED IN THE CONSTRUCTION OF LIFE TABLES

B.—MORTALITY

No. of line.	AREA, YEAR, SEX, AND COLOR.	All ages.	AGE INTERVAL IN YEARS									
			0–1	1–2	2–3	3–4	4–5	0–5	5 to 10	10 to 15	15 to 20	20 to 25
	CLEVELAND, 1919.											
	Colored males:											
1	Total	388	50	12	6	5	.....	73	8	6	20	19
2	Negro	379	50	12	6	5	.....	73	8	6	19	19
3	Other colored	9	.....	.....	.....	.....	.....	.....	.....	.....	1	.....
	Colored females:											
4	Total	303	37	11	3	2	.....	53	13	3	13	35
5	Negro	303	37	11	3	2	.....	53	13	3	13	35
6	Other colored	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	DETROIT, 1919.											
	Males:											
7	White	5,691	1,358	238	138	102	59	1,895	191	90	125	209
8	Negro	314	46	6	5	3	2	62	10	4	16	29
	Females:											
9	White	5,091	1,030	225	105	80	62	1,502	163	76	144	287
10	Negro	236	42	11	5	1	2	61	9	4	7	19
	BUFFALO, 1919.											
	Males:											
11	White	3,730	773	119	83	55	27	1,057	126	69	86	100
12	Negro	69	6	2	2	.....	1	11	.....	.....	2	8
13	Other colored	6	2	.....	.....	.....	.....	2	.....	.....	1	1
	Females:											
14	White	3,452	613	124	68	55	45	905	110	55	88	135
15	Negro	30	6	3	.....	.....	.....	9	1	2	2	1
16	Other colored	2	.....	1	.....	.....	.....	1	.....	.....	.....	1
	BUFFALO, 1920.											
	Males:											
17	White	3,739	767	141	69	50	33	1,060	115	64	60	107
18	Negro	68	10	5	2	.....	.....	17	4	1	1	8
19	Other colored	10	1	1	.....	.....	.....	2	.....	.....	1	.....
	Females:											
20	White	3,382	585	111	55	39	37	827	110	61	71	149
21	Negro	46	6	5	1	.....	.....	12	3	.....	2	2
22	Other colored	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

	AREA, COLOR, OR RACE.	NUMBER OF DEATHS AMONG CHILDREN UNDER 2							
		December 31, 1916.				December 31, 1917.			
		All ages.	Under 1 year.			Under 1 year.		1–2 years.	
			Total.	Males.	Females.	Males.	Females.	Males.	Females.
	Oregon:								
23	White	.....	.....	406	290	468	336	76	47
24	Colored	.....	.....	16	13	22	11	3	5
25	Tennessee: Total	.....	3,993	.....	.....	.....	.....	.....	.....
	Hawaii:								
26	All races combined	3,879	.....	.....	.....	.....	.....	.....	.....
27	Japanese	.....	.....	.....	.....	.....	.....	.....	.....

BUT NOT COMPILED IN THE BUREAU OF THE CENSUS—Continued. TABLE 16.

STATISTICS.

AGE INTERVAL IN YEARS.																
25 to 30	30 to 35	35 to 40	40 to 45	45 to 50	50 to 55	55 to 60	60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 to 90	90 to 95	95 to 100	100 years and over.	Age unknown.	No. of line.
27	41	38	39	42	24	11	11	15	6	5	2	1					1
25	41	38	38	41	21	11	10	15	6	5	2	1					2
2			1	1	3		1										3
29	23	23	16	26	30	11	5	9	5	5	4						4
29	23	23	16	26	30	11	5	9	5	5	4						5
																	6
321	360	316	266	275	240	244	288	259	242	179	111	59	11	5	4	1	7
29	27	45	22	30	13	10	3	7	4	2		1					8
379	291	221	217	214	190	224	250	249	233	207	131	81	27	3	2		9
30	17	23	13	13	5	6	6	5	4	5	3	3	3				10
161	170	187	184	167	238	265	268	200	158	152	80	41	14	5	2		11
5	6	9	4	9	8	1	1		1	3		1					12
	1				1												13
167	167	130	143	134	168	171	229	210	213	187	145	68	21	5	1		14
2		2	4	2	2		2							1			15
																	16
143	144	169	190	196	217	241	255	255	207	151	98	45	21		1		17
4	5	8	3	2	8	2	2	1	1		1						18
2			1	1		2				1							19
157	147	124	106	173	155	191	217	228	234	178	141	80	31	2			20
2	4	3		6	4	2	3		2	1							21
			1	1			1	1									22

YEARS OF AGE DURING YEAR ENDED—						DEATHS FROM JULY 1, TO DECEMBER 31, 1916.		
June 30, 1916.			June 30, 1917.			All ages.		
All ages.		Under 1 year.	All ages.		Under 1 year.			
Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	
								23
								24
								25
2,333	1,607	1,137	2,103	1,395	1,259	1,316	937	26
817	568		736	510				27

TABLE 17. STATISTICS ON WHICH RATES OF MORTALITY

[Italics indicate statistics not compiled in the Bureau of the Census; bold-faced type indi-

No. of life table.	AREA, SEX, AND COLOR.	NUMBER OF BIRTHS REGISTERED.					ADJUSTED NUMBER OF BIRTHS.				
		1916	1917	1918	1919	1920	1916	1917	1918	1919	1920
	WHITE.										
	Aggregate:[1]										
1	Males						925,118	930,225	941,806	880,694	952,938
2	Females						873,214	877,881	889,163	836,788	900,382
	Original registration states:[1]										
3	Males	326,054	334,357	333,843	308,301	327,823	334,795	343,320	342,793	316,566	336,611
4	Females	308,956	316,863	315,491	293,680	310,288	317,239	325,357	323,949	301,553	318,606
	STATES.										
	California:										
5	Males	*23,928*	*24,320*	*26,221*	26,446	30,976	26,685	27,122	29,242	29,493	34,545
6	Females	*22,344*	*22,994*	*24,766*	24,261	29,763	24,919	25,644	27,619	27,057	33,193
	Connecticut:										
7	Males	18,095	18,885	18,633	17,251	17,019	18,638	19,451	19,192	17,768	17,530
8	Females	16,884	18,125	17,830	16,119	16,513	17,390	18,669	18,365	16,603	17,008
	Illinois:										
9	Males	*58,397*	*54,728*	*59,520*	*57,307*	*64,676*	72,211	67,674	73,599	70,863	79,975
10	Females	*55,654*	*52,109*	*56,453*	*55,064*	*61,675*	68,819	64,435	69,807	68,089	76,264
	Indiana:										
11	Males	*31,893*	31,734	32,476	29,805	32,373	34,278	34,107	34,905	32,034	34,794
12	Females	*30,450*	30,152	30,602	28,110	30,928	32,727	32,407	32,890	30,212	33,241
	Kansas:										
13	Males	*20,875*	19,576	19,648	18,137	19,904	23,741	22,264	22,345	20,627	22,637
14	Females	*19,231*	18,034	18,443	17,255	18,690	21,871	20,510	20,975	19,624	21,256
	Kentucky:										
15	Males	*29,104*	29,400	30,322	27,853	30,414	33,655	33,997	35,063	32,208	35,170
16	Females	*27,582*	27,862	28,051	25,805	28,333	31,895	32,219	32,437	29,840	32,763
	Maryland:										
17	Males	14,008	14,149	14,317	14,198	15,033	14,724	14,872	15,048	14,923	15,801
18	Females	13,297	13,370	13,643	13,250	14,419	13,976	14,053	14,340	13,927	15,155
	Massachusetts:										
19	Males	47,767	48,382	48,597	44,080	46,524	.....	.....	.....	43,760	.....
20	Females	44,730	46,169	45,770	42,576	43,873	.....	.....	.....	42,266	.....
	Michigan:										
21	Males	44,750	45,723	46,523	42,350	46,922	47,748	48,787	49,640	45,188	50,066
22	Females	41,638	42,853	43,622	40,526	44,375	44,428	45,724	46,545	43,241	47,348
	Minnesota:										
23	Males	28,331	27,859	28,756	26,458	28,560	30,598	30,088	31,057	28,575	30,845
24	Females	26,814	26,555	26,739	24,994	26,905	28,960	28,680	28,879	26,994	29,058
	Missouri:										
25	Males	*36,745*	*33,158*	*31,599*	*28,556*	*32,191*	43,059	38,856	37,029	33,463	37,723
26	Females	*34,599*	*31,458*	*30,244*	*30,221*	*30,465*	40,544	36,864	35,441	35,414	35,700
	New Jersey:										
27	Males	*34,787*	*37,397*	*37,099*	*34,743*	*37,546*	36,823	39,586	39,271	36,777	39,744
28	Females	*33,496*	*35,666*	*35,117*	*33,526*	*35,925*	35,457	37,754	37,173	35,488	38,028
	New York:										
29	Males	121,638	124,494	122,278	113,703	118,719	.....	.....	.....	113,209	.....
30	Females	116,081	117,638	115,665	107,927	111,528	.....	.....	.....	107,459	.....
	North Carolina:										
31	Males	*27,451*	27,581	27,027	26,895	29,515	30,802	30,914	30,293	30,145	33,082
32	Females	*25,965*	25,269	25,116	24,937	27,539	29,103	28,323	28,151	27,951	30,867
	Ohio:										
33	Males	*56,958*	60,970	62,613	56,366	61,571	65,249	69,870	71,753	64,594	70,559
34	Females	*53,540*	57,331	58,861	53,286	58,251	61,355	65,700	67,453	61,064	66,754
	Oregon:										
35	Males	*6,450*	*6,702*	*6,613*	6,846	7,464	7,370	7,622	7,521	7,786	8,489
36	Females	*6,159*	*6,121*	*6,353*	6,369	7,097	7,005	6,962	7,226	7,244	8,072
	Pennsylvania:										
37	Males	109,470	111,758	110,406	103,659	110,177	120,720	123,243	121,752	114,312	121,500
38	Females	103,513	105,771	104,554	98,010	103,775	114,151	116,641	115,299	108,082	114,440
	South Carolina:										
39	Males	*11,751*	*10,573*	*10,661*	11,416	12,331	14,068	12,658	12,763	13,667	14,762
40	Females	*10,651*	*9,839*	*10,059*	10,600	11,482	12,751	11,779	12,042	12,690	13,746
	Tennessee:										
41	Males	*22,765*	*22,622*	*23,229*	*21,296*	*22,726*	30,141	29,952	30,755	28,196	30,089
42	Females	*21,099*	*20,989*	*21,533*	*19,756*	*21,085*	27,935	27,789	28,510	26,157	27,917
	Utah:										
43	Males	*6,753*	6,863	7,312	6,567	7,086	7,184	7,301	7,779	6,986	7,538
44	Females	*6,400*	6,590	6,962	6,233	6,791	6,808	7,011	7,406	6,631	7,224
	Virginia:										
45	Males	*21,160*	21,591	22,299	21,410	23,191	22,969	23,437	24,206	23,241	25,174
46	Females	*20,157*	20,333	21,338	20,246	22,038	21,881	22,072	23,163	21,977	23,922
	Washington:										
47	Males	*11,756*	11,575	12,553	12,269	13,130	13,270	13,066	14,170	13,849	14,821
48	Females	*10,943*	10,774	11,993	11,516	12,478	12,352	12,161	13,537	12,999	14,085
	Wisconsin:										
49	Males	*30,404*	30,486	31,087	28,001	30,170	33,877	33,969	34,638	31,200	33,617
50	Females	*28,405*	28,434	29,553	26,471	28,145	31,650	31,682	32,929	29,495	31,360

[1] Statistics for the aggregate tables are a compilation of those for the original registration states, and Pennsylvania, Maryland, Virginia, North Carolina, South Carolina, Tennessee, Kentucky, Ohio, Illinois, Wisconsin, Minnesota, Missouri, Kansas, Utah, California, Oregon, and Washington.

AT AGES UNDER 3 YEARS ARE BASED. TABLE 17.

cate aggregates which include some statistics not compiled in the Bureau of the Census.]

NUMBER OF DEATHS IN AGE INTERVAL.*												
0—1 year.					1—2 years.				2—3 years.			No. of life table.
1916	1917	1918	1919	1920	1917	1918	1919	1920	1918	1919	1920	
86,163	**86,196**	92,160	74,506	79,652	**17,342**	23,573	13,840	15,630	11,274	6,774	7,173	**1**
65,985	**65,335**	70,330	56,588	60,010	**14,891**	21,388	11,995	13,570	10,724	5,975	6,347	**2**
34,486	34,119	36,508	28,857	31,585	6,330	9,311	5,091	6,288	4,138	2,613	2,808	**3**
26,388	25,697	27,840	21,933	23,770	5,425	8,442	4,485	5,435	3,996	2,260	2,494	**4**
1,832	1,998	2,386	2,013	2,543	373	543	307	484	277	159	217	**5**
1,443	1,606	1,770	1,549	1,955	308	463	286	399	258	151	191	**6**
1,968	1,945	2,153	1,660	1,714	350	508	251	309	211	138	165	**7**
1,564	1,491	1,725	1,186	1,316	288	466	275	309	223	127	141	**8**
7,606	*7,884*	7,253	6,100	6,430	*1,942*	1,811	1,290	1,250	968	556	592	**9**
5,992	*5,673*	5,404	4,684	4,722	*1,592*	1,631	1,060	1,106	851	541	516	**10**
2,985	3,008	3,081	2,586	2,841	637	736	475	543	380	252	265	**11**
2,241	2,217	2,321	1,914	2,195	551	682	421	464	344	219	223	**12**
1,587	1,592	1,657	1,366	1,561	296	345	241	288	195	125	160	**13**
1,111	1,242	1,287	1,031	1,170	249	283	233	249	181	106	135	**14**
2,484	2,640	2,866	2,385	2,273	718	855	599	507	455	276	235	**15**
1,978	2,096	2,241	1,758	1,767	657	807	554	451	466	250	222	**16**
1,502	1,567	1,910	1,454	1,467	253	521	244	225	202	136	98	**17**
1,248	1,217	1,567	1,088	1,193	237	458	221	235	209	112	90	**18**
5,245	5,274	6,004	4,273	4,693	977	1,528	735	883	608	388	376	**19**
3,967	3,954	4,579	3,310	3,480	771	1,374	663	776	633	312	334	**20**
4,725	4,447	4,489	4,174	4,721	764	947	684	874	418	387	391	**21**
3,547	3,357	3,506	3,211	3,529	631	795	598	781	416	324	372	**22**
2,162	2,092	2,235	1,990	2,100	271	397	301	317	272	153	163	**23**
1,640	1,545	1,692	1,429	1,546	235	411	260	262	194	119	135	**24**
3,243	3,113	3,035	2,527	2,753	815	853	577	646	468	293	304	**25**
2,304	2,438	2,483	1,925	2,102	676	772	470	593	386	249	296	**26**
3,893	4,034	4,467	3,237	3,478	733	1,243	618	752	601	285	315	**27**
3,081	3,070	3,394	2,467	2,714	596	1,240	504	642	589	236	273	**28**
12,480	12,467	12,965	10,340	11,160	2,369	3,597	1,949	2,475	1,592	978	1,065	**29**
9,613	9,333	9,769	7,892	8,365	2,197	3,226	1,690	2,091	1,457	861	973	**30**
2,410	2,487	2,512	2,176	2,363	821	897	557	561	398	224	206	**31**
1,815	1,997	1,940	1,670	1,829	701	776	453	462	371	191	180	**32**
5,998	6,132	6,398	5,397	5,497	1,110	1,398	949	1,046	643	450	531	**33**
4,698	4,593	4,781	4,205	4,161	962	1,272	819	943	652	422	449	**34**
406	*468*	485	497	506	*76*	96	64	85	51	41	38	**35**
290	*336*	382	307	376	*47*	87	49	58	45	45	31	**36**
13,616	13,650	15,489	11,212	11,578	2,395	4,166	2,058	2,238	1,994	910	977	**37**
10,412	10,100	11,640	8,649	8,755	2,110	3,779	1,745	1,923	1,934	828	891	**38**
1,012	1,036	1,118	954	1,133	324	372	203	280	132	107	111	**39**
796	800	848	721	855	295	348	177	242	167	90	87	**40**
1,690	2,076	2,049	1,817	1,885	613	713	489	442	352	231	231	**41**
1,281	1,576	1,616	1,465	1,445	518	647	413	380	354	186	186	**42**
476	502	487	518	561	101	84	64	104	57	43	49	**43**
414	415	418	379	425	91	95	48	88	48	36	50	**44**
1,827	1,911	2,073	1,904	1,849	419	508	367	328	285	190	182	**45**
1,492	1,462	1,676	1,345	1,395	383	550	338	301	297	167	176	**46**
865	864	963	834	964	140	162	132	156	90	76	73	**47**
548	621	680	634	710	107	128	100	131	72	48	63	**48**
2,961	2,665	2,736	2,505	2,604	345	541	307	385	297	191	198	**49**
2,115	1,921	2,065	1,816	1,834	298	439	284	312	243	174	155	**50**

[1] The original registration states include New England states, New York, New Jersey, District of Columbia, Indiana, and Michigan.
* Proportionate part of number of deaths at unknown ages included.

TABLE 17. STATISTICS ON WHICH RATES OF MORTALITY

[Italics indicate statistics not compiled in the Bureau of the Census; bold-faced type indi-

No. of life table.	AREA, SEX, AND COLOR.	NUMBER OF BIRTHS REGISTERED.					ADJUSTED NUMBER OF BIRTHS.				
		1916	1917	1918	1919	1920	1916	1917	1918	1919	1920
	WHITE—Continued.										
	CITIES.										
	Aggregate in cities:[1]										
51	Males	**193,763**	**199,249**	**199,299**	**187,722**	**200,630**					
52	Females	**184,150**	**188,526**	**189,113**	**179,280**	**189,856**					
	Baltimore:										
53	Males	6,311	6,456	6,527	7,621	7,960	6,388	6,535	6,607	7,714	8,057
54	Females	5,967	6,189	6,292	7,190	7,694	6,040	6,265	6,369	7,278	7,788
	Boston:										
55	Males	9,966	9,983	10,165	9,239	9,801				8,085	
56	Females	9,248	9,528	9,482	9,118	9,217				7,979	
	Buffalo:										
57	Males	6,631	6,912	7,138	6,426	6,734				6,119	
58	Females	6,409	6,521	6,759	6,195	6,469				5,899	
	Chicago:										
59	Males	*24,883*	*24,917*	*25,426*	*23,504*	*27,393*	31,431	31,474	32,117	29,689	34,602
60	Females	*23,718*	*23,515*	*24,266*	*22,533*	*26,090*	29,960	29,703	30,652	28,463	32,956
	Cleveland:										
61	Males	*9,383*	10,193	10,439	9,082	9,478	9,879	10,732	10,991	9,562	9,979
62	Females	*8,970*	9,745	9,817	8,698	9,103	9,444	10,260	10,336	9,158	9,584
	Detroit:										
63	Males	12,540	13,516	13,789	12,830	13,801	12,709	13,699	13,975	13,003	13,988
64	Females	11,597	12,524	12,787	12,182	12,928	11,754	12,693	12,960	12,347	13,103
	Los Angeles:										
65	Males	*3,712*	*3,802*	*4,068*	4,140	5,249				4,000	
66	Females	*3,612*	*3,678*	*3,866*	3,927	5,212				3,795	
	New Orleans:										
67	Males	*3,001*	*3,080*	*3,157*	*3,142*	*3,447*				2,850	
68	Females	*2,835*	*2,847*	*2,907*	*3,011*	*3,238*				2,731	
	New York City:										
69	Males	69,126	70,929	68,905	64,939	66,483				63,139	
70	Females	65,993	67,302	65,371	61,685	62,191				59,976	
	Philadelphia:										
71	Males	19,629	20,889	20,865	19,765	20,760				19,700	
72	Females	18,579	19,496	19,957	19,140	19,716				19,077	
	Pittsburgh:										
73	Males	8,003	8,115	7,754	7,028	7,257				6,956	
74	Females	7,798	7,773	7,451	6,679	6,655				6,610	
	St. Louis:										
75	Males	*6,876*	*6,592*	*6,404*	*5,958*	*6,642*	6,991	6,703	6,512	6,058	6,754
76	Females	*6,538*	*6,301*	*6,106*	*5,666*	*6,545*	6,648	6,407	6,209	5,751	6,655
	San Francisco:										
77	Males	*3,827*	*3,809*	*4,103*	4,067	4,331				3,726	
78	Females	*3,471*	*3,695*	*3,877*	3,758	4,132				3,443	
	Washington, D. C.:										
79	Males	2,547	2,716	3,027	3,043	3,285				2,957	
80	Females	2,432	2,534	2,994	2,858	3,034				2,777	
	NEGROES.										
	States with less than 4 per cent Negroes:[2]										
81	Males	**9,574**	**10,325**	**11,356**	**12,423**	**13,752**	12,019	12,962	14,256	15,596	17,264
82	Females	**9,232**	**10,211**	**11,077**	**12,210**	**13,563**	11,590	12,819	13,906	15,328	17,027
	States with more than 5 per cent Negroes:[3]										
83	Males	**44,562**	**43,104**	**43,625**	**42,012**	**45,313**	60,350	58,375	59,081	56,897	61,367
84	Females	**42,621**	**41,209**	**41,468**	**40,956**	**43,844**	57,721	55,809	56,160	55,466	59,378
	Large cities:[4]										
85	Males	**7,775**	**8,105**	**8,529**	**9,591**	**10,621**	8,520	8,881	9,346	10,509	11,638
86	Females	**7,540**	**7,887**	**8,340**	**9,330**	**10,294**	8,262	8,642	9,139	10,224	11,280
	Original registration states[5]										
87	Males	**5,445**	**5,912**	**6,341**	**6,737**	**7,703**	6,440	6,993	7,500	7,968	9,111
88	Females	**5,218**	**5,936**	**6,311**	**6,634**	**7,471**	6,172	7,021	7,465	7,847	8,837
	HAWAII.										
	Hawaii (all races combined):										
89	Males	*4,324*	*4,880*	*4,758*	*5,080*	*5,388*	4,537	5,120	4,992	5,330	5,648
90	Females	*3,846*	*4,316*	*4,656*	*4,532*	*4,777*	4,035	4,528	4,780	4,755	5,012
	Japanese in Hawaii:										
91	Males	*2,102*	*2,415*	*2,331*	*2,488*	*2,618*	2,213	2,542	2,454	2,619	2,756
92	Females	*1,796*	*2,074*	*2,167*	*2,164*	*2,318*	1,891	2,183	2,281	2,278	2,440

[1] This aggregate includes the number of births registered in the fourteen cities shown below except in Chicago, Cleveland, Detroit, and St. Louis, whose adjusted number of births were included.

[2] The states with less than 4 per cent Negro population are Connecticut, Massachusetts, New York, Michigan, Wisconsin, Minnesota, Washington, Oregon, California, Utah, Kansas, Illinois, Indiana, Ohio, Pennsylvania, and New Jersey.

[3] The states with more than 5 per cent Negro population are Maryland, Virginia, North Carolina, South Carolina, Tennessee, Kentucky, and Missouri.

AT AGES UNDER 3 YEARS ARE BASED—Continued. TABLE 17.

cate aggregates which include some statistics not compiled in the Bureau of the Census.]

NUMBER OF DEATHS IN AGE INTERVAL.*												
0—1 year.					1—2 years.				2—3 years.			No. of life table.
1916	1917	1918	1919	1920	1917	1918	1919	1920	1918	1919	1920	
21,014	20,938	22,060	17,957	18,936	4,644	6,267	3,612	4,140	2,902	1,775	1,924	51
16,218	15,919	16,834	13,749	14,191	4,064	5,643	3,123	3,579	2,673	1,547	1,611	52
697	744	958	761	826	122	293	132	130	105	78	51	53
578	564	800	560	664	106	252	124	140	108	64	50	54
1,130	1,106	1,254	981	1,096	248	382	192	213	166	77	93	55
862	804	972	789	804	178	330	141	193	158	71	66	56
826	812	946	778	769	125	232	121	140	95	81	69	57
661	581	731	609	588	102	244	123	112	92	68	56	58
3,807	3,646	3,649	3,130	3,121	1,029	976	724	612	496	297	315	59
2,982	2,823	2,703	2,411	2,257	865	904	618	545	435	283	232	60
1,090	1,218	1,109	945	878	241	221	183	179	117	80	107	61
894	920	834	714	701	209	230	149	162	114	58	79	62
1,557	1,492	1,495	1,359	1,560	270	312	238	311	144	138	145	63
1,137	1,181	1,149	1,030	1,175	239	281	225	263	130	105	125	64
258	276	333	298	405	61	75	42	88	45	20	37	65
224	235	264	238	336	50	58	32	71	44	19	33	66
237	263	318	246	235	60	88	42	42	43	31	19	67
195	198	250	185	200	84	72	42	33	35	21	23	68
6,969	6,855	6,839	5,735	6,066	1,547	2,187	1,240	1,616	943	611	686	69
5,417	5,184	5,198	4,323	4,602	1,417	1,917	1,066	1,404	871	531	622	70
2,262	2,359	2,740	1,870	1,978	464	829	363	411	409	199	184	71
1,645	1,817	2,087	1,485	1,415	423	719	279	333	372	160	164	72
986	1,062	1,193	872	862	210	362	166	196	195	72	97	73
800	784	877	669	646	191	361	166	153	188	76	67	74
676	625	652	481	570	179	155	99	102	79	53	67	75
468	465	518	369	394	129	171	85	101	71	47	59	76
283	270	300	280	301	54	87	34	64	35	19	34	77
180	201	216	190	223	42	48	42	42	30	27	24	78
236	210	274	221	269	34	68	36	36	30	16	20	79
175	162	235	177	186	29	56	31	27	25	17	11	80
1,702	1,887	2,362	2,022	2,521	547	781	465	641	356	217	200	81
1,375	1,628	1,958	1,659	1,955	480	723	426	634	356	160	189	82
6,893	7,213	7,510	6,276	6,548	1,826	2,426	1,390	1,294	1,124	629	539	83
5,453	5,736	6,308	4,869	5,263	1,661	2,261	1,136	1,158	1,098	570	499	84
1,391	1,603	1,762	1,503	1,821	449	585	323	459	313	162	158	85
1,093	1,289	1,438	1,136	1,509	346	521	293	432	293	131	133	86
1,022	1,114	1,234	1,087	1,327	292	409	246	346	184	111	90	87
834	908	1,066	881	1,081	242	371	235	331	176	89	94	88
730	730	676	548	619	85	95	80	133	47	45	56	89
520	520	604	472	466	65	100	86	117	51	29	46	90
256	340	274	229	242	36	51	40	68	25	21	28	91
187	245	264	183	176	30	44	44	51	20	15	23	92

[4] The twelve cities included in "large cities" for Negroes are Boston, Buffalo, Detroit, Chicago, St. Louis, New Orleans, Cleveland, Pittsburgh, Philadelphia, New York, Baltimore, and Washington.

[5] The original registration states include New England states, New York, New Jersey, District of Columbia, Indiana, and Michigan.

* Proportionate part of number of deaths at unknown ages included.

TABLE 18. POPULATIONS AND MORTALITY STATISTICS ON WHICH ALL

Populations and deaths at

No. of life table.	AREA, SEX, COLOR, POPULATION, AND DEATHS.	All ages.	AGE INTERVAL IN YEARS.									
			0-1	1-2	2-3	3-4	4-5	0-5	5 to 10	10 to 15	15 to 20	20 to 25
	WHITE.											
1	Aggregate—Males: [1]											
	Population, Jan. 1, 1920	37,026,026	754,699	786,844	791,693	797,257	779,549	3,910,042	3,757,878	3,483,084	3,078,576	3,050,889
	Deaths, 1919	476,933	74,506	13,840	6,774	4,752	3,604	103,476	11,479	7,862	12,226	15,702
	Deaths, 1920	488,529	79,652	15,631	7,173	4,751	3,614	110,821	11,838	8,093	11,793	14,502
	Deaths, 1919 and 1920	965,462	154,158	29,471	13,947	9,503	7,218	214,297	23,317	15,955	24,019	30,204
2	Aggregate—Females: [1]											
	Population, Jan.1, 1920	35,787,552	734,897	763,509	770,428	780,328	756,032	3,805,194	3,682,128	3,417,409	3,107,135	3,190,808
	Deaths, 1919	421,871	56,588	11,995	5,975	4,295	3,190	82,043	9,677	6,765	10,902	17,748
	Deaths, 1920	442,566	60,010	13,570	6,347	4,482	3,322	87,731	10,041	6,742	10,655	16,729
	Deaths, 1919 and 1920	864,437	116,598	25,565	12,322	8,777	6,512	169,774	19,718	13,507	21,557	34,477
3	Original registration states—Males: [2]											
	Population, Jan. 1, 1920	13,729,188	269,612	282,866	288,178	287,058	277,175	1,404,889	1,327,302	1,223,673	1,085,948	1,130,899
	Deaths, 1919	187,949	28,857	5,091	2,613	1,839	1,379	39,779	4,572	2,816	4,365	5,896
	Deaths, 1920	192,782	31,585	6,289	2,808	1,825	1,373	43,880	4,493	2,937	4,100	5,374
	Deaths, 1919 and 1920	380,731	60,442	11,380	5,421	3,664	2,752	83,659	9,065	5,753	8,465	11,270
4	Original registration states—Females: [2]											
	Population, Jan. 1, 1920	13,573,563	264,122	274,740	281,584	280,607	270,935	1,371,988	1,305,723	1,206,952	1,111,162	1,221,556
	Deaths, 1919	173,259	21,933	4,485	2,260	1,600	1,259	31,537	3,718	2,421	3,914	6,866
	Deaths, 1920	181,453	23,770	5,435	2,494	1,764	1,283	34,746	3,838	2,482	3,860	6,236
	Deaths, 1919 and 1920	354,712	45,703	9,920	4,754	3,364	2,542	66,283	7,556	4,903	7,774	13,102
	STATES.											
5	California—Males:											
	Population, Jan. 1, 1920	1,710,223	25,508	26,315	26,093	26,367	26,475	130,758	135,767	127,287	119,555	132,938
	Deaths, 1919	25,143	2,013	307	159	146	104	2,729	398	327	533	803
	Deaths, 1920	25,342	2,543	484	217	147	129	3,520	474	401	609	767
	Deaths, 1919 and 1920	50,485	4,556	791	376	293	233	6,249	872	728	1,142	1,570
6	California—Females:											
	Population, Jan. 1, 1920	1,554,488	24,034	25,222	25,424	25,650	25,774	126,104	133,326	124,981	115,437	128,301
	Deaths, 1919	17,919	1,549	286	151	98	90	2,174	341	247	442	754
	Deaths, 1920	18,881	1,955	399	191	133	112	2,790	424	286	449	726
	Deaths, 1919 and 1920	36,800	3,504	685	342	231	202	4,964	765	533	891	1,480
7	Connecticut—Males:											
	Population, Jan. 1, 1920	683,837	15,091	15,290	15,950	15,858	14,630	76,819	69,184	60,522	51,654	54,329
	Deaths, 1919	9,385	1,660	251	138	94	67	2,210	236	142	210	289
	Deaths, 1920	9,448	1,714	309	165	87	65	2,340	228	139	189	259
	Deaths, 1919 and 1920	18,833	3,374	560	303	181	132	4,550	464	281	399	548
8	Connecticut—Females:											
	Population, Jan. 1, 1920	674,895	14,573	15,127	15,885	15,250	14,428	75,263	68,196	59,910	53,612	59,647
	Deaths, 1919	8,371	1,186	275	127	93	59	1,740	184	108	141	327
	Deaths, 1920	8,966	1,316	309	141	93	57	1,916	183	102	167	275
	Deaths, 1919 and 1920	17,337	2,502	584	268	186	116	3,656	367	210	308	602
9	Illinois—Males:											
	Population, Jan. 1, 1920	3,207,773	60,945	65,011	65,975	68,009	66,322	326,262	319,516	294,469	262,825	261,272
	Deaths, 1919	39,651	6,100	1,290	556	431	299	8,676	921	638	1,008	1,214
	Deaths, 1920	41,526	6,430	1,250	592	441	357	9,070	1,133	719	1,100	1,216
	Deaths, 1919 and 1920	81,177	12,530	2,540	1,148	872	656	17,746	2,054	1,357	2,108	2,430
10	Illinois—Females:											
	Population, Jan. 1 1920	3,091,560	59,453	63,097	64,244	66,326	64,094	317,214	313,743	289,044	265,319	280,606
	Deaths, 1919	33,969	4,684	1,060	541	374	294	6,953	803	565	923	1,444
	Deaths, 1920	36,773	4,722	1,106	516	390	309	7,043	882	590	916	1,436
	Deaths, 1919 and 1920	70,742	9,406	2,166	1,057	764	603	13,996	1,685	1,155	1,839	2,880
11	Indiana—Males:											
	Population, Jan. 1, 1920	1,446,825	27,372	29,486	28,707	29,186	28,745	143,496	141,083	135,913	124,200	116,212
	Deaths, 1919	18,233	2,586	475	252	153	112	3,578	421	285	544	556
	Deaths, 1920	19,342	2,841	543	265	176	122	3,947	441	324	501	547
	Deaths, 1919 and 1920	37,575	5,427	1,018	517	329	234	7,525	862	609	1,045	1,103
12	Indiana—Females:											
	Population, Jan. 1, 1920	1,402,246	26,779	28,401	28,082	28,665	28,179	140,106	137,707	132,439	123,713	118,755
	Deaths, 1919	17,264	1,914	421	219	162	106	2,822	346	274	518	787
	Deaths, 1920	18,281	2,195	464	223	167	122	3,171	352	307	510	708
	Deaths, 1919 and 1920	35,545	4,109	885	442	329	228	5,993	698	581	1,028	1,495
13	Kansas—Males:											
	Population, Jan. 1, 1920	878,150	17,860	18,882	18,820	18,802	18,506	92,870	91,166	87,867	78,333	73,976
	Deaths, 1919	9,889	1,366	241	125	92	68	1,892	223	204	280	346
	Deaths, 1920	10,131	1,561	288	160	88	71	2,168	259	177	295	280
	Deaths, 1919 and 1920	20,020	2,927	529	285	180	139	4,060	482	381	575	626
14	Kansas—Females:											
	Population, Jan. 1, 1920	830,756	17,493	18,177	17,998	18,258	17,816	89,742	89,079	86,249	78,897	73,886
	Deaths, 1919	8,107	1,031	233	106	77	62	1,509	176	161	242	320
	Deaths, 1920	8,907	1,170	249	135	79	75	1,708	206	181	234	340
	Deaths, 1919 and 1920	17,014	2,201	482	241	156	137	3,217	382	342	476	660
15	Kentucky—Males:											
	Population, Jan. 1, 1920	1,108,853	27,575	28,062	27,128	27,567	27,868	138,200	134,863	126,191	107,514	92,575
	Deaths, 1919	13,133	2,385	599	276	188	138	3,586	413	311	520	559
	Deaths, 1920	12,213	2,273	507	235	132	120	3,267	375	268	405	453
	Deaths, 1919 and 1920	25,346	4,658	1,106	511	320	258	6,853	788	579	925	1,012
16	Kentucky—Females:											
	Population, Jan. 1, 1920	1,071,707	26,630	26,876	26,075	26,714	26,826	133,121	130,061	122,182	106,850	95,050
	Deaths, 1919	12,573	1,758	554	250	176	133	2,871	380	314	546	755
	Deaths, 1920	11,791	1,767	451	222	155	97	2,692	339	231	387	571
	Deaths, 1919 and 1920	24,364	3,525	1,005	472	331	230	5,563	719	545	933	1,326
17	Maryland—Males:											
	Population, Jan. 1, 1920	605,601	12,666	12,440	12,415	12,494	12,146	62,161	59,999	58,049	54,604	55,032
	Deaths, 1919	8,689	1,454	244	136	91	74	1,999	184	140	216	297
	Deaths, 1920	8,218	1,467	225	98	74	39	1,903	176	125	150	252
	Deaths, 1919 and 1920	16,907	2,921	469	234	165	113	3,902	360	265	366	549
18	Maryland—Females:											
	Population, Jan. 1, 1920	599,136	12,133	12,054	12,200	12,420	11,961	60,768	58,268	56,883	53,158	53,467
	Deaths, 1919	7,868	1,088	221	112	82	52	1,555	152	127	183	331
	Deaths, 1920	7,934	1,193	235	90	58	43	1,619	140	96	175	308
	Deaths, 1919 and 1920	15,802	2,281	456	202	140	95	3,174	292	223	358	639

[1] Statistics for the aggregate tables are a compilation of those for the New England states, New York, New Jersey, Pennsylvania, Maryland, District of Columbia, Virginia, North Carolina, South Carolina, Tennessee, Kentucky, Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Missouri, Kansas, Utah, California, Oregon, and Washington.

RATES OF MORTALITY AT AGES 7 YEARS AND OVER ARE BASED. TABLE 18.

unknown ages are distributed.

AGE INTERVAL IN YEARS.															No. of life table.
25 to 30	30 to 35	35 to 40	40 to 45	45 to 50	50 to 55	55 to 60	60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 to 90	90 to 95	95 to 100	100 years and over.	
3,176,040	2,958,375	2,867,053	2,353,629	2,189,634	1,829,925	1,392,008	1,154,021	786,254	519,714	314,762	139,199	51,254	11,249	2,126	314	1
19,469	21,445	22,698	21,042	23,532	25,282	28,125	32,480	33,422	33,533	29,999	20,200	10,858	3,264	729	110	
17,442	19,207	20,947	19,930	22,313	25,788	28,666	33,914	35,421	36,118	32,978	22,540	11,732	3,657	708	121	
36,911	40,652	43,645	40,972	45,845	51,070	56,791	66,394	68,843	69,651	62,977	42,740	22,590	6,921	1,437	231	
3,155,083	2,800,117	2,602,938	2,204,847	1,938,197	1,656,189	1,284,533	1,067,924	754,292	527,329	338,659	167,437	66,883	16,651	3,297	502	2
21,145	19,581	18,243	16,711	17,958	20,223	22,497	26,188	29,195	31,201	30,264	22,553	13,059	4,667	1,062	189	
20,011	19,487	18,506	16,860	18,352	21,180	23,703	28,529	31,075	33,603	32,955	25,217	14,450	5,258	1,205	187	
41,156	39,068	36,749	33,571	36,310	41,403	46,200	54,717	60,270	64,894	63,219	47,770	27,509	9,925	2,267	376	
1,221,406	1,142,984	1,094,345	905,120	840,474	708,189	528,809	433,172	294,299	193,676	117,025	52,600	19,263	4,213	806	96	3
7,687	8,329	8,904	8,427	9,602	10,572	11,561	13,098	13,392	13,302	11,895	7,978	4,257	1,199	277	41	
6,680	7,405	8,040	8,051	9,151	10,660	11,739	13,688	14,230	14,246	12,973	8,787	4,598	1,436	272	42	
14,367	15,734	16,944	16,478	18,753	21,232	23,300	26,786	27,622	27,548	24,868	16,765	8,855	2,635	549	83	
1,231,495	1,093,987	1,017,366	872,555	772,703	672,110	515,110	426,903	300,097	211,837	136,128	69,228	28,035	7,042	1,391	195	4
8,452	7,602	7,013	6,951	7,716	8,823	9,822	11,569	12,747	13,345	12,892	9,695	5,625	2,035	455	71	
7,782	7,490	7,156	6,783	7,786	9,292	10,180	12,299	13,493	14,512	13,860	10,656	6,242	2,206	487	67	
16,234	15,092	14,169	13,734	15,502	18,115	20,002	23,868	26,240	27,847	26,752	20,351	11,867	4,241	942	138	
149,958	153,459	159,392	132,138	122,036	101,523	78,483	63,424	42,627	29,650	18,619	8,455	3,259	712	154	29	5
1,191	1,484	1,619	1,522	1,575	1,659	1,776	1,996	1,867	1,829	1,679	1,213	694	197	44	8	
981	1,102	1,461	1,311	1,368	1,609	1,760	1,961	1,958	1,950	1,850	1,271	745	192	43	9	
2,172	2,586	3,080	2,833	2,943	3,268	3,536	3,957	3,825	3,779	3,529	2,484	1,439	389	87	17	
142,730	137,273	133,866	115,660	99,606	85,440	65,732	54,083	37,269	26,391	16,349	7,906	3,115	755	135	29	6
1,071	1,035	975	866	932	1,000	1,032	1,208	1,261	1,388	1,383	1,013	533	211	45	8	
818	919	914	891	919	1,056	1,093	1,353	1,346	1,471	1,434	1,084	620	225	51	12	
1,889	1,954	1,889	1,757	1,851	2,056	2,125	2,561	2,607	2,859	2,817	2,097	1,153	436	96	20	
62,122	58,145	54,542	44,909	41,966	33,666	24,186	20,579	13,484	8,952	5,203	2,400	898	229	45	3	7
398	403	455	467	489	519	573	632	607	616	557	323	199	43	13	4	
351	396	433	400	448	535	598	631	646	623	578	367	202	70	15	.....	
749	799	888	867	937	1,054	1,171	1,263	1,253	1,239	1,135	690	401	113	28	4	
62,197	53,587	49,702	42,181	37,703	32,289	23,905	20,097	14,069	10,221	6,740	3,567	1,492	416	91	10	8
393	366	332	312	360	422	479	582	585	600	563	443	292	112	29	1	
378	352	353	342	346	453	466	601	646	717	645	551	321	118	33	1	
771	718	685	654	706	875	945	1,183	1,231	1,317	1,208	994	613	230	62	2	
287,494	275,323	260,471	207,996	189,178	160,668	120,920	96,635	61,679	40,502	25,410	11,628	4,339	994	170	22	9
1,631	1,852	2,020	1,801	2,076	2,290	2,445	2,702	2,712	2,548	2,285	1,599	887	279	62	5	
1,541	1,777	1,844	1,741	2,069	2,331	2,562	2,891	2,811	2,813	2,640	1,866	1,024	311	59	8	
3,172	3,629	3,864	3,542	4,145	4,621	5,007	5,593	5,523	5,361	4,925	3,465	1,911	590	121	13	
292,624	257,864	230,102	189,146	166,215	142,978	110,663	87,853	59,334	41,417	26,882	13,478	5,359	1,393	297	29	10
1,827	1,645	1,464	1,372	1,410	1,782	1,888	1,943	2,283	2,302	2,218	1,651	1,044	365	74	13	
1,893	1,713	1,627	1,403	1,621	1,800	2,062	2,334	2,440	2,677	2,534	2,058	1,160	464	111	9	
3,720	3,358	3,091	2,775	3,031	3,582	3,950	4,277	4,723	4,979	4,752	3,709	2,204	829	185	22	
115,198	107,451	106,056	88,402	85,438	76,719	61,799	53,002	39,148	26,165	16,242	7,199	2,500	495	97	10	11
651	679	732	644	725	848	1,059	1,225	1,486	1,579	1,462	1,017	577	136	28	1	
565	605	711	677	734	875	1,029	1,332	1,645	1,702	1,727	1,157	596	185	37	5	
1,216	1,284	1,443	1,321	1,459	1,723	2,088	2,557	3,131	3,281	3,189	2,174	1,173	321	65	6	
115,035	105,950	101,052	85,324	78,415	69,278	57,224	48,345	35,894	25,197	16,284	7,678	3,035	677	126	12	12
828	780	705	638	713	754	888	1,101	1,253	1,425	1,521	1,064	612	199	33	3	
761	826	748	652	742	829	902	1,134	1,394	1,517	1,611	1,164	691	212	44	6	
1,589	1,606	1,453	1,290	1,455	1,583	1,790	2,235	2,647	2,942	3,132	2,228	1,303	411	77	9	
70,303	63,660	61,380	51,896	48,242	41,289	32,881	29,727	20,952	15,751	10,945	4,700	1,796	334	71	11	13
409	408	353	311	336	403	500	630	680	887	933	619	345	101	23	6	
284	329	349	344	324	353	453	615	724	917	1,013	682	388	121	25	1	
693	737	702	655	660	786	953	1,245	1,404	1,804	1,946	1,301	733	222	48	7	
68,924	61,947	56,897	48,429	42,476	34,796	28,251	24,199	18,300	13,300	8,995	4,289	1,634	392	65	9	14
414	417	379	322	298	316	383	410	539	644	642	536	262	112	24	1	
373	405	351	320	322	360	423	548	589	712	734	620	351	115	32	3	
787	822	730	642	620	676	806	958	1,128	1,356	1,376	1,156	593	227	56	4	
83,558	70,942	71,150	58,723	57,718	47,864	36,007	31,138	22,565	14,953	9,222	3,905	1,398	306	50	11	15
550	506	521	447	521	537	574	744	755	888	785	535	256	100	18	7	
398	372	413	384	470	471	597	735	865	940	812	593	272	101	15	7	
948	878	934	831	991	1,008	1,171	1,479	1,620	1,828	1,597	1,128	528	201	33	14	
83,067	71,480	68,924	57,240	51,472	41,838	33,025	27,568	20,406	14,238	8,986	4,102	1,605	394	81	17	16
707	634	585	450	486	437	523	641	698	782	757	548	323	104	21	11	
606	544	462	404	433	460	569	631	731	852	815	570	331	113	41	9	
1,313	1,178	1,047	854	919	897	1,092	1,272	1,429	1,634	1,572	1,118	654	217	62	20	
51,514	46,272	43,552	36,825	36,004	29,754	22,713	19,272	13,250	8,548	5,070	2,091	721	140	25	5	17
350	389	399	382	462	465	520	623	608	628	531	303	148	38	6	1	
288	305	312	293	374	471	516	607	671	664	546	348	162	45	8	2	
638	694	711	675	836	936	1,036	1,230	1,279	1,292	1,077	651	310	83	14	3	
51,175	45,645	43,536	37,462	33,914	29,603	22,401	19,385	14,082	9,326	5,882	2,868	1,036	229	39	9	18
385	348	324	292	335	377	438	487	566	660	601	417	216	57	15	2	
310	327	306	297	337	391	446	539	556	666	639	433	243	88	17	1	
695	675	630	589	672	768	884	1,026	1,122	1,326	1,240	850	459	145	32	3	

[1] The original registration states include the New England states, New York, New Jersey, District of Columbia, Indiana, and Michigan.

TABLE 18. POPULATIONS AND MORTALITY STATISTICS UPON WHICH ALL RATES

Populations and deaths at

No. of life table.	AREA, SEX, COLOR, POPULATION, AND DEATHS.	All ages.	AGE INTERVAL IN YEARS.									
			0-1	1-2	2-3	3-4	4-5	0-5	5 to 10	10 to 15	15 to 20	20 to 25
	WHITE—Continued.											
	STATES—continued.											
19	Massachusetts—Males:											
	Population, Jan. 1, 1920	1,864,317	36,939	39,237	39,264	39,091	37,957	192,488	178,910	165,620	146,262	151,831
	Deaths, 1919	25,730	4,273	735	388	272	183	5,851	615	345	528	691
	Deaths, 1920	26,023	4,693	883	376	271	190	6,413	593	366	454	606
	Deaths, 1919 and 1920	51,753	8,966	1,618	764	543	373	12,264	1,208	711	982	1,297
20	Massachusetts—Females:											
	Population, Jan. 1 1920	1,939,207	37,005	38,338	38,571	38,064	37,119	189,097	177,505	164,773	152,746	171,355
	Deaths, 1919	25,387	3,310	663	312	224	174	4,683	506	290	469	882
	Deaths, 1920	26,415	3,480	776	334	232	180	5,002	513	314	473	759
	Deaths, 1919 and 1920	51,802	6,790	1,439	646	456	354	9,685	1,019	604	942	1,641
21	Michigan—Males:											
	Population, Jan. 1 1920	1,890,265	38,434	42,051	41,585	41,473	39,427	202,970	184,723	163,735	147,305	159,112
	Deaths, 1919	23,517	4,174	684	387	302	188	5,735	651	399	575	666
	Deaths, 1920	26,371	4,721	874	391	289	223	6,498	714	445	685	842
	Deaths, 1919 and 1920	49,888	8,895	1,558	778	591	411	12,233	1,365	844	1,260	1,508
22	Michigan—Females:											
	Population, Jan. 1, 1920	1,711,362	37,845	40,543	40,206	40,168	38,363	197,125	179,361	159,103	143,861	148,281
	Deaths, 1919	20,903	3,211	598	324	214	186	4,533	520	356	552	866
	Deaths, 1920	23,463	3,529	781	372	272	199	5,153	661	382	607	944
	Deaths, 1919 and 1920	44,366	6,740	1,379	696	486	385	9,686	1,181	738	1,159	1,810
23	Minnesota—Males:											
	Population, Jan. 1, 1920	1,235,728	24,707	26,954	26,494	27,217	26,315	131,687	125,464	117,572	109,232	107,567
	Deaths, 1919	13,453	1,990	301	153	115	104	2,663	322	267	402	480
	Deaths, 1920	13,815	2,100	317	163	109	87	2,776	336	249	383	493
	Deaths, 1919 and 1920	27,268	4,090	618	316	224	191	5,439	658	516	785	973
24	Minnesota—Females:											
	Population, Jan. 1, 1920	1,133,208	24,028	25,989	25,680	26,352	26,035	128,084	121,611	115,154	109,330	109,014
	Deaths, 1919	11,026	1,429	260	119	115	71	1,994	277	218	376	571
	Deaths, 1920	11,494	1,546	262	135	119	59	2,121	290	211	315	532
	Deaths, 1919 and 1920	22,520	2,975	522	254	234	130	4,115	567	429	691	1,103
25	Missouri—Males:											
	Population, Jan. 1, 1920	1,631,697	30,432	32,510	31,812	32,934	32,899	160,587	164,870	162,725	144,490	133,022
	Deaths, 1919	19,541	2,527	577	293	187	161	3,745	519	368	611	708
	Deaths, 1920	20,428	2,753	646	304	184	156	4,043	587	378	565	677
	Deaths, 1919 and 1920	39,969	5,280	1,223	597	371	317	7,788	1,106	746	1,176	1,385
26	Missouri—Females:											
	Population, Jan. 1, 1920	1,593,347	29,835	31,618	30,730	32,304	31,189	155,676	160,412	158,530	148,642	141,762
	Deaths, 1919	16,825	1,925	470	249	186	130	2,960	472	334	500	760
	Deaths, 1920	18,434	2,102	593	296	199	156	3,346	473	335	546	834
	Deaths, 1919 and 1920	35,259	4,027	1,063	545	385	286	6,306	945	669	1,046	1,594
27	New Jersey—Males:											
	Population, Jan. 1, 1920	1,531,146	31,590	32,800	34,322	34,423	33,198	166,333	157,588	141,354	121,595	125,286
	Deaths, 1919	20,189	3,237	618	285	196	171	4,507	574	316	446	710
	Deaths, 1920	20,137	3,478	752	315	216	157	4,918	499	318	426	582
	Deaths, 1919 and 1920	40,326	6,715	1,370	600	412	328	9,425	1,073	634	872	1,292
28	New Jersey—Females:											
	Population, Jan. 1, 1920	1,505,941	30,962	31,885	33,568	33,910	32,078	162,403	155,307	140,493	124,333	134,101
	Deaths, 1919	18,339	2,467	504	236	177	160	3,544	471	280	409	715
	Deaths, 1920	18,714	2,714	642	273	195	140	3,964	413	265	423	669
	Deaths, 1919 and 1920	37,053	5,181	1,146	509	372	300	7,508	884	545	832	1,384
29	New York—Males:											
	Population, Jan. 1, 1920	5,081,010	96,494	100,001	104,255	103,335	99,920	504,005	483,598	448,736	393,639	422,955
	Deaths, 1919	72,981	10,340	1,949	978	690	543	14,500	1,685	1,091	1,663	2,495
	Deaths, 1920	72,556	11,160	2,475	1,065	632	525	15,857	1,698	1,069	1,449	2,054
	Deaths, 1919 and 1920	145,537	21,500	4,424	2,043	1,322	1,068	30,357	3,383	2,160	3,112	4,549
30	New York—Females:											
	Population, Jan. 1, 1920	5,091,017	93,983	96,958	101,698	101,252	97,817	491,708	476,243	442,190	410,952	477,651
	Deaths, 1919	65,794	7,892	1,690	861	589	470	11,502	1,397	907	1,477	2,650
	Deaths, 1920	67,818	8,365	2,091	973	683	485	12,597	1,425	927	1,367	2,400
	Deaths, 1919 and 1920	133,612	16,257	3,781	1,834	1,272	955	24,099	2,822	1,834	2,844	5,050
31	North Carolina—Males:											
	Population, Jan. 1, 1920	899,031	25,964	25,328	25,362	25,583	25,520	127,757	122,995	110,152	90,031	75,178
	Deaths, 1919	9,388	2,176	557	224	123	86	3,166	255	188	329	379
	Deaths, 1920	10,340	2,363	561	206	122	90	3,342	244	217	295	343
	Deaths, 1919 and 1920	19,728	4,539	1,118	430	245	176	6,508	499	405	624	722
32	North Carolina—Females:											
	Population, Jan. 1, 1920	884,748	24,809	24,369	24,188	25,223	24,183	122,772	119,527	106,264	90,536	81,147
	Deaths, 1919	9,209	1,670	453	191	117	87	2,518	247	180	309	465
	Deaths, 1920	9,849	1,829	462	180	112	94	2,677	209	149	323	440
	Deaths, 1919 and 1920	19,148	3,499	915	371	229	181	5,195	456	329	632	905
33	Ohio—Males:											
	Population, Jan. 1, 1920	2,854,664	55,244	59,279	59,346	58,964	57,696	290,529	269,785	250,190	225,937	242,917
	Deaths, 1919	36,385	5,397	949	450	337	232	7,365	815	551	852	1,117
	Deaths, 1920	36,784	5,497	1,046	531	330	256	7,660	848	547	910	1,087
	Deaths, 1919 and 1920	73,169	10,894	1,995	981	667	488	15,025	1,663	1,098	1,762	2,204
34	Ohio—Females:											
	Population, Jan. 1, 1920	2,717,229	53,734	57,443	57,427	57,474	55,619	281,697	265,291	244,939	225,051	237,041
	Deaths, 1919	32,445	4,205	819	422	281	191	5,918	687	453	771	1,324
	Deaths, 1920	33,529	4,161	943	449	307	238	6,098	682	440	779	1,199
	Deaths, 1919 and 1920	65,974	8,366	1,762	871	588	429	12,016	1,369	893	1,550	2,523
35	Oregon—Males:											
	Population, Jan. 1, 1920	407,159	6,748	7,131	7,215	7,223	7,218	35,535	36,602	34,507	30,547	30,791
	Deaths, 1919	4,957	497	64	41	36	28	666	103	85	156	142
	Deaths, 1920	5,080	506	85	38	36	28	693	94	95	127	144
	Deaths, 1919 and 1920	10,037	1,003	149	79	72	56	1,359	197	180	283	286
36	Oregon—Females:											
	Population, Jan. 1, 1920	361,987	6,513	6,961	6,827	7,061	7,062	34,424	35,544	33,633	31,120	31,237
	Deaths, 1919	3,619	307	49	45	30	14	445	75	81	114	177
	Deaths, 1920	3,843	376	58	31	29	23	517	73	63	114	182
	Deaths, 1919 and 1920	7,462	683	107	76	59	37	962	148	144	228	359
37	Pennsylvania—Males:											
	Population, Jan. 1, 1920	4,278,332	96,509	98,852	100,874	101,204	98,505	495,944	464,880	417,183	358,585	339,631
	Deaths, 1919	58,601	11,212	2,058	910	627	472	15,279	1,498	946	1,293	1,781
	Deaths, 1920	60,301	11,578	2,238	977	700	506	15,999	1,513	972	1,360	1,707
	Deaths, 1919 and 1920	118,902	22,790	4,296	1,887	1,327	978	31,278	3,011	1,918	2,653	3,488
38	Pennsylvania—Females:											
	Population, Jan. 1, 1920	4,154,394	94,482	97,221	99,668	100,069	96,366	487,806	458,896	414,013	362,531	356,891
	Deaths, 1919	51,681	8,649	1,745	828	633	455	12,310	1,240	804	1,197	2,002
	Deaths, 1920	54,499	8,755	1,923	891	613	456	12,638	1,323	849	1,222	1,895
	Deaths, 1919 and 1920	106,180	17,404	3,668	1,719	1,246	911	24,948	2,563	1,653	2,419	3,897

OF MORTALITY AT AGES 7 YEARS AND OVER ARE BASED—Continued. TABLE 18.

unknown ages are distributed.

AGE INTERVAL IN YEARS.															No. of life table.
25 to 30	30 to 35	35 to 40	40 to 45	45 to 50	50 to 55	55 to 60	60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 to 90	90 to 95	95 to 100	100 years and over.	
163,323	151,391	146,584	124,848	120,938	100,323	73,436	58,423	39,056	25,525	15,000	6,992	2,579	656	122	10	19
994	1,061	1,148	1,145	1,356	1,498	1,593	1,788	1,888	1,826	1,537	1,075	562	188	37	4	
845	856	988	1,008	1,263	1,479	1,571	1,886	1,968	1,988	1,690	1,175	622	202	47	3	
1,839	1,917	2,136	2,153	2,619	2,977	3,164	3,674	3,856	3,814	3,227	2,250	1,184	390	84	7	
174,927	154,236	147,017	130,822	118,417	101,490	77,811	63,918	44,844	32,067	20,886	11,105	4,687	1,253	220	31	20
1,121	1,055	1,028	1,054	1,191	1,335	1,356	1,773	1,866	1,969	1,904	1,571	893	345	82	14	
973	994	981	971	1,158	1,419	1,533	1,783	2,028	2,192	2,068	1,727	1,037	397	81	12	
2,094	2,049	2,009	2,025	2,349	2,754	2,889	3,556	3,894	4,161	3,972	3,298	1,930	742	163	26	
180,939	164,730	150,554	116,982	105,425	86,892	69,694	58,817	41,957	27,821	17,290	7,684	2,883	601	129	22	21
940	1,015	990	841	918	1,001	1,227	1,472	1,665	1,777	1,642	1,154	640	163	40	6	
1,036	1,127	1,082	971	1,004	1,095	1,360	1,677	1,808	1,923	1,844	1,277	717	218	36	12	
1,976	2,142	2,072	1,812	1,922	2,096	2,587	3,149	3,473	3,700	3,486	2,431	1,357	381	76	18	
155,831	138,101	121,927	101,220	87,351	75,627	61,653	50,858	36,666	25,498	16,718	8,127	3,164	725	144	21	22
1,080	952	834	784	814	895	1,043	1,196	1,443	1,479	1,509	1,129	654	214	43	7	
1,239	1,091	984	825	915	988	1,095	1,385	1,457	1,637	1,743	1,306	733	264	46	8	
2,319	2,043	1,818	1,609	1,729	1,883	2,138	2,581	2,900	3,116	3,252	2,435	1,387	478	89	15	
109,900	100,111	90,531	71,960	67,151	58,004	48,708	39,431	25,106	16,109	10,083	4,504	2,021	500	80	7	23
614	650	603	553	606	674	849	989	904	911	800	653	350	122	36	5	
546	669	603	477	578	688	859	1,015	962	1,008	931	659	401	153	28	1	
1,160	1,319	1,206	1,030	1,184	1,362	1,708	2,004	1,866	1,919	1,731	1,312	751	275	64	6	
102,256	88,322	76,543	62,227	54,216	46,500	38,263	30,032	20,487	13,886	9,491	4,878	2,165	604	133	12	24
638	568	527	418	484	503	623	611	655	685	727	545	419	141	40	6	
652	623	514	444	434	508	620	654	701	743	836	637	431	178	47	3	
1,290	1,191	1,041	862	918	1,011	1,243	1,265	1,356	1,428	1,563	1,182	850	319	87	9	
131,158	119,678	119,172	101,146	97,900	83,118	65,299	56,346	38,626	26,635	16,435	7,210	2,561	581	118	20	25
711	779	856	810	951	959	1,235	1,422	1,446	1,458	1,319	934	503	175	31	1	
743	768	849	759	886	1,075	1,201	1,458	1,525	1,594	1,488	1,085	533	164	40	5	
1,454	1,547	1,705	1,569	1,837	2,034	2,436	2,880	2,971	3,052	2,807	2,019	1,041	339	71	6	
137,440	121,126	114,937	98,740	88,708	74,958	58,059	48,140	34,405	24,416	15,929	7,560	3,031	693	151	32	26
848	783	787	707	724	766	887	984	1,193	1,235	1,263	893	507	168	46	8	
930	914	818	704	756	863	894	1,089	1,253	1,367	1,420	1,021	612	196	49	14	
1,778	1,697	1,605	1,411	1,480	1,629	1,781	2,073	2,446	2,602	2,683	1,914	1,119	364	95	22	
137,012	130,283	125,739	102,148	93,550	75,501	53,323	41,694	26,236	17,126	10,048	4,458	1,524	289	51	8	27
914	1,006	1,068	1,016	1,176	1,188	1,249	1,291	1,253	1,248	1,074	677	348	103	20	5	
734	839	868	912	1,110	1,181	1,268	1,399	1,324	1,355	1,149	761	368	102	23	1	
1,648	1,845	1,936	1,928	2,286	2,369	2,517	2,690	2,577	2,603	2,223	1,438	716	205	43	6	
137,508	122,824	113,627	95,991	83,841	70,673	51,992	42,433	28,448	20,135	12,504	6,234	2,384	584	106	20	28
1,012	841	759	739	836	946	1,054	1,222	1,348	1,259	1,298	914	484	167	35	6	
847	767	749	731	803	994	1,026	1,301	1,319	1,445	1,343	918	501	205	25	6	
1,859	1,608	1,508	1,470	1,639	1,940	2,080	2,523	2,667	2,704	2,641	1,832	985	372	60	12	
463,055	440,889	421,165	347,369	313,532	265,983	193,349	154,909	100,938	64,135	38,148	16,778	6,184	1,354	259	30	29
3,163	3,530	3,823	3,644	4,190	4,583	4,880	5,393	5,012	4,714	4,070	2,686	1,323	414	107	15	
2,672	3,008	3,302	3,375	3,836	4,603	4,798	5,414	5,283	4,927	4,356	2,852	1,458	456	77	12	
5,835	6,538	7,125	7,019	8,026	9,186	9,678	10,807	10,295	9,641	8,426	5,538	2,781	870	184	27	
479,947	426,581	394,321	335,324	291,703	256,747	190,584	155,958	106,231	73,494	45,835	23,194	9,390	2,385	497	82	30
3,359	2,949	2,695	2,828	3,144	3,716	4,059	4,509	4,863	5,084	4,552	3,273	1,945	700	155	30	
2,956	2,818	2,666	2,649	3,117	3,748	4,155	4,892	5,220	5,395	4,858	3,607	2,095	722	179	25	
6,315	5,767	5,361	5,477	6,261	7,464	8,214	9,401	10,083	10,479	9,410	6,880	4,040	1,422	334	55	
64,386	54,424	54,571	43,351	39,699	32,076	24,714	22,875	17,281	10,979	5,281	2,193	838	193	43	14	31
387	358	336	301	315	312	401	495	626	587	437	290	169	40	12	5	
393	376	377	361	350	438	397	585	710	726	552	357	183	80	10	4	
780	734	713	662	665	750	798	1,080	1,336	1,313	989	647	352	120	22	9	
68,681	56,308	52,131	44,932	35,369	27,771	22,032	20,357	15,339	10,561	6,342	2,998	1,218	354	84	25	32
472	476	447	353	319	322	326	418	531	628	554	394	223	91	23	3	
493	440	497	404	322	307	356	473	582	695	642	483	212	105	23	17	
965	916	944	757	641	629	682	891	1,113	1,323	1,196	877	435	196	46	20	
257,064	236,092	227,892	186,297	172,077	141,050	109,729	92,492	65,132	43,370	27,083	11,758	4,248	861	147	14	33
1,359	1,700	1,779	1,622	1,737	1,809	1,972	2,507	2,792	2,734	2,593	1,792	907	308	62	12	
1,379	1,460	1,555	1,443	1,581	1,778	2,069	2,515	2,798	2,918	2,937	1,971	959	297	64	8	
2,738	3,160	3,334	3,065	3,318	3,587	4,041	5,022	5,590	5,652	5,530	3,763	1,866	605	126	20	
240,702	215,694	201,311	170,844	151,487	129,796	104,538	88,137	64,368	45,085	29,682	14,473	5,526	1,314	225	28	34
1,545	1,500	1,437	1,209	1,320	1,479	1,712	1,989	2,286	2,642	2,651	1,943	1,113	369	79	18	
1,437	1,517	1,295	1,218	1,327	1,466	1,716	2,273	2,547	2,747	2,839	2,189	1,203	456	92	9	
2,982	3,017	2,732	2,427	2,647	2,945	3,428	4,262	4,833	5,389	5,490	4,132	2,316	825	171	27	
33,441	34,359	35,571	28,795	26,147	22,821	18,717	15,564	10,613	6,648	3,884	1,753	670	162	26	6	35
229	257	269	221	224	289	328	375	443	386	350	241	135	45	13	.....	
190	212	286	187	236	274	342	432	446	432	394	284	158	42	9	3	
419	469	555	408	460	563	670	807	889	818	744	525	293	87	22	3	
32,298	30,526	28,383	23,862	20,336	17,546	13,735	11,306	7,493	5,145	3,199	1,458	581	125	35	1	36
235	192	204	181	158	176	225	256	250	259	240	183	110	48	10	.....	
177	209	197	163	197	213	208	266	269	283	305	222	118	56	9	2	
412	401	401	344	355	389	433	522	519	542	545	405	228	104	19	2	
357,916	336,643	329,213	270,272	252,434	202,313	149,207	120,420	81,548	53,074	30,551	13,106	4,332	898	160	22	37
2,271	2,509	2,900	2,714	3,070	3,082	3,390	3,749	3,788	3,769	3,206	2,012	1,005	272	61	6	
2,112	2,425	2,672	2,613	2,929	3,229	3,500	3,969	4,049	4,100	3,442	2,276	1,059	321	43	11	
4,383	4,934	5,572	5,327	5,999	6,311	6,890	7,718	7,837	7,869	6,648	4,288	2,064	593	104	17	
352,546	313,321	292,160	246,958	219,614	185,688	141,816	117,862	83,091	57,678	36,841	17,844	6,861	1,632	303	42	38
2,320	2,260	2,053	1,913	2,109	2,455	2,592	3,233	3,465	3,701	3,485	2,535	1,366	515	109	17	
2,296	2,287	2,230	2,045	2,189	2,561	3,046	3,449	3,670	3,874	3,835	2,871	1,561	532	113	13	
4,616	4,547	4,283	3,958	4,298	5,016	5,638	6,682	7,135	7,575	7,320	5,406	2,927	1,047	222	30	

TABLE 18. POPULATIONS AND MORTALITY STATISTICS UPON WHICH ALL RATES

Populations and deaths at

No. of life table.	AREA, SEX, COLOR, POPULATION, AND DEATHS.	All ages.	AGE INTERVAL IN YEARS. 0-1	1-2	2-3	3-4	4-5	0-5	5 to 10	10 to 15	15 to 20	20 to 25
	WHITE—Continued.											
	STATES—continued.											
39	South Carolina—Males:											
	Population, Jan. 1, 1920	415,823	11,744	11,047	11,046	11,610	11,309	56,756	54,642	50,450	41,517	37,235
	Deaths, 1919	4,556	954	203	107	60	50	1,374	131	108	168	244
	Deaths, 1920	4,873	1,133	280	111	63	48	1,635	112	91	138	188
	Deaths, 1919 and 1920	9,429	2,087	483	218	123	98	3,009	243	199	306	432
40	South Carolina—Females:											
	Population, Jan. 1, 1920	402,715	11,337	10,466	10,616	11,347	10,539	54,305	52,935	49,110	41,580	37,606
	Deaths, 1919	4,038	721	177	90	64	43	1,095	124	72	130	200
	Deaths, 1920	4,552	855	242	87	71	41	1,296	100	77	133	206
	Deaths, 1919 and 1920	8,590	1,576	419	177	135	84	2,391	224	149	263	406
41	Tennessee—Males:											
	Population, Jan. 1, 1920	951,224	24,334	23,881	23,504	23,874	24,244	119,837	119,546	114,507	94,415	76,590
	Deaths, 1919	10,329	1,817	489	231	130	122	2,789	299	234	383	405
	Deaths, 1920	10,369	1,885	442	231	157	90	2,805	294	214	331	343
	Deaths, 1919 and 1920	20,698	3,702	931	462	287	212	5,594	593	448	714	748
42	Tennessee—Females:											
	Population, Jan. 1, 1920	934,769	23,377	22,758	22,933	23,616	22,714	115,398	115,309	109,650	96,429	85,537
	Deaths, 1919	9,862	1,465	413	186	155	97	2,316	253	207	385	508
	Deaths, 1920	9,857	1,445	380	186	139	96	2,246	305	201	356	525
	Deaths, 1919 and 1920	19,719	2,910	793	372	294	193	4,562	558	408	741	1,033
43	Utah—Males:											
	Population, Jan. 1, 1920	227,232	6,054	6,536	6,252	6,064	5,854	30,760	28,340	25,832	21,307	19,022
	Deaths, 1919	2,608	518	64	43	27	24	676	63	77	104	99
	Deaths, 1920	2,785	561	104	49	25	24	763	95	70	82	95
	Deaths, 1919 and 1920	5,393	1,079	168	92	52	48	1,439	158	147	186	194
44	Utah—Females:											
	Population, Jan. 1, 1920	214,669	5,850	6,289	5,983	5,905	5,789	29,816	27,633	25,429	21,626	18,999
	Deaths, 1919	2,168	379	48	36	31	14	508	50	58	88	115
	Deaths, 1920	2,280	425	88	50	18	23	604	52	68	74	102
	Deaths, 1919 and 1920	4,448	804	136	86	49	37	1,112	102	126	162	217
45	Virginia—Males:											
	Population, Jan. 1, 1920	825,133	19,881	19,835	19,684	20,177	19,606	99,183	99,096	92,994	82,964	73,144
	Deaths, 1919	9,776	1,904	367	190	112	89	2,662	245	205	349	455
	Deaths, 1920	9,478	1,849	328	182	85	68	2,512	208	181	275	324
	Deaths, 1919 and 1920	19,254	3,753	695	372	197	157	5,174	453	386	624	779
46	Virginia—Females:											
	Population, Jan. 1, 1920	792,776	19,469	19,467	18,946	19,939	18,947	96,768	95,989	89,303	78,521	72,430
	Deaths, 1919	8,669	1,345	338	167	113	76	2,039	216	176	259	385
	Deaths, 1920	8,875	1,395	301	176	119	68	2,059	221	120	225	374
	Deaths, 1919 and 1920	17,544	2,740	639	343	232	144	4,098	437	296	484	759
47	Washington—Males:											
	Population, Jan. 1, 1920	711,693	12,093	12,569	12,327	12,602	12,830	62,421	63,751	58,604	52,356	54,796
	Deaths, 1919	7,918	834	132	76	56	54	1,152	179	127	252	339
	Deaths, 1920	8,333	964	156	73	58	44	1,295	198	166	227	294
	Deaths, 1919 and 1920	16,251	1,798	288	149	114	98	2,447	377	293	479	633
48	Washington—Females:											
	Population, Jan. 1, 1920	608,084	11,575	12,222	11,910	12,040	12,046	59,793	62,022	57,437	52,226	53,272
	Deaths, 1919	5,740	634	100	48	53	39	874	166	133	195	283
	Deaths, 1920	5,997	710	131	63	44	39	987	151	123	203	267
	Deaths, 1919 and 1920	11,737	1,344	231	111	97	78	1,861	317	256	398	550
49	Wisconsin—Males:											
	Population, Jan. 1, 1920	1,348,522	26,823	29,346	29,168	29,508	29,061	143,906	139,294	130,832	118,416	114,304
	Deaths, 1919	14,967	2,505	307	191	155	120	3,278	339	270	405	437
	Deaths, 1920	15,731	2,604	385	198	175	128	3,490	399	286	441	466
	Deaths, 1919 and 1920	30,698	5,109	692	389	330	248	6,768	738	556	846	903
50	Wisconsin—Females:											
	Population, Jan. 1, 1920	1,268,416	26,023	28,540	27,995	29,023	28,137	139,718	136,759	127,656	118,720	113,006
	Deaths, 1919	12,804	1,816	284	174	110	83	2,467	300	214	328	488
	Deaths, 1920	13,618	1,834	312	155	133	110	2,544	333	240	344	556
	Deaths, 1919 and 1920	26,422	3,650	596	329	243	193	5,011	633	454	672	1,044
	CITIES.											
51	Aggregate in cities—Males: [1]											
	Population, Jan. 1, 1920	8,149,409	155,937	160,438	165,753	164,115	158,094	804,337	754,457	681,848	617,572	724,622
	Deaths, 1919	114,370	17,957	3,612	1,775	1,279	992	25,615	2,940	1,698	2,416	3,854
	Deaths, 1920	113,724	18,936	4,140	1,924	1,208	973	27,181	3,170	1,714	2,382	3,561
	Deaths, 1919 and 1920	228,094	36,893	7,752	3,699	2,487	1,965	52,796	6,110	3,412	4,798	7,415
52	Aggregate in cities—Females: [1]											
	Population, Jan. 1, 1920	8,061,689	152,460	155,950	161,989	161,003	155,551	786,953	745,625	679,701	653,627	809,924
	Deaths, 1919	99,877	13,749	3,123	1,547	1,126	868	20,413	2,452	1,518	2,375	4,663
	Deaths, 1920	102,982	14,191	3,579	1,611	1,168	878	21,427	2,589	1,451	2,366	4,227
	Deaths, 1919 and 1920	202,859	27,940	6,702	3,158	2,294	1,746	41,840	5,041	2,969	4,741	8,890
53	Baltimore—Males:											
	Population, Jan. 1, 1920	308,324	6,601	6,079	6,162	6,061	5,847	30,750	28,587	27,027	25,800	29,241
	Deaths, 1919	4,642	761	132	78	51	43	1,065	106	69	90	142
	Deaths, 1920	4,429	826	130	51	45	23	1,075	95	54	65	136
	Deaths, 1919 and 1920	9,071	1,587	262	129	96	66	2,140	201	123	155	278
54	Baltimore—Females:											
	Population, Jan. 1, 1920	316,806	6,285	5,970	6,122	6,109	5,755	30,241	27,846	27,399	27,569	30,528
	Deaths, 1919	4,254	560	124	64	49	31	828	71	66	90	187
	Deaths, 1920	4,353	664	140	50	35	23	912	67	50	98	185
	Deaths, 1919 and 1920	8,607	1,224	264	114	84	54	1,740	138	116	188	372
55	Boston—Males:											
	Population, Jan. 1, 1920	359,403	6,775	7,262	7,232	7,146	6,876	35,291	32,457	30,407	27,447	31,049
	Deaths, 1919	5,727	981	192	77	65	40	1,355	144	68	100	151
	Deaths, 1920	5,597	1,096	213	93	56	39	1,497	142	85	87	146
	Deaths, 1919 and 1920	11,324	2,077	405	170	121	79	2,852	286	153	187	297
56	Boston—Females:											
	Population, Jan. 1, 1920	371,082	6,801	6,952	6,978	6,934	6,762	34,427	32,315	30,147	28,834	34,810
	Deaths, 1919	5,533	789	141	71	61	42	1,104	137	79	89	217
	Deaths, 1920	5,559	804	193	66	61	39	1,163	124	66	99	199
	Deaths, 1919 and 1920	11,092	1,593	334	137	122	81	2,267	261	145	188	416

[1] The 14 cities included in aggregate white in cities are those shown in the table.

OF MORTALITY AT AGES 7 YEARS AND OVER ARE BASED—Continued. TABLE 18.

unknown ages are distributed.

AGE INTERVAL IN YEARS.															No of life table.
25 to 30	30 to 35	35 to 40	40 to 45	45 to 50	50 to 55	55 to 60	60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 to 90	90 to 95	95 to 100	100 years and over.	
32,113	26,588	27,097	21,749	19,163	13,958	9,716	10,144	7,144	4,373	2,108	753	249	54	10	4	39
193	195	213	182	195	173	183	228	313	313	179	90	54	18	1	1	
175	184	201	177	182	197	200	316	328	333	225	117	54	11	7	2	
368	379	414	359	377	370	383	544	641	646	404	207	108	29	8	3	
32,520	26,635	25,954	20,333	16,266	12,269	9,045	8,815	6,468	4,471	2,570	1,227	460	114	24	8	40
210	225	209	155	144	159	150	208	232	265	199	145	76	26	11	3	
213	212	249	165	143	141	163	257	290	283	262	203	110	40	7	2	
423	437	458	320	287	300	313	465	522	548	461	348	186	66	18	5	
69,024	59,983	61,329	48,494	47,460	41,505	28,791	25,595	18,778	12,983	7,865	3,134	1,087	238	48	15	41
375	388	423	388	396	426	467	578	666	780	645	404	211	54	14	4	
380	360	410	399	371	459	468	626	692	772	717	441	200	65	18	4	
755	748	833	787	767	885	935	1,204	1,358	1,552	1,362	845	411	119	32	8	
74,725	62,939	60,887	49,254	43,185	33,812	25,409	22,420	16,541	11,561	6,951	3,165	1,232	276	66	23	42
556	512	515	430	399	371	406	490	588	629	580	408	222	55	26	6	
552	471	481	424	406	377	391	475	605	639	598	468	242	71	16	8	
1,108	983	996	854	805	748	797	965	1,193	1,268	1,178	876	464	126	42	14	
18,227	16,635	15,800	12,224	10,432	8,868	6,618	5,356	3,433	2,151	1,303	602	253	59	10	.....	43
132	161	150	123	124	100	106	140	152	127	123	89	47	12	3	.....	
131	138	152	126	113	132	152	148	170	126	126	87	54	21	4	.....	
263	299	302	249	237	232	258	288	322	253	249	176	101	33	7	.....	
17,121	15,134	13,595	10,811	8,654	7,361	5,864	4,802	3,192	2,096	1,399	736	322	64	15	.....	44
130	146	127	93	73	90	88	85	114	119	108	100	50	21	4	1	
117	129	127	92	64	77	87	104	115	116	125	124	69	26	8	.....	
247	275	254	185	137	167	175	189	229	235	233	224	119	47	12	1	
63,496	53,555	54,208	45,107	43,264	33,501	24,388	22,820	16,749	10,894	6,059	2,557	899	196	51	8	45
399	402	360	341	351	368	404	541	666	740	589	395	226	63	13	2	
310	334	371	321	353	383	435	592	687	782	670	450	209	58	20	3	
709	736	731	662	704	751	839	1,133	1,353	1,522	1,259	845	435	121	33	5	
62,992	53,749	51,724	43,556	37,742	30,099	22,052	20,718	15,249	10,706	6,438	3,080	1,261	305	78	16	46
386	385	402	296	301	338	352	476	543	658	610	473	267	74	24	9	
388	354	413	325	333	381	369	533	608	671	631	443	279	109	35	4	
774	739	815	621	634	719	721	1,009	1,151	1,329	1,241	916	546	183	59	13	
61,666	63,461	64,883	52,307	46,547	39,909	32,337	24,657	15,976	9,452	5,225	2,289	817	197	33	9	47
437	466	452	373	395	464	543	628	570	533	503	281	168	41	15	.....	
374	392	459	434	427	518	542	679	652	593	509	319	183	59	9	4	
811	858	911	807	822	982	1,085	1,307	1,222	1,126	1,012	600	351	100	24	4	
55,619	52,321	49,107	40,567	33,243	28,250	21,894	17,075	10,992	6,982	4,371	1,971	736	178	26	2	48
361	310	304	277	270	293	365	363	366	362	357	260	134	57	7	3	
316	328	341	303	295	322	353	393	397	374	369	263	151	49	12	.....	
677	638	645	580	565	615	718	756	763	736	726	523	285	106	19	3	
113,416	104,206	96,496	79,229	73,708	63,515	53,971	44,953	30,496	19,966	12,594	5,961	2,503	611	124	21	49
544	612	541	524	596	701	871	1,035	1,042	1,113	1,147	772	496	200	38	6	
537	599	593	509	551	691	874	1,082	1,143	1,204	1,153	947	545	180	34	7	
1,081	1,211	1,134	1,033	1,147	1,392	1,745	2,117	2,185	2,317	2,300	1,719	1,041	380	72	13	
108,168	95,846	85,515	72,271	62,991	55,374	46,644	38,269	27,179	18,233	12,224	6,176	2,706	787	149	25	50
589	543	491	425	480	536	685	817	878	907	997	814	569	218	49	9	
657	605	528	476	468	605	727	859	883	1,011	1,077	872	535	229	55	14	
1,246	1,148	1,019	901	948	1,141	1,412	1,676	1,761	1,918	2,074	1,686	1,104	447	104	23	
833,151	775,483	722,381	567,992	498,467	405,485	280,373	214,497	125,736	76,189	41,909	17,221	6,028	1,354	272	35	51
5,268	6,140	6,758	6,353	7,393	7,700	7,861	8,252	7,096	6,039	4,638	2,614	1,255	377	89	14	
4,736	5,356	5,891	5,775	6,712	7,635	7,897	8,390	7,266	6,402	4,894	2,910	1,359	416	61	16	
10,004	11,496	12,649	12,128	14,105	15,335	15,758	16,642	14,362	12,441	9,532	5,524	2,614	793	150	30	
839,771	717,328	644,328	529,928	451,898	384,948	275,346	216,974	138,712	92,515	54,547	26,405	10,006	2,490	559	104	52
5,872	5,150	4,666	4,650	5,076	5,787	6,020	6,401	6,579	6,399	5,386	3,709	1,880	701	156	24	
5,323	4,881	4,579	4,450	5,190	5,859	6,379	7,163	7,087	6,984	5,770	4,091	2,136	800	205	25	
11,195	10,031	9,245	9,100	10,266	11,646	12,399	13,564	13,666	13,383	11,156	7,800	4,016	1,501	361	49	
29,549	26,149	24,294	19,698	18,510	15,318	11,371	9,310	5,999	3,592	2,006	770	270	67	14	2	53
202	217	215	261	302	289	297	356	328	281	230	123	53	14	2	.....	
159	172	196	178	237	285	317	342	363	325	225	126	57	18	3	1	
361	389	411	439	539	574	614	698	691	606	455	249	110	32	5	1	
29,771	25,908	24,240	20,313	18,259	16,109	11,917	10,231	7,009	4,632	2,831	1,370	497	110	21	5	54
222	186	178	183	206	217	278	258	321	343	293	185	106	27	7	2	
167	170	156	187	207	237	273	310	304	348	315	196	119	43	9	.....	
389	356	334	370	413	454	551	568	625	691	608	381	225	70	16	2	
34,444	31,381	29,811	25,038	24,320	19,747	13,735	10,445	6,407	3,985	2,160	847	314	104	13	1	55
225	296	281	303	393	414	390	422	382	334	239	127	75	23	5	.....	
201	199	237	252	346	369	375	407	361	356	274	160	75	22	6	.....	
426	495	518	555	739	783	765	829	743	690	513	287	150	45	11	.....	
35,761	30,506	29,619	26,351	23,721	19,856	14,523	11,384	7,643	5,387	3,296	1,646	650	168	33	5	56
293	252	280	270	302	309	318	359	384	372	320	272	126	38	11	1	
236	218	236	237	295	344	328	398	409	407	331	262	138	53	15	1	
529	470	516	507	597	653	646	757	793	779	651	534	264	91	26	2	

TABLE 18. POPULATIONS AND MORTALITY STATISTICS UPON WHICH ALL RATES

Populations and deaths at

No. of life table.	AREA, SEX, COLOR, POPULATION, AND DEATHS.	All ages.	AGE INTERVAL IN YEARS.									
			0-1	1-2	2-3	3-4	4-5	0-5	5 to 10	10 to 15	15 to 20	20 to 25
	WHITE—Continued.											
	CITIES—continued.											
57	Buffalo—Males:											
	Population, Jan. 1, 1920	250,973	5,067	5,315	5,316	5,233	5,111	26,042	23,838	21,071	18,908	21,593
	Deaths, 1919	3,903	778	121	84	55	27	1,065	128	69	90	105
	Deaths 1920	3,858	769	140	69	50	31	1,059	116	64	61	109
	Deaths 1919 and 1920	7,761	1,547	261	153	105	58	2,124	244	133	151	214
58	Buffalo—Females:											
	Population, Jan. 1, 1920	251,069	5,049	5,181	5,227	5,233	5,111	25,801	23,535	21,214	20,797	24,258
	Deaths, 1919	3,492	609	123	68	53	45	898	110	56	86	134
	Deaths 1920	3,494	588	112	56	39	38	833	109	59	71	149
	Deaths, 1919 and 1920	6,986	1,197	235	124	92	83	1,731	219	115	157	283
59	Chicago—Males:											
	Population, Jan. 1, 1920	1,311,243	25,154	26,257	27,786	28,353	27,322	134,872	126,667	108,820	94,164	108,202
	Deaths, 1919	16,988	3,130	724	297	221	170	4,542	437	248	325	484
	Deaths 1920	17,280	3,121	612	315	225	182	4,455	555	274	386	513
	Deaths 1919 and 1920	34,268	6,251	1,336	612	446	352	8,997	992	522	711	997
60	Chicago—Females:											
	Population Jan. 1, 1920	1,277,926	24,558	25,818	26,900	27,779	26,473	131,528	125,801	108,398	100,951	125,886
	Deaths 1919	14,525	2,411	618	283	195	153	3,660	346	214	338	674
	Deaths 1920	15,269	2,257	545	232	191	158	3,383	433	221	384	625
	Deaths 1919 and 1920	29,794	4,668	1,163	515	386	311	7,043	779	435	722	1,299
61	Cleveland—Males:											
	Population, Jan. 1, 1920	394,337	8,056	8,901	9,104	8,837	8,395	43,293	38,674	32,881	27,425	34,157
	Deaths, 1919	5,065	945	183	80	67	40	1,315	166	78	103	164
	Deaths, 1920	4,913	878	179	107	64	45	1,273	135	83	107	130
	Deaths, 1919 and 1920	9,978	1,823	362	187	131	85	2,588	301	161	210	294
62	Cleveland—Females:											
	Population, Jan. 1, 1920	367,689	8,029	8,611	8,816	8,884	8,471	42,811	38,232	32,824	28,957	36,353
	Deaths, 1919	4,147	714	149	58	45	45	1,011	140	57	108	219
	Deaths 1920	4,303	701	162	79	56	44	1,042	131	64	106	157
	Deaths, 1919 and 1920	8,450	1,415	311	137	101	89	2,053	271	121	214	376
63	Detroit—Males:											
	Population, Jan. 1, 1920	515,989	10,919	11,683	11,603	11,057	10,217	55,479	43,325	33,572	34,005	55,329
	Deaths, 1919	5,691	1,359	238	138	102	59	1,896	191	90	125	209
	Deaths, 1920	6,767	1,560	311	145	102	77	2,195	236	94	186	296
	Deaths, 1919 and 1920	12,458	2,919	549	283	204	136	4,091	427	184	311	505
64	Detroit—Females:											
	Population, Jan. 1, 1920	436,076	10,770	11,460	11,056	10,831	10,091	54,208	42,785	33,252	33,468	47,566
	Deaths, 1919	5,091	1,030	225	105	80	62	1,502	163	76	144	287
	Deaths, 1920	5,893	1,175	263	125	89	69	1,721	202	88	163	326
	Deaths, 1919 and 1920	10,984	2,205	488	230	169	131	3,223	365	164	307	613
65	Los Angeles—Males:											
	Population, Jan. 1, 1920	268,231	3,482	3,579	3,513	3,576	3,549	17,699	18,979	17,776	17,104	21,408
	Deaths, 1919	3,866	298	42	20	24	21	405	57	56	75	123
	Deaths, 1920	4,155	405	88	37	23	18	571	92	61	91	127
	Deaths, 1919 and 1920	8,021	703	130	57	47	39	976	149	117	166	250
66	Los Angeles—Females:											
	Population, Jan. 1, 1920	278,633	3,317	3,419	3,585	3,509	3,463	17,293	18,762	18,387	18,952	23,892
	Deaths, 1919	3,269	238	32	19	20	12	321	56	43	69	145
	Deaths, 1920	3,580	336	71	33	25	15	480	72	48	81	125
	Deaths, 1919 and 1920	6,849	574	103	52	45	27	801	128	91	150	270
67	New Orleans—Males:											
	Population, Jan. 1, 1920	141,790	2,422	2,440	2,485	2,533	2,544	12,424	13,170	13,043	13,277	15,342
	Deaths, 1919	2,453	246	42	31	12	20	351	35	51	71	92
	Deaths, 1920	2,236	235	42	19	14	9	319	53	41	58	78
	Deaths, 1919 and 1920	4,689	481	84	50	26	29	670	88	92	129	170
68	New Orleans—Females:											
	Population, Jan. 1, 1920	144,126	2,416	2,267	2,496	2,477	2,520	12,176	12,959	13,402	13,818	14,694
	Deaths, 1919	2,140	185	42	21	19	11	278	29	32	53	116
	Deaths, 1920	1,946	200	33	23	15	12	283	28	20	53	88
	Deaths, 1919 and 1920	4,086	385	75	44	34	23	561	57	52	106	204
69	New York City—Males:											
	Population, Jan. 1, 1920	2,723,217	53,936	54,948	58,036	56,940	54,835	278,695	265,466	244,969	215,387	241,018
	Deaths, 1919	38,082	5,735	1,240	611	425	354	8,365	997	588	891	1,476
	Deaths, 1920	36,670	6,066	1,616	686	357	319	9,044	999	567	764	1,165
	Deaths, 1919 and 1920	74,752	11,801	2,856	1,297	782	673	17,409	1,996	1,155	1,655	2,641
70	New York City—Females:											
	Population, Jan. 1, 1920	2,736,246	52,410	53,043	56,733	55,447	53,828	271,461	262,648	242,380	229,091	285,002
	Deaths, 1919	32,889	4,323	1,066	531	356	279	6,555	813	526	858	1,586
	Deaths, 1920	33,537	4,602	1,404	622	406	280	7,314	825	516	768	1,394
	Deaths, 1919 and 1920	66,426	8,925	2,470	1,153	762	559	13,869	1,638	1,042	1,626	2,980
71	Philadelphia—Males:											
	Population, Jan. 1, 1920	839,296	16,744	16,877	17,429	17,289	16,684	85,023	79,668	72,706	65,442	73,800
	Deaths, 1919	11,867	1,870	363	199	140	95	2,667	286	167	244	388
	Deaths, 1920	12,026	1,978	411	184	127	113	2,813	312	176	219	325
	Deaths, 1919 and 1920	23,893	3,848	774	383	267	208	5,480	598	343	463	713
72	Philadelphia—Females:											
	Population, Jan. 1, 1920	848,884	16,629	16,675	17,169	16,992	16,464	83,929	78,445	72,446	68,397	80,614
	Deaths, 1919	11,400	1,485	279	160	129	99	2,152	270	145	257	511
	Deaths, 1920	11,558	1,415	333	164	126	106	2,144	242	141	242	428
	Deaths, 1919 and 1920	22,958	2,900	612	324	255	205	4,296	512	286	499	939
73	Pittsburgh—Males:											
	Population, Jan. 1, 1920	276,025	5,763	6,096	5,967	6,102	5,746	29,674	27,828	25,044	21,861	23,399
	Deaths, 1919	4,630	872	166	72	39	37	1,186	127	68	94	157
	Deaths, 1920	4,625	862	196	97	54	54	1,263	154	71	106	173
	Deaths, 1919 and 1920	9,255	1,734	362	169	93	91	2,449	281	139	200	330
74	Pittsburgh—Females:											
	Population, Jan. 1, 1920	274,236	5,671	5,949	6,123	6,080	5,821	29,644	27,159	24,775	23,652	26,213
	Deaths, 1919	4,065	669	166	76	49	29	989	95	86	90	191
	Deaths, 1920	4,188	646	153	67	48	36	950	121	63	103	194
	Deaths, 1919 and 1920	8,253	1,315	319	143	97	65	1,939	216	149	193	385
75	St. Louis—Males:											
	Population, Jan. 1, 1920	347,665	5,248	5,531	5,746	5,572	5,744	27,841	28,584	28,367	27,274	31,362
	Deaths, 1919	4,776	481	99	53	40	40	713	154	77	91	130
	Deaths, 1920	4,995	570	102	67	49	36	824	178	61	107	152
	Deaths, 1919 and 1920	9,771	1,051	201	120	89	76	1,537	332	138	198	282
76	St. Louis—Females:											
	Population, Jan. 1, 1920	354,950	5,028	5,272	5,445	5,514	5,488	26,747	28,007	28,431	30,833	36,093
	Deaths, 1919	4,119	369	85	47	46	24	571	133	73	90	176
	Deaths, 1920	4,513	394	101	59	52	24	630	128	65	121	196
	Deaths, 1919 and 1920	8,632	763	186	106	98	48	1,201	261	138	211	372

OF MORTALITY AT AGES 7 YEARS AND OVER ARE BASED—Continued. TABLE 18.

unknown ages are distributed.

AGE INTERVAL IN YEARS.															No. of life table.
25 to 30	30 to 35	35 to 40	40 to 45	45 to 50	50 to 55	55 to 60	60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 to 90	90 to 95	95 to 100	100 years and over.	
25,383	23,497	21,046	16,643	14,752	12,985	9,373	7,218	4,188	2,382	1,300	520	182	36	14	2	57
169	188	199	209	183	253	276	289	215	164	151	85	43	15	5	2	
149	153	179	202	203	229	252	268	265	217	156	100	48	22	.....	1	
318	346	378	411	386	482	528	557	480	381	307	185	91	37	5	3	
25,085	21,989	19,178	15,986	13,953	12,245	9,253	7,278	4,576	2,836	1,725	917	334	94	14	1	58
162	174	128	146	139	170	175	230	216	221	196	147	76	21	6	1	
165	149	128	117	180	164	207	223	236	251	180	155	85	31	2	.....	
327	323	256	263	319	334	382	453	452	472	376	302	161	52	8	1	
135,598	131,317	120,157	90,759	78,316	64,374	45,491	33,814	18,536	10,726	5,888	2,448	867	185	39	3	59
691	879	1,004	892	1,091	1,139	1,175	1,166	1,011	776	578	329	159	47	13	2	
736	868	881	875	1,038	1,137	1,175	1,279	945	858	661	394	180	59	10	1	
1,427	1,747	1,885	1,767	2,129	2,276	2,350	2,445	1,956	1,634	1,239	723	339	106	23	3	
140,218	119,276	101.346	80,001	68,294	57,891	42,039	31,664	19,242	12,667	7,353	3,592	1,322	361	84	12	60
874	766	638	657	643	841	887	854	864	800	647	453	251	89	26	3	
885	773	721	655	772	865	947	998	945	935	747	552	274	122	28	4	
1,759	1,539	1,359	1,312	1,415	1,706	1,834	1,852	1,809	1,735	1,394	1,005	525	211	54	7	
43,402	40,856	37,511	27,419	22,549	16,728	11,014	8,103	5,005	2,856	1,574	611	238	35	5	1	61
236	309	379	306	323	291	261	287	284	222	183	100	41	12	4	1	
239	285	314	291	286	289	304	296	281	235	187	104	57	14	3	.....	
475	594	693	597	609	580	565	583	565	457	370	204	98	26	7	1	
39,524	33,935	29,443	22,207	18,106	14,361	10,367	8,171	5,319	3,486	2,096	967	411	97	18	4	62
255	235	250	170	197	218	205	189	218	201	223	132	77	35	6	1	
243	248	176	186	193	208	222	263	265	265	239	160	85	37	13	.....	
498	483	426	356	390	426	427	452	483	466	462	292	162	72	19	1	
70,702	61,237	50,744	32,886	26,056	19,003	12,892	9,411	5,415	3,135	1,710	736	287	48	13	4	63
321	360	316	266	275	240	244	288	259	242	179	111	59	11	5	4	
423	419	397	314	283	329	316	331	280	254	204	123	68	15	2	2	
744	779	713	580	558	569	560	619	539	496	383	234	127	26	7	6	
53,243	43,542	34,087	24,732	19,636	16,004	11,816	8,777	5,684	3,609	2,124	1,016	406	97	22	2	64
379	291	221	217	214	190	224	250	249	233	207	131	81	27	3	2	
432	374	284	224	246	243	242	264	274	262	231	186	85	40	4	2	
811	665	505	441	460	433	466	514	523	495	438	317	166	67	7	4	
25,459	25,758	26,542	21,787	19,764	16,264	12,626	10,481	6,938	4,819	2,969	1,283	461	88	24	2	65
191	251	284	247	247	251	286	329	316	232	237	167	85	24	3	.....	
174	185	223	197	237	279	309	352	350	321	270	182	106	23	4	1	
365	436	507	444	484	530	595	681	666	553	507	349	191	47	7	1	
27,260	25,912	25,999	22,582	19,660	17,258	13,195	11,027	7,742	5,377	3,182	1,463	547	126	15	2	66
201	190	187	166	180	189	224	231	262	267	254	174	79	26	5	.....	
144	176	178	172	194	231	220	285	286	288	269	195	95	37	4	.....	
345	366	365	338	374	420	444	516	548	555	523	369	174	63	9	.....	
14,017	11,967	11,357	9,180	8,423	6,954	4,482	3,510	2,116	1,285	780	327	106	24	6	.....	67
121	142	154	140	190	175	217	188	169	134	101	63	46	9	3	1	
89	126	130	111	168	189	169	210	161	141	99	58	26	8	2	.....	
210	268	284	251	358	364	386	398	330	275	200	121	72	17	5	1	
13,832	11,773	10,977	9,298	8,410	6,824	4,845	4,220	2,870	1,859	1,260	597	242	54	11	5	68
155	129	131	95	117	138	114	135	145	144	136	105	55	25	8	.....	
117	76	88	106	101	109	125	167	157	136	122	95	48	23	3	1	
272	205	219	201	218	247	239	302	302	280	258	200	103	48	11	1	
269,037	253,201	237,199	188,768	161,861	132,959	88,774	66,865	37,909	22,439	11,859	4,757	1,604	365	72	13	69
1,879	2,077	2,317	2,138	2,556	2,713	2,650	2,727	2,252	1,927	1,333	752	312	103	26	3	
1,481	1,689	1,887	1,893	2,290	2,700	2,649	2,674	2,281	1,882	1,421	801	357	106	15	5	
3,360	3,766	4,204	4,031	4,846	5,413	5,299	5,401	4,533	3,809	2,754	1,553	669	209	41	8	
283,501	240,250	217,684	177,711	147,865	128,120	87,622	67,948	41,795	27,135	15,148	7,248	2,719	701	179	38	70
2,037	1,733	1,546	1,592	1,765	2,103	2,136	2,165	2,169	2,072	1,570	953	474	191	37	8	
1,716	1,525	1,478	1,484	1,727	1,976	2,155	2,391	2,396	2,228	1,683	1,132	564	199	56	10	
3,753	3,258	3,024	3,076	3,492	4,079	4,291	4,556	4,565	4,300	3,253	2,085	1,038	390	93	18	
81,147	72,583	68,152	56,522	52,740	43,597	30,606	24,702	15,036	9,296	5,082	2,153	756	170	23	2	71
476	526	604	629	719	781	842	937	766	742	570	316	156	39	11	1	
442	508	551	590	660	746	855	986	893	792	583	362	148	57	6	2	
918	1,034	1,155	1,219	1,379	1,527	1,697	1,923	1,659	1,534	1,153	678	304	96	17	3	
81,893	69,607	63,863	56,278	50,398	43,555	31,678	26,307	17,086	11,783	7,151	3,651	1,377	336	75	15	72
544	522	437	502	585	663	685	836	817	824	725	538	255	108	21	3	
558	482	482	460	551	669	806	882	825	911	769	557	275	101	29	4	
1,102	1,004	919	962	1,136	1,332	1,491	1,718	1,642	1,735	1,494	1,095	530	209	50	7	
26,515	24,367	23,567	18,930	16,920	13,344	9,050	6,955	4,123	2,458	1,302	500	144	36	7	1	73
213	242	316	268	315	303	287	277	239	232	187	67	38	11	3	.....	
194	243	247	266	269	271	294	298	251	221	155	92	45	10	1	1	
407	485	563	534	584	574	581	575	490	453	342	159	83	21	4	1	
26,630	22,776	21,291	17,787	15,086	12,450	9,078	7,139	4,620	3,054	1,756	781	282	50	11	2	74
247	217	223	195	178	223	209	241	242	237	188	123	66	21	4	.....	
213	219	235	195	219	217	252	271	271	233	203	129	74	20	6	.....	
460	436	458	390	397	440	461	512	513	470	391	252	140	41	10	.....	
34,426	31,652	30,566	25,740	23,521	19,554	14,160	10,800	6,379	3,902	2,198	888	343	83	23	2	75
186	219	248	263	324	319	393	415	402	320	267	145	70	36	4	.....	
187	206	271	237	293	346	396	462	388	333	278	158	88	25	4	1	
373	425	519	500	617	665	789	877	790	653	545	303	158	61	8	1	
36,648	32,161	29,314	25,220	21,878	18,788	13,833	10,416	6,924	4,652	2,880	1,396	573	119	31	6	76
218	190	217	202	253	254	262	261	314	274	292	194	108	25	10	2	
227	229	210	186	238	293	279	312	357	341	313	201	136	35	14	2	
445	419	427	388	491	547	541	573	671	615	605	395	244	60	24	4	

TABLE 18. POPULATION AND MORTALITY STATISTICS UPON WHICH ALL RATES

Populations and deaths at

No. of life table.	AREA, SEX, COLOR, POPULATION, AND DEATHS.	All ages.	AGE INTERVAL IN YEARS.									
			0-1	1-2	2-3	3-4	4-5	0-5	5 to 10	10 to 15	15 to 20	20 to 25
	WHITE—Continued.											
	CITIES—continued.											
77	San Francisco—Males:											
	Population, Jan. 1, 1920	260,885	3,204	3,177	3,104	3,192	3,091	15,768	16,509	15,524	18,034	22,332
	Deaths, 1919	4,501	280	34	19	21	22	376	63	45	65	144
	Deaths, 1920	3,963	301	64	34	22	17	438	57	53	103	130
	Deaths, 1919 and 1920	8,464	581	98	53	43	39	814	120	98	168	274
78	San Francisco—Females:											
	Population, Jan. 1, 1920	229,137	3,064	3,080	3,119	3,041	3,137	15,441	16,328	15,732	15,863	21,848
	Deaths, 1919	3,026	190	42	27	12	20	291	59	38	56	136
	Deaths, 1920	2,836	223	42	24	13	20	322	70	35	47	104
	Deaths, 1919 and 1920	5,862	413	84	51	25	40	613	129	73	103	240
79	Washington, D. C.—Males:											
	Population, Jan. 1, 1920	152,031	2,566	2,293	2,270	2,224	2,133	11,486	10,705	10,551	11,444	16,390
	Deaths, 1919	2,179	221	36	16	17	24	314	49	24	52	89
	Deaths, 1920	2,210	269	36	20	20	10	355	46	30	42	81
	Deaths, 1919 and 1920	4,389	490	72	36	37	34	669	95	54	94	170
80	Washington, D. C.—Females:											
	Population, Jan. 1, 1920	174,829	2,433	2,253	2,220	2,173	2,167	11,246	10,803	10,914	12,445	22,167
	Deaths, 1919	1,927	177	31	17	12	16	253	30	27	47	84
	Deaths, 1920	1,953	186	27	11	12	14	250	37	15	30	57
	Deaths, 1919 and 1920	3,880	363	58	28	24	30	503	67	42	77	141
	NEGROES.											
81	States having less than 4 per cent Negroes—Males:[1]											
	Population, Jan. 1, 1920	668,278	10,672	9,647	9,268	9,671	9,574	48,832	47,573	44,682	45,992	71,208
	Deaths, 1919	13,594	2,022	465	217	99	77	2,880	274	230	531	884
	Deaths, 1920	14,854	2,521	641	200	117	75	3,554	285	226	531	986
	Deaths, 1919 and 1920	28,448	4,543	1,106	417	216	152	6,434	559	456	1,062	1,870
82	States having less than 4 per cent Negroes—Females:[1]											
	Population, Jan. 1, 1920	628,941	11,089	9,872	9,712	9,884	9,755	50,312	49,216	47,917	50,151	73,545
	Deaths, 1919	11,746	1,659	426	160	83	84	2,412	277	267	571	848
	Deaths, 1920	12,836	1,955	634	189	110	74	2,962	259	254	503	890
	Deaths, 1919 and 1920	21,582	3,614	1,060	349	193	158	5,374	536	521	1,074	1,738
83	States having more than 5 per cent Negroes—Males:[2]											
	Population, Jan. 1, 1920	1,694,317	39,667	37,481	40,411	42,075	43,160	202,794	220,498	211,299	176,118	153,928
	Deaths, 1919	30,551	6,276	1,390	629	359	254	8,908	853	788	1,623	1,944
	Deaths, 1920	29,784	6,548	1,294	539	310	201	8,892	724	668	1,274	1,797
	Deaths, 1919 and 1920	60,335	12,824	2,684	1,168	669	455	17,800	1,577	1,456	2,897	3,741
84	States having more than 5 per cent Negroes—Females:[2]											
	Population, Jan. 1, 1920	1,734,242	40,631	37,877	40,954	43,814	42,187	205,463	221,544	212,469	190,619	182,522
	Deaths, 1919	31,407	4,869	1,136	570	370	286	7,231	951	993	2,081	2,599
	Deaths, 1920	30,687	5,263	1,158	499	324	226	7,470	804	755	1,725	2,378
	Deaths, 1919 and 1920	62,094	10,132	2,294	1,069	694	512	14,701	1,755	1,748	3,806	4,977
85	Large cities—Males:[3]											
	Population, Jan. 1, 1920	454,516	7,098	6,208	5,996	6,186	6,123	31,611	30,556	28,454	30,287	50,827
	Deaths, 1919	9,719	1,503	323	162	93	54	2,135	189	165	362	563
	Deaths, 1920	10,327	1,821	459	158	92	52	2,582	176	168	340	660
	Deaths, 1919 and 1920	20,046	3,324	782	320	185	106	4,717	365	333	702	1,223
86	Large cities—Females:[3]											
	Population, Jan. 1, 1920	464,585	7,398	6,403	6,345	6,561	6,316	33,023	32,022	31,941	37,284	59,287
	Deaths, 1919	9,075	1,136	293	131	66	56	1,682	206	187	460	666
	Deaths, 1920	9,964	1,509	432	133	75	67	2,216	181	162	409	741
	Deaths, 1919 and 1920	19,039	2,645	725	264	141	123	3,898	387	349	869	1,407
87	Original registration states—Males.[4]											
	Population, Jan. 1, 1920	319,926	5,364	4,903	4,752	4,793	4,789	24,601	23,528	21,897	22,543	34,448
	Deaths, 1919	6,660	1,087	246	111	69	44	1,557	126	117	238	455
	Deaths, 1920	7,059	1,327	346	90	59	40	1,862	142	110	251	442
	Deaths, 1919 and 1920	13,719	2,414	592	201	128	84	3,419	268	227	489	897
88	Original registration states—Females:[4]											
	Population, Jan. 1, 1920	325,598	5,718	5,014	5,096	4,994	4,860	25,682	24,363	23,501	26,212	38,891
	Deaths, 1919	6,195	881	235	89	51	51	1,307	147	128	268	390
	Deaths, 1920	6,761	1,081	334	94	57	39	1,605	146	114	289	450
	Deaths, 1919 and 1920	12,956	1,962	569	183	108	90	2,912	293	242	557	840
	HAWAII.											
89	All races combined—Males:											
	Population, Jan. 1, 1920	151,146	4,417	3,965	4,010	3,713	3,401	19,506	15,485	11,269	11,552	14,828
	Deaths, 1919	2,305	548	80	45	25	20	718	61	40	83	129
	Deaths, 1920	2,743	619	133	56	34	26	868	65	37	79	154
	Deaths, 1919 and 1920	5,048	1,167	213	101	59	46	1,586	126	77	162	283
90	All races combined—Females:											
	Population, Jan. 1, 1920	104,766	4,166	3,998	3,954	3,699	3,243	19,060	14,723	10,801	9,102	9,946
	Deaths, 1919	1,571	472	86	29	28	22	637	82	41	72	106
	Deaths, 1920	1,857	466	117	46	44	28	701	25	37	106	118
	Deaths, 1919 and 1920	3,428	938	203	75	72	50	1,338	143	78	178	224
91	Japanese males:											
	Population, Jan. 1, 1920	62,644	2,162	1,950	2,037	1,801	1,604	9,554	6,844	4,500	4,417	3,321
	Deaths, 1919	821	229	40	21	14	12	316	25	14	31	26
	Deaths, 1920	984	242	68	28	26	17	381	21	14	25	29
	Deaths, 1919 and 1920	1,805	471	108	49	40	29	697	46	28	56	55
92	Japanese females:											
	Population, Jan. 1, 1920	46,630	2,060	1,925	2,016	1,766	1,471	9,238	6,683	4,126	3,439	4,271
	Deaths, 1919	568	183	44	15	11	6	259	23	12	27	49
	Deaths, 1920	663	176	51	23	18	13	281	37	16	33	44
	Deaths, 1919 and 1920	1,231	359	95	38	29	19	540	60	28	60	93

[1] The states with less than 4 per cent Negro population are Connecticut, Massachusetts, New York, Michigan, Wisconsin, Minnesota, Washington, Oregon, California, Utah, Kansas, Illinois, Indiana, Ohio, Pennsylvania, and New Jersey.

[2] The states with more than 5 per cent Negro population are Maryland, Virginia, North Carolina, South Carolina, Tennessee, Kentucky, and Missouri.

OF MORTALITY AT AGES 7 YEARS AND OVER ARE BASED—Continued. TABLE 18.

unknown ages are distributed.

AGE INTERVAL IN YEARS.															No. of life table.
25 to 30	30 to 35	35 to 40	40 to 45	45 to 50	50 to 55	55 to 60	60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 to 90	90 to 95	95 to 100	100 years and over.	
26,632	27,508	28,668	23,431	20,203	16,117	11,167	8,159	4,813	3,249	1,674	750	267	67	12	1	77
208	329	346	331	366	389	415	399	311	264	210	138	76	22	4	.....	
173	198	273	247	272	341	335	337	298	265	227	137	60	17	2	.....	
381	527	619	578	638	730	750	736	609	529	437	275	136	39	6	.....	
25,280	23,483	22,417	18,576	15,257	12,330	8,916	6,953	4,376	3,151	1,823	913	331	92	23	4	78
190	182	151	165	199	180	193	242	229	240	196	162	70	39	7	1	
138	170	136	162	182	177	195	238	195	219	194	133	76	31	12	.....	
328	352	287	327	381	357	388	480	424	459	390	295	146	70	19	1	
16,840	14,010	12,767	11,191	10,532	8,541	5,632	4,724	2,872	2,065	1,407	631	189	46	7	1	79
150	105	95	100	109	143	128	172	162	169	173	91	42	11	1	.....	
89	100	105	122	130	125	151	148	149	202	154	113	44	20	3	1	
239	205	200	222	239	268	279	320	311	371	327	204	86	31	4	1	
21,125	16,210	14,870	12,886	11,375	9,157	6,264	5,459	3,826	2,887	1,922	848	315	85	22	3	80
95	83	79	90	98	92	110	150	149	171	139	140	56	29	5	.....	
82	72	71	79	85	126	128	161	167	160	174	138	82	28	10	1	
177	155	150	169	183	218	238	311	316	331	313	278	138	57	15	1	
78,426	68,097	76,535	54,483	51,215	32,150	17,848	12,479	7,965	5,171	3,361	1,330	594	196	76	65	81
898	911	1,206	973	1,109	877	620	580	483	418	374	169	109	36	16	16	
977	920	1,270	1,067	1,073	932	654	587	527	444	368	235	118	56	23	21	
1,875	1,831	2,476	2,040	2,182	1,809	1,274	1,167	1,010	862	742	404	227	92	39	37	
78,488	63,953	64,503	45,686	35,183	24,772	14,842	11,279	7,707	5,272	3,217	1,562	774	284	139	139	82
896	799	874	740	673	709	562	501	447	405	299	198	125	85	26	32	
927	828	960	808	799	696	647	566	484	453	322	218	130	67	32	31	
1,823	1,627	1,834	1,548	1,472	1,405	1,209	1,067	931	858	621	416	255	152	58	63	
125,346	97,550	112,710	85,369	93,645	71,661	43,143	38,623	27,098	17,314	9,594	4,435	1,879	717	335	261	83
1,641	1,446	1,720	1,392	1,649	1,564	1,156	1,290	1,259	1,164	865	626	308	173	85	97	
1,513	1,352	1,563	1,309	1,525	1,721	1,261	1,337	1,263	1,271	910	654	365	199	86	100	
3,154	2,798	3,283	2,701	3,174	3,285	2,417	2,627	2,522	2,435	1,775	1,280	673	372	171	197	
146,465	110,943	119,756	89,890	74,122	57,093	34,801	31,155	22,185	16,278	9,181	5,252	2,193	1,240	489	582	84
2,335	1,839	2,026	1,680	1,585	1,502	1,167	1,182	1,106	1,004	742	583	335	217	97	152	
2,062	1,833	1,897	1,683	1,552	1,526	1,157	1,249	1,148	1,092	770	665	364	255	102	200	
4,397	3,672	3,923	3,363	3,137	3,028	2,324	2,431	2,254	2,096	1,512	1,248	699	472	199	352	
58,412	50,158	54,981	38,589	35,198	20,305	10,052	6,751	3,792	2,295	1,361	526	236	78	26	21	85
634	702	981	748	893	697	450	377	309	212	170	66	36	17	10	3	
711	734	968	763	816	723	432	407	287	247	146	86	46	19	11	5	
1,345	1,436	1,949	1,511	1,709	1,420	882	784	596	459	316	152	82	36	21	8	
63,435	50,404	50,536	34,498	25,944	17,298	9,617	7,585	4,654	3,337	1,896	963	492	207	93	69	86
778	636	763	644	601	611	444	404	294	261	191	115	62	34	16	20	
791	711	792	678	686	612	481	427	341	277	194	128	71	33	19	14	
1,569	1,347	1,555	1,322	1,287	1,223	925	831	635	538	385	243	133	67	35	34	
38,209	32,692	35,433	25,649	23,287	14,888	8,294	5,861	3,782	2,319	1,526	603	233	81	27	25	87
466	442	535	446	488	409	308	285	251	212	169	85	43	13	8	7	
442	424	554	484	499	411	302	297	259	214	162	107	57	26	7	7	
908	866	1,089	930	987	820	610	582	510	426	331	192	100	39	15	14	
40,387	33,276	33,670	23,952	18,544	13,216	7,747	6,111	4,127	2,865	1,605	804	393	133	62	57	88
471	400	464	410	357	390	308	291	253	229	152	105	68	25	14	18	
456	440	507	416	405	374	339	336	257	245	169	99	55	29	13	17	
927	840	971	826	762	764	647	627	510	474	321	204	123	54	27	35	
11,645	12,934	11,833	11,921	10,978	7,520	4,543	3,779	1,888	797	390	146	76	22	16	18	89
97	127	123	148	159	139	131	124	83	49	43	24	16	2	7	2	
167	128	180	156	205	183	119	130	105	63	42	31	17	12	1	1	
264	255	303	304	364	322	250	254	188	112	85	55	33	14	8	3	
9,859	7,761	7,087	5,648	4,145	2,551	1,541	1,098	651	365	209	121	54	19	15	10	90
124	100	97	67	55	43	30	33	29	22	29	15	7	11	6	4	
174	138	122	79	65	48	32	43	37	24	16	11	9	7	4	4	
298	238	219	146	120	91	62	76	66	46	45	26	16	18	10	8	
2,392	6,732	5,827	6,691	5,254	3,774	1,802	1,170	294	51	16	1	3	.....	.....	1	91
16	47	52	69	72	62	43	36	9	3	.....	.....	.....	.....	.....	.....	
26	63	78	75	86	91	51	24	16	2	1	1	.....	.....	.....	.....	
42	110	130	144	158	153	94	60	25	5	1	1	.....	.....	.....	.....	
4,786	3,942	3,413	3,079	1,917	1,072	454	157	41	5	4	2	1	.....	.....	.....	92
60	43	37	23	17	8	5	5	.....	.....	.....	.....	.....	.....	.....	.....	
69	65	41	35	19	18	2	3	.....	.....	.....	.....	.....	.....	.....	.....	
129	108	78	58	36	26	7	8	.....	.....	.....	.....	.....	.....	.....	.....	

[3] The 12 cities included in "large cities" for Negroes are Boston, Buffalo, Detroit, Chicago, St. Louis, New Orleans, Cleveland, Pittsburgh, Philadelphia, New York, Baltimore, and Washington.

[4] The original registration states include New England states, New York, New Jersey, District of Columbia, Indiana, and Michigan.

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