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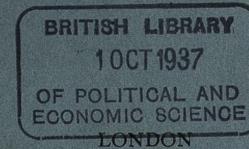


THE REGISTRAR - GENERAL'S  
DECENNIAL SUPPLEMENT  
ENGLAND & WALES

1931

PART I  
LIFE TABLES

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## PREFACE.

The Registrar-General's Decennial Supplement, 1931, of which this volume is the first part, is the eighth of its series, the first six having been published as Supplements to the Annual Reports of the Registrar-General for the six census years 1861 to 1911 inclusive, and the seventh, under the slightly modified title now in use, in association with the census of 1921.

Following the procedure adopted in respect of its immediate predecessors, the 1931 Supplement will be issued in Sections, conforming with the following arrangement of subject matter—

- Part I. The present volume of Life Tables.
- Part II. A review of (a) occupational and social class mortality, and (b) general and occupational fertility, in respect of the years 1930-32.
- Part III. A general review of the vital statistics of the decennium 1921-30.
- Part IV. A volume entitled Secondary and Associated Causes of Death, providing information in analytical form regarding the incidence of combinations of diseases or other causes of death found associated with one another among the deaths registered in the decennium 1921-30.

Parts I, II and III are natural successors to corresponding earlier volumes in the series, while Part IV deals with an aspect of the death records not hitherto included in the Supplement.

The principal object of the present work is the production of English Life Table No. 10 which is now published—for males and females separately—in Table I of Appendix IV (pages 48 and 49). The table is based upon the mortality experienced in England and Wales as a whole during the three years 1930-32 and is thus similar to and directly comparable with its two predecessors, English Life Tables Nos. 8 and 9, which were based upon the respective experiences of 1910-12 and 1920-22 and published in the preceding volumes of this series.

In addition to the main tables for the country as a whole, life tables have also been prepared in a similar degree of completeness for the geographical region known as Greater London, the area comprised by the City of London and Metropolitan Police Districts and representing approximately a circle of 15 miles radius from Charing Cross. The mortality experiences of thirty-four geographical and density aggregates of area comprising the remainder of the country are also examined in considerable detail at various age periods; and in respect of two of these, representing experiences of extreme types, graduated rates of mortality ( $q_x$ ) have been calculated. The separate experiences of single, married and widowed females are also discussed and graduated rates of mortality provided in a form comparable with the  $q_x$  of the normal life table.

The work has been undertaken by the Government Actuary, Sir Alfred Watson, K.C.B., at the invitation of the Registrar-General, who desires to take this opportunity of placing upon record his appreciation of the attention which Sir Alfred has devoted to the task and of the valuable report embodying his conclusions which is now presented to the public.

## REPORT ON LIFE TABLES BY THE GOVERNMENT ACTUARY.

S. P. VIVIAN, Esq., C.B.,  
Registrar-General,  
Somerset House, W.C.2.

SIR,

In compliance with your request I have examined the question, in connection with the census of 1931, of the construction of Life Tables representative of the mortality experience of the population of England and Wales, and have prepared such tables, for males and females respectively, on the basis of that census and the deaths of the three years 1930, 1931 and 1932. The circumstances which have led me to select these data for the preparation of the National Life Tables on the present occasion are explained in the following report.

### I.—INTRODUCTORY.

Since the census of 1841, which Dr. William Farr took as the basis of the first officially published English Life Tables, it has been the custom to review the mortality experience of the country after each successive census. When the figures derived from the 1921 census became available you invited me to undertake this duty, and the results were published in 1927 in the Registrar-General's Decennial Supplement—1921, Part I. In the course of that investigation I prepared life tables based on the population enumerated in England and Wales at the 1921 census and on the deaths recorded in the three years 1920, 1921 and 1922. These life tables continued the series instituted by Dr. Farr and were designated English Life Tables No. 9. Accompanying the national tables were tables of rates of mortality at individual ages for certain sections of the population, and numerous comparative mortality tables showing the mortality experience of subdivisions of the country in relation to that of the country as a whole. The present investigation has proceeded on similar lines. The following pages accordingly describe the construction of new national life tables, designated English Life Tables No. 10 (males and females) and the relative mortality experience of the populations in the several geographical sections (and their sub-sections—County Boroughs, Urban Districts and Rural Districts) into which the country has been divided.

The first point to which consideration had to be given was the statistical basis of the investigation. It was for a long time the practice to base national life tables on the population enumerated at two successive censuses and on the deaths recorded in the intervening years. In connection with the 1911 census, however, two sets of national life tables were prepared, English Life Tables No. 7, based on the censuses of 1901 and 1911 and on the deaths in the ten years 1901 to 1910, and English Life Tables No. 8, based on the 1911 census alone and on the deaths in the three years 1910, 1911 and 1912. The latter plan was adopted on the ground that it gave a closer approach to contemporaneous mortality than the older plan. This point of view as well as the various special factors which were operating in the decennium between the censuses of 1911 and 1921, are discussed at length in my previous report. For the reasons therein adduced, it was decided to use the 1921 census alone as the population basis, and to relate to it the deaths in the three adjacent years 1920, 1921 and 1922. The elements introduced by the disturbances due to the War are not now present, but the other considerations which influenced me in my choice of basis are still valid. I have accordingly decided again to base the construction of the tables, both national and sectional, on the census population and on the deaths in the three calendar years to which the census was most nearly central, *i.e.*, the years 1930, 1931 and 1932. Throughout the investigation the experience of males and females has been separately examined.

## II.—NATIONAL LIFE TABLES.

The 1931 census was taken on the night of 26–27 April, or 65 days before the middle point of the three years 1930, 1931, and 1932. In the absence of any abnormal circumstances the mean population of a three year period is represented very closely by the population at the middle of the period. In the preparation of life tables from census data it has been customary to increase the recorded population (infantile ages excepted) by a suitable factor computed from the growth of the population since the previous census to bring it up to the middle of the census year. In 1921 the interval between the census date and the middle of the year was only 11 days, and it was therefore assumed that the census population could without sacrifice of accuracy be taken as representing the mean population of the three years 1920, 1921 and 1922. On the present occasion I should have reverted to the traditional method for ages over 20, (the treatment of the figures for ages below 20 is explained in the following paragraph) had not certain conditions, explained below, led me to conclude that any adjustment of the census figures of 1931 to approximate the population recorded at each age to that existing at 30th June of that year would be unlikely to produce any more dependable figures than those of the census itself.

For ages 0–5 it was decided, in view of the doubt attaching to census returns in this section of the age field, to disregard the census data and to obtain the rates of mortality by reference to the returns of births and deaths in the appropriate years, a course which has invariably been adopted in previous investigations. At ages 6 and upwards throughout the ages of childhood and adolescence, it may be assumed that the numbers recorded at each age at the census are not subject to inaccuracy of any significance and should normally follow each other from age to age in a regular course. An inspection of the population enumerated at successive ages, however, revealed an irregular progression, the fluctuations being most marked at the ages from 10 to 14. This phenomenon is the result of the variations in the birth-rate from year to year in the years during and immediately following the war. It was evident that the census population at a single age within this youthful group could not be taken as a suitable measure of the "exposed to risk" to which the average number of the deaths in the three years at that age could be related. A method had therefore to be devised in order to furnish a more accurate "exposed to risk" over the section of the table specially affected by the fluctuations in the birth-rate in successive years during and subsequent to the war period. The process adopted is described in detail in Appendix I.

The first of the conditions to which I refer above was that the increase of population at ages 20 and upwards between June, 1921, and April, 1931, while amounting to 13 per cent. for such population as a whole (the equivalent of which for 65 days, i.e., the period from 26th April, 1931, to 30th June of the same year, would have been 0.23 per cent.) was not uniform with reference to individual ages or even to quinary groups of ages. It had in fact varied widely in the groups aged between 20 and 55. In the case of men this is largely due to the effect on successive censuses of the deaths due to the War. The same irregularities, though less pronounced, are found in the case of females; as regards this sex the presumable reason (which applies equally to males) is the variation in the annual number of births which took place from 20 to 60 years ago. In any case an assumption based upon former practice that the increase in the first 65 days of the decennium 1931–1941 would follow the increase at the same age group between the years 1921 and 1931 seemed unwarranted in view of the known facts, and no other material was available for estimating such increase of the population as might have occurred in the 65 days under consideration.

The second condition which presented itself was that to obtain a meticulously accurate rate of mortality the recorded deaths must be compared with the years of life experienced by the population during the three years under observation, a figure which, though closely approximate to, cannot be expected to coincide with, the population as accurately estimated on the particular 30th June which is the mid-date of the period under observation. This consideration added further to the doubts as to the value of any attempt to make an authoritative adjustment of the census figures as to adults, in order to bring them up to the estimated population on 30th June, 1931. It may usefully be added that an approximate

adjustment made by way of increasing the numbers at risk up to 30th June, 1931, at ages over 60, where the growth of population is more pronounced than at the younger ages, had the effect of increasing the expectation of life for males by about 14 days at the age of 60 and by about 11 days at the age of 70.

In view of these trifling changes at the age-points which give the adjustment its maximum value, I decided to act upon the judgment to which the general considerations adduced above had led me, namely to adopt the census figures as the mean of the numbers "at risk" during the three years 1930–32.

### CALCULATION OF GRADUATED RATES OF MORTALITY.

The basis of the investigation having been determined, the next step was to derive from the selected data graduated rates of mortality at each age, and so to construct the life tables.

For the larger part of the table it was decided again to adopt King's method of graduation, which has been described in previous reports and is so well known as to require no further explanation. The process adopted by King for the English Life Tables Nos. 7 and 8, and by myself for the English Life Tables No. 9, was to obtain "pivotal" values at every fifth year of age for the population and deaths separately, and from the resulting pivotal rates of mortality to insert the intermediate rates by osculatory interpolation. This procedure has again been used.

The selection of the quinary age groups, from which the pivotal values are obtained, is a matter of importance. An inspection of the numbers returned in the census as well as of the deaths recorded each year shows considerable fluctuations from age to age which can only be accounted for, except at the younger ages already referred to, by misstatement either accidental, *e.g.* through ignorance, or deliberate. The census statistics reveal a partiality for the ages ending in digits 0 and 8, whilst those ending in digits 1, 7 and 9 appear to be less favoured. The numbers of deaths recorded at individual ages present generally the same features, except that the numbers at ages ending in the digit 2 appear to be unduly large. The most accurate group totals, and consequently the most reliable pivotal values derivable from them will be obtained by the selection of the groups in such a manner that in each group the excess over the normal numbers at specially favoured ages shall be balanced by the deficiency at the other ages. Experiments were made to discover the grouping which presumably would reduce the errors of the original figures to a minimum. The population and deaths were examined separately both for males and for females, thus giving four series of figures. In the case of two of the four series, the best grouping was found to be 0–4, 5–9, and in the other two also this arrangement produced good results. The various alternative groupings if good in one series were unsatisfactory in the others. Consequently the aggregation of the data in the quinary groups with digits ending in 0–4 and 5–9 was adopted for the national tables. It may be mentioned here that since the statistics are tabulated at individual ages any grouping can be made for the purpose of constructing a life table, and it is possible therefore to select that which experiment indicates to be most appropriate. For the sectional tables, however, the statistics were available only for groups of quinary ages (0–4 and 5–9); it is satisfactory to note, therefore, that the combination of ages which perforce has to be adopted for the purpose of calculating pivotal values in these tables is that found on the whole to be the best for the national tables.

By means of this grouping, pivotal rates of mortality,  $q_x$ , were obtained at ages 12, 17 . . . . . 92. The application to these rates of King's osculatory interpolation process led to the derivation of a smoothly graduated series of rates of mortality at individual ages from 17 to 87.

There remained the problem of deducing rates of mortality for the earlier and later spans of life which would combine smoothly with the series of rates derived for the main part of the table.

*Infantile Ages, 0 to 5.*—As already intimated, the quality of the census record at these ages has not yet been sufficiently established to permit of its being adopted as the most appropriate population to which the deaths should be related in order to furnish an index of the mortality experience. It was felt that the preferable course would be to follow previous practice and to obtain the exposed to risk by computing the numbers of survivors at each age by reference

to the records of births and deaths. Consequently this method of deducing infantile rates of mortality has been adopted in the present as in previous investigations. On this occasion the method previously employed has been developed in order to obtain a closer approximation to the rate of mortality during the first year of life. The rate is heaviest just after birth and decreases thereafter, rapidly at first but more slowly towards the close of the first year of age. The available data permitted of an estimate to be made of the respective probabilities at birth of an infant dying in the first, second, third and fourth quarters of the first year of life, and the rate of mortality for this year of age has been derived by taking the sum of these probabilities.

*Ages 6 to 22.*—The rates of mortality for the first six years of life having been calculated as indicated above, it became necessary, for the reasons explained in Appendix I (b), to devise a method for obtaining rates for ages 6 to 16, after which the rates deduced for the main body of the table are available. Crude death rates at each age from 6 to 16 were obtained by dividing the average number of deaths recorded in the three years 1930-32 by an adjusted population figure so calculated as to give a more accurate "exposed to risk" than the population recorded at the census. This series of crude rates was graduated to give a smooth progression. The substitution of an adjusted for the actual census population at the younger ages necessitated a modification of the pivotal rate of mortality for age 17 previously obtained from the unadjusted census figures and also of the rates of mortality derived therefrom. The series of specially graduated values was therefore carried forward to age 22 where it merged into the series of rates derived for the larger part of the table from the unadjusted census population.

*Advanced Ages.*—After various experiments it was decided to adopt the rates of mortality given by King's method for ages up to 87 and to complete the table by a "Gompertz graduation."

At all stages of the table it was found that the same methods could be applied equally satisfactorily to the data representing both male and female lives. All the data used in the calculations are given in Appendix II, and, where necessary, the technical processes are described in Appendix I.

#### LIFE TABLES AND TABULATED FUNCTIONS.

The rates of mortality derived as explained in the foregoing paragraphs form the basis of the new English Life Tables No. 10.

That the rates represent closely the mortality prevailing in the three years 1930, 1931 and 1932 is evidenced by the following Table A, showing, for quinary groups of ages, the number of deaths expected in a year, on the basis of the census of 1931 and the graduated rates of mortality, in comparison with the average of the number of deaths recorded in the years 1930-32. In obtaining the expected deaths the central death rate,  $m_x$ , corresponding to each rate of mortality,  $q_x$ , was applied at each age  $x$  to the recorded census population, except at ages 6 to 17 where the adjusted population was used. The relation between  $q_x$  and  $m_x$  is fully explained on page 3 of my previous report. The reason for using  $m_x$  for the present purpose is that the population recorded at age  $x$  purports to consist of all persons aged  $x$  last birthday. The infantile ages are excluded from the comparison as the census data at these ages were not used in constructing the rates of mortality.

The figures are given in five year groups, being the groups employed in obtaining the pivotal values. In my report on the English Life Table No. 9 a grouping in 7-year periods was adopted, but in view of the experiments referred to above I have reverted to the 5-year groups. One of the difficulties encountered in a comparison by particular groups of ages however selected is that the expected deaths, computed by applying the graduated rates of mortality to the census population at each age, are swollen to some extent at certain ages, e.g., those ending in the digits "0" and "8," which are specially favoured in filling up the census returns, while the actual deaths are similarly inflated at other ages, e.g., those ending in the digit "2."

TABLE A.  
ENGLAND AND WALES.

*Life Tables 1930-32.*

Comparison of Actual and Expected Deaths—Summary.

Age Group.	MALES.				FEMALES.			
	Expected Deaths.	Actual Deaths (Average 1930-32).	Deviation.		Expected Deaths.	Actual Deaths (Average 1930-32).	Deviation.	
			Expected less Actual Deaths.	Accumulated Deviation.			Expected less Actual Deaths.	Accumulated Deviation.
6-9 ...	2,777	2,756	+ 21	+ 21	2,412	2,411	+ 1	+ 1
10-14 ...	2,416	2,435	- 19	+ 2	2,301	2,293	+ 8	+ 9
15-19 ...	4,320	4,354	- 34	- 32	3,952	3,969	- 17	- 8
20-24 ...	5,583	5,580	+ 3	- 29	5,050	5,039	+ 11	+ 3
25-29 ...	5,395	5,376	+ 19	- 10	5,290	5,295	- 5	- 2
30-34 ...	5,226	5,224	+ 2	- 8	5,425	5,421	+ 4	+ 2
35-39 ...	6,106	6,115	- 9	- 17	5,981	5,995	- 14	- 12
40-44 ...	7,944	7,926	+ 18	+ 1	7,034	7,027	+ 7	- 5
45-49 ...	11,043	11,053	- 10	- 9	9,196	9,194	+ 2	- 3
50-54 ...	14,601	14,604	- 3	- 12	11,996	11,996	—	- 3
55-59 ...	18,882	18,879	+ 3	- 9	15,031	15,031	—	- 3
60-64 ...	22,741	22,701	+ 40	+ 31	18,764	18,767	- 3	- 6
65-69 ...	26,911	26,897	+ 14	+ 45	23,364	23,387	- 23	- 29
70-74 ...	28,048	28,014	+ 34	+ 79	27,509	27,456	+ 53	+ 24
75-79 ...	23,976	24,060	- 84	- 5	27,402	27,516	- 114	- 90
80-84 ...	14,991	15,031	- 40	- 45	20,957	21,015	- 58	- 148
85-89 ...	6,633	6,638	- 5	- 50	11,582	11,649	- 67	- 215
90-94 ...	1,717	1,715	+ 2	- 48	3,735	3,800	- 65	- 280
95-99 ...	284	256	+ 28	- 20	756	714	+ 42	- 238
100 and over	18	16	+ 2	- 18	78	71	+ 7	- 231
	209,612	209,630	+ 186 - 204	- 18	207,815	208,046	+ 135 - 366	- 231

It will be observed that throughout the table there is a close correspondence between the expected and the actual deaths. The differences are small in every age group and change sign frequently, with the result that the accumulated deviations are always relatively small.

In the males table the total expected deaths amount to 209,612 as compared with 209,630 actual deaths, the difference being insignificant in every group of ages. The difference of 231 in the females table is larger but it arises wholly in the advanced age groups, and in relation to the numbers involved need not be regarded as significant.

The complete life tables for males and females respectively are given in Appendix IV.

The functions tabulated are:—

$l_x$  = the number of persons surviving at exact age  $x$ ,

$d_x$  = the deaths in the year of age  $x$  to  $x + 1$  among the  $l_x$  persons who enter on that year,

$p_x$  = the probability of a person aged  $x$  living a year,

$q_x$  = the probability of a person aged  $x$  dying within a year,

$\bar{e}_x$  = the "complete expectation of life," or the total future lifetime which, on the average, will be passed through by each of a group of persons aged exactly  $x$ .



An examination of the series of rates of mortality reveals several features inviting comment. In the first place it has been considered undesirable to graduate the rates of mortality for ages 0 to 5 as obtained by the special process explained in Appendix I. One peculiarity has thus been allowed to remain. In the life table for males the rate of mortality at age 5 is higher than is consistent with a smooth progression of the rates from age to age. The same feature is discernible, though in a less marked degree, in the table for females. When life tables for certain sections of the country came to be prepared it was found that this feature was also prominent in all but one of these sectional tables. From the statistical point of view no reason can be suggested for this apparent abnormality but the fact that it has been found to exist generally appears to stamp it as something more than a mere fortuity.

Another section of the table in which the progression of the rates of mortality from age to age is somewhat irregular is between ages 20 and 30. The graduated rates of mortality for males show in this section of the table a maximum value at age 23 followed by decreases to age 26, where the minimum rate of the section occurs. Thereafter the rates increase steadily from age to age. In the case of females there are no instances of decreasing rates of mortality in this span of life, but there is a decided retardation in the progression of the rates. Had this feature obtained only among females there might have been an inclination to assign it to misstatement of age, but the fact that it is more pronounced among males than among females would appear to indicate that some special factor or factors are operating at these ages to disturb the progressive increase in the rate of mortality from age to age.

#### COMPARISON WITH EARLIER NATIONAL LIFE TABLES.

A comparison of the mortality experience disclosed by these new life tables with that of other national tables is given in the following summaries (Tables B, C, D and E).

The national tables selected for comparison are English Life Tables No. 9 and English Life Tables No. 8, representing the mortality experience of periods related to the censuses of 1921 and 1911 respectively.

For the purpose of comparing the mortality disclosed by the various tables I have selected the same criteria as those adopted in my 1921 census report. These enable the experience to be examined from four different points of view, and are:—

- The rates of mortality at selected ages, *i.e.*, the values of  $q_x$ .
- The number of survivors at selected ages out of a stated number of births, *i.e.* the values of  $l_x$ .
- The expectation of life at selected ages, *i.e.*, the values of  $e_x$ .
- The probability of surviving a specified period, say ten years, from the attainment of selected ages, *i.e.*, the values of  ${}_{10}p_x$ .

TABLE B.

Rates of Mortality,  $q_x$ .

Age $x$ .	MALES			FEMALES		
	English Life Table, No. 8, 1910-12.	English Life Table, No. 9, 1920-22.	English Life Table, No. 10, 1930-32.	English Life Table, No. 8, 1910-12.	English Life Table, No. 9, 1920-22.	English Life Table, No. 10, 1930-32.
0 ... ..	.12044	.08996	.07186	.09767	.06942	.05455
10 ... ..	.00193	.00181	.00146	.00196	.00180	.00134
20 ... ..	.00348	.00349	.00316	.00295	.00306	.00268
30 ... ..	.00478	.00434	.00340	.00411	.00392	.00319
40 ... ..	.00811	.00688	.00562	.00660	.00532	.00440
50 ... ..	.01482	.01179	.01128	.01140	.00915	.00816
60 ... ..	.03042	.02561	.02415	.02310	.01897	.01770
70 ... ..	.06470	.05997	.06035	.05259	.04646	.04451
80 ... ..	.14299	.14002	.14500	.12419	.11766	.11858
90 ... ..	.27395	.26752	.28614	.23826	.23852	.25061

TABLE C.

No. of Survivors  $l_x$  at the specified ages out of 100,000 Births.

Age $x$ .	MALES			FEMALES		
	English Life Table, No. 8, 1910-12.	English Life Table, No. 9, 1920-22.	English Life Table, No. 10, 1930-32.	English Life Table, No. 8, 1910-12.	English Life Table, No. 9, 1920-22.	English Life Table, No. 10, 1930-32.
0 ... ..	100,000	100,000	100,000	100,000	100,000	100,000
10 ... ..	81,241	85,693	89,023	83,598	87,909	91,082
20 ... ..	79,344	83,748	87,245	81,681	85,938	89,383
30 ... ..	76,223	80,549	84,416	78,954	83,019	86,792
40 ... ..	71,673	76,294	80,935	74,988	79,381	83,690
50 ... ..	64,333	69,916	74,794	68,881	74,246	78,958
60 ... ..	52,110	58,804	63,620	58,660	65,202	70,204
70 ... ..	33,431	39,526	43,361	41,688	48,401	53,144
80 ... ..	12,194	15,035	16,199	18,086	22,295	24,869
90 ... ..	1,361	1,710	1,609	2,764	3,447	3,611

TABLE D.

Expectation of Life (Years),  $e_x$ .

Age $x$ .	MALES			FEMALES		
	English Life Table, No. 8, 1910-12.	English Life Table, No. 9, 1920-22.	English Life Table, No. 10, 1930-32.	English Life Table, No. 8, 1910-12.	English Life Table, No. 9, 1920-22.	English Life Table, No. 10, 1930-32.
0 ... ..	51.50	55.62	58.74	55.35	59.58	62.88
10 ... ..	53.08	54.64	55.79	55.91	57.53	58.87
20 ... ..	44.21	45.78	46.81	47.10	48.73	49.88
30 ... ..	35.81	37.40	38.21	38.54	40.26	41.22
40 ... ..	27.74	29.19	29.62	30.30	31.86	32.55
50 ... ..	20.29	21.36	21.60	22.51	23.69	24.18
60 ... ..	13.78	14.36	14.43	15.48	16.22	16.50
70 ... ..	8.53	8.75	8.62	9.58	9.95	10.02
80 ... ..	4.90	4.93	4.74	5.49	5.56	5.46
90 ... ..	2.87	2.82	2.63	3.16	3.13	2.98

TABLE E.  
Probability of Surviving 10 years,  $_{10}p_x$ .

Age $x$ .	MALES			FEMALES		
	English Life Table, No. 8, 1910-12.	English Life Table, No. 9, 1920-22.	English Life Table, No. 10, 1930-32.	English Life Table, No. 8, 1910-12.	English Life Table, No. 9, 1920-22.	English Life Table, No. 10, 1930-32.
0 ...	.81241	.85693	.89023	.83598	.87909	.91082
10 ...	.97664	.97730	.98003	.97707	.97758	.98135
20 ...	.96067	.96180	.96757	.96660	.96603	.97101
30 ...	.94031	.94718	.95876	.94977	.95618	.96426
40 ...	.89760	.91640	.92412	.91856	.93531	.94346
50 ...	.81001	.84107	.85060	.85161	.87819	.88913
60 ...	.64154	.67217	.68156	.71066	.74232	.75699
70 ...	.36474	.38038	.37358	.43385	.46063	.46795
80 ...	.11160	.11373	.09933	.15283	.15461	.14520

The comparison in Table B indicates that except at advanced ages the mortality experience of the country has continued to improve. At birth the probability of a child dying in the first year has decreased very considerably, in the case of males from .12044 in 1911\*, and .08996 in 1921\* to .07186 in 1931\*, the corresponding figures in the case of females being .09767, .06942, and .05455. Putting it perhaps more simply this means that out of every 1,000 boys born, the number who died before attaining the age of one year was in 1911 about 120, in 1921 about 90, but in 1931 about 72 only. Out of 1,000 girls born, the numbers of deaths in the first year of age were 98 in 1911, 69 in 1921 and 55 in 1931. Reference to earlier English life tables shows that infant mortality for a long time remained at a persistently high level, the number of deaths in the first year of life out of 1,000 births having varied but little in the case of males from 170, and in the case of females from 140, throughout the period from 1841 until the end of the nineteenth century. During the first three decennia of the present century the rate of mortality in the first year of life has fallen by as much as 60 per cent. In early childhood and in the years of adolescence there has been a substantial improvement in vitality between 1921 and 1931, and between the ages of 20 and 40 the improvement has been even more marked. The deterioration in the experience of females aged between 18 and 27 noted in my previous report has not persisted.

If reference be made to the full English Life Table No. 10, Males (Appendix IV, Table 1), and to the corresponding Table No. 9 (Appendix IV Table 1 of my previous report) it will be seen that after age 55 the new rates of mortality begin to overtake the earlier rates until at age 60 the English Life Table No. 10 shows a heavier rate of mortality than that of the English Life Table No. 9. Thenceforward to the end of life the new rates of mortality are heavier than the earlier rates, with the result that at age 70 the expectation of life has fallen from 8.75 years to 8.62 years. Notwithstanding the excess in the later rates of mortality at the higher ages the effect of the superiority in vitality revealed at the younger ages by the new table is such that it is not until age 88 that the number of survivors at each age  $x$ ,  $l_x$  (from 100,000 births), in the English Life Table No. 10 falls below the numbers at the same age in the English Life Table No. 9.

From age 79 onwards the English Life Table No. 10 rates of mortality (1930-32) are in excess of those of the English Life Table No. 8 (1910-12).

In the case of females the improvement in vitality is found to persist until a later age than in the case of males. The favourable differences between the English Life No. 10 and the English Life No. 9 rates are substantial until about age 75. The differences then decrease sharply and at age 78 the new rates of mortality rise above the earlier rates, and remain higher thereafter. The expectation of life at age 80 is 5.46 years by the No. 10 table as compared with 5.56 years by the

\* The single years 1911, 1921 and 1931 are used here and elsewhere as contractions for 1910-12, 1920-22 and 1930-32.

No. 9 table. The experience of females over the greater part of life is so much more favourable according to the more recent table that it is not until age 93 that the number of survivors  $l_{93}$ , out of 100,000 births, by the earlier table, exceeds that by the later. Again, compared with the English Life Table No. 8 the new table, referring to a period twenty years later, shows heavier rates of mortality at ages 84 and over.

As successive investigations indicate that there has been a progressive improvement in vitality at all except the advanced ages, it has been thought that it would be of interest to show the degree of improvement or deterioration that has taken place in the vitality of the people in the intervals between the periods to which the successive national life tables relate. The following table has, therefore, been prepared:—

TABLE F.

Ratio of the rates of mortality,  $q_x$ , according to the successive National Life Tables Nos. 8, 9 and 10.

Age $x$ .	MALES.			FEMALES.		
	E.L. No. 9	E.L. No. 10	E.L. No. 10	E.L. No. 9	E.L. No. 10	E.L. No. 10
	E.L. No. 8	E.L. No. 9	E.L. No. 8	E.L. No. 8	E.L. No. 9	E.L. No. 8
0 ...	.75	.80	.60	.71	.78	.56
5 ...	.85	.82	.70	.88	.70	.62
10 ...	.94	.81	.76	.92	.74	.68
15 ...	.93	.90	.84	.95	.84	.80
20 ...	1.00	.91	.91	1.04	.88	.91
25 ...	1.00	.83	.82	1.03	.85	.88
30 ...	.91	.78	.71	.95	.81	.78
35 ...	.89	.76	.67	.86	.81	.70
40 ...	.85	.82	.69	.81	.83	.67
45 ...	.81	.91	.73	.78	.87	.68
50 ...	.80	.96	.76	.80	.89	.72
55 ...	.83	.92	.76	.82	.89	.73
60 ...	.84	.94	.79	.82	.93	.77
65 ...	.91	.95	.87	.90	.92	.82
70 ...	.93	1.01	.93	.88	.96	.85
75 ...	.96	1.01	.98	.94	.98	.92
80 ...	.98	1.04	1.01	.95	1.01	.95
85 ...	1.00	1.05	1.06	1.01	1.03	1.03
90 ...	.98	1.07	1.04	1.00	1.05	1.05
95 ...	1.12	1.07	1.19	1.03	1.05	1.08
100 ...	1.09	1.06	1.16	1.01	1.04	1.05

It will be seen that the improvement in vitality has not at any age been uniform throughout the period of approximately twenty years which the observations cover. The changes which have taken place have, however, been much the same for both males and females. Between the English Life Tables No. 8 and No. 9 which may be taken as relating to 1911 and 1921 respectively there was considerable improvement up to age 5, but at the immediately succeeding ages the mortality rates of the later experience gradually approached the earlier, until at ages 20 and 25 the 1921 rates of mortality in the case of males were equal to, and in the case of females were actually heavier than, those of ten years earlier. From age 25 upwards the 1921 experience shows lighter mortality than that of 1911, the advantage in the later period over the earlier becoming more pronounced with advancing age until about ages 45 or 50, when the later rates were only about 80 per cent. of the earlier. After age 50 the 1921 rates converge towards the 1911 rates and equality is again reached about age 85. Thereafter the later rates are on the whole the higher.

The English Life No. 10 rates, which may be taken as relating to 1931, show that in the period between 1921 and 1931 the greatest improvement in vitality did not occur at the same ages as in the previous intercensal period. At the earliest ages the 1931 rates of mortality are much lower than those of 1921, the difference being specially marked in the case of females. The improvement persists though not to the same degree between ages 15 and 25. The absence of improvement, and in the case of females the deterioration, at ages between 20 and 25 which was

so conspicuous a feature in the 1921 investigation has been replaced by a substantial improvement in vitality in the case of both sexes. The range of ages showing the most remarkable change in the mortality experience is that from about 30 to 40. Here the rates of mortality are approximately 20 per cent. less than in 1921, the decrease being the more pronounced in the case of males.

After age 40 the mortality of males in 1931 begins to approach that of 1921, and between the ages of 50 and 70 the improvement, though not inappreciable, has been definitely less than that recorded in the previous intercensal period. In the case of females the improvement has been rather more substantial, but again it has not been on the same scale as in the earlier period. At about age 70 in the case of men the later life table exhibits heavier mortality than the earlier, the retrogression thus indicated increasing with age. In the case of women this feature is postponed to age 80. The columns giving the ratios of the rates by the English Life Tables No. 10 to those by the English Life Tables No. 8 show the relation of the mortality experience of 1931 to that of 1911. The trend of these figures indicates in the most emphatic manner the great improvement in the vitality of the people which has taken place at all but the most advanced ages within the last 20 years. If the table be examined as a whole it will be seen that the improvement in mortality at all ages comprised within the normal span of human life is much more pronounced than the deterioration at the most advanced ages; the latter may be regarded as a phenomenon for which students of demography will probably agree upon one cause, namely, the survival to old age in the present generation of many of the weaker members of the community who under the conditions prevailing in the past would have succumbed before old age was in sight.

#### COMPARISON OF MORTALITY OF MALES AND FEMALES.

The rates of mortality for females are lighter than those for males at all ages except age 13, when the rate for males is very slightly the less. (Appendix IV, Table I.)

In the first year of life the difference between the two sexes is very marked. According to the English Life Tables No. 10, out of every 100,000 boys born, 7,186 die before attaining one year of age, but out of every 100,000 girls born, only 5,455 fail to survive one year. The differences between the two series of rates of mortality decrease in the early years of life as the magnitude of the rates themselves decreases, and from about age 10 to age 15, when the probability of death is at a minimum the mortality experience of the two sexes is practically the same. Thereafter the superior vitality of females becomes increasingly apparent, the divergence between the two series of rates becoming wider as the rates increase in magnitude with advancing age.

#### III.—RATES OF MORTALITY OF FEMALES ACCORDING TO MARITAL STATUS.

The registers of deaths in England and Wales do not distinguish males according to marital status, and consequently there are no means by which the mortality of bachelors, married men and widowers can be compared.

In the case of women, however, the numbers of deaths of spinsters, married women and widows are tabulated separately at each age, and the census returns also give the numbers of women enumerated at each age according to marital condition. It is, therefore, possible to obtain a measure of the rates of mortality which are experienced by each of the three classes. In my previous report, on the 1921 census, I pointed out that while there appeared to be full justification for ascertaining the rates of mortality,  $q_x$ , for each of the classes, a life table showing the number of survivors at each age in an  $l_x$  column must be regarded as statistically unsound. The reason is that each class is being depleted from age to age by another force in addition to mortality, *i.e.*, marriage in the case of spinsters, widowhood in the case of married women, and remarriage in the case of widows. Consequently a life table in the ordinary form, in which the only decremental force is mortality, would be misleading as an indication of the progress through life of any one of the three classes of women.

This section of the investigation has therefore, as in my previous report, been restricted to the computation of the rates of mortality for each of the three classes of

females—single women, married women and widows (with whom have been included divorced women, in accordance with the Registrar-General's classification of the deaths).

The graduated series of rates have been constructed according to the same principles as those adopted for the main part of the national tables, the data being aggregated in quinary groups and the rates at individual ages derived therefrom by King's method. It is a disadvantage of this method that it does not provide the values for a number of terms at the beginning and end of the series, and it was accordingly necessary to devise some means by which the missing values could be determined.

In the spinsters table this difficulty did not arise at the early ages, as the data were available to enable rates of mortality to be obtained for the youngest age at which they would be significant.

In the case of married women the numbers of deaths recorded in the three years 1930-32 at ages 16, 17, 18 and 19 were 5, 23, 88 and 237 respectively. The crude death rate, for this group of four ages, was found to be .00379, and in view of the paucity of numbers it was decided to adopt this rate as the central death rate,  $m_x$ , for each of the ages in the group, the corresponding rate of mortality  $q_x$  being .00378. For ages 20 to 31 the crude death rates were calculated at individual ages and graduated graphically, whilst from age 32 onwards the values derived from the graduation by King's method were adopted. The numbers of expected deaths computed by these rates agree closely with the numbers of deaths actually recorded.

The total number of deaths of widows recorded in the three years 1930-32 was only 30 at ages under 25, and 143 in the quinary age group 25-29. The crude death rates for these two groups were .00431 and .00410 respectively. As the numbers involved were small it was decided to adopt the uniform rate of mortality,  $q_x = .00420$ , for each age,  $x$ , from 23 to 29. The values for  $q_x$  from ages 37 onwards were available from the graduation by King's method, and these were adopted. The intervening values for ages 30 to 36 were inserted by inspection of the crude rates of mortality at the individual ages.

In Table 2 of Appendix IV mortality rates for each class are given up to age 84 beyond which the statistics are not sufficiently extensive to provide reliable material for discrimination between the mortality of the three classes.

The rates of mortality at each age for each of the three classes of women were tested to ensure that they were consistent with the corresponding rates for all females as shown in Table I of Appendix IV.

The results of the investigation are summarised in the following table:—

TABLE G.  
Mortality according to Marital Status—Females.  
Rates of Mortality,  $q_x$ .

Age $x$ .	Single.	Married.	Widowed.	All Female Lives.
20 ...	.00262	.00315	—	.00268
25 ...	.00301	.00294	.00420	.00298
30 ...	.00343	.00308	.00445	.00319
35 ...	.00385	.00355	.00457	.00364
40 ...	.00484	.00426	.00489	.00440
45 ...	.00663	.00554	.00676	.00584
50 ...	.00873	.00780	.00954	.00816
55 ...	.01221	.01134	.01301	.01174
60 ...	.01738	.01723	.01917	.01770
65 ...	.02557	.02684	.02957	.02755
70 ...	.04063	.04298	.04718	.04451
75 ...	.06852	.06917	.07768	.07414
80 ...	.11381	.11167	.12136	.11858

It will be observed that at all ages from 25 to 60 the lightest rates are those for married women, and that at the higher ages the differences between the rates of single and married women are neither consistent nor significant.

In previous investigations the mortality of widows has generally been found to be heavier than that of either single or married women. The same feature is again apparent, and over a large section of the table the inferiority of the vitality of widows compared with that of the other two classes is very marked.

In an earlier paragraph the mortality experience exhibited by the English Life Table No. 10 was compared with that exhibited by the English Life Table No. 9. It was shown that during the ten years' interval between the periods 1930-32 and 1920-22, to which these tables respectively relate, there was an improvement in the vitality of females at all except the highest ages. The following table affords an indication of the extent to which each of the three classes, single women, married women and widows has shared in this improvement. For each class there are shown the ratios of the rates of mortality at selected ages in the later period 1930-32 to the corresponding rates in the earlier period 1920-22.

TABLE H.

Ratio of Rates of Mortality,  $q_x$ , in 1930-32 to corresponding rates in 1920-22.

Age $x$ .	Spinsters.	Married Women.	Widows.	All Females.
20 ...	.88	.86	—	.88
25 ...	.90	.80	1.06	.85
30 ...	.90	.78	1.09	.81
35 ...	.86	.79	.95	.81
40 ...	.88	.81	.83	.83
45 ...	.91	.87	.82	.87
50 ...	.87	.90	.89	.89
55 ...	.89	.91	.85	.89
60 ...	.95	.96	.89	.93
65 ...	.90	.94	.92	.92
70 ...	.94	.97	.96	.96
75 ...	.97	.99	.97	.98
80 ...	1.04	1.05	1.00	1.01

At ages under 45 the improvement in the vitality of married women has been much greater than in the case of single women.

At ages from about 45 to 75 all three classes, spinsters, married women and widows have shared almost equally in the improved vitality which, however, has tended to decrease as the age increased. The slightly less favourable experience at the more advanced ages has also been common to all three classes.

In the investigations based on the 1911 and 1921 censuses the rates for married women exceeded those for spinsters until age 44 in the 1911 tables and until age 37 in the 1921 tables. The heavier mortality of married women apparently persisted in the past throughout the childbearing period, or, as in the 1921 experience, during the greater part of it. The present investigation, however, indicates a material change in this respect. It is only up to age 24 that the mortality rates of married women are now found to be heavier than those of the unmarried.

In order that the changes which have occurred during the last twenty years may be clearly seen, the following table (Table J) has been prepared showing the rates of mortality of single and married women at selected ages according to the 1911, 1921 and 1931 census investigations, together with the ratio of the married to the corresponding single women's rates.

TABLE J.

Comparison of Rates of Mortality of Single and Married Women.

Age $x$ .	Rate of mortality, $q_x$ .						Ratio of mortality Married to Single.		
	1911.		1921.		1931.		1911.	1921.	1931.
	Single.	Married.	Single.	Married.	Single.	Married.			
20 ...	.00278	.00375*	.00297	.00365	.00262	.00315	1.35	1.23	1.20
23 ...	.00293	.00375*	.00317	.00365	.00284	.00295	1.28	1.15	1.04
25 ...	.00306	.00376	.00333	.00368	.00301	.00294	1.23	1.11	.98
28 ...	.00351	.00397	.00360	.00381	.00326	.00300	1.13	1.06	.92
31 ...	.00414	.00435	.00393	.00405	.00353	.00313	1.05	1.03	.89
34 ...	.00466	.00503	.00431	.00439	.00377	.00341	1.08	1.02	.90
37 ...	.00527	.00583	.00478	.00477	.00411	.00384	1.11	1.00	.93
40 ...	.00602	.00667	.00548	.00523	.00484	.00426	1.11	.95	.88
43 ...	.00735	.00758	.00650	.00578	.00584	.00492	1.03	.89	.84
45 ...	.00850	.00825	.00732	.00637	.00663	.00554	.97	.87	.84
50 ...	.01139	.01083	.01001	.00870	.00873	.00780	.95	.87	.89
55 ...	.01509	.01549	.01375	.01248	.01221	.01134	1.03	.91	.93
60 ...	.02158	.02162	.01830	.01804	.01738	.01723	1.00	.99	.99
65 ...	.03140	.03172	.02848	.02863	.02557	.02684	1.01	1.01	1.05
70 ...	.04746	.04839	.04301	.04415	.04063	.04298	1.02	1.03	1.06
75 ...	.07394	.07442	.07034	.06977	.06852	.06917	1.01	.99	1.01
80 ...	.11751	.11615	.10957	.10650	.11381	.11167	.99	.97	.98

\* These values are estimates only as the published tables did not include rates of mortality at these ages.

The most striking feature of this table is the fact that at all ages up to 55 the ratios of the mortality rates of married women to those of single women show a decrease in 1921 from 1911 and up to age 45 a further decrease in 1931 from 1921. This increasing superiority in the vitality of married women affords a good example of the necessity for investigating the underlying factors of statistical phenomena. In recent years there has been a marked reduction in the ratio of the number of births to the number of married women of childbearing age. It follows that though the maternal mortality rate, which is the ratio of the deaths associated with childbirth to the number of births, has remained practically unaltered, the actual number of deaths associated with childbirth has decreased. Apart therefore from variations in the numbers of deaths due to other causes, the reduction in the numbers of maternal deaths associated with childbirth tends to diminish the overall rate of mortality among married women generally. Investigation shows that if the number of births per married woman had remained at the higher figures of 1920-22 the mortality rates of married women up to age 45 would have been increased on the average by about 5½ per cent. and would have been above those of spinsters up to age 27, thereafter falling below the spinster rates. In my last report it was shown that the excess in the married women's mortality rates extended to age 37. After full allowance has been made for the disturbing factor here analysed it is evident that the rate of mortality among married women becomes the lower from a much earlier age than was formerly the case.

## IV.—SECTIONAL LIFE TABLES.

In my previous report I examined the mortality experience of sections of the country with reference to (a) geographical situation, and (b) density of population. The considerations which justified this degree of research are fully set out on page 12 of that report, and may conveniently be repeated. They are as follows:—

“ This form of classification raises a wide question. The rate of mortality is evidently influenced by many factors, and general observation has led to the conviction that there are, at any rate, three elements of variation, the concurrent effects of which should, if possible, be surveyed—namely, geographical distribution, density of population, and occupation. In previous investigations the latter two elements had been brought under review, but had been the subjects of wholly independent inquiries, no attempt having been made, presumably because the material available was not in the requisite form, to trace the inter-relation of the two. This inter-relation is a point of potential importance, as may be seen from consideration of abstract cases. If it be assumed, for instance, that a certain occupation involves a heavy rate of mortality and that the great majority of persons engaged in that occupation are resident in urban localities, an excess in the rate of mortality in the occupational group in question may be partly due to density of population and only partly to the occupational influences to which, on the results of an investigation directed solely to the operation of this element, it might be wholly attributed. Difficulties of this kind permeate all investigations with reference to particular elements of variability taken in isolation from other elements with which they may be concurrently operating, and it was thought that on the present occasion an endeavour should be made to carry the process of analysis further than had previously been attempted. Taking the three elements named above as those in respect of which statistical research of the type discussed in this report is possible, the ideal arrangement may be suggested as one under which the population would be divided into sections on a geographical basis, the numbers at each age in each section being then divided into classes with reference to density of population, these classes being in turn divided with regard to the personal occupations of the component individuals. So far as the living population is concerned such a distribution, elaborate as it would prove to be, would present no great difficulties. The position is otherwise with regard to the deaths, and a scheme of investigation on these ambitious lines is not at present practicable.”

On the present occasion there were available in quinary age groups for each of the administrative counties the census population, and the deaths in each of the three years 1930, 1931 and 1932, and for each county the statistics were further subdivided into those relating to County Boroughs, Municipal Boroughs and Urban Districts, and Rural Districts. A suitable grouping of contiguous counties provided the geographical basis of the classification, and the separate grouping of (1) the County Boroughs, (2) Urban Districts (including the Municipal Boroughs), and (3) Rural Districts, in each area enabled the effect of density of population to be traced for each geographical area, so far as that classification may be held to serve this purpose.

The grouping of the counties adopted in my previous report, which was based upon a personal experience extending over many years of professional practice, gave ten geographical divisions, one of which was Greater London, and of the others four were in the North of England, while the Central, Southern and Eastern Counties each provided one division; Wales was divided into two parts, South Wales and North and West Wales.

The mortality experience of each of these areas revealed distinctive features, and in the ordinary course I should have employed again the same basis of classification, but in the interval since the publication of the 1921 census report the Registrar-General has adopted for the purposes of the comparison of the vital statistics of sections of the country a subdivision of the whole of England and Wales on a more extensive scale than that formerly employed by him. The first occasion on which the revised scheme of subdivision was published was in the Statistical Review for 1931. The Regional Summary, as the subdivision of the country was therein described, was found to correspond in its more important features with the scheme of classification employed in my 1921 Life Tables Report. The

divisions of the Northern Counties are identical, as is also the subdivision of Wales. The Central Counties of my 1921 report have been subdivided into two Regions, Midland I and Midland II, and several counties have been transferred to a new South East Region. The Eastern Counties have become the new East Region with the exception that Essex has been transferred to the South East, and the Southern Counties have been included in one or other of the two new Regions South East and South West. There are thus in the Registrar-General's regional classification eleven areas, covering the whole country, with, in addition, separate statistics for Greater London, instead of the ten areas, of which Greater London was one, in the scheme employed in my 1921 report.

I do not anticipate that in regard to major features of mortality experience the two methods of geographical partition will show differences of any importance, and having regard to the fact that the areas adopted by the Registrar-General as described above are continuously employed for the purpose of his Annual Review I have deemed it advisable to base the present sectional investigation upon them. This course had the further practical advantage that the Registrar-General was able to furnish in a convenient form as soon as they had been compiled all the statistics required for my investigation of the mortality experience of the several subdivisions. The laborious process of having to extract and aggregate the figures given in the various census county volumes and the detailed tables in the Registrar-General's Annual Statistical Reviews was thus avoided.

Before passing from this point it should be stated that later in this report the subject is more fully discussed in regard to the former Eastern Counties (Rural Districts) Life Table and its successor.

A list of the counties in each of the eleven Geographical Areas into which the whole of England and Wales has been divided is shown below.\*

The comparison of the mortality experience of the several sections has been effected by means of the ratios of the numbers of deaths actually recorded in the various age groups of the sectional population to the corresponding numbers of deaths expected according to the national table. The sectional data consisted of the numbers in quinary age groups up to age 94, with one final group for ages 95 and over, in the case of the population, and up to age 84 with one final group for ages 85 and over in the case of the deaths. The expected deaths consequently could not be computed at individual ages, and the procedure adopted was to apply to the population in each age group a group rate of mortality based on the population and the graduated rates of mortality at individual ages in the national table. This procedure involves the assumption that the population of the sections is distributed over the ages in each age group in the same manner as is the total population of the country. It is improbable that any significant error can have been introduced by this assumption in any of the quinary age groups. In the final group, ages 85 and over, the deaths are available in total only. The ratios for this group should therefore not be regarded as giving more than a broad indication of the relative mortality experiences.

The complete results of this investigation are given in Appendix III.

\* The constitution of the geographical regions is as follows:—

<i>South East.</i>	<i>North I.</i>	<i>Midland I.</i>	<i>East.</i>	<i>Wales I.</i>
Bedfordshire.	Durham.	Gloucestershire.	Cambridgeshire.	Brecknockshire.
Berkshire.	Northumberland.	Herefordshire.	Ely, Isle of.	Carmarthenshire.
Buckinghamshire.		Shropshire.	Huntingdonshire.	Glamorganshire.
Essex.	<i>North II.</i>	Staffordshire.	Lincolnshire—	Monmouthshire.
Hertfordshire.	Cumberland.	Warwickshire.	Parts of Holland.	
Kent.	Westmorland.	Worcestershire.	„ Kesteven.	<i>Wales II.</i>
London.	Yorkshire,		„ Lindsey.	Anglesey.
Middlesex.	East Riding.	<i>Midland II.</i>	Norfolk.	Caernarvonshire.
Oxfordshire.	North Riding.	Derbyshire.	Rutlandshire.	Cardiganshire.
Southampton.		Leicestershire.	Suffolk, East.	Denbighshire.
Surrey.	<i>North III.</i>	Northamptonshire.	„ West.	Flintshire.
Sussex, East.	Yorkshire,	Nottinghamshire.		Merionethshire.
„ West.	West Riding.	Peterborough,	<i>South West.</i>	Montgomeryshire.
Wight, Isle of.	York C.B.	Soke of.	Cornwall.	Pembrokeshire.
			Devonshire.	Radnorshire.
	<i>North IV.</i>		Dorsetshire.	
	Cheshire.		Somersetshire.	
	Lancashire.		Wiltshire.	

The South-East Region includes parts which make up together “Greater London,” the experience of which is also separately investigated.

For the detailed constitution of Greater London, see pp. 63-65 of the Preliminary Report on the Census of England and Wales, 1931.

A broad view of the results is afforded by the following summary Table K:—

TABLE K.

*Mortality Experience according to Geographical Distribution and Density of Population.*

(1931 Census and 1930-31-32 Deaths.)

C.B. = County Boroughs; U. = Other Urban Areas; R. = Rural Districts.

(The figures given relate to all ages from 5 upwards.)

Region.	MALES.				FEMALES.			
	Popula- tion, 1931.	Number of Deaths, 1930-32.		Ratio of Actual to Expected Deaths.	Popula- tion, 1931.	Number of Deaths, 1930-32.		Ratio of Actual to Expected Deaths.
		"Expected" by the Eng- lish Life Table No. 10.	Actual.			"Expected" by the Eng- lish Life Table No. 10.	Actual.	
<b>North 1—</b>								
C.B. ...	400,408	12,695	15,166	1.195	428,540	11,520	13,882	1.205
U. ...	376,901	11,903	12,635	1.061	373,886	9,687	11,331	1.170
R. ...	234,802	7,762	7,494	.965	227,731	5,966	6,977	1.169
Total ...	1,012,111	32,360	35,295	1.091	1,030,157	27,173	32,190	1.185
<b>North 2—</b>								
C.B. ...	225,578	7,131	8,232	1.154	237,501	6,508	7,604	1.168
U. ...	172,686	6,699	6,800	1.015	194,325	6,682	6,942	1.039
R. ...	173,210	7,251	6,171	.851	171,012	6,144	6,032	.982
Total ...	571,474	21,081	21,203	1.006	602,838	19,334	20,578	1.064
<b>North 3—</b>								
C.B. ...	837,698	28,129	32,392	1.152	933,556	27,543	31,943	1.127
U. ...	485,949	16,417	17,667	1.076	524,525	15,426	17,816	1.155
R. ...	203,569	6,582	6,064	.921	196,848	5,431	5,828	1.073
Total ...	1,527,216	51,128	56,123	1.098	1,654,929	48,400	54,687	1.130
<b>North 4—</b>								
C.B. ...	1,580,905	50,265	62,198	1.237	1,791,761	50,984	61,551	1.207
U. ...	878,530	29,978	32,745	1.092	987,742	29,671	33,819	1.140
R. ...	211,032	7,862	6,933	.882	226,820	7,176	7,067	.985
Total ...	2,670,467	88,105	101,876	1.156	3,006,323	87,831	102,437	1.166
<b>Midland 1—</b>								
C.B. ...	1,076,282	34,643	37,587	1.085	1,185,836	34,431	35,554	1.033
U. ...	502,781	17,792	17,969	1.010	548,386	17,919	17,946	1.002
R. ...	422,358	17,132	15,128	.883	432,827	15,799	14,748	.933
Total ...	2,001,421	69,567	70,684	1.016	2,167,049	68,149	68,248	1.001
<b>Midland 2—</b>								
C.B. ...	321,672	11,587	11,925	1.029	366,814	11,589	11,995	1.035
U. ...	384,338	13,298	12,612	.948	404,987	11,803	12,026	1.019
R. ...	354,783	13,056	11,277	.864	358,275	11,394	10,848	.952
Total ...	1,060,793	37,941	35,814	.944	1,130,076	34,786	34,869	1.002
<b>East—</b>								
C.B. ...	187,717	7,157	6,728	.940	208,836	7,181	7,054	.982
U. ...	239,624	9,732	8,505	.874	262,597	9,897	8,948	.904
R. ...	395,482	18,397	14,324	.779	388,490	16,064	14,128	.879
Total ...	822,823	35,286	29,557	.838	859,923	33,142	30,130	.909

Region.	MALES.				FEMALES.			
	Popula- tion, 1931.	Number of Deaths, 1930-32.		Ratio of Actual to Expected Deaths.	Popula- tion, 1931.	Number of Deaths, 1930-32.		Ratio of Actual to Expected Deaths.
		"Expected" by the Eng- lish Life Table No.10	Actual.			"Expected" by the Eng- lish Life Table No.10	Actual.	
<b>South East—</b>								
London Ad- ministrative County.	1,894,367	66,155	71,157	1.076	2,205,485	71,517	69,509	.972
C.B. (exclud- ing London Ad. Co.).	772,941	28,969	27,874	.962	903,685	32,606	29,567	.907
U. ...	2,304,896	82,437	72,786	.883	2,625,485	89,932	76,520	.851
R. ...	884,079	38,167	30,594	.802	938,065	35,833	29,767	.831
Total ...	5,856,283	215,728	202,411	.938	6,672,720	229,888	205,363	.893
<b>South West—</b>								
C.B. ...	150,307	5,757	5,727	.995	169,003	6,627	6,376	.962
U. ...	352,433	15,618	14,089	.902	423,381	17,941	15,817	.882
R. ...	406,666	18,326	15,621	.852	424,946	17,503	15,713	.898
Total ...	909,406	39,701	35,437	.893	1,017,330	42,071	37,906	.901
<b>Wales 1—</b>								
C.B. ...	246,731	8,186	9,200	1.124	258,775	7,235	8,126	1.123
U. ...	456,369	14,120	15,624	1.107	431,599	10,894	13,428	1.233
R. ...	177,442	6,026	6,138	1.019	173,505	4,951	5,625	1.136
Total ...	880,542	28,332	30,962	1.093	863,879	23,080	27,179	1.178
<b>Wales 2—</b>								
C.B. ...	—	—	—	—	—	—	—	—
U. ...	122,737	5,027	5,119	1.018	144,744	5,294	5,576	1.053
R. ...	187,523	7,888	7,671	.972	189,316	6,992	7,755	1.109
Total ...	310,260	12,915	12,790	.990	334,060	12,286	13,331	1.085
<b>England and Wales.</b>								
London Ad- ministrative County.	1,894,367	66,155	71,157	1.076	2,205,485	71,517	69,509	.972
Total C.B. (ex- cluding Lon- don Ad. Co.).	5,800,239	194,519	217,029	1.116	6,484,307	196,224	212,752	1.084
Total U. ...	6,277,244	223,021	216,551	.971	6,921,657	225,146	220,169	.978
Total R. ...	3,650,946	148,449	127,415	.858	3,727,835	133,253	124,488	.934
Grand Total England and Wales.	17,622,796	632,144	632,152	1.000	19,339,284	626,140	626,918	1.001
<b>Greater Lon- don.</b>	3,541,597	120,406	119,987	.997	4,085,585	130,069	120,287	.925

There are 34 separate divisions (including Greater London which, although forming part of the South East Region, it has been thought advisable to investigate also as a separate unit), and as males and females have been considered separately throughout the investigation, the table furnishes the material for a comparison of the experience of no fewer than 68 sections of the population.

A comprehensive view of the results shown in Table K is provided by the following table:—

TABLE L.

*Ratios of Actual Deaths in the several Geographical Regions and Sub-divisions to the Expected Deaths as computed by English Life Tables No. 10 (ages 5 and upwards).*

Geographical Division.	Males.				Females.			
	County Boroughs.	Urban Districts.	Rural Districts.	Whole Division.	County Boroughs.	Urban Districts.	Rural Districts.	Whole Division.
North IV. (Cheshire and Lancashire).	1.24	1.09	.88	1.16	1.21	1.14	.98	1.17
North I. (Northumberland and Durham).	1.19	1.06	.97	1.09	1.21	1.17	1.17	1.18
Wales I. (South Wales)	1.12	1.11	1.02	1.09	1.12	1.23	1.14	1.18
North III. (Yorks. West Riding and York C.B.).	1.15	1.08	.92	1.10	1.13	1.15	1.07	1.13
North II. (Yorks. East Riding & North Riding, etc.).	1.15	1.02	.85	1.01	1.17	1.04	.98	1.06
Wales II. (North and West Wales).	—	1.02	.97	.99	—	1.05	1.11	1.09
Midland I. (Gloucestershire, Herefordshire, etc.).	1.08	1.01	.88	1.02	1.03	1.00	.93	1.00
Midland II. (Derbyshire, Leicestershire, etc.).	1.03	.95	.86	.94	1.04	1.02	.95	1.00
South East (including London Admin. County).	1.04	.88	.80	.94	.95	.85	.83	.89
South West ... ..	.99	.90	.85	.89	.96	.88	.90	.90
East ... ..	.94	.87	.78	.84	.98	.90	.88	.91
Greater London ... ..	—	—	—	1.00	—	—	—	.92
England and Wales ... ..	1.11	.97	.86	1.00	1.05	.98	.93	1.00

The several Regions have been ranged as nearly as possible in the order of magnitude of the ratios of actual deaths to expected deaths according to the new tables (English Life No. 10) for the whole country.

In the 1921 investigation the ratios shown in the corresponding table were not taken directly from the summary of the sectional tables but were re-worked with the age distribution of the population of the whole country taken as a standard. It was found that these standardised ratios seldom differed from the ratios in the summary table (obtained directly from the population of and the deaths in each subdivision), and that where there was a difference it was very small. It has, therefore, been considered unnecessary on this occasion to calculate standardised ratios, and the ratios in Table L have accordingly been taken direct from Table K.

It should be understood that each figure in the table is the index of the relation between the mortality of the whole population in the section of the community to which it relates and that of England and Wales as a whole. The corresponding indices for quinary age groups are shown in Appendix III.

Looked at vertically the columns show the deviations from the general average with reference to geographical situation. The trend of the figures indicates a high degree of consistency in all the columns. Generally it may be stated that the mortality among both sexes is heaviest in the north of the country and tends to become lighter as the locality approaches the south. Examined horizontally the columns give what may reasonably be regarded as an index of the effect of density of population on death rates, namely, the relative mortality experience of County Boroughs, Urban Districts, and Rural Districts, in the several geographical areas. It will be observed here that the differences between the ratios of the County Boroughs, which generally suffer the highest mortality, and those of the Rural Districts, which usually experience the lowest, are in the case of

females considerably less than in the case of males. This curious feature of the experience is due to the relatively more favourable mortality which, in the Rural Districts, the males experience as compared with the females. It will be noted that in each division the ratios for the County Boroughs do not differ materially as between males and females, but in each of the divisions the ratio for the Rural Districts is lower for males than for females. Reference to Appendix III will show that this phenomenon is not confined to any particular group of ages but is practically universal between ages 15 and 85 and sometimes is found outside these limits. The following table (M) has been prepared to enable the comparison to be made conveniently in the case of two specimen areas (a) North I Region (Northumberland and Durham), where the rates of mortality are generally heavy, and (b) East Region, where the mortality is markedly lighter than the average.

In so far as the influence of the density of population upon mortality experience is exhibited by the comparative figures relating to County Boroughs and Rural Districts in the same area, its effect is seen to be very substantial at all ages.

The experience of males and females however is found to differ in certain aspects to which attention may be directed. In the East Region, where the mortality of the area taken as a whole is much lighter than the general average, it will be observed that in the County Boroughs the rates of mortality for females are usually very close to those for England and Wales, while those for males are on a rather lower level in relation to the national tables. The figures relating to the Rural Districts reveal a more pronounced difference, in the same direction, between the experience of males and that of females. Both sexes are subject to a death rate below the average, except in the case of females between the ages of 25 and 34, but whilst the experience of men is shown to be much more favourable than that of the whole country, the experience of women shows no correspondingly large deviation from the general average.

In the North I Region also there are certain respects in which the experience of males differs from that of females. In the County Boroughs the death rate of both sexes is above the general average at all ages, but the excess is relatively greater amongst men than it is amongst women between the ages of 20 and 55. At the more advanced ages the tendency is in the other direction, the excess over the general standard being relatively the greater in the case of women. In the Rural Districts of this area the mortality of women is also higher than the general average except in one age group, and at the adult ages is not greatly different from that of women in the County Boroughs. On the other hand, the mortality rates of men in these Rural Districts fall below the general average of the country for a long span of ages from 34 upwards, and at all ages are very much below the corresponding rates of the County Boroughs in the area.

It does not fall within the scope of this report to pursue the study of the actions and interactions of the various forces which evidently operate, in combination with geographical situation and density of population, to influence the mortality experience of a community. The comparative mortality figures here given suggest, however, the possibility that in this aspect of the subject there is presented a wide field for investigation in matters affecting the public health. The peculiarities to which attention has been drawn were to a large extent observable in the last decennial investigation and cannot therefore be regarded as merely fortuitous.

TABLE M.

Comparison of Mortality Experience of Males with that of Females in the County Boroughs and Rural Districts respectively of the North I (Northumberland and Durham) Region and the East Region.

Ratios of Actual Deaths to Expected Deaths as computed by English Life Tables No. 10.

North I (Northumberland and Durham) Region.

Age Group.	MALES.			FEMALES.		
	County Boroughs.	Rural Districts.	County Boroughs minus Rural Districts.	County Boroughs.	Rural Districts.	County Boroughs minus Rural Districts.
5-9 ...	1.408	1.152	.256	1.233	1.069	.164
10-14 ...	1.417	1.018	.399	1.622	1.411	.211
15-19 ...	1.426	1.286	.140	1.537	1.310	.227
20-24 ...	1.450	1.138	.312	1.391	1.311	.080
25-29 ...	1.421	1.184	.237	1.388	1.094	.294
30-34 ...	1.384	1.172	.212	1.257	1.232	.025
35-39 ...	1.314	.987	.327	1.262	1.262	—
40-44 ...	1.338	.911	.427	1.290	1.193	.097
45-49 ...	1.236	.834	.402	1.169	.987	.182
50-54 ...	1.177	.788	.389	1.136	1.081	.055
55-59 ...	1.068	.839	.229	1.124	1.180	-.056
60-64 ...	1.117	.905	.212	1.226	1.160	.066
65-69 ...	1.164	.946	.218	1.165	1.130	.035
70-74 ...	1.209	.933	.276	1.180	1.159	.021
75-79 ...	1.065	1.000	.065	1.159	1.210	-.051
80-84 ...	1.148	1.143	.005	1.163	1.167	-.004
85 and over ...	1.018	.996	.022	1.081	1.256	-.175

East Region.

Age Group.	MALES.			FEMALES.		
	County Boroughs.	Rural Districts.	County Boroughs minus Rural Districts.	County Boroughs.	Rural Districts.	County Boroughs minus Rural Districts.
5-9 ...	1.098	.749	.349	1.119	.701	.418
10-14 ...	.897	.842	.055	.853	.748	.105
15-19 ...	.911	.823	.088	.874	.995	-.121
20-24 ...	1.023	.913	.110	1.000	.936	.064
25-29 ...	1.018	.830	.188	1.074	1.029	.045
30-34 ...	.901	.768	.133	.898	1.003	-.105
35-39 ...	.954	.719	.235	.876	.904	-.028
40-44 ...	.942	.692	.250	1.000	.905	.095
45-49 ...	.962	.669	.293	.983	.892	.091
50-54 ...	.935	.630	.305	.984	.923	.061
55-59 ...	.914	.663	.251	.979	.829	.150
60-64 ...	.899	.704	.195	.972	.844	.128
65-69 ...	.914	.743	.171	.963	.820	.143
70-74 ...	.881	.763	.118	.936	.812	.124
75-79 ...	.983	.804	.179	1.003	.892	.111
80-84 ...	1.010	.878	.132	1.052	.907	.145
85 and over ...	.965	1.047	-.082	1.003	.953	.050

RATES OF MORTALITY IN DISTRICTS WITH HEAVIEST AND LIGHTEST MORTALITY.

It has been stated above that the experience of 68 separate sections has been examined. The labour involved in preparing a complete life table or even a graduated series of rates of mortality for each of these sections would clearly be prohibitive, while such an extensive variety of life tables would in any case be superfluous.

The difference between the mortality experience of the sections showing the heaviest and the lightest death rates respectively is, however, so striking that it is believed that tables showing the rates of mortality at individual ages in sections whose experience as a whole is farthest removed from the average will be found of interest and may be of practical value.

In my previous investigation the section which showed the heaviest mortality was Northumberland and Durham County Boroughs, while the Rural Districts Section of the Eastern Counties exhibited the lightest mortality. From Table L as well as from the extended tables given in Appendix III it will be seen that the present investigation shows that as regards males the heaviest mortality is found in the County Boroughs of North IV Region (Cheshire and Lancashire). The North I Region (Northumberland and Durham) County Boroughs are again proved to be subject to very heavy mortality, and up to age 45 their experience is much less favourable than that of any other section. It is at the higher ages that the death rates in the Cheshire and Lancashire County Boroughs exceed those in Northumberland and Durham. The same features are present also in the case of females, the excess mortality at the lower ages in the Northumberland and Durham County Boroughs being again very marked. If the present investigation stood alone, there would, therefore, be some justification for selecting the Northumberland and Durham County Boroughs as typical of the heaviest mortality, while the fact that this section was selected in the previous investigation and its constitution has not been altered in the meantime greatly strengthens the case for again taking it for this particular purpose in preference to any other section. This has accordingly been done.

The desirability of preserving continuity in the choice of typical sections suggests also the selection of the Rural Districts of the East Region as the section representative of the lightest mortality. In the case of males this section shows the lowest death rate for all ages together. Though at the younger ages two other sections show somewhat lower rates, the mortality particularly at the ages of middle life is much lower in this section than in any other. In the case of females the Rural and Urban Districts of the South-East Region show the lightest mortality, but the next lowest death rate is that of the East Region Rural Districts. For the sake of continuity, therefore, it has been decided to resort to the East Region Rural Districts as indicative of the most favourable mortality experience for both sexes.

It should be noted, however, that the districts now included in the East Region Rural Districts differ in an important respect from those of the Eastern Counties Rural Districts, which were the subject of the 1921 investigation. The more recent classification places the county of Essex in the South-East Region instead of in the East Region, and in order that the two investigations may be strictly comparable the experience of the Rural Districts of Essex should be excluded from the former Eastern Counties investigation. The Eastern Counties Rural Districts table has been extensively used by Assurance Companies and in other connections, and it has consequently seemed desirable to test the effect which the exclusion of the Essex Rural Districts would have had on the mortality experience in 1920-22 of the Eastern Counties Rural Districts. The results of this investigation are summarised in the following table:—



TABLE N.

Comparison of Group Death-rates in 1920-22 in East Region Rural Districts (1930-32 classification) with those in Eastern Counties Rural Districts (1920-22 classification).

Age Group.	MALES.			FEMALES.		
	Group Death Rate, 1920-22.		Ratio	Group Death Rate, 1920-22.		Ratio
	Eastern Counties.	Eastern Counties less Essex (i.e., East Region).		Eastern Counties.	Eastern Counties less Essex (i.e., East Region).	
5-9 ...	·00187	·00180	·96	·00194	·00192	·99
10-14 ...	·00152	·00153	1·01	·00151	·00161	1·07
15-19 ...	·00216	·00219	1·01	·00251	·00280	1·12
20-24 ...	·00308	·00325	1·06	·00374	·00396	1·06
25-29 ...	·00392	·00413	1·05	·00353	·00369	1·05
30-34 ...	·00360	·00364	1·01	·00372	·00394	1·06
35-39 ...	·00419	·00423	1·01	·00382	·00400	1·05
40-44 ...	·00487	·00478	·98	·00483	·00509	1·05
45-49 ...	·00616	·00599	·97	·00611	·00641	1·05
50-54 ...	·00842	·00850	1·01	·00839	·00848	1·01
55-59 ...	·01342	·01303	·97	·01099	·01088	·99
60-64 ...	·01973	·01936	·98	·01768	·01784	1·01
65-69 ...	·03397	·03308	·97	·02859	·02868	1·00
70-74 ...	·05339	·05321	1·00	·04523	·04466	·99
75-79 ...	·09560	·09534	1·00	·07845	·07891	1·01
80-84 ...	·15407	·15515	1·01	·13326	·13256	·99
85 and over ...	·24043	·24272	1·01	·23408	·23714	1·01

It will be observed that the effect of excluding Essex from the previous experience would have been immaterial in regard to males and to females over the age of 50, and that at the younger ages the female mortality would not have been so much increased as to deprive it of its characteristic features. The new East Region (Rural Districts) Tables may thus be regarded as the natural successors of the former Eastern Counties (Rural Districts) Tables.

In the preparation of the tables of graduated rates of mortality for the two sections taken as extremes, namely, the North I Region (Northumberland and Durham) County Boroughs and the East Region Rural Districts, the methods adopted for the national tables were followed so far as the limitations of the data permitted. Except for the first five ages, the deaths were available only in quinary age groups up to age 85, and in one final age group 85 and over. The population was obtainable in quinary age groups, and the numbers at individual ages were available up to age 20. King's method was applied to the main body of the tables, the rates at infantile ages were derived from the records of births and deaths in calendar years, and at ages up to 20 a graduated series of rates was obtained by comparison with the national rates and were such that the expected deaths computed by them for each age group agreed very closely with the numbers actually recorded. At the advanced ages it would have been possible to devise expedients for obtaining a series of rates that could have reasonably been propounded as indicative of the mortality experience, but in view of the insufficiency of the sectional data at these ages it has been considered preferable not to publish rates for ages above 84. The rates of mortality for each sex in both divisions as computed in the manner above described are set out in Table 3 of Appendix IV.

These sectional tables present several features that invite comment. In the Northumberland and Durham County Boroughs the rates of mortality for males during the years of adolescence are lower than those for females. Thereafter the males become subject to very heavy mortality and at age 23 there is a maximum point followed by successive decreases for 4 years until at age 27 the upward

trend is resumed. In the case of females there is a similar instance of rates decreasing with age, but this occurs rather later, a maximum value being shown at ages 27 and 28, where the rates are identical and a minimum at age 31.

The East Region Rural Districts rates for males rise to a maximum point at age 23, and thereafter decrease till ages 29 and 30, where the rates are identical. In the females table there are no decreases at the adult ages, but the progression in the rates is very slow from age to age from about 28 to 36. It will be recalled that somewhat similar features were observed in the national tables. An indication of the marked differences between the mortality experience of the districts with the heaviest and lightest death rates respectively, and of the country as a whole, is afforded by the following summary table showing (a) the rates of mortality,  $q_x$ , at selected ages, and (b) the probability of surviving ten years,  ${}_{10}p_x$ , from the attainment of selected ages.

TABLE O.

Rates of mortality,  $q_x$ , and probability of surviving 10 years,  ${}_{10}p_x$ , in England and Wales, and in sections with Heaviest and Lightest Mortality Experience.

Age $x$ .	MALES.			FEMALES.		
	English Life Table, No. 10.	North I (Northumberland and Durham) County Boroughs.	East Region Rural Districts.	English Life Table, No. 10.	North I (Northumberland and Durham) County Boroughs.	East Region Rural Districts.
	Rate of Mortality, $q_x$ .					
0 ...	·07186	·09556	·05749	·05455	·07322	·04456
10 ...	·00146	·00206	·00124	·00134	·00210	·00097
20 ...	·00316	·00457	·00283	·00268	·00383	·00255
30 ...	·00340	·00480	·00270	·00319	·00415	·00329
40 ...	·00562	·00756	·00395	·00440	·00572	·00397
50 ...	·01128	·01360	·00718	·00816	·00932	·00757
60 ...	·02415	·02640	·01659	·01770	·02132	·01486
70 ...	·06035	·07318	·04562	·04451	·05233	·03583
80 ...	·14500	·15732	·12210	·11858	·13589	·10844
	Probability of surviving 10 years, ${}_{10}p_x$ .					
0 ...	·89023	·84505	·91971	·91082	·87535	·93449
10 ...	·98003	·97188	·98345	·98135	·97111	·98316
20 ...	·96757	·95362	·97155	·97101	·96007	·97141
30 ...	·95876	·94484	·96933	·96426	·95508	·96606
40 ...	·92412	·90407	·94799	·94346	·93149	·94900
50 ...	·85060	·83522	·90032	·88913	·87531	·90328
60 ...	·68156	·64264	·75721	·75699	·71809	·79491
70 ...	·37358	·33123	·46155	·46795	·41271	·52099

An inspection of the rates of mortality shows very striking differences between the sections selected as typical of the heaviest and lightest mortality experience. At birth the respective values of  $q_x$  are ·09556 and ·05749 in the case of males and ·07322 and ·04456 in the case of females. This means that on the basis of the 1930-32 experience out of every 1,000 boys born, in the County Boroughs of Northumberland and Durham about 96 fail to survive for one year, but in the East Region Rural Districts the corresponding number of deaths is only 57. Out of every 1,000 female births the number of deaths in the first year of life is about 73 in the Northumberland and Durham County Boroughs and 45 in the East Region Rural Districts.\* During adolescence the differences are equally remarkable, and continue to be substantial throughout the adult ages, the males table

\* According to the national tables, which indicate the experience of England and Wales regarded as a whole, the numbers who fail to survive the first year of life are 72 per 1,000 births of male infants and 55 per 1,000 births of female infants.

generally showing a greater range of divergence than the females table. Even at age 70 the rate in the Northumberland and Durham County Boroughs is in excess of that in the East Region Rural Districts by as much as 60 per cent. in the case of males and 46 per cent. in the case of females.

The values of  $_{10}p_x$  show the probability of surviving ten years, and if each of the values be deducted from unity the remainder will give the probability of dying within ten years. Thus at age 20 the probability of death before attaining age 30 is for males  $\cdot 04638$  in the Northumberland and Durham County Boroughs and  $\cdot 02845$  in the East Region Rural Districts, the corresponding figures for females being  $\cdot 03993$  and  $\cdot 02859$ . Hence the probability at age 20 of dying within ten years is about 63 per cent. greater in the Northumberland and Durham County Boroughs than in the East Region Rural Districts in the case of males and about 40 per cent. greater in the case of females. Taking the national (English Life Table, No. 10) probability as the standard, *i.e.*, at age 20  $\cdot 03243$  for males and  $\cdot 02899$  for females, the probability of death in the ten years among males in the section showing the heaviest mortality is about 43 per cent. greater than in the national experience, while in the case of the section showing the lightest mortality the corresponding probability is about 12 per cent. less than the national figure. In the case of females the like probabilities are respectively 38 per cent. greater and 1 per cent. less than the national probabilities.

At age 60, where the respective probabilities of death within ten years in the two sections are  $\cdot 35736$  and  $\cdot 24279$  in the case of males and  $\cdot 28191$  and  $\cdot 20509$  in the case of females, the excess in the probability of death within ten years for the Northumberland and Durham County Boroughs over that for the East Region Rural Districts is about 47 per cent. for males and about 37 per cent. for females. As compared with the probabilities shown by the national tables, namely  $\cdot 31844$  for males and  $\cdot 24301$  for females, the probability of death in the ten years before attaining age 70 in the Northumberland and Durham County Boroughs is 12 per cent. greater and that in the East Region Rural Districts 24 per cent. less than the national probability in the case of males, and 16 per cent. greater and 16 per cent. less, respectively, in the case of females.

Reference has been made, in commenting on the national tables, to the general improvement in vitality which has taken place at all but the advanced ages. The following comparative figures (Table P) indicate the relation of the recent experience in these sections to that disclosed by the 1921 investigation. It will be seen that in the Northumberland and Durham County Boroughs there has been a substantial improvement at all the ages shown in the table except at age 20 in the case of females. This is a matter of high importance as proving that the death rates in the worst years of the economic depression and in an area ranking among those most severely hit by that depression exhibit no increase. On the contrary the mortality experience in this section is lighter than that disclosed by the previous decennial investigation, and on the analogy of the national experience there is reason to believe that if research were carried back sufficiently far it would be found that in the years 1930-32 the mortality experience of the County Boroughs of Northumberland and Durham was lighter than that of this area in any corresponding period in the present century.

The ratios of the 1930-32 mortality rates of the East Region Rural Districts to the 1920-22 rates of the Eastern Counties Rural Districts present a rather different aspect.\* At age 20 the males show no improvement in vitality but at the same age in the experience of women the improvement is greatest. By the time age 30 is reached, however, the ratio for males is particularly low, and even at age 40 it is still well below unity. It is noteworthy that the mortality experience has continued to improve at these ages, which were shown in the 1921 investigation to be subject to much lighter rates of mortality than the average for the country. In the case of both males and females there has been no improvement in vitality at ages over 50, any change that has occurred being rather towards deterioration.

\* As indicated in Table N the change of constitution of the division does not vitiate the comparability of these tables.

TABLE P.

Ratio of Rates of Mortality,  $q_x$ , for 1930-32 to corresponding Rates for 1920-22 in England and Wales and in sections with Heaviest and Lightest Mortality Experience.

Age x.	MALES.			FEMALES.		
	England and Wales.	North I (Northumberland and Durham) County Boroughs.	East Region Rural Districts.	England and Wales.	North I (Northumberland and Durham) County Boroughs.	East Region Rural Districts.
0 ... ..	$\cdot 80$	$\cdot 83$	$\cdot 82$	$\cdot 79$	$\cdot 81$	$\cdot 85$
10 ... ..	$\cdot 81$	$\cdot 89$	$\cdot 93$	$\cdot 74$	$\cdot 93$	$\cdot 77$
20 ... ..	$\cdot 91$	$\cdot 91$	$1\cdot 04$	$\cdot 88$	$1\cdot 09$	$\cdot 75$
30 ... ..	$\cdot 78$	$\cdot 82$	$\cdot 73$	$\cdot 81$	$\cdot 81$	$\cdot 91$
40 ... ..	$\cdot 82$	$\cdot 80$	$\cdot 87$	$\cdot 83$	$\cdot 78$	$\cdot 91$
50 ... ..	$\cdot 96$	$\cdot 91$	$1\cdot 00$	$\cdot 89$	$\cdot 76$	$1\cdot 03$
60 ... ..	$\cdot 94$	$\cdot 79$	$1\cdot 01$	$\cdot 93$	$\cdot 84$	$1\cdot 04$
70 ... ..	$1\cdot 01$	$\cdot 92$	$1\cdot 06$	$\cdot 96$	$\cdot 84$	$\cdot 98$
80 ... ..	$1\cdot 04$	$\cdot 90$	$\cdot 99$	$1\cdot 01$	$\cdot 95$	$1\cdot 04$

## LIFE TABLES FOR GREATER LONDON.\*

In Appendix IV, Table 4, I give complete life tables for males and females respectively based on the experience of residents in Greater London during the triennium 1930-32. These tables are comparable with the corresponding tables in my previous report.

In order to facilitate comparison of the mortality experience of the Greater London Area with that of the country as a whole, rates of mortality  $q_x$ , and the probability of surviving ten years  $_{10}p_x$  at selected ages are shown in Table Q.

It will be observed that in the case of males the death rates of Greater London are more favourable than those of the national experience up to about age 45, the ages at which the advantage is greatest being the early twenties. After middle life the Greater London rates of mortality among men are generally heavier than those for the whole country, but the difference is usually very small and is never as much as 5 per cent. The death rates for females are at all ages lower than those for England and Wales. The difference is relatively greater at the lower ages than at the higher, and is most marked at the ages just under 30, about five years later than the point at which the males experience is found to be relatively most favourable.

The values of  $_{10}p_x$  for Greater London are higher than those for England and Wales up to age 40 and again at age 70 in the table for males and at all ages in the table for females.

A comparison of the mortality experience in the Greater London Area in the years 1930-32 with that in the years 1920-22 is given for specimen ages in Table R. It will be seen that while the ratios correspond fairly closely with those for all England and Wales, they indicate, speaking generally, a rather greater degree of improvement in the intervening years than do those of the national experience.

\* "Greater London" comprises the area covered by the City of London and the Metropolitan Police Districts.

TABLE Q.

Age $x$ .	Rate of Mortality, $q_x$				Probability of surviving 10 years, $_{10}p_x$			
	Males.		Females.		Males.		Females.	
	English Life Table, No. 10.	Greater London.	English Life Table, No. 10.	Greater London.	English Life Table, No. 10.	Greater London.	English Life Table, No. 10.	Greater London.
0	·07186	·06481	·05455	·04928	·89023	·90005	·91082	·91817
10	·00146	·00130	·00134	·00122	·98003	·98150	·98135	·98374
20	·00316	·00288	·00268	·00235	·96757	·97027	·97101	·97456
30	·00340	·00324	·00319	·00281	·95876	·96115	·96426	·96876
40	·00562	·00531	·00440	·00395	·92412	·92492	·94346	·94804
50	·01128	·01158	·00816	·00762	·85060	·84487	·88013	·89574
60	·02415	·02504	·01770	·01619	·68156	·67503	·75699	·77410
70	·06035	·05980	·04451	·04131	·37358	·37835	·46795	·49571
80	·14500	·14637	·11858	·11130	—	—	—	—

TABLE R.

Ratio of Rates of Mortality,  $q_x$ , for 1930-32 to corresponding Rates for 1920-22 in England and Wales and Greater London.

Age $x$	MALES.		FEMALES.	
	England and Wales.	Greater London.	England and Wales.	Greater London.
0	·80	·79	·79	·77
10	·81	·67	·74	·66
20	·91	·85	·88	·85
30	·78	·75	·81	·80
40	·82	·75	·83	·79
50	·96	·87	·89	·84
60	·94	·91	·93	·86
70	1·01	·97	·96	·93
80	1·04	1·03	1·01	·97

From Table K and from the more extended tables of ratios given in Appendix III Tables (1) and (2) it will be seen that London Administrative County, the population of which comprises rather more than one-half of the total population of Greater London, exhibits a higher mortality experience than that of the whole Greater London Area, the excess for all ages 5 and over being about 8 per cent. in the case of males and 5 per cent. in the case of females. It is therefore evident that the mortality in those areas of Greater London outside the Administrative County, which have been conveniently designated "The Outer Ring" must be, to a practically equivalent extent, lighter than that of the whole Greater London Area. To investigate this feature, the experience of the Outer Ring has been segregated from that of the whole area, and the comparative mortality experience of the Greater London Area, and its two constituent sections, is indicated by the following table which shows in extended age groups the ratios of the actual deaths to expected deaths as computed by English Life Table No. 10.

TABLE S.

Age Group.	MALES.			FEMALES.		
	Greater London.	London Administrative County.	Outer Ring.	Greater London.	London Administrative County.	Outer Ring.
5-19	·931	·981	·873	·895	·938	·845
20-49	·954	1·058	·837	·892	·939	·838
50-69	1·032	1·132	·908	·926	·985	·854
70 and over	·992	1·035	·938	·941	·980	·893
5 and over	·997	1·076	·900	·925	·972	·867

The foregoing ratios indicate the marked superiority of the mortality experience of the Outer Ring over that of the Administrative County.

The figures also show that the London Suburban Areas are subject to a much lighter death rate than the country as a whole, in respect of both sexes. It is found, in fact, when the figures are compared with those for other Urban Areas, that the "Outer Ring" of London is conspicuous for the lightness of its death rates over the whole span of life from age 5 upwards. The same feature would presumably present itself if the infantile mortality experience of this section could be readily investigated.

## V.—CONCLUSION.

The conclusions to which this investigation has led may be broadly summarised as follows:—

- (i) The vitality of the population, both male and female, has continued to improve (though in less degree than in the previous decennium 1911-21) except in old age where there is some evidence that the death rates are tending to revert towards those prevailing in the earlier years of the present century. It is possible that this increase in the rates of mortality at the very advanced ages is a sequel of the progressive fall in the death rates in the middle periods of life which has been a marked feature of the national vital statistics for a prolonged period.
- (ii) The national tables are an aggregation of the experiences of different geographical areas, with their sub-divisions, in which the rates of mortality, as between extremes, vary widely at identical ages, a feature which is also found in different divisions of the same area. These national tables constitute a valuable standard for various purposes, but they may not reflect the mortality in any particular area which has contributed to the aggregate experience upon which the tables were framed.
- (iii) In particular areas, taken alone, the divergence from the general average of the whole country is by no means the same in respect of both sexes. There are marked differences in this classification between the experiences of males and of females; these are not consistent throughout the whole span of life, but vary as between the comparatively youthful and the older ages.

The phenomena which are summarised in (ii) and (iii) above confirm in large measure the results brought out in my previous report. They cannot, therefore, be held to be fortuitous, and their persistence suggests that they may be a permanent feature of the national vital statistics.

I have set out the facts as I have found them. Causation is another matter and will no doubt evoke the consideration of those who are specially interested in the subject of vital statistics.

I am, Sir,

Your obedient Servant,

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30th November, 1935.

## APPENDIX I.

## PROCEDURE ADOPTED FOR OBTAINING GRADUATED RATES OF MORTALITY AT EARLY AND ADVANCED AGES.

The following is a description of the procedure adopted for obtaining graduated rates of mortality over those sections of the table to which King's method was not applicable.

(a) *Infantile Ages.*

The births in each quarter of each calendar year are given for males and females separately in the Registrar-General's Quarterly Returns. In the Registrar-General's Statistical Review the ages under which the deaths in the first year of life are recorded for the years 1930, 1931 and 1932 are:—under 1 day, 1-7 days, each of the first four weeks, 4 weeks-3 months, 3-6 months, 6-9 months, and 9-12 months. For the years 1931 and 1932 there was a further sub-division of the ages up to 1 week.

If regard were to be had to these short intervals in deriving the death rate for the first year of life, it would be necessary to proportion the number of births in each quarter to correspond with the deaths in the several intervals. Any scheme of calculation that purported to give an accurate "exposed to risk" would involve assumptions for which no authority could be claimed. It was accordingly decided to obtain the probabilities of death for each of the quarters of the first year of age and sum these in order to arrive at the rate of mortality for the first year of life.

If the rate of mortality at age 0, *i.e.*, the probability at birth of dying in the first year of life, be denoted by  $q_0$  and the probability of dying in the first three months of life be denoted by  $q_0$  (0-3 months),

then  $q_0 = q_0$  (0-3 months) +  $q_0$  (3-6 months) +  $q_0$  (6-9 months) +  $q_0$  (9-12 months)

where  $q_0$  (0-3 months) =  $\frac{\text{deaths in 1930, 1931 and 1932 (age 0-3 months)}}{\frac{1}{2}\beta^4_{1929} + \beta_{1930} + \beta_{1931} + \beta_{1932} - \frac{1}{2}\beta^4_{1932}}$

$q_0$  (3-6 months) =  $\frac{\text{deaths in 1930, 1931 and 1932 (age 3-6 months)}}{\frac{1}{2}\beta^3_{1929} + \beta^4_{1929} + \beta_{1930} + \beta_{1931} + \beta_{1932} + \beta^2_{1932} + \frac{1}{2}\beta^3_{1932}}$ ;

and where  $\beta_{1930}$  represents the births in the year 1930

$\beta^4_{1929}$  " " " " 4th quarter of 1929  
etc.

For ages 1 to 5 the method employed in the English Life Table No. 9 was adopted. (See Registrar-General's Decennial Supplement, England and Wales, 1921—Part I, Life Tables, p. 30.)

$$e.g., q_2 = \left\{ \begin{array}{l} \text{Deaths} \\ \text{at age} \\ 2-3 \\ \text{in the} \\ \text{years} \\ 1930, 1931 \\ \text{and 1932} \end{array} \right\} \div \left\{ \begin{array}{l} \frac{1}{8}(\beta^1_{1927} + 3\beta^2_{1927} + 5\beta^3_{1927} + 7\beta^4_{1927}) \\ + \text{total births in 1928 and 1929} \\ + \frac{1}{8}(7\beta^1_{1930} + 5\beta^2_{1930} + 3\beta^3_{1930} + \beta^4_{1930}) \\ - \text{deaths at age 0-1 in 1928, 1929 and} \\ 1930 \\ - \text{deaths at age 1-2 in 1929, 1930 and} \\ 1931 \end{array} \right\}$$

(b) *Ages 6 to 16.*

From the census returns it will be observed that the population enumerated at the individual ages varies considerably from age to age, the numbers being specially high at ages 10 and 11 and specially low at ages 12 and 13. The numbers of deaths recorded at each age during the three years 1930, 1931 and 1932 also show remarkable variations from age to age. These irregularities in the progression of the numbers are due to the rapid changes in the birth rates during and after the war years, when the numbers of births registered varied considerably from quarter to quarter in each year. For example, the deaths recorded at age 12 in 1930, 1931 and 1932 occur amongst children born between 2nd January, 1917, and 31st December, 1920, a period which includes the first quarter of 1919 when the birth rate was exceptionally low and the first quarter of 1920 when it was exceptionally high. Assuming an even distribution of deaths over the year of age, and allowing for uneven distribution of births from quarter to quarter, the deaths at age 12 in the three years 1930, 1931 and 1932 would on the average arise from the following numbers of births:—

$$\left. \begin{array}{l} \frac{1}{8}\beta^1_{1917} + \frac{3}{8}\beta^2_{1917} + \frac{5}{8}\beta^3_{1917} + \frac{7}{8}\beta^4_{1917} \\ + \text{Births in 1918 and 1919} \\ + \frac{7}{8}\beta^1_{1920} + \frac{5}{8}\beta^2_{1920} + \frac{3}{8}\beta^3_{1920} + \frac{1}{8}\beta^4_{1920} \end{array} \right\} = A_{12}$$

The persons enumerated in the census at age 12 must have been born between 27th April, 1918, and 26th April, 1919. It follows, therefore, that the population at age 12 as enumerated at the census cannot, owing to the fluctuations in the birth rate in 1918 and 1919, be taken to represent with reasonable accuracy one-third of the actual numbers exposed to risk of death at age 12 in the years 1930, 1931 and 1932. The mean of the numbers enumerated at ages 11, 12 and 13 would be more accurate, the small number of deaths occurring at age 11 which should be excluded being taken as approximately equivalent to the number dying at age 13 who should be included. The population enumerated at

ages 11, 12 and 13 arises from the following births, the census date being assumed to be at the end of the fourth month of 1931:—

$$\left. \begin{array}{l} \frac{2}{8}\beta^2_{1917} + \beta^3_{1917} + \beta^4_{1917} \\ + \text{Births in 1918 and 1919} \\ + \beta^1_{1920} + \frac{1}{8}\beta^2_{1920} \end{array} \right\} = B_{12}$$

The numbers obtained by the formula corresponding to  $A_{12}$  and  $B_{12}$  were calculated for each age  $x$  from 6 to 16, and the ratio  $\frac{B_x}{A_x}$  obtained. This ratio may be denoted by  $R_x$ . Crude rates of mortality denoted  $m_x$ , for each age were then calculated by taking for age  $x$

$$m_x = \frac{\text{deaths at age } x \text{ in 1930, 1931 and 1932}}{\text{Census population aged } (x-1), (x), \text{ and } (x+1)} \times R_x$$

The series of values of  $m_x$  thus obtained was suitably graduated, and the corresponding rates of mortality,  $q_x$ , have been adopted for the Life Tables.

(c) *Ages 17 to 22.*

In the application of King's method to the main part of the tables, pivotal values of  $q_{12}$ ,  $q_{17}$ , etc., had been calculated from the census population and from the deaths recorded in 1930, 1931 and 1932. As the value of  $R_{16}$  obtained as explained above was sufficiently large to indicate that  $q_{17}$ , the pivotal value at age 17, and the related interpolated values might be appreciably inaccurate, rates of mortality giving a smooth progression from  $q_{16}$  to  $q_{22}$  have been adopted. From age 22 upwards the rates derived from the unadjusted census population have been retained.

(d) *Advanced Ages.*

King's method gives values of  $q_x$  for individual ages up to 87, and a pivotal value  $q_{92}$ . After various experiments it was decided to retain the osculatory values obtained by King's method up to age 87, the highest age to which it could be applied, and to complete the tables by a Gompertz graduation using values of  $r$ , *i.e.*,  $\text{colog } p_{x+5} / \text{colog } p_x$ , from that age onwards which were found experimentally to give a good agreement of actual and expected deaths. For the males table  $r = 1.40$  and for the females table  $r = 1.42$  were found to give the best results, and the tables were completed by means of these values. The rates appear to be rather heavy at the ages of 95-99, but the numbers of deaths actually recorded at these ages seem to be small in comparison with the numbers at ages 90-94. This feature is specially marked as regards the males.

APPENDIX II.  
ENGLAND  
Census 26/27th April, 1931.

Age last Birthday.	MALES.	FEMALES.				
	Total.	Total.	Single.	Married.	Widowed.	Divorced.
All Ages ...	19,133,010	20,819,367	10,414,083	8,603,598	1,782,517	19,169
0 ...	304,974	296,734	296,734	—	—	—
1 ...	298,776	293,627	293,627	—	—	—
2 ...	299,306	292,929	292,929	—	—	—
3 ...	299,004	293,034	293,034	—	—	—
4 ...	308,154	303,759	303,759	—	—	—
<b>0-4 ...</b>	<b>1,510,214</b>	<b>1,480,083</b>	<b>1,480,083</b>	—	—	—
5 ...	316,788	310,687	310,687	—	—	—
6 ...	321,847	316,224	316,224	—	—	—
7 ...	331,884	325,840	325,840	—	—	—
8 ...	340,064	333,782	333,782	—	—	—
9 ...	367,262	358,278	358,278	—	—	—
<b>5-9 ...</b>	<b>1,677,845</b>	<b>1,644,811</b>	<b>1,644,811</b>	—	—	—
10 ...	392,130	382,708	382,708	—	—	—
11 ...	382,313	372,537	372,537	—	—	—
12 ...	272,384	267,184	267,184	—	—	—
13 ...	265,265	261,150	261,150	—	—	—
14 ...	308,339	303,235	303,235	—	—	—
<b>10-14 ...</b>	<b>1,620,431</b>	<b>1,586,814</b>	<b>1,586,814</b>	—	—	—
15 ...	322,739	318,689	318,689	—	—	—
16 ...	350,879	351,906	351,530	375	1	—
17 ...	345,234	351,725	349,299	2,417	9	—
18 ...	346,426	351,923	343,392	8,513	16	2
19 ...	344,234	350,746	330,910	19,781	46	9
<b>15-19 ...</b>	<b>1,709,512</b>	<b>1,724,989</b>	<b>1,693,820</b>	<b>31,086</b>	<b>72</b>	<b>11</b>
20 ...	337,504	350,284	311,875	38,282	116	11
21 ...	345,166	359,803	296,292	63,274	219	18
22 ...	343,322	363,493	270,887	92,213	352	41
23 ...	338,165	363,472	242,489	120,343	583	57
24 ...	334,984	358,294	210,508	146,862	835	89
<b>20-24 ...</b>	<b>1,699,141</b>	<b>1,795,346</b>	<b>1,332,051</b>	<b>460,974</b>	<b>2,105</b>	<b>216</b>
25 ...	329,534	352,303	182,064	168,934	1,142	163
26 ...	332,520	353,662	159,654	192,247	1,544	217
27 ...	325,099	344,866	136,721	205,970	1,885	290
28 ...	326,897	345,318	120,385	222,084	2,502	347
29 ...	314,943	331,958	103,286	225,124	3,115	433
<b>25-29 ...</b>	<b>1,628,993</b>	<b>1,728,107</b>	<b>702,110</b>	<b>1,014,359</b>	<b>10,188</b>	<b>1,450</b>
30 ...	326,254	347,105	97,542	245,058	3,964	541
31 ...	301,545	327,862	84,055	238,711	4,475	621
32 ...	276,912	319,554	78,646	235,044	5,253	611
33 ...	264,114	312,169	72,430	233,241	5,892	606
34 ...	264,464	315,307	70,610	236,894	7,115	688
<b>30-34 ...</b>	<b>1,433,289</b>	<b>1,621,997</b>	<b>403,283</b>	<b>1,188,948</b>	<b>26,699</b>	<b>3,067</b>
35 ...	257,523	306,839	67,263	230,663	8,207	706
36 ...	259,629	308,520	65,144	233,170	9,480	726
37 ...	250,902	297,346	61,078	224,742	10,815	711
38 ...	261,656	310,201	62,012	234,336	13,146	707
39 ...	253,300	297,123	57,533	224,445	14,436	709
<b>35-39 ...</b>	<b>1,283,010</b>	<b>1,520,029</b>	<b>313,030</b>	<b>1,147,356</b>	<b>56,084</b>	<b>3,559</b>
40 ...	259,436	304,868	58,283	228,984	16,849	752
41 ...	236,126	269,783	49,847	203,215	16,084	637
42 ...	253,201	294,894	53,359	221,055	19,791	689
43 ...	244,760	287,318	50,488	214,861	21,285	684
44 ...	235,823	277,344	48,038	206,583	22,120	603
<b>40-44 ...</b>	<b>1,229,346</b>	<b>1,434,207</b>	<b>260,015</b>	<b>1,074,698</b>	<b>96,129</b>	<b>3,365</b>
45 ...	240,368	278,223	48,590	204,662	24,326	645
46 ...	238,313	274,857	46,232	203,137	24,902	586
47 ...	229,517	266,139	44,605	195,298	25,708	528
48 ...	239,390	279,476	45,990	204,312	28,656	518
49 ...	238,966	268,690	43,796	194,805	29,601	488
<b>45-49 ...</b>	<b>1,186,554</b>	<b>1,367,385</b>	<b>229,213</b>	<b>1,002,214</b>	<b>133,193</b>	<b>2,765</b>

TABLE I.  
AND WALES.  
Populations Enumerated.

Age last Birthday.	MALES.	FEMALES.				
	Total.	Total.	Single.	Married.	Widowed.	Divorced.
50 ...	245,684	280,182	45,435	201,154	33,115	478
51 ...	215,999	240,793	38,693	172,261	29,457	382
52 ...	222,091	254,072	40,375	180,101	33,237	359
53 ...	215,515	244,657	38,257	171,566	34,486	348
54 ...	217,030	245,614	38,844	169,362	37,092	316
<b>50-54 ...</b>	<b>1,116,319</b>	<b>1,265,318</b>	<b>201,604</b>	<b>894,444</b>	<b>167,387</b>	<b>1,883</b>
55 ...	209,904	231,694	36,962	155,849	38,564	319
56 ...	206,528	224,697	35,666	149,776	38,988	267
57 ...	193,079	209,880	32,634	138,552	38,470	224
58 ...	196,720	217,618	33,779	140,482	43,128	229
59 ...	181,214	197,143	30,834	123,972	42,119	218
<b>55-59 ...</b>	<b>987,445</b>	<b>1,081,032</b>	<b>169,875</b>	<b>708,631</b>	<b>201,269</b>	<b>1,257</b>
60 ...	177,377	201,010	31,767	120,376	48,673	194
61 ...	153,851	169,133	26,492	100,682	41,816	143
62 ...	156,354	174,760	26,874	100,818	46,884	184
63 ...	148,816	171,365	26,332	95,328	49,562	143
64 ...	141,666	162,619	25,053	87,438	50,005	123
<b>60-64 ...</b>	<b>778,064</b>	<b>878,887</b>	<b>136,518</b>	<b>504,642</b>	<b>236,940</b>	<b>787</b>
65 ...	133,124	159,019	25,252	79,133	54,517	117
66 ...	120,567	144,552	22,545	69,375	52,542	90
67 ...	115,922	137,233	21,813	63,243	52,094	83
68 ...	109,632	132,046	20,987	57,932	53,045	82
69 ...	98,725	110,850	19,099	49,446	51,235	70
<b>65-69 ...</b>	<b>577,970</b>	<b>692,700</b>	<b>109,696</b>	<b>319,129</b>	<b>263,433</b>	<b>442</b>
70 ...	92,299	118,579	19,261	45,285	53,964	69
71 ...	80,064	102,660	16,099	37,739	48,772	50
72 ...	74,464	98,567	15,123	33,660	49,738	46
73 ...	67,691	90,231	14,028	28,218	47,948	37
74 ...	61,962	84,234	12,759	24,029	47,420	26
<b>70-74 ...</b>	<b>376,480</b>	<b>494,271</b>	<b>77,270</b>	<b>168,931</b>	<b>247,842</b>	<b>228</b>
75 ...	54,590	75,806	11,652	19,787	44,337	30
76 ...	47,179	67,003	10,001	16,074	40,906	22
77 ...	39,293	57,563	8,405	12,294	36,847	17
78 ...	34,366	50,859	7,479	9,996	33,370	14
79 ...	28,751	44,453	6,559	7,882	30,000	12
<b>75-79 ...</b>	<b>204,179</b>	<b>295,684</b>	<b>44,096</b>	<b>66,033</b>	<b>185,460</b>	<b>95</b>
80 ...	25,478	41,193	6,004	6,263	28,917	9
81 ...	18,984	31,249	4,532	4,437	22,271	9
82 ...	16,228	27,518	3,987	3,296	20,226	9
83 ...	12,641	22,747	3,217	2,390	17,135	5
84 ...	10,309	19,481	2,720	1,765	14,994	2
<b>80-84 ...</b>	<b>83,640</b>	<b>142,188</b>	<b>20,460</b>	<b>18,151</b>	<b>103,543</b>	<b>34</b>
85 ...	8,131	15,716	2,234	1,261	12,219	2
86 ...	6,536	13,037	1,822	880	10,334	1
87 ...	4,690	9,925	1,384	686	7,855	—
88 ...	3,398	7,549	1,073	433	6,041	2
89 ...	2,499	5,591	794	257	4,537	3
<b>85-89 ...</b>	<b>25,254</b>	<b>51,818</b>	<b>7,307</b>	<b>3,517</b>	<b>40,986</b>	<b>8</b>
90 ...	1,915	4,287	646	179	3,462	—
91 ...	1,146	2,998	437	114	2,447	—
92 ...	790	2,118	300	72	1,746	—
93 ...	515	1,468	205	36	1,226	1
94 ...	366	988	139	36	813	—
<b>90-94 ...</b>	<b>4,732</b>	<b>11,859</b>	<b>1,727</b>	<b>437</b>	<b>9,694</b>	<b>1</b>
95 ...	239	679	107	13	559	—
96 ...	131	404	69	14	320	1
97 ...	104	290	44	7	239	—
98 ...	50	202	34	5	163	—
99 ...	41	138	24	7	107	—
<b>95-99 ...</b>	<b>565</b>	<b>1,713</b>	<b>278</b>	<b>46</b>	<b>1,388</b>	<b>1</b>
100 and over	27	129	22	2	105	—

APPENDIX II.  
ENGLAND  
Deaths Registered in the

Age last birthday.	MALES.	FEMALES.			
	Total.	Total.	Single.	Married.	Widowed.*
All Ages ...	729,442	701,744	209,386	240,726	251,632
0 ...	69,994	50,786	50,786	—	—
1 ...	14,012	12,024	12,024	—	—
2 ...	5,940	5,337	5,337	—	—
3 ...	4,015	3,623	3,623	—	—
4 ...	3,329	3,056	3,056	—	—
<b>0-4 ...</b>	<b>97,290</b>	<b>74,826</b>	<b>74,826</b>	—	—
5 ...	3,263	2,781	2,781	—	—
6 ...	2,556	2,235	2,235	—	—
7 ...	2,130	1,815	1,815	—	—
8 ...	1,810	1,612	1,612	—	—
9 ...	1,773	1,570	1,570	—	—
<b>5-9 ...</b>	<b>11,532</b>	<b>10,013</b>	<b>10,013</b>	—	—
10 ...	1,745	1,477	1,477	—	—
11 ...	1,537	1,382	1,382	—	—
12 ...	1,285	1,300	1,300	—	—
13 ...	1,222	1,287	1,287	—	—
14 ...	1,516	1,432	1,432	—	—
<b>10-14 ...</b>	<b>7,305</b>	<b>6,878</b>	<b>6,878</b>	—	—
15 ...	1,908	1,809	1,809	—	—
16 ...	2,366	2,215	2,210	5	—
17 ...	2,733	2,488	2,465	23	—
18 ...	2,971	2,576	2,488	88	—
19 ...	3,084	2,820	2,583	237	—
<b>15-19 ...</b>	<b>13,062</b>	<b>11,908</b>	<b>11,555</b>	<b>353</b>	—
20 ...	3,277	2,800	2,464	335	1
21 ...	3,396	2,943	2,386	555	2
22 ...	3,360	3,091	2,268	819	4
23 ...	3,442	3,082	2,021	1,053	8
24 ...	3,266	3,202	1,821	1,366	15
<b>20-24 ...</b>	<b>16,741</b>	<b>15,118</b>	<b>10,960</b>	<b>4,128</b>	<b>30</b>
25 ...	3,200	3,115	1,589	1,504	22
26 ...	3,170	3,104	1,430	1,656	18
27 ...	3,239	3,210	1,345	1,835	30
28 ...	3,236	3,201	1,177	1,985	39
29 ...	3,281	3,255	1,121	2,100	34
<b>25-29 ...</b>	<b>16,126</b>	<b>15,885</b>	<b>6,662</b>	<b>9,080</b>	<b>143</b>
30 ...	3,202	3,206	990	2,152	64
31 ...	3,149	3,157	872	2,215	70
32 ...	3,192	3,368	895	2,390	83
33 ...	2,982	3,173	808	2,277	88
34 ...	3,148	3,358	806	2,448	104
<b>30-34 ...</b>	<b>15,673</b>	<b>16,262</b>	<b>4,371</b>	<b>11,482</b>	<b>409</b>
35 ...	3,394	3,332	766	2,440	126
36 ...	3,505	3,547	771	2,622	154
37 ...	3,501	3,492	764	2,559	169
38 ...	3,947	3,711	804	2,756	151
39 ...	3,998	3,903	778	2,891	234
<b>35-39 ...</b>	<b>18,345</b>	<b>17,985</b>	<b>3,883</b>	<b>13,268</b>	<b>834</b>
40 ...	4,220	4,052	849	2,952	251
41 ...	4,281	3,782	793	2,735	254
42 ...	5,024	4,484	924	3,201	359
43 ...	4,993	4,361	883	3,130	348
44 ...	5,260	4,401	843	3,135	423
<b>40-44 ...</b>	<b>23,778</b>	<b>21,080</b>	<b>4,292</b>	<b>15,153</b>	<b>1,635</b>
45 ...	5,998	4,787	912	3,360	515
46 ...	6,113	5,091	996	3,534	561
47 ...	6,463	5,510	1,067	3,849	594
48 ...	6,921	5,868	1,104	4,034	730
49 ...	7,663	6,327	1,090	4,375	862
<b>45-49 ...</b>	<b>33,158</b>	<b>27,583</b>	<b>5,169</b>	<b>19,152</b>	<b>3,262</b>

\* The deaths of 251 divorced women have

TABLE 2.  
AND WALES.  
years 1930, 1931 and 1932.

Age last birthday.	MALES.	FEMALES.			
	Total.	Total.	Single.	Married.	Widowed.*
50 ...	8,001	6,452	1,124	4,445	883
51 ...	7,859	6,482	1,135	4,418	929
52 ...	8,972	7,492	1,263	5,075	1,154
53 ...	9,146	7,541	1,198	5,118	1,225
54 ...	9,834	8,020	1,268	5,367	1,385
<b>50-54 ...</b>	<b>43,812</b>	<b>35,987</b>	<b>5,988</b>	<b>24,423</b>	<b>5,576</b>
55 ...	9,808	7,792	1,295	5,038	1,459
56 ...	11,013	8,745	1,407	5,680	1,658
57 ...	11,188	8,941	1,407	5,755	1,779
58 ...	12,085	9,762	1,612	6,027	2,123
59 ...	12,545	9,853	1,544	6,014	2,295
<b>55-59 ...</b>	<b>56,639</b>	<b>45,093</b>	<b>7,265</b>	<b>28,514</b>	<b>9,314</b>
60 ...	12,566	10,135	1,577	5,922	2,636
61 ...	12,324	10,051	1,497	5,774	2,780
62 ...	13,900	11,491	1,708	6,354	3,429
63 ...	14,420	12,092	1,731	6,660	3,701
64 ...	14,893	12,533	1,833	6,581	4,119
<b>60-64 ...</b>	<b>68,103</b>	<b>56,302</b>	<b>8,346</b>	<b>31,291</b>	<b>16,665</b>
65 ...	15,992	13,535	1,945	6,566	5,024
66 ...	15,304	13,093	1,919	6,102	5,072
67 ...	16,153	13,931	2,032	6,232	5,667
68 ...	16,454	14,663	2,108	6,238	6,317
69 ...	16,787	14,941	2,198	5,940	6,803
<b>65-69 ...</b>	<b>80,690</b>	<b>70,163</b>	<b>10,202</b>	<b>31,078</b>	<b>28,883</b>
70 ...	16,742	15,638	2,251	5,889	7,498
71 ...	16,001	15,274	2,275	5,419	7,580
72 ...	17,347	17,046	2,474	5,532	9,040
73 ...	16,924	17,093	2,397	4,975	9,721
74 ...	17,027	17,317	2,356	4,744	10,217
<b>70-74 ...</b>	<b>84,041</b>	<b>82,368</b>	<b>11,753</b>	<b>26,559</b>	<b>44,056</b>
75 ...	16,055	17,489	2,521	4,198	10,770
76 ...	15,452	17,260	2,415	3,828	11,017
77 ...	14,363	15,999	2,178	3,236	10,585
78 ...	13,605	16,245	2,200	2,933	11,112
79 ...	12,705	15,554	2,141	2,494	10,919
<b>75-79 ...</b>	<b>72,180</b>	<b>82,547</b>	<b>11,455</b>	<b>16,689</b>	<b>54,403</b>
80 ...	11,379	14,793	2,075	2,163	10,555
81 ...	9,944	13,451	1,875	1,662	9,914
82 ...	9,169	12,537	1,786	1,465	9,286
83 ...	7,765	11,556	1,605	1,133	8,818
84 ...	6,837	10,708	1,468	884	8,356
<b>80-84 ...</b>	<b>45,094</b>	<b>63,045</b>	<b>8,809</b>	<b>7,307</b>	<b>46,929</b>
85 ...	5,812	9,435	1,383	627	7,425
86 ...	4,948	8,453	1,164	527	6,762
87 ...	3,918	6,880	957	361	5,562
88 ...	2,925	5,647	781	266	4,600
89 ...	2,310	4,533	651	163	3,719
<b>85-89 ...</b>	<b>19,913</b>	<b>34,948</b>	<b>4,936</b>	<b>1,944</b>	<b>28,068</b>
90 ...	1,809	3,737	558	122	3,057
91 ...	1,332	2,775	414	64	2,297
92 ...	873	2,205	317	49	1,839
93 ...	667	1,587	235	30	1,322
94 ...	464	1,095	156	15	924
<b>90-94 ...</b>	<b>5,145</b>	<b>11,399</b>	<b>1,680</b>	<b>280</b>	<b>9,439</b>
95 ...	317	822	122	12	688
96 ...	193	517	62	7	448
97 ...	122	379	61	2	316
98 ...	80	256	42	2	212
99 ...	55	167	21	1	145
<b>95-99 ...</b>	<b>767</b>	<b>2,141</b>	<b>308</b>	<b>24</b>	<b>1,809</b>
100 and over ...	48	213	35	1	177

been included with the deaths of widows.

APPENDIX II.  
ENGLAND AND WALES—

Age last birthday.	Greater London.		London Administrative County.		County Boroughs.			
	Males.	Females.	Males.	Females.	Total (excluding London, A.C.).		North I.	
					Males.	Females.	Males.	Females.
Populations enumerated								
All Ages ...	3,832,916	4,371,026	2,044,108	2,352,895	6,316,472	6,992,004	441,447	468,578
0-4 ...	291,319	285,441	149,741	147,410	516,233	507,697	41,039	40,038
5-9 ...	320,764	314,216	165,171	162,400	565,559	558,385	45,082	43,672
10-14 ...	307,342	301,992	162,323	160,385	542,248	537,098	42,942	42,519
15-19 ...	346,162	374,162	191,327	207,241	565,315	601,949	41,127	41,202
20-24 ...	366,115	417,173	203,380	234,126	561,486	621,644	36,516	40,312
25-29 ...	351,004	393,468	187,392	210,921	537,187	584,923	34,942	39,317
30-34 ...	297,648	356,877	152,698	184,861	475,639	547,006	31,838	35,756
35-39 ...	263,938	327,258	134,083	170,700	427,915	509,676	28,479	32,641
40-44 ...	251,728	306,718	130,406	162,968	409,001	479,416	27,119	30,543
45-49 ...	240,537	290,326	127,531	156,855	393,108	458,383	25,637	28,453
50-54 ...	223,987	262,792	121,110	143,218	371,538	424,878	24,621	26,119
55-59 ...	192,745	220,624	105,610	121,581	325,926	358,202	21,934	22,084
60-64 ...	148,976	177,757	83,091	98,657	250,504	284,246	16,173	16,640
65-69 ...	105,499	137,920	59,740	77,555	177,825	219,395	11,608	12,888
70-74 ...	68,182	99,193	38,712	55,774	110,737	153,481	7,005	8,734
75-79 ...	36,468	60,731	20,559	33,887	57,324	88,465	3,643	4,830
80-84 ...	14,966	30,120	8,247	16,710	21,695	39,975	1,347	2,018
85-89 ...	4,583	11,248	2,494	6,088	6,073	13,795	321	657
90-94 ...	857	2,597	442	1,363	1,022	2,974	61	144
95 and over ...	96	413	51	195	137	416	13	11

Deaths registered in the three

All Ages ...	137,319	133,711	81,385	77,598	256,264	242,921	19,076	16,888
0 ...	12,439	9,048	7,160	5,362	27,801	20,117	2,631	1,928
1 ...	2,588	2,228	1,714	1,437	6,112	5,250	711	592
2 ...	1,030	938	615	587	2,436	2,226	287	230
3 ...	676	627	378	371	1,582	1,406	159	153
4 ...	599	583	361	332	1,304	1,170	122	103
0-4 ...	17,332	13,424	10,228	8,089	39,235	30,169	3,910	3,006
5-9 ...	2,046	1,791	1,121	921	4,365	3,760	438	328
10-14 ...	1,240	1,178	701	663	2,749	2,564	272	300
15-19 ...	2,499	2,218	1,434	1,333	4,599	4,575	445	435
20-24 ...	3,240	3,130	1,874	1,825	5,996	5,665	522	473
25-29 ...	3,213	3,117	1,805	1,736	5,823	5,747	493	501
30-34 ...	3,113	3,164	1,773	1,703	5,743	5,855	483	450
35-39 ...	3,511	3,329	2,025	1,804	6,965	6,449	535	486
40-44 ...	4,602	4,131	2,774	2,383	9,199	7,748	704	579
45-49 ...	6,766	5,374	4,085	3,080	12,912	10,141	885	671
50-54 ...	9,113	7,033	5,560	4,081	16,948	13,276	1,137	844
55-59 ...	11,559	8,620	7,056	5,069	21,158	16,296	1,344	1,035
60-64 ...	13,432	10,331	8,152	6,094	24,422	19,866	1,584	1,307
65-69 ...	15,068	12,940	9,152	7,705	27,641	24,267	1,887	1,519
70-74 ...	14,882	15,297	8,921	9,050	27,786	27,783	1,894	1,721
75-79 ...	12,757	15,657	7,513	9,117	21,989	26,627	1,367	1,556
80-84 ...	8,193	12,645	4,609	7,244	12,451	18,930	831	1,037
85 and over ...	4,663	10,332	2,602	5,701	6,283	13,203	345	640

TABLE 3.  
GEOGRAPHICAL DIVISIONS.

Age last birthday.	County Boroughs—(continued).									
	North II.		North III.		North IV.		Midland I.		Midland II.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
at 1931 Census.										
All ages	248,967	260,155	905,811	1,001,152	1,723,745	1,932,996	1,175,143	1,282,726	348,980	393,734
0-4 ...	23,389	22,654	68,113	67,596	142,840	141,235	98,861	96,890	27,308	26,920
5-9 ...	24,505	24,299	76,258	74,751	155,123	154,415	106,786	105,671	29,671	29,566
10-14 ...	22,018	22,002	73,586	72,908	147,518	146,390	104,039	102,828	28,319	27,701
15-19 ...	22,426	22,913	78,568	85,319	156,001	165,745	107,137	113,939	30,297	33,580
20-24 ...	21,334	22,856	79,060	89,726	155,125	172,660	106,091	116,697	31,158	35,888
25-29 ...	21,208	21,268	77,649	85,296	146,646	161,981	103,193	109,810	29,931	33,054
30-34 ...	19,010	20,215	70,953	81,103	129,392	152,010	89,947	102,166	26,611	30,947
35-39 ...	16,646	18,626	63,809	75,414	117,013	142,468	79,221	93,587	23,599	29,320
40-44 ...	15,668	17,159	59,587	69,443	113,271	135,806	74,694	85,675	22,743	27,565
45-49 ...	14,946	16,139	58,806	67,241	107,542	129,262	70,982	80,904	22,344	26,590
50-54 ...	13,881	14,511	56,692	63,256	102,340	120,513	67,064	75,200	20,756	24,174
55-59 ...	11,731	11,920	50,442	54,117	89,284	100,331	58,276	62,381	18,379	20,524
60-64 ...	9,070	9,229	38,433	42,542	68,004	77,930	44,136	48,855	14,322	16,393
65-69 ...	6,233	6,997	26,667	31,886	46,534	58,572	30,695	36,951	10,717	13,166
70-74 ...	3,841	4,805	15,837	21,466	27,913	39,919	19,002	25,868	7,057	9,352
75-79 ...	1,989	2,757	7,838	12,154	13,353	21,560	9,940	15,196	3,827	5,530
80-84 ...	802	1,314	2,708	5,059	4,542	8,896	3,799	6,959	1,476	2,434
85-89 ...	211	391	690	1,566	1,111	2,738	1,075	2,518	407	837
90-94 ...	58	91	109	273	175	508	171	553	53	170
95 and over ...	1	9	6	36	18	57	34	78	5	23

years 1930, 1931 and 1932.

All Ages	10,320	9,218	37,405	34,929	75,133	71,268	44,189	40,710	13,878	13,427
0 ...	1,368	995	3,598	2,643	9,028	6,325	4,867	3,538	1,447	1,019
1 ...	398	329	678	600	2,172	1,849	927	823	267	237
2 ...	137	138	345	291	822	690	360	390	98	82
3 ...	96	79	203	191	508	457	253	220	79	54
4 ...	89	73	189	161	405	396	195	185	62	40
0-4 ...	2,088	1,614	5,013	3,886	12,935	9,717	6,602	5,156	1,953	1,432
5-9 ...	249	198	590	528	1,341	1,182	731	612	207	188
10-14 ...	130	125	377	313	816	799	458	408	128	119
15-19 ...	216	221	629	623	1,358	1,356	809	775	220	247
20-24 ...	244	239	815	738	1,714	1,747	1,073	924	309	291
25-29 ...	255	237	741	777	1,722	1,727	1,050	980	271	296
30-34 ...	236	213	801	820	1,696	1,815	1,015	1,003	317	338
35-39 ...	267	268	964	951	2,137	1,986	1,210	1,130	352	313
40-44 ...	383	316	1,295	1,146	2,787	2,236	1,632	1,395	467	443
45-49 ...	528	386	1,902	1,483	3,967	3,081	2,323	1,765	672	559
50-54 ...	655	507	2,617	2,023	5,264	4,065	2,986	2,242	826	718
55-59 ...	772	559	3,365	2,434	6,520	5,114	3,578	2,706	1,112	929
60-64 ...	887	692	3,971	3,079	7,305	6,120	4,180	3,202	1,261	1,075
65-69 ...	948	809	4,441	3,791	8,046	7,377	4,724	3,835	1,567	1,372
70-74 ...	915	936	4,275	4,227	7,946	8,287	4,647	4,521	1,658	1,551
75-79 ...	815	855	3,287	4,019	5,532	7,366	3,805	4,340	1,368	1,560
80-84 ...	500	633	1,625	2,583	2,830	4,598	2,205	3,284	767	1,170
85 and over ...	232	410	697	1,508	1,217	2,695	1,161	2,432	423	826

APPENDIX II.  
ENGLAND AND WALES

Age last birthday.	County Boroughs—(continued).									
	East.		South-East (excluding London, A.C.).		South-West.		Wales I.		Wales II.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
Populations enumerated										
All Ages	204,303	224,907	837,408	966,701	162,267	180,759	268,401	280,296	—	—
0-4...	16,586	16,071	64,467	63,016	11,960	11,756	21,670	21,521	—	—
5-9...	17,795	17,893	71,839	70,493	13,139	12,772	25,361	24,853	—	—
10-14...	17,354	17,343	69,491	68,679	12,704	12,076	24,277	24,052	—	—
15-19...	17,748	19,649	74,481	80,041	13,334	14,020	24,196	25,541	—	—
20-24...	17,344	19,777	77,623	83,860	14,995	15,057	22,240	24,811	—	—
25-29...	16,558	17,756	71,034	78,098	14,437	14,887	21,589	23,456	—	—
30-34...	14,752	16,714	60,234	72,197	12,543	13,717	20,359	22,181	—	—
35-39...	13,578	15,650	55,122	68,358	11,337	12,866	19,111	20,746	—	—
40-44...	13,413	15,128	53,799	67,063	10,640	12,332	18,067	18,702	—	—
45-49...	13,179	14,621	52,763	66,092	10,094	11,895	16,815	17,186	—	—
50-54...	12,212	13,341	49,204	61,009	9,675	11,155	15,093	15,600	—	—
55-59...	10,493	11,430	43,527	52,458	8,561	9,971	13,299	12,986	—	—
60-64...	8,497	9,634	34,487	44,118	6,894	8,583	10,488	10,322	—	—
65-69...	6,400	7,750	26,149	36,036	5,279	7,316	7,543	7,833	—	—
70-74...	4,450	5,903	17,449	26,542	3,540	5,532	4,643	5,360	—	—
75-79...	2,468	3,612	9,869	16,271	1,973	3,467	2,424	3,088	—	—
80-84...	1,064	1,797	4,196	8,268	827	1,812	934	1,418	—	—
85-89...	353	662	1,378	3,195	278	719	249	512	—	—
90-94...	52	152	259	786	46	187	38	110	—	—
95 and over	7	24	37	121	11	39	5	18	—	—

## Deaths registered in the three

All Ages	7,654	7,780	31,389	32,369	6,433	6,908	10,787	9,424	—	—
0 ...	662	486	2,556	1,909	509	373	1,135	901	—	—
1 ...	128	101	505	436	110	75	216	208	—	—
2 ...	60	69	192	211	29	41	106	84	—	—
3 ...	43	42	144	132	32	20	65	58	—	—
4 ...	33	28	118	114	26	23	65	47	—	—
0-4...	926	726	3,515	2,802	706	532	1,587	1,298	—	—
5-9...	135	122	422	378	89	74	163	150	—	—
10-14...	70	64	306	278	60	49	132	109	—	—
15-19...	123	118	489	463	89	110	221	227	—	—
20-24...	175	167	712	681	123	127	309	278	—	—
25-29...	167	175	706	622	145	153	273	279	—	—
30-34...	146	150	663	686	130	125	256	255	—	—
35-39...	185	162	789	714	186	154	340	285	—	—
40-44...	245	222	1,041	886	217	217	428	308	—	—
45-49...	354	290	1,459	1,255	297	243	525	408	—	—
50-54...	448	373	1,922	1,632	356	345	737	527	—	—
55-59...	550	407	2,476	2,024	519	395	922	633	—	—
60-64...	670	600	2,897	2,523	638	497	1,029	771	—	—
65-69...	817	755	3,367	3,286	705	685	1,139	838	—	—
70-74...	877	923	3,643	3,769	798	829	1,133	1,019	—	—
75-79...	854	1,007	3,422	4,094	697	926	842	904	—	—
80-84...	578	836	2,184	3,400	404	735	527	654	—	—
85 and over	334	623	1,376	2,876	274	712	224	481	—	—

TABLE 3—continued.  
—GEOGRAPHICAL DIVISIONS.

Age last birthday.	Urban Areas (other than County Boroughs and London A.C.)									
	Total.		North I.		North II.		North III.		North IV.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
at 1931 Census.										
All Ages	6,806,183	7,440,256	414,456	410,694	188,473	209,929	526,166	564,266	945,987	1,054,309
0-4...	528,939	518,599	37,555	36,808	15,787	15,604	40,217	39,741	67,457	66,567
5-9...	596,254	583,224	42,683	42,001	17,398	17,459	46,544	45,605	76,687	75,870
10-14...	575,410	564,911	40,609	39,631	17,171	16,804	43,908	43,624	76,244	75,335
15-19...	598,994	604,598	38,656	34,186	15,995	16,997	46,578	45,428	81,218	84,429
20-24...	598,609	632,017	34,855	33,058	15,109	16,799	45,408	47,178	82,456	89,908
25-29...	583,631	622,566	33,635	33,485	14,784	16,157	44,799	47,170	81,050	88,621
30-34...	520,264	589,376	30,181	31,311	13,544	15,334	40,873	45,680	73,673	85,655
35-39...	466,488	551,578	27,239	29,272	12,083	14,542	35,844	42,385	67,334	81,763
40-44...	443,517	517,770	25,537	26,906	11,662	14,149	34,334	39,455	65,468	77,076
45-49...	425,470	491,122	23,990	24,684	11,791	13,974	33,077	37,483	62,571	73,880
50-54...	398,690	454,013	22,344	22,132	11,244	13,112	32,033	35,097	59,684	69,697
55-59...	351,506	388,461	19,818	18,999	9,888	11,092	28,695	30,616	53,289	59,527
60-64...	274,095	315,135	14,729	14,213	7,871	9,220	21,916	23,869	40,655	46,897
65-69...	202,319	247,978	10,698	10,637	6,095	7,456	15,648	18,142	28,558	35,331
70-74...	130,704	177,122	6,680	7,181	4,247	5,558	9,308	12,225	17,504	23,738
75-79...	71,450	106,384	3,552	3,885	2,422	3,326	4,825	6,762	8,430	12,936
80-84...	29,195	51,544	1,313	1,677	1,015	1,621	1,652	2,791	2,856	5,153
85-89...	8,766	18,832	326	513	306	583	432	874	729	1,591
90-94...	1,656	4,306	48	104	52	132	67	126	109	297
95 and over	226	720	8	11	9	10	8	15	15	38

## years 1930, 1931 and 1932.

All Ages	247,951	244,133	15,692	13,674	7,906	7,809	20,468	20,002	37,238	37,316
0 ...	22,762	16,328	2,111	1,603	773	556	1,993	1,438	3,195	2,354
1 ...	4,188	3,590	466	394	169	143	384	342	605	557
2 ...	1,965	1,711	218	148	71	65	195	183	304	222
3 ...	1,382	1,261	139	103	54	57	127	125	220	206
4 ...	1,103	1,074	123	95	39	46	102	98	169	158
0-4...	31,400	23,964	3,057	2,343	1,106	867	2,801	2,186	4,493	3,497
5-9...	3,995	3,590	357	271	143	128	374	359	605	528
10-14...	2,441	2,373	222	226	97	91	220	193	342	328
15-19...	4,556	3,996	424	357	153	154	370	322	573	585
20-24...	5,654	5,099	405	381	174	149	438	420	770	676
25-29...	5,529	5,621	390	361	170	157	423	445	760	798
30-34...	5,347	5,742	360	364	154	163	459	507	770	857
35-39...	6,264	6,328	447	473	194	171	505	500	950	999
40-44...	7,984	7,239	513	435	221	216	655	591	1,303	1,193
45-49...	11,038	9,537	664	549	346	290	903	835	1,846	1,590
50-54...	14,629	12,327	802	708	425	385	1,296	1,043	2,406	2,139
55-59...	19,096	15,665	1,073	858	527	486	1,669	1,399	3,157	2,762
60-64...	23,346	19,840	1,297	1,067	642	642	2,073	1,753	3,909	3,490
65-69...	27,788	24,544	1,562	1,268	884	760	2,427	2,243	4,490	4,302
70-74...	29,218	29,170	1,632	1,374	954	912	2,426	2,542	4,652	4,871
75-79...	25,195	29,214	1,393	1,254	864	945	1,938	2,367	3,601	4,371
80-84...	15,749	22,417	761	885	553	712	1,038	1,467	1,819	2,776
85 and over	8,722	17,467	333	500	299	581	453	830	786	1,554



APPENDIX II.  
ENGLAND AND WALES—

Age last birth-day.	Urban Areas (other than County Boroughs and									
	Midland I.		Midland II.		East.		South East.		South-West.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
Populations enumerated										
All Ages	548,534	593,059	417,219	436,967	259,552	282,124	2,497,369	2,813,557	379,329	449,500
0-4...	45,753	44,673	32,881	31,980	19,928	19,527	192,473	188,072	26,806	26,119
5-9...	50,144	49,462	37,164	36,081	22,302	21,562	212,130	205,346	30,194	29,714
10-14...	49,551	48,713	35,720	35,090	21,798	21,374	199,673	195,055	29,308	28,940
15-19...	49,680	51,107	37,258	38,239	23,209	23,805	216,350	224,794	31,424	34,532
20-24...	47,438	50,746	37,069	39,119	24,813	23,883	228,787	245,268	31,474	36,121
25-29...	46,644	48,807	36,761	37,646	21,104	21,807	224,581	243,507	30,755	34,450
30-34...	41,348	45,457	32,929	35,573	18,171	20,525	196,051	229,673	27,791	32,483
35-39...	35,995	41,925	28,204	32,113	15,948	19,258	175,470	212,998	25,666	31,927
40-44...	33,840	38,746	26,124	29,290	15,860	18,842	166,269	200,592	24,433	31,552
45-49...	32,761	36,690	25,588	27,660	15,861	18,574	156,660	188,226	24,295	31,116
50-54...	30,824	34,275	23,875	25,282	15,061	17,323	144,687	172,301	23,213	29,509
55-59...	27,243	29,593	21,298	21,359	13,509	15,085	124,338	145,472	21,041	26,487
60-64...	21,274	23,981	16,120	16,914	11,046	12,654	97,541	120,104	18,011	23,618
65-69...	16,291	19,483	11,752	12,921	8,861	10,646	71,851	95,082	14,682	20,200
70-74...	10,472	14,360	7,945	9,038	6,105	7,928	47,467	69,587	10,221	15,216
75-79...	6,075	8,761	4,309	5,261	3,687	5,180	26,534	43,641	6,063	9,771
80-84...	2,357	4,306	1,653	2,397	1,627	2,766	11,868	22,571	2,725	5,108
85-89...	692	1,553	466	813	541	1,090	3,771	8,729	934	2,056
90-94...	137	356	90	168	112	253	765	2,150	180	488
95 and over	15	65	13	23	9	42	103	389	23	93

## Deaths registered in the three

All Ages	20,956	20,185	14,682	13,591	9,568	9,658	81,814	83,328	15,380	16,828
0 ...	2,151	1,499	1,547	1,081	796	524	6,723	4,722	958	712
1 ...	443	331	269	240	132	78	1,072	975	146	126
2 ...	175	208	111	98	59	48	545	404	90	66
3 ...	124	119	91	70	38	39	386	334	46	58
4 ...	94	82	52	76	38	21	302	313	51	49
0-4...	2,987	2,239	2,070	1,565	1,063	710	9,028	6,808	1,201	1,011
5-9...	341	279	210	221	133	130	1,223	1,123	186	166
10-14...	222	192	151	138	85	106	720	659	123	110
15-19...	382	333	264	277	168	131	1,420	1,124	206	198
20-24...	455	421	352	324	213	148	1,946	1,683	293	260
25-29...	471	460	365	384	152	172	1,929	1,840	279	314
30-34...	445	473	317	327	183	191	1,816	1,953	313	294
35-39...	536	520	371	370	225	226	2,050	2,051	322	329
40-44...	668	567	468	428	255	244	2,606	2,451	449	415
45-49...	892	703	633	501	374	341	3,645	3,208	586	589
50-54...	1,162	940	868	669	474	420	4,893	4,097	837	753
55-59...	1,548	1,202	1,087	918	637	531	6,345	5,039	1,101	1,018
60-64...	1,831	1,531	1,347	1,153	814	735	7,659	6,389	1,481	1,300
65-69...	2,253	1,922	1,557	1,342	1,118	930	8,946	8,005	1,817	1,713
70-74...	2,404	2,431	1,660	1,596	1,181	1,209	9,482	9,721	2,058	2,111
75-79...	2,279	2,490	1,511	1,547	1,160	1,267	8,459	10,443	1,891	2,390
80-84...	1,331	1,964	976	1,047	779	1,192	5,953	8,872	1,335	2,015
85 and over	749	1,518	475	784	554	975	3,694	7,862	812	1,842

TABLE 3—continued.  
GEOGRAPHICAL DIVISIONS.

Age last birth-day.	London A.C.—(continued).				Rural Districts.					
	Wales I.		Wales II.		Total.		North I.		North II.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
at 1931 Census.										
All Ages	496,417	471,397	132,681	154,454	3,966,247	4,034,212	257,466	250,316	187,881	185,465
0-4...	40,048	39,798	9,944	9,710	315,301	306,377	22,664	22,585	14,671	14,453
5-9...	49,651	49,097	11,357	11,027	350,861	340,802	26,701	26,165	15,875	15,614
10-14...	50,576	49,308	10,852	11,037	340,450	324,420	25,562	24,563	15,531	14,779
15-19...	47,405	38,522	11,221	12,559	353,876	311,201	24,837	21,165	19,179	15,358
20-24...	40,953	36,923	11,147	13,014	335,666	307,559	21,999	19,780	17,965	14,265
25-29...	38,799	38,533	10,719	12,383	320,783	309,697	20,272	19,763	14,981	13,865
30-34...	35,978	36,171	9,725	11,514	284,688	300,754	18,123	18,500	12,681	13,110
35-39...	33,883	34,675	8,822	10,720	254,524	288,075	16,339	17,460	11,412	12,670
40-44...	31,861	30,977	8,129	10,185	246,422	274,053	15,624	16,217	10,904	12,234
45-49...	30,712	28,397	8,164	10,438	240,445	261,025	14,653	15,071	10,778	11,975
50-54...	27,522	25,331	8,203	9,954	224,981	243,209	13,559	13,482	10,358	11,271
55-59...	25,018	21,286	7,369	8,945	204,403	212,788	12,274	11,579	9,219	9,878
60-64...	18,778	16,088	6,154	7,577	170,374	180,849	9,526	8,991	8,052	8,383
65-69...	13,117	11,784	4,766	6,296	138,086	147,772	7,003	6,735	6,767	6,986
70-74...	7,561	7,744	3,194	4,547	96,327	107,894	4,578	4,412	4,860	5,171
75-79...	3,698	4,179	1,855	2,682	54,846	66,948	2,507	2,379	2,877	3,257
80-84...	1,352	1,829	777	1,325	24,503	33,959	947	1,127	1,276	1,476
85-89...	341	602	228	428	7,921	13,103	254	262	423	565
90-94...	53	130	43	102	1,612	3,216	39	75	67	137
95 and over	11	23	12	11	178	511	5	5	5	18

## years 1930, 1931 and 1932.

All Ages	18,565	15,715	5,682	6,027	143,842	137,092	9,229	8,351	6,931	6,625
0 ...	2,092	1,532	423	307	12,271	8,979	1,251	917	596	448
1 ...	440	343	62	61	1,998	1,747	246	232	79	74
2 ...	168	172	29	37	924	813	117	104	38	22
3 ...	124	124	33	26	673	585	70	75	21	31
4 ...	117	116	16	20	561	480	51	46	26	18
0-4...	2,941	2,287	563	451	16,427	12,604	1,735	1,374	760	593
5-9...	356	325	67	60	2,051	1,742	212	170	97	63
10-14...	220	276	39	54	1,414	1,278	116	151	53	60
15-19...	505	423	91	92	2,473	2,004	243	190	108	84
20-24...	485	517	117	120	3,217	2,529	247	219	168	122
25-29...	461	567	129	123	2,969	2,781	238	198	136	111
30-34...	441	470	89	143	2,810	2,962	232	228	143	110
35-39...	536	563	128	126	3,091	3,404	230	260	107	164
40-44...	657	530	189	169	3,821	3,710	276	284	157	151
45-49...	909	711	240	220	5,123	4,825	341	300	222	229
50-54...	1,151	891	315	282	6,675	6,303	419	414	296	273
55-59...	1,511	1,096	441	356	9,329	8,063	591	570	408	376
60-64...	1,736	1,280	537	500	12,183	10,502	756	668	564	502
65-69...	2,085	1,405	649	654	16,109	13,647	925	771	769	735
70-74...	1,958	1,579	811	824	18,116	16,365	954	854	921	830
75-79...	1,458	1,337	641	803	17,483	17,589	883	800	980	895
80-84...	793	887	411	600	12,285	14,454	582	581	659	730
85 and over	342	571	225	450	8,266	12,330	249	319	383	597

APPENDIX II.  
ENGLAND AND WALES—

Age last birthday.	Rural Districts—(continued).									
	North III.		North IV.		Midland I.		Midland II.		East.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
Populations enumerated										
All Ages	223,643	216,330	227,438	242,635	459,676	469,207	386,977	389,402	429,515	421,551
0-4...	20,074	19,482	16,406	15,815	37,318	36,380	32,194	31,127	34,033	33,061
5-9...	21,903	21,804	17,764	17,437	41,331	39,752	35,224	34,493	38,136	36,325
10-14...	20,451	19,535	18,267	17,251	39,606	38,314	33,875	32,375	36,899	34,758
15-19...	20,316	17,477	19,714	19,498	41,292	36,451	33,945	31,232	37,888	30,635
20-24...	19,448	17,031	19,734	20,479	38,072	35,726	33,462	31,656	34,805	29,807
25-29...	19,037	17,485	19,402	20,361	37,518	35,797	33,527	32,255	33,206	29,870
30-34...	17,089	17,047	17,594	19,810	33,196	34,804	29,882	31,098	29,132	29,035
35-39...	15,037	15,703	16,113	18,768	29,019	33,031	26,030	28,557	25,200	28,121
40-44...	14,108	14,441	15,307	17,338	28,078	31,104	23,792	25,610	25,429	27,979
45-49...	13,173	13,030	14,091	16,626	27,156	29,329	22,996	24,061	25,992	27,423
50-54...	12,272	12,015	13,830	15,568	25,795	27,949	21,070	22,294	24,263	25,259
55-59...	10,415	9,673	12,353	13,332	23,797	24,692	18,891	18,628	22,635	22,728
60-64...	7,726	7,710	9,861	10,904	19,957	21,279	14,951	15,289	19,465	20,055
65-69...	5,740	5,921	7,697	8,504	16,188	17,437	11,609	12,308	16,907	17,232
70-74...	3,753	4,166	4,866	5,626	11,189	12,745	8,352	9,084	12,767	13,321
75-79...	2,061	2,339	2,476	3,240	6,279	8,213	4,550	5,478	7,594	8,523
80-84...	774	1,058	1,016	1,480	2,803	4,142	1,936	2,610	3,625	4,777
85-89...	228	329	299	481	877	1,619	557	974	1,252	2,042
90-94...	35	74	43	103	189	385	115	240	256	519
95 and over	3	10	5	14	16	58	13	33	31	81

## Deaths registered in the three

All Ages	7,601	6,974	7,836	7,687	16,972	16,215	13,073	12,252	15,844	15,317
0 ...	1,038	745	671	470	1,370	1,078	1,307	979	1,204	905
1 ...	237	189	105	84	227	176	244	205	150	134
2 ...	116	92	59	34	102	96	113	98	78	69
3 ...	83	56	36	15	75	62	79	70	49	51
4 ...	63	64	32	17	70	55	53	52	39	30
0-4...	1,537	1,146	903	620	1,844	1,467	1,796	1,404	1,520	1,189
5-9...	194	199	100	88	196	185	202	167	197	155
10-14...	114	109	66	64	157	160	144	103	139	113
15-19...	166	130	129	98	256	257	247	186	237	209
20-24...	204	165	172	102	363	284	301	267	314	235
25-29...	183	147	145	174	357	340	314	256	274	282
30-34...	147	204	157	185	331	324	301	286	245	292
35-39...	183	220	164	212	372	394	302	340	259	300
40-44...	246	263	213	237	432	453	386	364	341	372
45-49...	299	240	283	288	609	482	493	468	486	494
50-54...	391	345	460	419	793	721	608	550	600	663
55-59...	483	418	586	540	1,100	929	872	735	861	786
60-64...	596	501	777	680	1,195	993	905	1,201	1,085	1,085
65-69...	699	614	967	893	1,904	1,583	1,366	1,193	1,756	1,430
70-74...	794	729	989	1,005	2,180	1,897	1,647	1,445	2,176	1,807
75-79...	709	746	868	1,011	2,109	2,132	1,553	1,483	2,152	2,112
80-84...	413	491	551	641	1,488	1,803	961	1,162	1,711	1,916
85 and over	243	307	306	430	935	1,609	587	938	1,375	1,877

TABLE 3—continued.  
GEOGRAPHICAL DIVISIONS.

Age last birthday.	Rural Districts—(continued).							
	South East.		South West.		Wales I.		Wales II.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
at 1931 Census.								
All Ages	957,463	1,008,860	439,882	457,066	192,694	188,345	203,612	205,035
0-4...	73,384	70,795	33,216	32,120	15,252	14,840	16,089	15,719
5-9...	80,418	77,723	37,013	36,135	18,321	17,929	18,175	17,425
10-14...	78,274	73,716	35,143	33,637	18,610	17,903	18,232	17,589
15-19...	83,346	74,853	37,241	32,565	18,077	16,429	18,041	15,538
20-24...	80,412	76,762	37,184	32,582	15,902	15,009	16,683	14,462
25-29...	77,483	76,946	34,627	33,328	15,249	15,082	15,481	14,945
30-34...	67,369	74,572	31,297	33,188	14,116	14,781	14,209	14,809
35-39...	60,649	73,250	28,422	32,486	13,371	13,748	12,932	14,281
40-44...	60,730	71,325	27,764	31,943	12,565	12,480	12,121	13,382
45-49...	60,365	68,572	26,834	30,434	11,811	11,464	11,996	13,040
50-54...	56,018	63,906	25,448	28,588	10,695	10,238	11,667	12,639
55-59...	50,605	56,218	23,607	25,923	9,559	8,845	11,048	11,292
60-64...	43,610	48,665	20,392	22,822	7,485	6,976	9,349	9,775
65-69...	36,022	39,788	17,294	19,698	5,313	5,226	7,546	7,937
70-74...	24,978	29,049	12,419	14,650	3,395	3,701	5,170	5,969
75-79...	14,194	18,237	7,271	9,444	1,936	2,203	3,101	3,635
80-84...	6,812	9,539	3,259	4,940	762	1,010	1,293	1,800
85-89...	2,240	3,815	1,175	2,015	223	400	393	601
90-94...	492	980	251	472	47	69	78	162
95 and over...	62	149	25	96	5	12	8	35

## years 1930, 1931 and 1932.

All Ages	33,506	31,972	17,127	16,840	7,087	6,374	8,636	8,485
0 ...	2,220	1,562	1,170	816	689	535	755	524
1 ...	314	307	163	157	135	98	98	91
2 ...	139	133	71	71	48	54	43	40
3 ...	135	109	49	53	41	32	35	31
4 ...	104	94	53	30	36	30	34	44
0-4...	2,912	2,205	1,506	1,127	949	749	965	730
5-9...	406	340	202	136	122	124	123	115
10-14...	329	242	132	108	77	80	87	88
15-19...	542	391	240	183	160	140	145	136
20-24...	721	493	357	279	180	175	190	188
25-29...	635	586	329	313	187	171	171	203
30-34...	611	630	306	325	165	184	172	194
35-39...	727	717	355	374	195	210	197	213
40-44...	900	769	417	406	232	185	221	226
45-49...	1,145	1,195	584	557	346	265	315	307
50-54...	1,552	1,498	753	712	415	340	388	368
55-59...	2,198	1,918	1,102	894	541	402	587	495
60-64...	2,832	2,483	1,504	1,327	643	486	771	670
65-69...	3,955	3,207	2,001	1,727	759	622	1,008	872
70-74...	4,293	3,952	2,279	2,125	766	695	1,117	1,026
75-79...	4,220	4,288	2,278	2,331	660	682	1,071	1,109
80-84...	3,217	3,700	1,584	2,048	439	499	680	883
85 and over...	2,311	3,358	1,198	1,868	251	365	428	662

APPENDIX II. TABLE 4.

## ENGLAND AND WALES.

Births registered in each quarter in years 1924-1932.

Year.	MALES.				FEMALES.			
	March.	June.	September.	December.	March.	June.	September.	December.
1924 ...	94,690	95,680	95,572	87,328	90,699	91,358	91,007	83,599
1925 ...	89,706	95,484	93,154	84,823	85,817	91,380	88,681	81,537
1926 ...	88,544	92,612	89,093	83,968	85,453	88,720	85,744	80,429
1927 ...	85,079	87,020	83,774	77,864	81,895	83,758	80,080	74,702
1928 ...	86,276	86,801	84,620	79,485	81,650	84,196	81,055	76,184
1929 ...	81,962	86,627	83,417	76,636	78,085	82,824	80,360	73,762
1930 ...	80,868	86,568	84,791	79,153	77,677	83,474	80,805	75,475
1931 ...	81,803	83,526	82,455	75,781	77,860	80,234	78,678	71,744
1932 ...	77,861	84,768	79,864	71,914	74,255	80,635	76,322	68,353

APPENDIX II. TABLE 5.

## ENGLAND AND WALES.

Deaths of Infants registered in years 1925-29.

## Males.

Year.	0-3 months.	3-6 months.	6-9 months.	9 months -1 year.	1-2 years.	2-3 years.	3-4 years.	4-5 years.
1925 ...	18,279	4,751	3,886	3,582	7,743	3,132	2,072	1,635
1926 ...	17,520	4,205	3,393	2,918	6,395	2,705	1,676	1,399
1927 ...	16,320	3,690	3,293	3,003	6,858	2,933	1,812	1,387
1928 ...	16,052	3,557	2,788	2,459	5,400	2,404	1,501	1,221
1929 ...	16,588	3,956	3,572	3,205	7,468	3,134	1,908	1,413

## Females.

1925 ...	13,663	3,278	2,955	2,922	6,822	2,925	1,982	1,453
1926 ...	12,664	3,017	2,604	2,436	5,711	2,309	1,597	1,209
1927 ...	11,853	2,682	2,379	2,390	5,838	2,638	1,612	1,228
1928 ...	11,496	2,528	2,080	2,000	4,710	2,156	1,342	1,088
1929 ...	11,989	2,933	2,811	2,754	6,668	3,050	1,724	1,264

APPENDIX

RATIO OF ACTUAL DEATHS TO EXPECTED DEATHS

(1) Boroughs, Urban Districts and Rural Districts combined.

Age Group.	North I.	North II.	North III.	North IV.	Mid-land I.	Mid-land II.	East.	South-East (Incl. London Admin. County)	South-West.	Wales I.	Wales II.	Greater London (in-cluded in S.E. Region)
MALES.												
5-9	1.275	1.226	1.160	1.188	.927	.879	.861	.868	.861	.995	.931	.925
10-14	1.250	1.143	1.152	1.131	.969	.966	.865	.902	.913	1.026	.969	.902
15-19	1.401	1.092	1.055	1.056	.962	.949	.883	.905	.860	1.301	1.063	.951
20-24	1.273	1.091	1.026	1.048	1.000	.958	.924	.902	.936	1.262	1.116	.897
25-29	1.271	1.109	.959	1.070	1.010	.955	.842	.912	.950	1.226	1.154	.922
30-34	1.224	1.077	.996	1.086	.994	.955	.844	.932	.955	1.118	.996	.955
35-39	1.178	.991	1.009	1.136	1.028	.923	.857	.920	.924	1.130	1.045	.932
40-44	1.128	1.027	1.049	1.144	1.032	.938	.793	.919	.889	1.088	1.046	.962
45-49	1.053	1.046	1.058	1.181	1.046	.908	.790	.931	.858	1.074	.986	1.007
50-54	.993	.989	1.086	1.178	1.018	.893	.753	.957	.850	1.101	.901	1.037
55-59	.971	.965	1.074	1.155	.993	.914	.766	.972	.892	1.083	.973	1.045
60-64	1.026	.955	1.112	1.154	1.009	.905	.785	.949	.912	1.064	.962	1.028
65-69	1.068	.975	1.127	1.168	1.006	.943	.822	.939	.869	1.098	.963	1.023
70-74	1.098	.964	1.160	1.209	1.016	.951	.812	.916	.878	1.106	1.032	.977
75-79	1.066	1.036	1.144	1.170	1.043	.992	.860	.942	.902	1.043	.981	.993
80-84	1.121	1.029	1.114	1.149	1.043	.993	.903	.954	.907	1.073	.980	1.018
85 and over	1.018	.955	1.055	1.100	1.045	1.021	1.019	.969	.917	.993	1.002	.994
5-19	1.317	1.153	1.116	1.121	.951	.927	.871	.891	.872	1.122	.993	.931
20-49	1.166	1.053	1.024	1.123	1.023	.935	.832	.921	.908	1.133	1.046	.954
50-69	1.020	.970	1.103	1.163	1.006	.917	.789	.952	.883	1.085	.955	1.032
70 and over	1.084	.999	1.138	1.178	1.033	.980	.876	.939	.897	1.069	1.001	.992
5 and over	1.091	1.006	1.098	1.156	1.016	.944	.838	.938	.893	1.093	.990	.997

FEMALES.

5-9	1.129	1.115	1.254	1.192	.906	.944	.881	.879	.785	1.070	1.012	.936
10-14	1.459	1.185	1.039	1.145	.920	.870	.884	.850	.817	1.171	1.136	.806
15-19	1.481	1.208	1.056	1.100	.986	1.003	.900	.821	.882	1.429	1.181	.863
20-24	1.367	1.121	1.019	1.058	.951	.981	.889	.868	.943	1.499	1.328	.890
25-29	1.247	1.072	.994	1.085	.997	.990	.987	.855	1.028	1.436	1.299	.863
30-34	1.216	.996	1.062	1.107	.985	.972	.953	.884	.936	1.240	1.277	.885
35-39	1.302	1.117	1.062	1.116	1.029	.964	.926	.854	.941	1.297	1.149	.863
40-44	1.199	1.067	1.103	1.083	1.056	1.019	.920	.879	.931	1.119	1.142	.916
45-49	1.104	1.065	1.076	1.118	.995	.966	.919	.902	.937	1.201	1.112	.917
50-54	1.120	1.053	1.087	1.132	.999	.949	.916	.903	.919	1.208	1.011	.941
55-59	1.122	1.036	1.080	1.165	.994	1.023	.869	.897	.887	1.185	1.008	.937
60-64	1.192	1.068	1.123	1.184	.983	1.006	.892	.876	.886	1.187	1.053	.907
65-69	1.162	1.062	1.174	1.213	.982	1.006	.864	.883	.863	1.140	1.060	.927
70-74	1.164	1.032	1.186	1.224	1.000	.857	.869	.877	.857	1.174	1.054	.924
75-79	1.171	1.038	1.207	1.215	1.002	1.015	.911	.897	.895	1.110	1.089	.927
80-84	1.174	1.064	1.153	1.167	1.035	1.027	.955	.920	.915	1.084	1.073	.949
85 and over	1.121	1.117	1.108	1.106	1.047	1.056	.961	.953	.960	1.028	1.111	.979
5-19	1.343	1.168	1.121	1.142	.942	.950	.889	.847	.832	1.228	1.110	.895
20-49	1.225	1.072	1.058	1.097	1.004	.982	.930	.877	.949	1.280	1.199	.892
50-69	1.153	1.057	1.123	1.180	.988	1.000	.881	.888	.883	1.175	1.039	.926
70 and over	1.162	1.055	1.176	1.194	1.017	1.020	.921	.907	.903	1.112	1.078	.941
5 and over	1.185	1.064	1.130	1.166	1.001	1.002	.909	.893	.901	1.178	1.085	.925

III.

AS COMPUTED BY ENGLISH LIFE TABLES NO. 10.

(2) County Boroughs and London Administrative County.

Age Group.	London Admin. County.	North I.	North II.	North III.	North IV.	Mid-land I.	Mid-land II.	East.	South East (Excl. London Admin. County)	South-West.	*Wales I.	Total (including London A.C.)
MALES.												
5-9	.983	1.408	1.473	1.122	1.253	.992	1.010	1.008	.851	.978	.931	1.088
10-14	.966	1.417	1.327	1.146	1.238	.985	1.008	.897	.984	1.053	1.211	1.096
15-19	.988	1.426	1.271	1.055	1.147	.995	.957	.911	.865	.881	1.201	1.050
20-24	.934	1.450	1.156	1.045	1.120	1.025	1.003	1.023	.930	.831	1.405	1.043
25-29	.970	1.421	1.209	.961	1.183	1.024	.912	1.018	1.001	1.014	1.276	1.060
30-34	1.060	1.384	1.135	1.031	1.197	1.030	1.089	.901	1.005	.949	1.148	1.092
35-39	1.057	1.314	1.122	1.058	1.279	1.070	1.045	.954	1.003	1.148	1.245	1.120
40-44	1.098	1.338	1.260	1.121	1.270	1.127	1.059	.942	.998	1.053	1.223	1.145
45-49	1.147	1.236	1.266	1.158	1.321	1.171	1.077	.962	.990	1.053	1.117	1.169
50-54	1.170	1.177	1.202	1.176	1.311	1.134	1.015	.935	.995	.937	1.245	1.164
55-59	1.165	1.068	1.147	1.163	1.273	1.070	1.055	.914	.992	1.057	1.208	1.140
60-64	1.119	1.117	1.116	1.178	1.225	1.080	1.004	.899	.958	1.055	1.118	1.114
65-69	1.097	1.164	1.088	1.192	1.238	1.102	1.047	.914	.922	.957	1.081	1.109
70-74	1.031	1.209	1.066	1.208	1.274	1.094	1.051	.881	.934	1.009	1.092	1.099
75-79	1.037	1.065	1.163	1.191	1.176	1.087	1.015	.983	.984	1.003	.986	1.075
80-84	1.039	1.148	1.160	1.116	1.159	1.079	.966	1.010	.968	.908	1.050	1.060
85 and over	1.031	1.018	1.004	1.037	1.113	1.070	1.093	.965	.966	.958	.914	1.029
5-19	.981	1.417	1.362	1.100	1.207	.992	.988	.976	.887	.956	1.103	1.074
20-49	1.058	1.339	1.204	1.080	1.244	1.090	1.039	.964	.988	1.019	1.218	1.116
50-69	1.132	1.131	1.131	1.179	1.256	1.095	1.031	.914	.960	1.002	1.150	1.127
70 and over	1.035	1.134	1.109	1.173	1.210	1.087	1.027	.950	.961	.980	1.033	1.077
5 and over...	1.076	1.195	1.154	1.152	1.237	1.085	1.029	.940	.962	.995	1.124	1.106
FEMALES.												
5-9	.931	1.233	1.338	1.160	1.257	.950	1.044	1.119	.881	.949	.993	1.066
10-14	.950	1.622	1.302	.987	1.254	.913	.992	.853	.930	.891	1.038	1.064
15-19	.936	1.537	1.408	1.063	1.191	.990	1.069	.874	.842	1.146	1.297	1.063
20-24	.925	1.391	1.238	.976	1.200	.939	.960	1.000	.963	1.000	1.330	1.038
25-29	.897	1.388	1.215	.992	1.161	.972	.977	1.074	.868	1.117	1.298	1.024
30-34	.920	1.257	1.049	1.009	1.192	.979	1.090	.898	.949	.912	1.149	1.031
35-39	.896	1.262	1.218	1.070	1.182	1.024	.905	.876	.886	1.013	1.163	1.029
40-44	.995	1.290	1.254	1.122	1.120	1.108	1.094	1.000	.899	1.199	1.120	1.073
45-49	.973	1.169	1.184	1.092	1.180	1.081	1.041	.983	.941	1.012	1.176	1.064
50-54	1.002	1.136	1.228	1.125	1.186	1.048	1.044	.984	.941	1.088	1.187	1.074
55-59	.964	1.124	1.125	1.078	1.222	1.040	1.085	.979	.925	.950	1.168	1.068
60-64	.964	1.226	1.171	1.130	1.226	1.023	1.024	.972	.893	.904	1.166	1.059
65-69	.982	1.165	1.143	1.175	1.245	1.026	1.030	.963	.901	.926	1.057	1.064
70-74	.972	1.180	1.167	1.179	1.243	1.047	.993	.936	.850	.897	1.139	1.054
75-79	.968	1.159	1.116	1.189	1.229	1.027	1.015	1.003	.905	.961	1.054	1.051
80-84	.980	1.163	1.090	1.155	1.169	1.067	1.087	1.052	.930	.918	1.043	1.044
85 and over	1.012	1.081	1.139	1.111	1.126	1.050	1.097	1.003	.943	1.000	1.021	1.035
5-19	.938	1.448	1.357	1.078	1.229	.958	1.043	.953	.876	1.017	1.128	1.064
20-49	.939	1.281	1.194	1.052	1.171	1.027	1.016	.972	.919	1.046	1.198	1.046
50-69	.985	1.166	1.162	1.132	1.224	1.032	1.043	.973	.911	.950	1.135	1.065
70 and over	.980	1.156	1.130	1.169	1.209	1.046	1.036	.995	.903	.941	1.073	1.048
5 and over...	.972	1.205	1.168	1.127	1.207	1.033	1.035	.982	.907	.962	1.123	1.054

\* There are no County Boroughs in Wales II.

## APPENDIX III.

## RATIO OF ACTUAL DEATHS TO EXPECTED DEATHS

## (3) Urban Areas (other than County Boroughs and London A.C.).

Age Group.	North I.	North II.	North III.	North IV.	Mid-land I.	Mid-land II.	East.	South East.	South West.	Wales I.	Wales II.	Total.
MALES.												
5-9 ...	1.210	1.192	1.165	1.144	.986	.820	.864	.835	.894	1.038	.859	.971
10-14 ...	1.220	1.260	1.122	1.003	1.005	.944	.876	.806	.939	.973	.796	.949
15-19 ...	1.447	1.264	1.045	.930	1.013	.933	.955	.865	.862	1.403	1.071	1.002
20-24 ...	1.177	1.168	.978	.953	.972	.962	.869	.862	.942	1.228	1.064	.957
25-29 ...	1.168	1.156	.951	.944	1.017	1.000	.724	.865	.915	1.197	1.217	.954
30-34 ...	1.091	1.041	1.025	.954	.982	.878	.920	.846	1.030	1.119	.840	.939
35-39 ...	1.149	1.121	.986	.988	1.043	.921	.987	.818	.877	1.107	1.016	.940
40-44 ...	1.036	.978	.985	1.027	1.018	.925	.831	.809	.947	1.065	1.196	.929
45-49 ...	.991	1.052	.977	1.056	.975	.885	.844	.833	.863	1.059	1.053	.929
50-54 ...	.914	.964	1.031	1.027	.960	.926	.802	.862	.919	1.066	.978	.935
55-59 ...	.944	.929	1.014	1.033	.990	.890	.822	.890	.912	1.053	1.043	.947
60-64 ...	1.004	.930	1.079	1.096	.981	.953	.840	.895	.938	1.066	.994	.971
65-69 ...	1.046	1.039	1.110	1.126	.990	.948	.903	.891	.886	1.138	.974	.983
70-74 ...	1.093	1.005	1.166	1.189	.927	.935	.866	.894	.901	1.159	1.136	1.000
75-79 ...	1.114	1.013	1.140	1.212	1.065	.995	.893	.905	.885	1.119	.982	1.001
80-84 ...	1.078	1.013	1.169	1.184	1.051	1.098	.890	.933	.911	1.091	.983	1.003
85 and over	1.037	.958	1.066	1.098	1.045	.979	.986	.932	.840	.994	.918	.963
5-19 ...	1.303	1.236	1.107	1.023	1.001	.894	.904	.841	.891	1.164	.929	.979
20-49 ...	1.085	1.074	.983	1.000	.999	.923	.859	.836	.919	1.114	1.070	.939
50-69 ...	.986	.972	1.065	1.078	.983	.932	.852	.887	.911	1.085	.995	.963
70 and over	1.092	1.004	1.150	1.189	1.046	.990	.896	.910	.890	1.120	1.029	.997
5 and over...	1.061	1.015	1.076	1.092	1.010	.948	.874	.883	.902	1.107	1.018	.971

## FEMALES.

5-9 ...	1.059	1.208	1.291	1.143	.927	1.005	.992	.898	.917	1.087	.896	1.011
10-14 ...	1.314	1.247	1.016	1.000	.906	.902	1.140	.777	.873	1.290	1.125	.966
15-19 ...	1.519	1.316	1.032	1.009	.949	1.053	.799	.728	.835	1.596	1.070	.962
20-24 ...	1.366	1.049	1.055	.892	.984	.982	.736	.814	.852	1.662	1.091	.957
25-29 ...	1.176	1.061	1.028	.980	1.027	1.110	.860	.823	.994	1.602	1.079	.984
30-34 ...	1.159	1.058	1.107	.999	1.040	.919	.927	.849	.905	1.298	1.243	.972
35-39 ...	1.371	1.000	1.000	1.036	1.053	.976	.996	.817	.875	1.377	1.000	.972
40-44 ...	1.098	1.038	1.019	1.053	.995	.993	.881	.831	.894	1.165	1.127	.951
45-49 ...	1.102	1.028	1.103	1.066	.949	.898	.909	.844	.938	1.241	1.043	.962
50-54 ...	1.126	1.032	1.045	1.079	.964	.930	.852	.836	.897	1.238	.996	.955
55-59 ...	1.083	1.050	1.096	1.113	.974	1.030	.844	.831	.921	1.234	.954	.967
60-64 ...	1.173	1.086	1.147	1.162	.997	1.065	.907	.830	.859	1.243	1.031	.983
65-69 ...	1.178	1.008	1.222	1.203	.975	1.027	.864	.832	.838	1.179	1.027	.978
70-74 ...	1.146	.983	1.245	1.229	1.014	1.058	.913	.837	.831	1.221	1.086	.986
75-79 ...	1.161	1.022	1.259	1.216	1.022	1.057	.880	.861	.880	1.151	1.076	.988
80-84 ...	1.193	.993	1.189	1.218	1.032	.988	.975	.889	.892	1.096	1.024	.984
85 and over	1.094	1.096	1.145	1.110	1.036	1.067	.949	.935	.937	1.023	1.131	.988
5-19 ...	1.288	1.260	1.121	1.052	.931	1.000	.946	.798	.871	1.316	1.025	.980
20-49 ...	1.198	1.037	1.055	1.016	1.003	.972	.890	.831	.912	1.363	1.091	.966
50-69 ...	1.145	1.042	1.141	1.149	.979	1.020	.869	.832	.870	1.220	1.008	.973
70 and over	1.154	1.016	1.226	1.208	1.024	1.043	.926	.876	.881	1.144	1.076	.986
5 and over...	1.170	1.039	1.155	1.140	1.002	1.019	.904	.851	.882	1.233	1.053	.978

—continued.

## AS COMPUTED BY ENGLISH LIFE TABLES NO. 10.

## (4) Rural Districts.

Age Group.	North I.	North II.	North III.	North IV.	Mid-land I.	Mid-land II.	East.	South East.	South West.	Wales I.	Wales II.	Total.
MALES.												
5-9 ...	1.152	.882	1.285	.813	.688	.831	.749	.732	.792	.968	.984	.847
10-14 ...	1.018	.768	1.253	.805	.887	.954	.842	.940	.841	.928	1.074	.929
15-19 ...	1.286	.740	1.078	.860	.818	.957	.823	.856	.848	1.168	1.058	.921
20-24 ...	1.138	.949	1.062	.882	.965	.912	.913	.908	.973	1.146	1.152	.971
25-29 ...	1.184	.913	.968	.751	.957	.943	.830	.826	.956	1.238	1.110	.932
30-34 ...	1.172	1.029	.786	.813	.912	.920	.768	.828	.892	1.065	1.103	.902
35-39 ...	.987	.656	.851	.713	.899	.812	.719	.839	.874	1.021	1.065	.850
40-44 ...	.911	.744	.901	.717	.794	.837	.692	.765	.775	.951	.940	.800
45-49 ...	.834	.738	.812	.690	.803	.768	.669	.679	.780	1.048	.940	.763
50-54 ...	.788	.729	.811	.847	.784	.735	.630	.706	.754	.988	.847	.756
55-59 ...	.839	.771	.809	.827	.806	.804	.663	.757	.814	.987	.926	.796
60-64 ...	.905	.799	.880	.898	.883	.757	.704	.741	.841	.980	.940	.815
65-69 ...	.946	.814	.872	.900	.842	.842	.743	.786	.828	1.023	.956	.835
70-74 ...	.933	.848	.946	.909	.872	.882	.763	.769	.821	1.009	.967	.841
75-79 ...	1.000	.966	.977	.995	.953	.969	.804	.844	.889	.968	.981	.905
80-84 ...	1.143	.961	.993	1.009	.987	.923	.878	.878	.904	1.071	.978	.932
85 and over	.996	.925	1.090	1.052	1.015	1.005	1.047	.965	.968	1.068	1.052	1.000
5-19 ...	1.172	.794	1.197	.831	.786	.910	.800	.830	.826	1.038	1.035	.896
20-49 ...	1.002	.818	.886	.747	.871	.851	.746	.786	.855	1.063	1.029	.850
50-69 ...	.883	.788	.848	.874	.836	.793	.699	.755	.817	.997	.929	.809
70 and over	1.001	.920	.980	.970	.940	.932	.843	.844	.881	1.014	.984	.901
5 and over	.965	.851	.921	.882	.883	.864	.779	.802	.852	1.019	.972	.858

## FEMALES.

5-9 ...	1.069	.663	1.496	.830	.764	.795	.701	.719	.618	1.138	1.085	.840
10-14 ...	1.411	.938	1.282	.853	.958	.730	.748	.754	.740	1.026	1.143	.906
15-19 ...	1.310	.792	1.083	.731	1.028	.865	.995	.761	.817	1.239	1.271	.937
20-24 ...	1.311	1.017	1.146	.590	.944	1.000	.936	.762	1.015	1.378	1.541	.975
25-29 ...	1.094	.874	.913	.930	1.033	.865	1.029	.830	1.023	1.239	1.482	.978
30-34 ...	1.232	.840	1.193	.934	.928	.917	1.003	.843	.976	1.243	1.311	.983
35-39 ...	1.262	1.101	1.189	.959	1.013	1.009	.904	.830	.977	1.296	1.268	1.002
40-44 ...	1.193	.839	1.241	.929	.991	.968	.905	.734	.864	1.011	1.147	.921
45-49 ...	.987	.946	.913	.857	.814	.963	.892	.863	.907	1.147	1.167	.916
50-54 ...	1.081	.850	1.009	.946	.907	.868	.923	.824	.876	1.168	1.025	.911
55-59 ...	1.180	.913	1.037	.971	.902	.946	.829	.818	.827	1.089	1.051	.909
60-64 ...	1.160	.935	1.014	.974	.877	.924	.844	.797	.908	1.087	1.070	.907
65-69 ...	1.130	1.040	1.025	1.037	.897	.958	.820	.797	.867	1.176	1.086	.913
70-74 ...	1.159	.962	1.047	1.070	.891	.953	.812	.815	.860	1.125	1.029	.908
75-79 ...	1.210	.989	1.148	1.122	.934	.974	.892	.846	.888	1.114	1.097	.945
80-84 ...	1.167	1.118	1.049	.980	.985	1.007	.907	.877	.938	1.116	1.109	.963
85 and over	1.256	1.122	1.007	.979	1.052	1.014	.953	.911	.969	1.046	1.096	.985
5-19 ...	1.243	.781	1.296	.794	.865	.806	.820	.744	.724	1.147	1.169	.893
20-49 ...	1.162	.935	1.091	.874	.942	.955	.935	.814				

APPENDIX IV. TABLE I.  
ENGLISH LIFE TABLE No. 10. 1930-32.  
MALES.

Age. x.	$l_x$	$d_x$	$p_x$	$q_x$	$e_x$	Age. x.	$l_x$	$d_x$	$p_x$	$q_x$	$e_x$
0	100,000	7,186	.92814	.07186	58.74	55	70,041	1,130	.98386	.01614	17.89
1	92,814	1,420	.98470	.01530	62.25	56	68,911	1,202	.98256	.01744	17.17
2	91,394	600	.99343	.00657	62.21	57	67,709	1,280	.98110	.01890	16.47
3	90,794	400	.99559	.00441	61.62	58	66,429	1,362	.97950	.02050	15.78
4	90,394	325	.99641	.00359	60.89	59	65,067	1,447	.97776	.02224	15.10
5	90,069	309	.99657	.00343	60.11	60	63,620	1,536	.97585	.02415	14.43
6	89,760	233	.99740	.00260	59.31	61	62,084	1,633	.97370	.02630	13.77
7	89,527	195	.99782	.00218	58.47	62	60,451	1,738	.97125	.02875	13.13
8	89,332	165	.99815	.00185	57.59	63	58,713	1,849	.96850	.03150	12.50
9	89,167	144	.99839	.00161	56.70	64	56,864	1,965	.96545	.03455	11.89
10	89,023	130	.99854	.00146	55.79	65	54,899	2,081	.96209	.03791	11.30
11	88,893	124	.99861	.00139	54.87	66	52,818	2,198	.95838	.04162	10.73
12	88,769	125	.99859	.00141	53.95	67	50,620	2,312	.95432	.04568	10.17
13	88,644	134	.99849	.00151	53.02	68	48,308	2,422	.94986	.05014	9.63
14	88,510	150	.99830	.00170	52.10	69	45,886	2,525	.94498	.05502	9.12
15	88,360	174	.99803	.00197	51.19	70	43,361	2,617	.93965	.06035	8.62
16	88,186	200	.99773	.00227	50.29	71	40,744	2,695	.93385	.06615	8.14
17	87,986	228	.99741	.00259	49.40	72	38,049	2,757	.92754	.07246	7.68
18	87,758	249	.99716	.00284	48.53	73	35,292	2,801	.92062	.07938	7.24
19	87,509	264	.99698	.00302	47.66	74	32,491	2,826	.91303	.08697	6.82
20	87,245	276	.99684	.00316	46.81	75	29,665	2,824	.90481	.09519	6.43
21	86,969	283	.99675	.00325	45.95	76	26,841	2,791	.89603	.10397	6.05
22	86,686	286	.99670	.00330	45.10	77	24,050	2,724	.88675	.11325	5.69
23	86,400	289	.99666	.00334	44.25	78	21,326	2,626	.87687	.12313	5.36
24	86,111	287	.99667	.00333	43.40	79	18,700	2,501	.86627	.13373	5.04
25	85,824	283	.99670	.00330	42.54	80	16,199	2,349	.85500	.14500	4.74
26	85,541	280	.99673	.00327	41.68	81	13,850	2,173	.84313	.15687	4.46
27	85,261	280	.99672	.00328	40.82	82	11,677	1,977	.83073	.16927	4.20
28	84,981	281	.99669	.00331	39.95	83	9,700	1,768	.81771	.18229	3.95
29	84,700	284	.99665	.00335	39.08	84	7,932	1,555	.80393	.19607	3.72
30	84,416	287	.99660	.00340	38.21	85	6,377	1,342	.78952	.21048	3.50
31	84,129	294	.99651	.00349	37.34	86	5,035	1,135	.77456	.22544	3.30
32	83,835	303	.99639	.00361	36.47	87	3,900	939	.75922	.24078	3.12
33	83,532	316	.99622	.00378	35.60	88	2,961	756	.74480	.25520	2.95
34	83,216	331	.99602	.00398	34.73	89	2,205	596	.72969	.27031	2.79
35	82,885	349	.99579	.00421	33.87	90	1,609	460	.71386	.28614	2.63
36	82,536	369	.99553	.00447	33.01	91	1,149	347.8	.69730	.30270	2.49
37	82,167	389	.99526	.00474	32.15	92	801.2	256.4	.68002	.31998	2.35
38	81,778	411	.99498	.00502	31.30	93	544.8	184.1	.66200	.33800	2.22
39	81,367	432	.99469	.00531	30.46	94	360.7	128.7	.64327	.35673	2.09
40	80,935	455	.99438	.00562	29.62	95	232.0	87.3	.62381	.37619	1.97
41	80,480	481	.99402	.00598	28.78	96	144.7	57.4	.60366	.39634	1.86
42	79,999	511	.99361	.00639	27.95	97	87.3	36.4	.58280	.41720	1.76
43	79,488	546	.99313	.00687	27.13	98	50.9	22.3	.56131	.43869	1.66
44	78,942	585	.99259	.00741	26.32	99	28.6	13.2	.53919	.46081	1.57
45	78,357	626	.99201	.00799	25.51	100	15.4	7.5	.51650	.48350	1.48
46	77,731	669	.99139	.00861	24.71	101	8.0	4.0	.49329	.50671	1.40
47	77,062	713	.99075	.00925	23.92	102	3.9	2.1	.46960	.53040	1.32
48	76,349	756	.99010	.00990	23.14	103	1.8	1.0	.44553	.55447	1.25
49	75,593	799	.98943	.01057	22.36	104	.8	.5	.42115	.57885	1.18
50	74,794	844	.98872	.01128	21.60						
51	73,950	892	.98794	.01206	20.84						
52	73,058	946	.98705	.01295	20.09						
53	72,112	1,005	.98607	.01393	19.34						
54	71,107	1,066	.98501	.01499	18.61						

APPENDIX IV. TABLE I (continued).  
ENGLISH LIFE TABLE No. 10. 1930-32.  
FEMALES.

Age. x.	$l_x$	$d_x$	$p_x$	$q_x$	$e_x$	Age. x.	$l_x$	$d_x$	$p_x$	$q_x$	$e_x$
0	100,000	5,455	.94545	.05455	62.88	55	75,290	884	.98826	.01174	20.23
1	94,545	1,272	.98655	.01345	65.48	56	74,406	944	.98731	.01269	19.46
2	93,273	562	.99397	.00603	65.37	57	73,462	1,012	.98623	.01377	18.70
3	92,711	377	.99593	.00407	64.76	58	72,450	1,085	.98503	.01497	17.96
4	92,334	310	.99664	.00336	64.03	59	71,365	1,161	.98373	.01627	17.22
5	92,024	274	.99702	.00298	63.24	60	70,204	1,243	.98230	.01770	16.50
6	91,750	214	.99767	.00233	62.43	61	68,961	1,331	.98070	.01930	15.79
7	91,536	176	.99808	.00192	61.57	62	67,630	1,427	.97890	.02110	15.09
8	91,360	148	.99838	.00162	60.69	63	66,203	1,527	.97693	.02307	14.40
9	91,212	130	.99857	.00143	59.79	64	64,676	1,630	.97480	.02520	13.73
10	91,082	122	.99866	.00134	58.87	65	63,046	1,737	.97245	.02755	13.07
11	90,960	121	.99867	.00133	57.95	66	61,309	1,851	.96981	.03019	12.43
12	90,839	127	.99860	.00140	57.03	67	59,458	1,975	.96679	.03321	11.80
13	90,712	138	.99848	.00152	56.11	68	57,483	2,104	.96340	.03660	11.19
14	90,574	154	.99830	.00170	55.19	69	55,379	2,235	.95965	.04035	10.60
15	90,420	173	.99809	.00191	54.28	70	53,144	2,365	.95549	.04451	10.02
16	90,247	194	.99785	.00215	53.39	71	50,779	2,496	.95084	.04916	9.46
17	90,053	212	.99765	.00235	52.50	72	48,283	2,624	.94565	.05435	8.93
18	89,841	225	.99750	.00250	51.62	73	45,659	2,750	.93976	.06024	8.41
19	89,616	233	.99740	.00260	50.75	74	42,909	2,869	.93314	.06686	7.92
20	89,383	240	.99732	.00268	49.88	75	40,040	2,969	.92586	.07414	7.45
21	89,143	245	.99725	.00275	49.02	76	37,071	3,039	.91803	.08197	7.01
22	88,898	251	.99718	.00282	48.15	77	34,032	3,071	.90975	.09025	6.59
23	88,647	255	.99712	.00288	47.28	78	30,961	3,066	.90097	.09903	6.19
24	88,392	259	.99707	.00293	46.42	79	27,895	3,026	.89152	.10848	5.82
25	88,133	263	.99702	.00298	45.55	80	24,869	2,949	.88142	.11858	5.46
26	87,870	264	.99699	.00301	44.69	81	21,920	2,834	.87069	.12931	5.13
27	87,606	268	.99694	.00306	43.82	82	19,086	2,684	.85935	.14065	4.82
28	87,338	272	.99689	.00311	42.95	83	16,402	2,505	.84725	.15275	4.53
29	87,066	274	.99685	.00315	42.09	84	13,897	2,303	.83429	.16571	4.25
30	86,792	277	.99681	.00319	41.22	85	11,594	2,080	.82058	.17942	4.00
31	86,515	281	.99675	.00325	40.35	86	9,514	1,843	.80627	.19373	3.76
32	86,234	286	.99668	.00332	39.48	87	7,671	1,599	.79156	.20844	3.55
33	85,948	293	.99659	.00341	38.61	88	6,072	1,347	.77822	.22178	3.35
34	85,655	302	.99648	.00352	37.74	89	4,725	1,114	.76417	.23583	3.16
35	85,353	311	.99636	.00364	36.87	90	3,611	905	.74939	.25061	2.98
36	85,042	321	.99623	.00377	36.00	91	2,706	720	.73385	.26615	2.81
37	84,721	332	.99608	.00392	35.14	92	1,986	561	.71753	.28247	2.65
38	84,389	343	.99593	.00407	34.27	93	1,425	426.9	.70044	.29956	2.50
39	84,046	356	.99577	.00423	33.41	94	998.1	316.9	.68254	.31746	2.36
40	83,690	368	.99560	.00440	32.55	95	681.2	229.0	.66388	.33612	2.22
41	83,322	384	.99539	.00461	31.69	96	452.2	160.8	.64441	.35559	2.09
42	82,938	403	.99514	.00486	30.84	97	291.4	109.5	.62415	.37585	1.97
43	82,535	425	.99485	.00515	29.99	98	181.9	72.2	.60314	.39686	1.86
44	82,110	450	.99452	.00548	29.14	99	109.7	45.9	.58139	.41861	1.75
45	81,660	477	.99416	.00584	28.30	100	63.8	28.1	.55893	.44107	1.65
46	81,183	507	.99376	.00624	27.46	101	36.7	16.6	.535		

APPENDIX IV. TABLE 2.  
ENGLAND AND WALES.

Rates of Mortality,  $q_x$ —Spinsters, Married Women and Widows; and All Female Lives.

Based on 1931 Census and Deaths in 1930, 1931 and 1932.

Age $x$ .	Spinsters.	Married Women.	Widows.	All Female Lives.	Age $x$ .	Spinsters.	Married Women.	Widows.	All Female Lives.
16	·00215	·00378	—	·00215	50	·00873	·00780	·00954	·00816
17	·00233	·00378	—	·00235	51	·00921	·00839	·01014	·00875
18	·00247	·00378	—	·00250	52	·00981	·00905	·01081	·00941
19	·00255	·00378	—	·00260	53	·01052	·00976	·01151	·01013
					54	·01133	·01051	·01223	·01090
20	·00262	·00315	—	·00268	55	·01221	·01134	·01301	·01174
21	·00269	·00303	—	·00275	56	·01316	·01227	·01391	·01269
22	·00276	·00298	—	·00282	57	·01417	·01333	·01499	·01377
23	·00284	·00295	·00420	·00288	58	·01519	·01451	·01624	·01497
24	·00292	·00294	·00420	·00293	59	·01624	·01581	·01763	·01627
25	·00301	·00294	·00420	·00298	60	·01738	·01723	·01917	·01770
26	·00309	·00294	·00420	·00301	61	·01866	·01881	·02089	·01930
27	·00317	·0297	·00420	·00306	62	·02014	·02057	·02280	·02110
28	·00326	·00300	·00420	·00311	63	·02179	·02249	·02487	·02307
29	·00335	·00304	·00420	·00315	64	·02357	·02456	·02711	·02520
30	·00343	·00308	·00445	·00319	65	·02557	·02684	·02957	·02755
31	·00353	·00313	·00453	·00325	66	·02784	·02938	·03233	·03019
32	·00362	·00319	·00456	·00332	67	·03050	·03226	·03547	·03321
33	·00370	·00329	·00457	·00341	68	·03352	·03549	·03899	·03660
34	·00377	·00341	·00457	·00352	69	·03687	·03905	·04288	·04035
35	·00385	·00355	·00457	·00364	70	·04063	·04298	·04718	·04451
36	·00396	·00369	·00458	·00377	71	·04489	·04730	·05197	·04916
37	·00411	·00384	·00460	·00392	72	·04973	·05204	·05732	·05435
38	·00432	·00398	·00467	·00407	73	·05528	·05725	·06338	·06024
39	·00456	·00411	·00476	·00423	74	·06155	·06294	·07021	·06686
40	·00484	·00426	·00489	·00440	75	·06852	·06917	·07768	·07414
41	·00515	·00444	·00508	·00461	76	·07614	·07598	·08566	·08197
42	·00548	·00466	·00535	·00486	77	·08435	·08342	·09397	·09025
43	·00584	·00492	·00574	·00515	78	·09329	·09186	·10260	·09903
44	·00622	·00521	·00622	·00548	79	·10314	·10141	·11170	·10848
45	·00663	·00554	·00676	·00584	80	·11381	·11167	·12136	·11858
46	·00706	·00591	·00733	·00624	81	·12521	·12215	·13165	·12931
47	·00749	·00632	·00789	·00668	82	·13722	·13225	·14268	·14065
48	·00790	·00677	·00843	·00714	83	·15004	·14205	·15464	·15275
49	·00830	·00726	·00897	·00763	84	·16387	·15189	·16758	·16571

APPENDIX IV. TABLE 3.

ENGLAND AND WALES—SECTIONAL TABLES.

Rates of Mortality,  $q_x$ , based on 1931 Census and Deaths in 1930, 1931 and 1932.

MALES.					FEMALES.						
Age $x$ .	North I (Northumberland and Durham) County Boroughs.	East Region Rural Districts.	Age $x$ .	North I (Northumberland and Durham) County Boroughs.	East Region Rural Districts.	Age $x$ .	North I (Northumberland and Durham) County Boroughs.	East Region Rural Districts.	Age $x$ .	North I (Northumberland and Durham) County Boroughs.	East Region Rural Districts.
0	·09556	·05749	45	·01020	·00545	0	·07322	·04456	45	·00709	·00521
1	·02818	·00747	46	·01078	·00584	1	·02413	·00682	46	·00740	·00555
2	·01168	·00386	47	·01141	·00621	2	·00959	·00350	47	·00779	·00595
3	·00646	·00242	48	·01210	·00655	3	·00639	·00258	48	·00825	·00643
4	·00482	·00220	49	·01283	·00685	4	·00417	·00210	49	·00876	·00698
5	·00460	·00210	50	·01360	·00718	5	·00350	·00200	50	·00932	·00757
6	·00368	·00188	51	·01441	·00759	6	·00256	·00161	51	·00996	·00816
7	·00308	·00169	52	·01526	·00813	7	·00223	·00134	52	·01067	·00873
8	·00261	·00148	53	·01606	·00880	8	·00209	·00115	53	·01141	·00921
9	·00227	·00133	54	·01680	·00955	9	·00206	·00103	54	·01217	·00962
10	·00206	·00124	55	·01763	·01042	10	·00210	·00097	55	·01303	·01005
11	·00196	·00120	56	·01868	·01140	11	·00218	·00098	56	·01408	·01060
12	·00198	·00118	57	·02009	·01252	12	·00233	·00104	57	·01541	·01136
13	·00212	·00125	58	·02188	·01375	13	·00251	·00116	58	·01710	·01236
14	·00238	·00136	59	·02399	·01509	14	·00272	·00146	59	·01910	·01353
15	·00276	·00155	60	·02640	·01659	15	·00299	·00186	60	·02132	·01486
16	·00319	·00181	61	·02912	·01829	16	·00328	·00212	61	·02366	·01631
17	·00366	·00210	62	·03216	·02024	17	·00360	·00235	62	·02600	·01784
18	·00405	·00237	63	·03553	·02247	18	·00376	·00249	63	·02819	·01941
19	·00433	·00262	64	·03926	·02495	19	·00381	·00253	64	·03032	·02104
20	·00457	·00283	65	·04339	·02769	20	·00383	·00255	65	·03258	·02282
21	·00472	·00299	66	·04797	·03071	21	·00385	·00257	66	·03523	·02484
22	·00481	·00306	67	·05307	·03401	22	·00390	·00262	67	·03849	·02720
23	·00486	·00307	68	·05900	·03757	23	·00398	·00272	68	·04249	·02981
24	·00483	·00301	69	·06581	·04142	24	·00406	·00284	69	·04712	·03263
25	·00476	·00290	70	·07318	·04562	25	·00414	·00296	70	·05233	·03583
26	·00470	·00280	71	·08066	·05029	26	·00421	·00307	71	·05804	·03960
27	·00468	·00274	72	·08776	·05551	27	·00425	·00316	72	·06419	·04417
28	·00470	·00272	73	·09407	·06138	28	·00425	·00322	73	·07054	·04964
29	·00474	·00270	74	·09987	·06790	29	·00420	·00326	74	·07762	·05601
30	·00480	·00270	75	·10562	·07507	30	·00415	·00329	75	·08534	·06328
31	·00489	·00273	76	·11168	·08290	31	·00412	·00331	76	·09427	·07145
32	·00502	·00278	77	·11905	·09142	32	·00415	·00334	77	·10368	·08043
33	·00518	·00286	78	·12941	·10070	33	·00424	·00336	78	·11369	·08963
34	·00537	·00297	79	·14242	·11090	34	·00437	·00338	79	·12443	·09893
35	·00560	·00310	80	·15732	·12210	35	·00454	·00340	80	·13589	·10844
36	·00587	·00324	81	·17381	·13450	36	·00473	·00344	81	·14819	·11832
37	·00620	·00340	82	·19144	·14830	37	·00494	·00352	82	·16118	·12878
38	·00660	·00357	83	·20963	·16370	38	·00517	·00364	83	·17505	·13981
39	·00705	·00375	84	·22744	·18090	39	·00544	·00379	84	·18990	·15139
40	·00756	·00395				40	·00572	·00397			
41	·00808	·00417				41	·00601	·00417			
42	·00861	·00443				42	·00630	·00440			
43	·00913	·00474				43	·00657	·00465			
44	·00965	·00508				44	·00682	·00491			

APPENDIX IV. TABLE 4.  
GREATER LONDON LIFE TABLE—MALES.  
Based on 1931 Census, and Deaths in 1930, 1931 and 1932.

Age. x.	$l_x$	$d_x$	$p_x$	$q_x$	$e_x$	Age. x.	$l_x$	$d_x$	$p_x$	$q_x$	$e_x$
0	100,000	6,481	.93519	.06481	59.52	55	71,184	1,202	.98311	.01689	17.77
1	93,519	1,340	.98567	.01433	62.61	56	69,982	1,278	.98174	.01826	17.06
2	92,179	536	.99419	.00581	62.51	57	68,704	1,359	.98022	.01978	16.37
3	91,643	352	.99616	.00384	61.87	58	67,345	1,442	.97859	.02141	15.69
4	91,291	305	.99666	.00334	61.11	59	65,903	1,525	.97686	.02314	15.02
5	90,986	290	.99681	.00319	60.31	60	64,378	1,612	.97496	.02504	14.37
6	90,696	219	.99758	.00242	59.50	61	62,766	1,706	.97282	.02718	13.72
7	90,477	184	.99797	.00203	58.65	62	61,060	1,809	.97037	.02963	13.09
8	90,293	155	.99828	.00172	57.77	63	59,251	1,923	.96754	.03246	12.48
9	90,138	133	.99853	.00147	56.86	64	57,328	2,043	.96437	.03563	11.88
10	90,005	117	.99870	.00130	55.95	65	55,285	2,163	.96088	.03912	11.30
11	89,888	109	.99879	.00121	55.02	66	53,122	2,277	.95713	.04287	10.74
12	89,779	111	.99876	.00124	54.09	67	50,845	2,381	.95317	.04683	10.20
13	89,668	122	.99864	.00136	53.15	68	48,464	2,468	.94908	.05092	9.67
14	89,546	141	.99842	.00158	52.22	69	45,996	2,539	.94481	.05519	9.17
15	89,405	168	.99812	.00188	51.31	70	43,457	2,599	.94020	.05980	8.67
16	89,237	193	.99784	.00216	50.40	71	40,858	2,653	.93507	.06493	8.19
17	89,044	218	.99755	.00245	49.51	72	38,205	2,704	.92922	.07078	7.73
18	88,826	238	.99732	.00268	48.63	73	35,501	2,752	.92248	.07752	7.28
19	88,588	248	.99720	.00280	47.76	74	32,749	2,787	.91489	.08511	6.85
20	88,340	254	.99712	.00288	46.89	75	29,962	2,801	.90652	.09348	6.44
21	88,086	258	.99707	.00293	46.03	76	27,161	2,785	.89746	.10254	6.05
22	87,828	261	.99703	.00297	45.16	77	24,376	2,734	.88783	.11217	5.68
23	87,567	264	.99699	.00301	44.29	78	21,642	2,654	.87738	.12262	5.34
24	87,303	264	.99698	.00302	43.42	79	18,988	2,546	.86590	.13410	5.01
25	87,039	262	.99699	.00301	42.55	80	16,442	2,407	.85363	.14637	4.71
26	86,777	261	.99699	.00301	41.68	81	14,035	2,233	.84089	.15911	4.44
27	86,516	263	.99696	.00304	40.81	82	11,802	2,029	.82806	.17194	4.18
28	86,253	267	.99691	.00309	39.93	83	9,773	1,805	.81533	.18467	3.94
29	85,986	272	.99684	.00316	39.05	84	7,968	1,574	.80249	.19751	3.73
30	85,714	278	.99676	.00324	38.17	85	6,394	1,347	.78934	.21066	3.52
31	85,436	285	.99666	.00334	37.30	86	5,047	1,132	.77568	.22432	3.33
32	85,151	295	.99654	.00346	36.42	87	3,915	935	.76123	.23877	3.14
33	84,856	305	.99640	.00360	35.54	88	2,980	754	.74691	.25309	2.97
34	84,551	318	.99624	.00376	34.67	89	2,226	597	.73190	.26810	2.81
35	84,233	332	.99606	.00394	33.80	90	1,629	462	.71616	.28384	2.65
36	83,901	348	.99585	.00415	32.93	91	1,167	350.4	.69971	.30029	2.51
37	83,553	368	.99560	.00440	32.07	92	816.6	259.2	.68254	.31746	2.37
38	83,185	389	.99532	.00468	31.21	93	557.4	186.9	.66463	.33537	2.23
39	82,796	412	.99502	.00498	30.35	94	370.5	131.2	.64600	.35400	2.11
40	82,384	437	.99469	.00531	29.50	95	239.3	89.3	.62664	.37336	1.99
41	81,947	467	.99430	.00570	28.65	96	150.0	59.0	.60658	.39342	1.88
42	81,480	501	.99385	.00615	27.82	97	91.0	37.7	.58583	.41417	1.77
43	80,979	540	.99333	.00667	26.98	98	53.3	23.2	.56443	.43557	1.67
44	80,439	585	.99273	.00727	26.16	99	30.1	13.8	.54240	.45760	1.58
45	79,854	632	.99209	.00791	25.35	100	16.3	7.8	.51978	.48022	1.49
46	79,222	681	.99140	.00860	24.55	101	8.5	4.3	.49664	.50336	1.41
47	78,541	731	.99069	.00931	23.76	102	4.2	2.2	.47302	.52698	1.33
48	77,810	781	.98996	.01004	22.98	103	2.0	1.1	.44900	.55100	1.26
49	77,029	830	.98922	.01078	22.20	104	.9	.5	.42467	.57533	1.19
50	76,199	882	.98842	.01158	21.44						
51	75,317	938	.98754	.01246	20.69						
52	74,379	999	.98657	.01343	19.94						
53	73,380	1,064	.98550	.01450	19.20						
54	72,316	1,132	.98435	.01565	18.48						

APPENDIX IV. TABLE 4 (continued).  
GREATER LONDON LIFE TABLE—FEMALES.  
Based on 1931 Census, and Deaths in 1930, 1931 and 1932.

Age. x.	$l_x$	$d_x$	$p_x$	$q_x$	$e_x$	Age. x.	$l_x$	$d_x$	$p_x$	$q_x$	$e_x$
0	100,000	4,928	.95072	.04928	64.43	55	77,308	857	.98891	.01109	20.83
1	95,072	1,203	.98735	.01265	66.74	56	76,451	914	.98804	.01196	20.06
2	93,869	509	.99458	.00542	66.59	57	75,537	977	.98707	.01293	19.30
3	93,360	339	.99637	.00363	65.95	58	74,560	1,040	.98605	.01395	18.54
4	93,021	309	.99668	.00332	65.19	59	73,520	1,104	.98499	.01501	17.80
5	92,712	265	.99714	.00286	64.40	60	72,416	1,172	.98381	.01619	17.06
6	92,447	204	.99779	.00221	63.59	61	71,244	1,250	.98246	.01754	16.34
7	92,243	166	.99820	.00180	62.73	62	69,994	1,340	.98086	.01914	15.62
8	92,077	139	.99849	.00151	61.84	63	68,654	1,441	.97901	.02099	14.91
9	91,938	121	.99868	.00132	60.93	64	67,213	1,550	.97694	.02306	14.22
10	91,817	112	.99878	.00122	60.01	65	65,663	1,666	.97463	.02537	13.55
11	91,705	110	.99880	.00120	59.08	66	63,997	1,789	.97205	.02795	12.89
12	91,595	114	.99875	.00125	58.15	67	62,208	1,918	.96917	.03083	12.24
13	91,481	123	.99866	.00134	57.22	68	60,290	2,050	.96600	.03400	11.62
14	91,358	135	.99852	.00148	56.30	69	58,240	2,183	.96252	.03748	11.01
15	91,223	150	.99836	.00164	55.38	70	56,057	2,316	.95869	.04131	10.42
16	91,073	167	.99817	.00183	54.47	71	53,741	2,450	.95441	.04559	9.84
17	90,906	182	.99800	.00200	53.57	72	51,291	2,584	.94962	.05038	9.29
18	90,724	195	.99785	.00215	52.68	73	48,707	2,717	.94422	.05578	8.76
19	90,529	205	.99774	.00226	51.79	74	45,990	2,843	.93819	.06181	8.24
20	90,324	212	.99765	.00235	50.91	75	43,147	2,953	.93155	.06845	7.75
21	90,112	220	.99756	.00244	50.03	76	40,194	3,042	.92432	.07568	7.29
22	89,892	226	.99749	.00251	49.15	77	37,152	3,102	.91651	.08349	6.84
23	89,666	230	.99744	.00256	48.27	78	34,050	3,132	.90803	.09197	6.42
24	89,436	231	.99742	.00258	47.39	79	30,918	3,130	.90875	.10125	6.02
25	89,205	232	.99740	.00260	46.52	80	27,788	3,093	.90870	.11130	5.64
26	88,973	232	.99739	.00261	45.64	81	24,695	3,015	.90791	.12209	5.29
27	88,741	234	.99736	.00264	44.75	82	21,680	2,896	.90641	.13359	4.95
28	88,507	238	.99731	.00269	43.87	83	18,784	2,744	.90391	.14609	4.64
29	88,269	243	.99725	.00275	42.99	84	16,040	2,593	.90024	.15976	4.35
30	88,026	247	.99719	.00281	42.10	85	13,477	2,349	.89568	.17432	4.08
31	87,779	253	.99712	.00288	41.22	86	11,128	2,107	.89062	.18938	3.83
32	87,526	258	.99705	.00295	40.34	87	9,021	1,844	.88554	.20446	3.61
33	87,268	263	.99699	.00301	39.46	88	7,177	1,562	.88042	.22158	3.41
34	87,005	267	.99693	.00307	38.57	89	5,615	1,299	.87560	.23140	3.22
35	86,738	272	.99686	.00314	37.69	90	4,316	1,062	.87005	.24595	3.04
36	86,466	279	.99677	.00323	36.81	91	3,254	850	.86474	.26126	2.87
37	86,187	290	.99664	.00336	35.93	92	2,404	667	.85867	.27733	2.70
38	85,897	303	.99647	.00353	35.05	93	1,737	511	.85181	.29419	2.55
39	85,594	318	.99628	.00372	34.17	94	1,226	382.3	.84418	.31182	2.40
40	85,276	337	.99605	.00395	33.29	95	843.7	278.6	.83575	.33025	2.26
41	84,939	356	.99581	.00419	32.42	96	565.1	197.5	.82652	.34948	2.13
42	84,583	377	.99554	.00446	31.56	97	367.6	135.8	.81651	.36949	2.01
43	84,206	399	.99526	.00474	30.70	98	231.8	90.5	.80573	.39027	1.89
44	83,807	422	.99497	.00503	29.84	99	141.3	58.2	.79421	.41179	1.78
45	83,385	446	.99465	.00535	28.99	100	83.1	36.1	.78197	.43403	1.68
46	82,939	474	.99429	.00571	28.14						



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