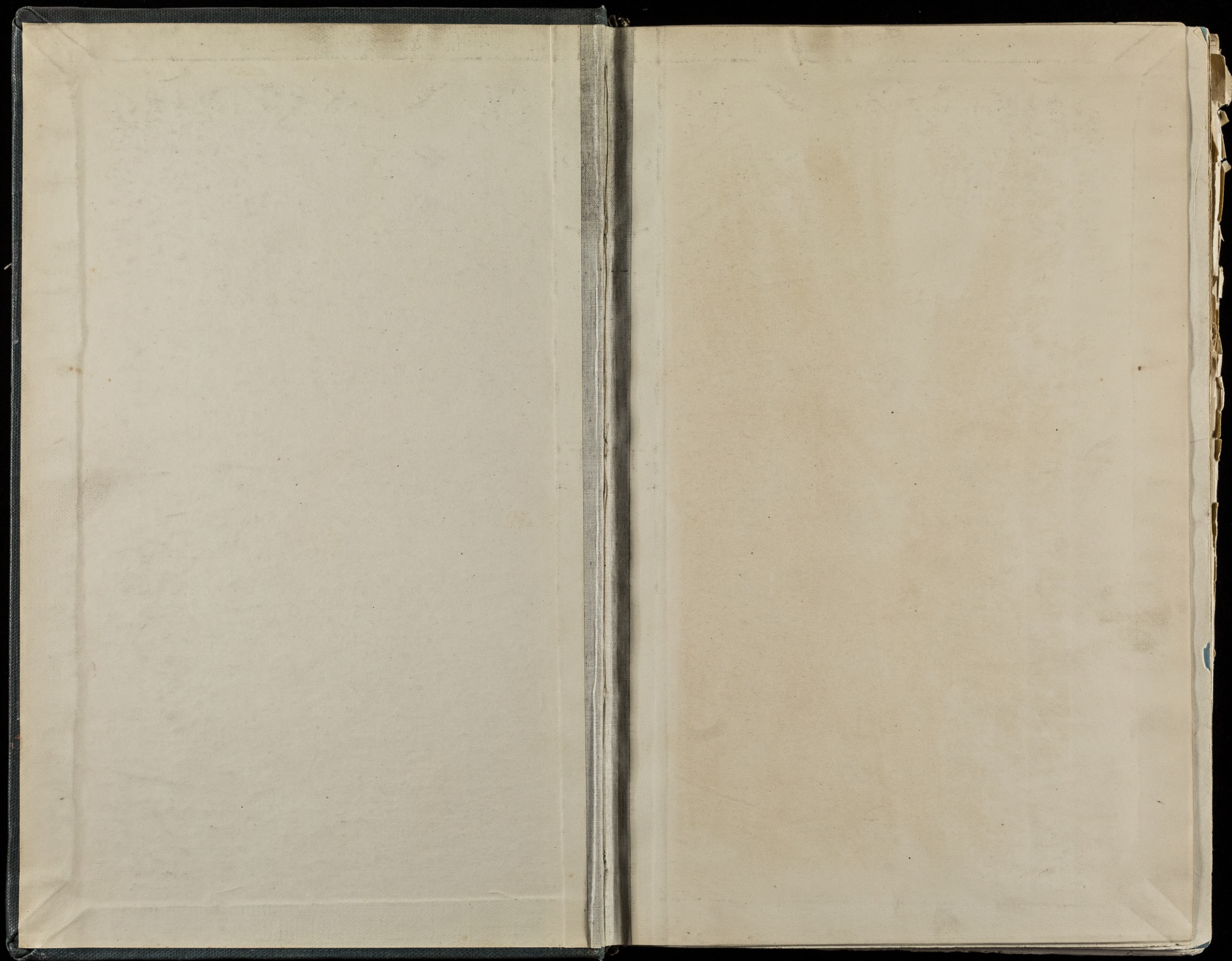


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SEVENTY-SIXTH  
ANNUAL REPORT

OF THE

REGISTRAR-GENERAL

OF

BIRTHS, DEATHS, AND MARRIAGES  
IN ENGLAND AND WALES.

(1913.)

Presented to both Houses of Parliament by Command of His Majesty.



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## REPORT

TO

THE RIGHT HONOURABLE HERBERT L. SAMUEL, M.P.,  
PRESIDENT OF THE LOCAL GOVERNMENT BOARD, &C., &C.

(1913.)

SIR,

I HAVE the honour to submit to you my Report on the estimated population, and on the marriages, births, and deaths registered in England and Wales during the year 1913.

From returns furnished by the registrars acting throughout the country, the provisional numbers of marriages, births, and deaths for the year 1913 have already been published in the "General Abstract," and in somewhat greater detail as regards the causes of death for the registration counties of England and Wales, and for London and other large towns in the "Annual Summary," which was incorporated with the Return for the Fourth Quarter of the year issued early in March 1914.

The present Report also relates to the year 1913, but the statistics have been compiled from the registers deposited in this office, and they have been analysed in far greater detail than was possible in the "Annual Summary."

The salient features of the vital statistics of 1913 are as follows:—The marriage-rate was 15·5 per 1,000, being the same as in the preceding year and 0·1 above the average in the ten years 1903-1912. It is satisfactory to note that the marriage-rate in 1912 and 1913 showed an increase upon those in the four preceding years. The provisional figures for 1914 indicate a further rise of 0·3 per 1,000.

The birth-rate in 1913 was 23·9 per 1,000 and was 2·4 below the average for the preceding decennium; with the exception of the rate in 1912 it was the lowest on record, being no less than 0·5 below that of 1911, which was the next lowest. The provisional figures for 1914 indicate a further fall of 0·3 per 1,000.

The death-rate in 1913 was 13·7 per 1,000, and was 1·2 below the average for the ten preceding years. Although higher than the rates in 1910 and 1912 it was otherwise the lowest rate on record. The increase over 1912 is accounted for by the increased mortality from diarrhoea and enteritis due to the fact that the summer of 1913 was much warmer than that of 1912. Apart from the effects of the warmer summer the reduction of mortality below all previous records which characterised 1912 was maintained in 1913.

Infant mortality was 108 per 1,000 births, being 13 per 1,000 below the average for the preceding decennium. As in the case of the general death-rate it was the lowest rate on record, excepting those in 1910 and 1912. The increase over 1912 is almost entirely accounted for by the increase in diarrhoeal mortality already referred to. The provisional infant mortality rate for 1914 shows a reduction to 105 per 1,000 births.

Mortality from all the principal epidemic diseases was below the average, that from enteric fever and from whooping cough being the lowest recorded. The mortality from diphtheria and croup conjointly was the lowest, except for the rate in 1912, and that from scarlet fever the lowest, except for 1911 and 1912.

Cancer caused a higher death-rate both among males and among females than in any preceding year, but the rates from phthisis and from tuberculosis as a whole were the lowest on record. The mortality from diseases affecting the lungs was very low. Lower mortality from bronchitis and pneumonia jointly has been experienced in 1911 only.

I regret that my Report upon the year 1913 should appear only in the spring of 1915, for I regard promptitude of publication as second only in importance to considerations affecting the value of these Reports as permanent records of vital statistics. The delay which occurred in the publication of the Reports for 1911 and 1912 was due partly to extra pressure on the Department owing to the census—a cause which has



regularly produced the same result in the past—and partly to the extensive changes in form and additions to the matter dealt with which were first made in the Report for 1911. It was my hope, with the disappearance of these two causes of delay, to secure much earlier publication of the Report for 1913, not later than 12 months after the completion of the year to which it refers. The war, however, has prevented the realisation of this hope, as it has had the double effect of decreasing the staff of experienced workers in the Department and of imposing new duties upon the remainder. Even so, however, the date of publication is earlier than last year, and compares not unfavourably with what has been attained in the past when the quantity of matter dealt with was far less. Moreover, there is at present reason to hope that unless the interference due to the war is increased, a further improvement may be secured in the date of publishing the Report for 1914.

I should say that the advisability of curtailment of the Report in view of the special circumstances of the year was carefully considered. I was induced to decide against this course by the consideration that for many purposes the value of a series of yearly tables would be greatly impaired if its continuity were interrupted. With one exception, therefore, all the important tables appear as hitherto in the present Report. That exception is formed by the table of deaths from different causes occurring in various classes of institutions. This table had only appeared in the two preceding Reports, and its place has this year been taken by a similar table distinguishing age, but not cause of death, which it is hoped may also be useful. I believe, indeed, that while tables of primary importance should appear every year and in as constant a form as circumstances will admit, it may be of distinct advantage to vary from time to time both the subject-matter and the manner of treatment of other portions of the Report. The volume of information which might be published is too great to admit of its all being dealt with in any one year, but it does not follow that because certain information cannot be given every year it should never be given at all.

Matter of primary importance must be given every year, but for much other material of lesser but still considerable interest it must suffice to publish records for sample years at intervals, varying the subjects so dealt with from year to year in order to increase their number.

A good instance of this method of tabulation is afforded by the tables on pages 548 to 587 dealing with deaths from cancer and other tumours in far greater detail than would be practicable for annual publication. It is hoped, however, that in the course of 10 years each cause of death will be so dealt with, some in one year and some in another. Apart from any other importance they may possess, these tables should be of some historical value as records of the opinions current amongst the medical profession at the dates to which they refer and of the terminology in which these are expressed.

The importance of cancer at the present time as a cause of death, both because of the number of its victims and of their real or apparent increase, is sufficient to justify the space devoted to it in this Report. The tables showing incidence upon single and married women of mortality from the important forms of cancer peculiar to that sex may be especially referred to, for the statements made upon this subject hitherto have lacked the basis of facts which the national records alone can provide; and both on that account and from unavoidable omission to take into consideration all the factors involved, prove to have been to some extent misleading.

I have to convey my thanks to the Registrars-General of Scotland and Ireland, and the various foreign and Colonial Authorities for the information from which the tables of International Vital Statistics have been compiled, to medical officers of health throughout the country, especially county medical officers of health, for their valuable assistance in securing accurate transfer of deaths from the district of occurrence to that of residence, and to Dr. W. N. Shaw, F.R.S., for the Meteorological Report upon the year 1913.

I have the honour to be,

Sir,

Your obedient Servant,

BERNARD MALLET,

*Registrar-General.*

General Register Office,  
Somerset House,  
March, 1915.

## REVIEW OF THE VITAL STATISTICS OF THE YEAR 1913.

### POPULATION.

The final report on the census of 1911 shows that the total population of England and Wales on April 3rd, 1911, was 36,070,492.

On the assumption of a continuance of increase by geometrical progression at the rate experienced during 1901–1911 the population at the middle of the year 1913 is estimated to have been 36,919,339; and on the further assumption of a continuance in arithmetical progression of the change in the proportion of the sexes experienced between the last two censuses this total is estimated to have been made up of 17,857,014 males and 19,062,325 females.

For parts of the country the method adopted in this Report for the calculation of estimated populations is that described in the Annual Reports for 1907, pages cxxxii–cxxxiv, and for 1910, pages xi and xii.

The factors required for estimating the population of any district during 1911–1920, on the above assumption of continuance of the last intercensal rate of increase for the country at large, are as follows:—

1911	...	...	·02634780	1916	...	...	·56787619
1912	...	...	·13242746	1917	...	...	·67958101
1913	...	...	·23960799	1918	...	...	·79244797
1914	...	...	·34790096	1919	...	...	·90648664
1915	...	...	·45731880	1920	...	...	1·02170833

The population of any district at the middle of any year from 1911 to 1920 is calculated by adding to the population enumerated in 1911 the product of the increase of population in the last intercensal period and the factor for the year in the above series. In the case of a decreasing population the product of the intercensal decrease multiplied by the factor should be deducted from the population enumerated in 1911.

In the case of leap years, when it is desired to allow for the extra day, the mid-year estimate of population should be increased by  $\frac{1}{365}$ th part.

There is reason to believe that the rate of increase experienced during 1901–1911 has not continued since the latter date, for Table XIII shows that the rate of natural increase has fallen since 1911, while Table 33 indicates an increase of the loss on passenger movement. In view of these considerations the assumption hitherto made is open to such serious objection that in future years it will be necessary to frame an estimate upon the natural increase of the population and the net effect of migration. In this case a new set of factors for estimating the population of the various parts of the country will be required.

Had the estimate for the middle of 1913 been framed upon the natural increase and migration returns it would have been lower by some 310,000 than that given above.

### MARRIAGES.

The marriages in England and Wales during the year 1913 numbered 286,583, corresponding to a rate of 15·5 persons married per 1,000 population at all ages. This rate was equal to that in 1912, and to the average rate in the decade 1901–1910.

The proportion to the total population of persons married during the 76 years (1838–1913) since civil registration of marriages was enforced has ranged between a maximum of 17·9 per 1,000 living in 1853 and a minimum of 14·2 per 1,000 in 1886, the mean annual rate for the whole period being 15·8 per 1,000. (See Table 6, p. 20.)

These variations, however, are influenced by the fact that different populations contain marriageable persons—*i.e.*, unmarried, widowed, and divorced persons aged 15 years and upwards—in different proportions. It is obvious that with the tendency to marriage equal in both cases that population containing the larger proportion of marriageable persons will have the larger proportion of marriages to total population. In order to allow for these differences in opportunity it is desirable to state the marriage rate in terms of the marriageable population only. Marriage rates so calculated are shown for a series of years in Table 6. The table shows that the more accurate method of statement accentuates the decline which has occurred during the period referred to, the rate for the quinquennium 1906–1910 being the lowest recorded in any corresponding period for either sex, whereas the rate per 1,000 persons at all ages was lower in three previous quinquennia.



The marriage-rates recorded in the various registration counties are stated in Table 12 (page 25).

TABLE I.—ENGLAND AND WALES, 1876-1913.—PROPORTIONS OF FIRST MARRIAGES and RE-MARRIAGES in 1,000 MARRIAGES.

Period.	Men.		Women.		Bachelors who married.		Widowers who married.	
	Bachelors.	Widowers.	Spinsters.	Widows.	Spinsters.	Widows.	Spinsters.	Widows.
1876-80 ...	864	136	902	98	820	44	82	54
1881-85 ...	874	126	911	89	834	40	77	49
1886-90 ...	881	119	917	83	844	37	73	46
1891-95 ...	887	113	921	79	851	36	70	43
1896-1900 ...	904	96	931	69	871	33	60	36
1901-05 ...	911	89	933	67	877	34	56	33
1906-10 ...	916	84	938	62	884	32	54	30
1911 ...	918	82	939	61	887	31	52	30
1912 ...	918	82	938	62	886	32	52	30
1913 ...	919	81	936	64	885	34	51	30

TABLE II.—ENGLAND AND WALES, 1886-1913.—MARRIAGES OF BACHELORS, SPINSTERS, WIDOWERS and WIDOWS of VARIOUS AGES per 1,000 MARRIAGES at ALL AGES.

Period.	All Ages.	Under 18 Years.	18—	19—	20—	21—	25—	30—	35—	40—	45—	50—	55 and upwards.	Age not Stated.
1886-1890	1,000	0	4	20	47	424	309	96	33	13	6	3	2	43
1891-1895	1,000	0	3	17	43	415	333	108	37	14	6	3	2	19
1896-1900	1,000	0	3	15	39	411	346	110	39	15	6	3	2	11
1901-1905	1,000	0	3	13	35	390	360	122	41	16	7	3	2	8
1906-1910	1,000	0	3	11	30	370	372	132	46	17	8	3	2	6
1911 ...	1,000	0	3	11	28	350	380	139	50	19	9	3	3	5
1912 ...	1,000	0	3	11	28	347	378	140	52	20	9	4	3	5
1913 ...	1,000	0	3	12	30	348	372	141	53	21	9	4	3	4
<i>Spinsters.</i>														
1886-1890	1,000	9	37	72	97	417	219	62	23	10	5	2	1	46
1891-1895	1,000	7	31	66	94	425	241	70	25	11	5	2	1	22
1896-1900	1,000	6	27	59	89	434	253	74	26	11	5	2	1	13
1901-1905	1,000	5	23	53	82	428	272	79	28	12	5	2	1	10
1906-1910	1,000	5	21	48	75	420	284	87	30	12	6	2	2	8
1911 ...	1,000	5	21	46	70	404	298	93	32	13	7	3	2	6
1912 ...	1,000	5	22	47	71	399	295	95	34	14	7	3	2	6
1913 ...	1,000	5	25	50	72	397	290	95	34	14	7	3	2	6

Period.	All Ages.	Minors.	21—	25—	30—	35—	40—	45—	50—	55—	60—	65—	70 and upwards.	Un-stated.
1886-1890	1,000	0	13	81	133	151	139	120	94	70	53	27	15	104
1891-1895	1,000	0	12	76	132	153	148	126	106	74	55	29	18	71
1896-1900	1,000	0	10	73	131	158	150	136	109	84	56	30	19	44
1901-1905	1,000	0	10	68	130	155	152	136	116	83	62	32	20	36
1906-1910	1,000	0	8	61	123	153	152	141	119	90	62	37	24	30
1911 ...	1,000	0	7	56	115	155	146	144	119	93	68	40	33	24
1912 ...	1,000	0	7	55	108	150	145	142	125	99	68	45	33	23
1913 ...	1,000	0	8	51	109	149	150	145	125	97	69	42	30	25
<i>Widows.</i>														
1886-1890	1,000	1	30	119	164	173	145	117	73	46	26	10	3	93
1891-1895	1,000	1	27	115	170	177	157	119	78	47	29	10	4	66
1896-1900	1,000	1	26	113	175	188	157	127	81	50	28	11	3	40
1901-1905	1,000	1	28	122	182	190	158	118	78	47	29	11	4	32
1906-1910	1,000	1	23	106	177	192	160	129	82	52	30	14	6	28
1911 ...	1,000	0	22	102	164	192	166	135	82	54	32	17	13	21
1912 ...	1,000	1	19	95	166	195	166	134	87	54	34	17	12	20
1913 ...	1,000	1	21	102	170	195	164	133	82	53	32	16	11	20

Table I gives a general view of the changes in the proportions of first marriages and re-marriages since the year 1876; it will be observed that the proportion of re-marriages shows continuous decrease in both sexes up to 1910 and amongst men also since that date.

Table II shows the proportions by age of bachelors, spinsters, widowers, and widows who married during the period 1886-1913.

**The Divorced.**—The number of persons divorced in 1913 was 1,154, the number in 1912 being 1,174. Both figures are well below the average of the five years immediately preceding.

As will be seen from Table III, the marriages of persons described as divorced show a considerable increase on those of previous years. No valid comparison can, however, be instituted between the number of persons divorced and the number of divorced persons married in any given year, as the figures are not directly related. A very large percentage of the divorced who contract marriage in England have been divorced by some foreign tribunal and resort to this country either to avoid local publicity or to avail themselves of the greater facilities for contracting marriage under English law; while on the other hand it is probable that in some cases persons divorced in this country are not so described in the marriage register.

TABLE III.—ENGLAND AND WALES.—AVERAGE ANNUAL NUMBER OF DIVORCED PERSONS who RE-MARRIED, 1876-1913.

Period.	Average Annual Number of Divorced Persons who re-married.							
	Total.	Men.	Women.	Divorced men and spinsters.	Divorced men and widows.	Divorced men and divorced women.	Divorced women and bachelors.	Divorced women and widowers.
1876-80 ...	104	56	48	42	12	2	31	15
1881-85 ...	128	68	60	53	12	3	42	15
1886-90 ...	169	80	89	65	11	4	65	20
1891-95 ...	214	110	104	89	15	6	75	23
1896-1900 ...	345	172	173	138	24	10	126	37
1901-05 ...	509	262	247	205	38	19	181	47
1906-10 ...	693	356	337	276	53	27	253	57
1911 ...	702	365	337	300	39	26	265	46
1912 ...	782	402	380	321	51	30	280	70
1913 ...	854	415	439	322	51	42	337	60

**Marriages of Minors.**—The proportion of marriages under age was at its maximum in the year 1874 both for males and females, since when the ratio of such marriages to total marriages declined continuously up to 1911. In 1913, however, the ratio for both sexes showed an appreciable increase. (See Tables IV and 10.)

TABLE IV.—ENGLAND AND WALES, 1876-1913.—MINORS MARRIED per 1,000 MARRIAGES at ALL AGES.

—	Husbands.	Wives.	—	Husbands.	Wives.
1876-80 ...	77.8	217.0	1911... ..	39.3	133.3
1881-85 ...	73.0	215.0	1912... ..	39.2	135.4
1886-90 ...	63.2	200.2	1913... ..	42.1	143.8
1891-95 ...	56.2	182.6			
1896-1900 ...	51.2	168.0			
1901-05 ...	46.3	153.1			
1906-10 ...	40.3	139.4			

The proportions per 1,000 marriages of husbands and of wives marrying under age in 1913 and in the preceding decennium in the respective registration counties are shown in Table 12, page 25.

The highest proportions of marriages of minors were recorded in the mining and manufacturing counties and the lowest in the agricultural counties.

Marriages of minors are proportionately more common in Scotland but much less common in Ireland than in England and Wales.



**Mean Age at Marriage.**—The great reduction that has taken place in the disturbing factor of unstated ages, has rendered it possible to measure with approximate accuracy for a series of recent years the mean age at marriage, based on the returns in which age is recorded, as is done in Tables V and VI. These tables show that the mean age at marriage has steadily increased since 1896 both for bachelors and for spinsters, and a similar tendency, with slight fluctuations, is noticeable in the case of widowers. In the case of widows the mean age has shown a progressive increase since 1902. The tendency to later marriage received a check in 1913, the mean age of bachelors remaining stationary, and that of spinsters, widows, and widowers respectively showing slight decrease.

TABLE V.—ENGLAND AND WALES.—MEAN AGES OF MEN at MARRIAGE, 1896–1913.

Year.	All Bridegrooms.*	All Bachelor Bridegrooms.	All Widower Bridegrooms.	Bachelors with Spinsters.	Bachelors with Widows.	Widowers with Spinsters.	Widowers with Widows.
1896	28.43	26.59	44.49	26.30	33.93	41.38	49.60
1897	28.38	26.63	44.53	26.35	34.10	41.43	49.73
1898	28.34	26.62	44.70	26.34	33.94	41.82	49.69
1899	28.34	26.65	44.90	26.37	34.29	41.87	49.81
1900	28.41	26.68	45.02	26.39	34.35	42.19	49.75
1901	28.55	26.76	45.18	26.48	33.94	42.43	49.69
1902	28.53	26.88	44.96	26.60	33.94	42.11	49.81
1903	28.49	26.91	44.94	26.63	34.24	42.16	49.72
1904	28.46	26.93	45.03	26.66	34.06	42.25	49.98
1905	28.56	27.01	45.27	26.74	34.26	42.47	50.18
1906	28.56	27.03	45.37	26.76	34.39	42.59	50.25
1907	28.66	27.10	45.62	26.84	34.58	42.85	50.56
1908	28.78	27.19	45.69	26.92	34.57	42.92	50.66
1909	28.88	27.29	45.93	27.02	35.00	43.23	50.85
1910	28.92	27.36	45.93	27.09	34.96	43.14	50.89
1911	29.03	27.46	46.42	27.19	35.19	43.49	51.46
1912	29.12	27.56	46.77	27.27	35.75	43.96	51.67
1913	29.11	27.56	46.65	27.25	35.68	43.91	51.35

TABLE VI.—ENGLAND AND WALES.—MEAN AGES OF WOMEN at MARRIAGE, 1896–1913.

Year.	All Brides.*	All Spinster Brides.	All Widower Brides.	Spinsters with Bachelors.	Spinsters with Widowers.	Widows with Bachelors.	Widows with Widowers.
1896	26.21	25.08	40.58	24.54	32.43	35.69	44.81
1897	26.18	25.10	40.74	24.59	32.31	35.95	45.00
1898	26.18	25.14	40.59	24.62	32.68	35.85	45.04
1899	26.21	25.16	40.83	24.65	32.83	36.12	45.16
1900	26.29	25.23	40.74	24.71	32.97	36.19	44.95
1901	26.39	25.31	40.43	24.77	33.04	35.65	44.96
1902	26.37	25.36	40.25	24.86	32.86	35.62	44.95
1903	26.35	25.37	40.27	24.89	32.93	35.69	45.01
1904	26.32	25.37	40.35	24.90	33.03	35.82	45.22
1905	26.38	25.43	40.53	24.96	33.08	36.02	45.29
1906	26.41	25.46	40.79	24.99	33.30	36.27	45.53
1907	26.49	25.54	40.91	25.06	33.43	36.32	45.68
1908	26.61	25.63	41.02	25.13	33.71	36.43	45.86
1909	26.69	25.73	41.27	25.22	33.85	36.71	45.98
1910	26.75	25.79	41.33	25.30	33.85	36.83	46.07
1911	26.80	25.81	41.74	25.32	34.13	37.01	46.63
1912	26.84	25.85	41.89	25.36	34.25	37.44	46.69
1913	26.80	25.78	41.57	25.29	34.23	37.22	46.59

\* The apparent anomaly that the mean age of all bridegrooms shows a smaller increase than the mean age of either bachelor or widower bridegrooms is due to the fact that in the earlier years the total number of bridegrooms included a larger proportion of widowers, and this, of course, had the effect of raising the mean age of the total (see Table I.). A similar explanation applies to the mean ages of wives.

The ages of persons married in 1911 onwards have been separately abstracted for each year of age up to 25, and these numbers have been used in calculating the mean age at marriage in the above tables. For years prior to 1911 marriages at ages between 21 and 25 formed a single group and the mean age of this group was taken as 23 years.

**Signature in Marriage Register.**—The proportion of husbands who failed at the time of marriage to sign their names in the marriage register has gradually fallen from 32.6 per cent. in 1841–45 to 0.9 in 1913, and of wives from 48.9 to 1.0. In the Home and the agricultural counties the proportion of illiterate men is higher, and in the mining and industrial counties lower, than that of women.

**Buildings in which Marriages may be Solemnized.**—At the end of the year 1913 the numbers of churches or chapels of the Established Church, and of registered buildings in which marriages could be legally solemnized were as follows:—

Established Church ... ..	15,958
All other Religious Denominations ... ..	16,472
<b>Total ... ..</b>	<b>32,430</b>

The increase upon the numbers at the end of the previous year was: Established Church 51, other religious denominations 220. The number of these buildings belonging to the various denominations is shown for each registration county in Table 8, (p. 21).

By the Acts 15 and 16 Vict. c. 36, and 18 and 19 Vict., c. 81, it was enacted that all places of religious worship not being churches or chapels of the Established Church should, if the congregations desired, but not otherwise, be certified to the Registrar General, certification for public worship being a necessary preliminary to the registration of a building for the solemnization of marriages. The number of places of meeting for religious worship on the official register on 31st December, 1913, and the number of buildings registered for the solemnization of marriages are shown in the following table:—

TABLE VII.

Denomination.	Buildings certified to the Registrar-General as Meeting-places for Religious Worship.	Buildings registered for the Solemnization of Marriages.*	Denomination.	Buildings certified to the Registrar-General as Meeting-places for Religious Worship.	Buildings registered for the Solemnization of Marriages.*
Roman Catholics ... ..	1,442	1,368	New Church† ... ..	53	57
Wesleyan Methodists ... ..	7,491	3,830	Catholic Apostolic Church	69	49
Congregationalists ... ..	3,260	2,942	Countess of Huntingdon's Connexion.	46	43
Baptists ... ..	3,059	2,655	Salvation Army ... ..	1,157	53
Primitive Methodists ... ..	4,277	1,736	Society of Friends ... ..	426	—‡
United Methodist Church	1,956	1,176	Jews ... ..	208	—‡
Calvinistic Methodists ... ..	1,223	917	Other Denominations ... ..	2,829	1,013
Presbyterians ... ..	436	440			
Unitarians ... ..	178	193	All Denominations ... ..	28,110	16,472

\* Of these buildings nearly 1,000 were certified before 1852, as Places of Meeting for Religious Worship, to some other Authority than the Registrar-General and therefore are not included in the preceding column.

† Formerly called New Jerusalem Church.  
‡ It is not necessary for buildings to be registered for the solemnization of Quaker or Jewish marriages. Under section 31 of the Births, Deaths, and Marriages Registration Act (1836) Registering Officers of the Society of Friends and Secretaries of Jewish Synagogues who have been certified to the Registrar-General record the marriages in each case.

The Marriage Act, 1898, provided that under specified conditions marriages might be solemnized in registered buildings in the presence of duly authorised persons without the attendance of a Registrar of Marriages. The governing bodies of some of the registered buildings have availed themselves of this provision, and at the end of the year 1913 the number of such buildings which had been brought under the operation of the Act, and so remained, was 3,749 out of the total of 16,472; the numbers of these buildings and the denominations to which they belonged, were as follows:—

- 1,613 Wesleyan Methodists.
- 583 Congregationalists.
- 528 Primitive Methodists.
- 373 Baptists.
- 332 United Methodist Church.
- 96 Calvinistic Methodists.
- 224 Other Denominations, and Unsectarian.
- 3,749 All Denominations.**



These 3,749 registered buildings were distributed among 535 of the registration districts. In the remaining 99 registration districts there was no registered building under the operation of the Act.

**Manner of Solemnization.**—Table 9, p. 22, shows that almost four-fifths of the marriages contracted in England and Wales during 1913 were solemnized with religious ceremonial. This proportion, which has been steadily decreasing since the commencement of civil registration owing to the growing favour of purely civil marriage in District Register Offices, was lower in 1913 than in any previous year.

The proportion of marriages solemnized under the provisions of the Marriage Act, 1898, has steadily increased in each successive year from 11 per 1,000 marriages in 1899 to 50 in 1913.

Of the 1,934 Jewish marriages contracted in the year 1913 in England and Wales, 1,419, or 73 per cent., were registered in London, 179, or 9 per cent., in the City of Manchester, and 100, or 5 per cent., in the City of Leeds. Of the Jewish marriages in London, no fewer than 1,090, or 77 per cent., were registered in a group of three registration districts—London City, Whitechapel, and Mile End Old Town.

Table 11, p. 24, gives particulars as to the forms under which marriages have been contracted in the various registration counties during 1913.

#### BIRTHS.

The births registered in the year 1913 numbered 881,890; of these 843,981 were legitimate and 37,909 illegitimate.

In proportion to the total population of both sexes and all ages, the total births were equal to a rate of 23·9 per 1,000 living; this rate was 0·1 per 1,000 more than that recorded in 1912, but was no less than 3·3 per 1,000 below the average of the low rates in the ten years 1901–1910.

In the year 1876 the birth-rate in this country attained the highest point on record, viz., 36·3 per 1,000 living, since which date the ratio has, with a few insignificant exceptions, fallen year by year.

The birth-rate, stated in terms of total population (crude birth-rate), must obviously vary considerably with the proportion of females of conceptive ages in the population, and with the proportion of these married.

The following statement shows the changes in these proportions and in the age constitution of the married female population at the last five censuses:—

TABLE VIII.—ENGLAND AND WALES.

Census Years.	Proportion per cent. of Women aged 15–45 years in the Total Population of both sexes and all ages.	Proportion per cent. of Married Women in the Female Population aged 15–45 years.	Of the Married Women aged 15–45 years, the proportion per cent. at four groups of ages.				Persons Married per 1,000 Marriage- able Persons* in the Population.
			15–20.	20–25.	25–35.	35–45.	
1871 ... ..	23·1	49·6	1·3	13·9	45·5	39·3	56·9
1881 ... ..	23·1	49·1	1·1	13·7	45·6	39·6	51·1
1891 ... ..	23·8	47·1	0·9	12·8	46·0	40·3	49·8
1901 ... ..	25·0	46·8	0·7	11·8	46·8	40·7	48·6
1911 ... ..	24·9	47·7	0·5	9·4	46·0	44·1	46·2

\* *i.e.*—unmarried and widowed persons over 15 years of age: see p. ix.

There are three changes recorded in this table which influence the birth-rate, one making for its increase and two for its decrease. The first of these is the increased proportion of women of child-bearing age in the total population, which is a direct consequence of the fall in the birth-rate which has already occurred. Up to 1901 this fall affected the population mainly in the direction of a decreased number of children, and so the proportion of young women to total population increased. Since 1901, however, another effect of the falling birth-rate has come more into evidence in the form of an increase in the proportion of old people in the population. This has, so far as Table VIII is concerned, offset the continued decrease in the proportion of children, and a complete arrest of the previous increase in the proportion of women of fertile age has resulted.

There remains, however, a considerably increased proportion of these women as compared with the period when the birth-rate commenced to fall, a fact which, of course, had other factors remained unchanged, would have led to a rise.

The second change referred to is the proportion of women of fertile age who are married. This change to some extent helps to account for the fall in the birth-rate as compared with 1876, but as the proportion married has risen since 1901 this factor has tended to lessen the fall since that date, a period during which it has been particularly rapid.

The third change is the increasing average age of married women under 45 years old. This appears to have been continuous throughout the period dealt with, and must have contributed to the recorded fall in the birth-rate, since female fertility decreases with age. As, however, in the absence of any statement of the age of parents in our birth registers, there are no available records of the fertility of women of different ages in England, it is impossible to determine exactly the effect upon the birth-rate of this increase in the age of potential mothers. In any case, it can account for but a small fraction of the fall which has occurred.

From Table VIII it is easy to calculate the effect of the first two factors dealt with. Thus, the increase in proportion of women of conceptive age from 231 to 249 per 1,000 total population would, had other factors remained unchanged, have raised the birth-rate in like proportion, from the 35·35 recorded in 1876–80 to 38·10 or, measuring the increase more precisely, to 38·21 per 1,000 total population, an increase of 2·86 per 1,000. After eliminating in this way the effects of the two factors referred to as influencing the proportionate number of women, married and unmarried respectively, of fertile ages in the community, the net fall in the birth-rate of the present day must be due to a diminution in the fertility of these women from whatever cause, including that resulting from increase in their average age. The effects of these changes upon the total, legitimate and illegitimate birth-rates, are set forth in the subjoined table.

TABLE IX.—ENGLAND AND WALES. THE EFFECTS OF VARIOUS FACTORS INFLUENCING THE FALL OF THE BIRTH-RATE, 1876–80 TO 1913.

	Birth-rate per 1,000 total population.		
	Total.	Legitimate.	Illegitimate.
Potential effect of increased proportion of women aged 15–45 in the population.	+ 2·86	+ 2·72	+ 0·14
Potential effect of decreased proportion of married to total women aged 15–45.	– 1·10	– 1·16	+ 0·06
Effect of diminished fertility ... ..	– 13·22	– 12·37	– 0·85
Recorded fall 1876–80 to 1913 ... ..	– 11·46	– 10·81	– 0·65

It will be understood that when a potential rise is spoken of what is meant is that if the factor referred to had been the only one whose influence was altered the rise in question would have occurred.

It will be seen that the effect of decrease in fertility of married women—due in some measure to their greater average age, but largely no doubt to deliberate restriction of child-bearing—is masked to some extent by the net result of the other changes noted in the constitution of the population, so that these cannot be appealed to as helping to explain the fall in the birth-rate.

**Birth-rates of different parts of the Country.**—The birth-rates of individual administrative areas, tabulated on pages 132–164, are summarized in Table X. The reasons for employing this form of table have been stated in the Reports for 1911 and 1912; and the limits of the four geographical divisions dealt with, the populations of which are given in Table 2, are indicated in a footnote.\*

\* The “North” includes the administrative counties and county boroughs corresponding to the registration counties in the eighth, ninth and tenth “registration divisions” of the Registrar-General, *i.e.*, Lancashire, Cheshire and Yorkshire and counties north of them. The “South” includes England south of the Thames, with the whole of the County of London and the five south-western counties, forming the first, second and fifth registration divisions. “Wales” corresponds to the eleventh or Welsh registration division and so includes Monmouthshire. All the rest of the country,



TABLE X.—BIRTHS PER THOUSAND TOTAL POPULATION, 1913.

	North.	Midlands.	South.	Wales.	England and Wales.
London ... ..	—	—	24.5	—	24.5
County boroughs ... ..	25.9	25.7	20.8	26.9	25.3
Other urban districts ... ..	24.5	23.4	19.6	28.5	23.5
Rural districts... ..	24.5	21.7	19.4	24.7	22.0
All areas .. ..	25.2	23.6	21.8	26.9	23.9

The highest birth-rates recorded in Table X are those of Wales, and next to them of the North of England, while those of the South are much the lowest. In fact, there is no exception for any class of area to the order, Wales, North, Midlands, South. Moreover, if it were not for the inclusion of London in the South the rate for this portion of the country as a whole would fall short of those recorded elsewhere to a considerably greater extent than appears in the table. These differences depend upon real differences in fertility, for when allowance is made for variation in the proportion of women and of married women of fertile age, they are still apparent, though the southern deficit is less marked in a comparison of legitimate births in proportion to married women. (See Table XVIII, p. xxiii.)

If Table X is compared with the corresponding table of the Report for 1912, the apparent anomaly arises that although there was an increase of 0.1 per 1,000 living in the birth-rate of the country as a whole, there was no increase in any of the four geographical divisions. The anomaly disappears if the rates in both years are calculated to a further place of decimals as in Table XVIII. It will then be seen that the increase in the birth-rate in the country as a whole, was 0.07 per 1,000, being contributed to principally by the county boroughs of the North and the Midlands, and to a less degree by the urban districts of the North and the rural districts of the Midlands and Wales. Broadly speaking, the North and Midlands showed an increase and the South and Wales a decrease in birth-rate.

Table XVIII compares the fertility of urban and rural areas in different portions of the country, the rates in each case being stated in proportion to total population, to total females of conceptive ages, and to married females of conceptive ages. It shows that the low position of the rural districts in the last column of Table X is completely changed by statement in proportion either to total or to married women aged 15-45, for their fertility then ranks higher than that of any of the urban sections. This difference would be still more marked if the age constitution in the various groups of areas were identical. The rural districts, however, are at a disadvantage in this respect, because their proportion of married women at the younger and more fertile portions of the child-bearing period (29.5 per cent. under 30 years of age in 1911) is lower than that of the country at large (1.0 per cent. under 30 years of age) in consequence of the migration of young persons from rural to industrial areas. In all three divisions of Table XVIII the county boroughs make a better showing as regards births than the smaller urban areas, so that the relation of fertility to urbanization at the present time is not a simple one.

corresponding to the third, fourth, sixth and seventh registration divisions, is included in the Midland area. The counties in the four areas are as follows:—

North.	Midlands.	South.	Wales.
Cheshire.	Middlesex.	Gloucestershire.	London.
Lancashire.	Hertfordshire.	Herefordshire.	Surrey.
York, West Riding.	Buckinghamshire.	Shropshire.	Kent.
"  East Riding.	Oxfordshire.	Staffordshire.	Sussex, East.
"  North Riding.	Northamptonshire.	Worcestershire.	"  West.
Durham.	Soke of Peterborough.	Warwickshire.	Southampton.
Northumberland.	Huntingdonshire.	Leicestershire.	Isle of Wight.
Cumberland.	Bedfordshire.	Rutlandshire.	Berkshire.
Westmorland.	Cambridgeshire.	Lincolnshire.	Wiltshire.
	Isle of Ely.	Parts of Holland.	Dorsetshire.
	Essex.	"  Kesteven.	Devonshire.
	Suffolk, East.	"  Lindsey.	Devonshire.
	"  West.	Nottinghamshire.	Cornwall.
	Norfolk.	Derbyshire.	Somersetshire.
			Anglesey.

When comparison is made between different parts of the country Wales comes first, followed in order by the North, Midlands and South, whatever measure of fertility be employed. The highest rates are yielded by the small towns of Wales; and the lowest by the South of England. In all forms of the comparison London takes a higher position than the remainder of the South.

Further reference is made to this subject on page xxiii, where the combined effects of fertility and infant and child mortality are discussed.

**Sex Proportions at Birth.**—Births of males in England and Wales numbered 449,159, and those of females 432,731; the proportion of male to female births being, therefore, 1,038 to 1,000. The corresponding proportions in each year since 1864 and in groups of years since the commencement of registration are shown in Table 6, page 20; the extreme range has been from 1,032 per 1,000 in 1898 to 1,054 in 1843 and in 1844. Compared with other countries the proportion in England is exceedingly low, the ratio most commonly returned being 1,050-1,060.

The extent to which the proportional excess in the number of boys at birth varies in the different counties and other administrative areas of England and Wales may be gathered from the returns tabulated on pages 132-164. The relative extent of this excess varies so much from year to year in the different areas that it seems advisable to defer any classification of areas from this point of view until more records can be collated than those of the three years at present available—1911-13.

**Illegitimate Births.**—The births registered during the year 1913 included 37,909 of illegitimate children.

Illegitimate fertility is frequently measured by the proportion of illegitimate births either to total births or to total population. Neither of these measures, both of which find a place in Table XI, is a satisfactory index of the fertility of unmarried women, and the third form of statement employed in the table, which compares the illegitimate births with the number of possible unmarried mothers, is that to which most importance should be attached. It will be seen that it is when measured in this way that the decline in illegitimacy appears to be greatest, and that all three standards of comparison present results for 1913 identical with those for 1912.

TABLE XI.—ENGLAND AND WALES.—ILLEGITIMATE BIRTHS, 1876-1913.

Period.	In proportion to total Births.		In proportion to total Population.		In proportion to the Unmarried and Widowed Female Population aged 15-45 years.	
	Rate per 1,000.	Compared with rate in 1876-80 taken as 100.	Rate per 1,000.	Compared with rate in 1876-80 taken as 100.	Rate per 1,000.	Compared with rate in 1876-80 taken as 100.
1876-1880... ..	47.5	100.0	1.7	100.0	14.4	100.0
1881-1885... ..	48.0	101.1	1.6	94.1	13.5	93.8
1886-1890... ..	46.3	97.5	1.5	88.2	11.8	81.9
1891-1895... ..	42.4	89.3	1.3	76.5	10.1	70.1
1896-1900... ..	41.0	86.3	1.2	70.6	9.2	63.9
1901-1905... ..	39.5	83.2	1.1	64.7	8.4	58.3
1906-1910... ..	40.2	84.6	1.1	64.7	8.1	56.3
1901 ... ..	38.9	81.9	1.1	64.7	8.4	58.3
1902 ... ..	39.0	82.1	1.1	64.7	8.4	58.3
1903 ... ..	39.3	82.7	1.1	64.7	8.5	59.0
1904 ... ..	39.9	84.0	1.1	64.7	8.5	59.0
1905 ... ..	40.2	84.6	1.1	64.7	8.3	57.6
1906 ... ..	40.0	84.2	1.1	64.7	8.3	57.6
1907 ... ..	39.4	82.9	1.0	58.8	7.9	54.9
1908 ... ..	39.9	84.0	1.1	64.7	8.2	56.9
1909 ... ..	41.0	86.3	1.1	64.7	8.1	56.3
1910 ... ..	40.8	85.9	1.0	58.8	7.8	54.2
1911 ... ..	42.7	89.9	1.0	58.8	8.0	55.6
1912 ... ..	43.0	90.5	1.0	58.8	7.9	54.9
1913 ... ..	43.0	90.5	1.0	58.8	7.9	54.9



Comparing the proportion of illegitimate births in England and Wales in the year 1913 with that obtaining in the quinquennial period 1876-80, it will be seen that based on the standard of total births the rate of illegitimacy has decreased by less than 10 per cent. The crude illegitimate birth-rate, however, based on the total population, shows during the same period a decline of 41 per cent., while the rate based on the numbers of single and widowed women of conceptive ages fell by 45 per cent.

The extent of illegitimacy in different classes of area and parts of the country may be gathered from Table XII, from which it may be seen that statement in proportion to total population conceals the excess of illegitimacy in the rural districts which is definitely brought out by the other portion of the table. Stated in relation to unmarried women of conceptive ages illegitimate births were most frequent in the rural districts and least so in London. They were also most frequent in Wales, and least so in the South of England. These statements hold good of each of the three years 1911-13.

TABLE XII.—ILLEGITIMATE BIRTH-RATES, 1913.

	Per 1,000 total Population.					Per 1,000 Unmarried and Widowed Females aged 15-45 years.				
	North.	Midlands.	South.	Wales.	England and Wales.	North.	Midlands.	South.	Wales.	England and Wales.
London ... ..	—	—	0.99	—	0.99	—	—	6.59	—	6.59
County Boroughs ... ..	1.10	1.06	1.11	1.05	1.09	8.32	8.03	7.65	8.82	8.17
Other Urban Districts... ..	1.02	0.98	0.93	0.97	0.98	7.92	7.54	6.33	9.20	7.52
Rural Districts... ..	1.14	1.05	0.88	1.17	1.04	9.55	9.66	7.27	9.95	9.00
All areas ... ..	1.08	1.02	0.97	1.05	1.03	8.34	8.22	6.78	9.37	7.88

**Natural Increase.**—In 1913 both the birth-rate and the death-rate were slightly higher than in the preceding year, but as the excess was much less in the case of the former the natural increase, or excess of crude birth-rate over crude death-rate, diminished (Table XIII). In one single year only in fact—1911—has a lower rate of natural increase been recorded than that of 1913, and the climatic conditions of 1911 were exceptionally unfavourable to health. In no year previous to 1911 has a rate of natural increase as low as that of any of the three years 1911 1912 and 1913 been recorded. The fall in the death-rate, which for a number of years had sufficed to compensate for that in the birth-rate, has now ceased to do so, and it seems likely that a period of definitely lower natural increases than those of even the recent past has commenced. To some extent this is due to change in the age-constitution of the population. This was more favourable in regard to mortality (*see* Table 6) in 1901 than at any other census, a fact which, until that date, contributed to that fall in the crude death-rate which compensated for the fall in the birth-rate. Since 1901, however, owing largely to increased proportion of old people in

TABLE XIII.—NATURAL INCREASE of POPULATION per 1,000 LIVING, 1876-1913.

	Mean Annual Birth-rate per 1,000 living.	Mean Annual Death-rate per 1,000 living.	Mean Annual Rate of Increase by excess of Births over Deaths, per 1,000 living.
1876-1880 ... ..	35.3	20.8	14.5
1881-1885 ... ..	33.5	19.4	14.1
1886-1890 ... ..	31.4	18.9	12.5
1891-1895 ... ..	30.5	18.7	11.8
1896-1900 ... ..	29.3	17.7	11.6
1901-1905 ... ..	28.2	16.0	12.2
1906-1910 ... ..	26.3	14.7	11.6
1906... ..	27.2	15.5	11.7
1907... ..	26.5	15.1	11.4
1908... ..	26.7	14.8	11.9
1909... ..	25.8	14.6	11.2
1910... ..	25.1	13.5	11.6
1911... ..	24.4	14.6	9.8
1912... ..	23.8	13.3	10.5
1913... ..	23.9	13.7	10.2

the population as a result of the decreased birth-rate, the age-constitution has again become less favourable, and as this change progresses it will to an increasing extent tend to increase the crude death-rate, and so to diminish natural increase.

TABLE XIV.—NATURAL INCREASE per 1,000 LIVING, 1913.

	North.	Midlands.	South.	Wales.	England and Wales.
London ... ..	—	—	10.2	—	10.2
County Boroughs ... ..	9.8	11.3	8.0	13.3	10.2
Other Urban Districts ... ..	10.0	11.5	7.9	14.9	10.6
Rural Districts ... ..	11.1	9.5	7.9	10.6	9.5
All areas ... ..	10.1	10.8	8.9	13.1	10.2

The distribution throughout the country of the natural increase recorded in 1913 is shown in Table XIV. It will be seen that as in 1911 and 1912 it was highest in Wales in all but the rural areas, and lowest in the South in all three classes of area, its distribution closely resembling in these respects that of the birth-rate. On the other hand the advantage in birth-rate possessed by the North over the Midlands, and by the county boroughs over the smaller towns in the country at large, does not prevent their rates of increase being lower, owing to the higher mortality in the North and in the county boroughs. As all of these statements hold good of each of the three years for which the information has been tabulated, it would seem that the differences between the various areas are of a very stable character.

It may be pointed out that in the absence of migration the large towns would have increased at the same rate as the country at large, the smaller towns faster, and the rural areas more slowly. These facts are worth noting in view of the assumption sometimes loosely made that the population of the towns would cease to increase if it were not recruited from the country. It is true that the figures in the table probably do not fairly represent the increase characteristic of the town and country born, for many births in towns are the result of fertility freshly imported from the country, but the rural population now bears so small a proportion to the whole that this consideration must be of much less importance than in former years.

## DEATHS.

The deaths of 504,975 persons were registered in England and Wales during 1913, 261,687 of these being males and 243,288 females.

These deaths correspond to a rate of 13.7 per 1,000 population, which is 0.4 higher than that of the preceding year, the lowest yet reached, but is lower than any recorded previous to 1910. The lowest standardized death-rate\* of the nineteenth century was 16.4 in 1894, and the usual rates were considerably higher, the standardized rate for 1861-70 being 21.3 and that for 1891-95 18.5, since when the fall has been very rapid.

\* The need for modification of the crude death-rate, that is the proportion borne by deaths registered to each thousand of the population at all ages, if true comparison is to be made of the force of mortality at different times or in different areas, has frequently been pointed out in these Reports. The two methods of effecting this "standardization" of recorded death-rates here employed were fully described in the Annual Report for 1911 (pp. xxvii-xxx). Owing to the laborious nature of the calculations involved by use of the "direct" method, which is to be preferred on the ground of accuracy, the standardized rates shown for administrative areas on pages 132-164 have been obtained by the indirect or factorial method, by which the standardizing factor represents the relation of the "index death-rate" for the standard population, that of England and Wales in 1901, to the "index death-rate" of the population in question (the index death-rate itself being a measure of the effect upon mortality of the sex- and age-constitution of the population as ascertained at the



**Mortality of each Sex.**—The standardized mortality of males\* in 1913 exceeded that of females by 23 per cent. (Table 6). Up to 1860 or so the excess was only about nine per cent., but for the last 15 years it has averaged about 20 per cent. Since 1841–1845, the first quinquennium in the table, the standardized mortality of females has fallen by 39·4 per cent. while the fall in that of males has been only 31·5 per cent.

Tables 13 and 14 show that the excess in the mortality of males exists at all ages except in the years of childhood, when mortality is at its minimum. The excess, however, is very unequally distributed, being large in infancy, negative in childhood, then gradually increasing to a maximum in later middle life, and from this declining again with advancing age. The ratios of male per cent. of

latest census). The following comparison of the results of application of the two methods shows that the differences are not as a rule of great importance.

Rates calculated upon the standard recommended by the International Statistical Institute, viz., the population of Sweden in 1890, distinguishing five groups of ages, but without distinction of sex, are also shown.

	Crude Death-rate per Million Population, 1913.	Standardized Rates.		
		By Direct Method (England and Wales Standard, 1901).	By Indirect Method (England and Wales Standard, 1901).	By Direct Method (International Standard, 1890).
England and Wales ... ..	13,678	13,331	13,391	16,142
London ... ..	14,278	14,255	14,278	17,024
County Boroughs ... ..	15,113	15,591	15,518	18,370
Other Urban Districts ... ..	12,889	12,774	12,797	15,501
Rural Districts ... ..	12,494	10,690	11,067	13,587

In order that those interested in the subject may have an opportunity of using the standardization method to the fullest extent which the calculations permit, tables showing "calculated deaths" and "adjusted populations" were inserted in the Annual Report for 1912 (pages 163–174 and 610–611) and a supplementary table for areas affected by changes in boundary during 1913 is published at page 165 of the present Report. The figures in the second column of these tables are those referred to on page xxix of the Annual Report for 1911, as giving "the deaths that would have occurred in a year had the mortality of each sex- and age-group been the same as that in England and Wales as a whole" (during 1901–10). By the addition of these calculated deaths and adjusted populations for any combination of areas, a standardizing factor can be obtained for the combination in the same way as for the individual areas. Thus if it were desired to ascertain the standardized death-rate of Manchester and Salford in combination the procedure would be as follows:—

	Calculated deaths.	Adjusted population.
Manchester ... ..	10056·5	714,949
Salford ... ..	3275·9	231,357
Combined area ... ..	13332·4	946,306

The index death-rate for the combined area therefore =  $\frac{13332 \cdot 4 \times 1000}{946306} = 14 \cdot 09$ . The index death-rate for the standard population, that of England and Wales in 1901, was 15·19, and the standardizing factor for the combined area is therefore  $\frac{15 \cdot 19}{14 \cdot 09} = 1 \cdot 0781$ .

\* The methods of calculating standardized death-rates for populations consisting of persons of both sexes are inapplicable to a comparison between the sexes. For this purpose the standard population employed by these methods is unsuitable, since it does not furnish a common basis of comparison between the sexes. The female population is longer lived, and therefore older, and, assuming other conditions the same for both, on that account more prone to death than the male. In any true comparison of male and female mortality this fact must be allowed for, as in other similar cases. The allowance is made by applying the death-rates of the classes of persons compared to a common standard population, which in the case of comparison between the sexes is preferably that of persons of undistinguished sex in the community chosen for the purpose (*i.e.*, England and Wales in 1901). Some other population might have been chosen without seriously affecting the result, *e.g.*, males in 1901 or females in 1901, so long as, in making the comparison, the rates of male mortality are not applied to one population, that of males in 1901, and those of female mortality to another and differently constituted one, that of females in 1901. This would be done were comparison made by the direct method as applied to populations consisting of both sexes. All statements of standardized mortality in this Report which refer to the sexes separately are based upon the age-distribution of persons of undistinguished sex in the population of England and Wales in 1901.

female mortality at the various age-periods during the years 1901–1910 and 1913 are as follows:—

	0—	5—	10—	15—	20—	25—	35—	45—	55—	65—	75—	85—
1901–10 ... ..	119	97	95	107	120	119	123	130	128	120	115	112
1913 ... ..	122	100	95	108	117	121	123	130	133	126	119	111

**Mortality at different Ages.**—The fall in mortality during recent years applies to all ages, though in old age it is inconsiderable. Tables 13–15 enable the history of this fall to be traced at each age-period dealt with. They show that up to 35 years of age for males and to 45 for females the mortality of 1913 was at each period only about one half or less of that recorded 50 years ago (1861–65), but that after these ages the fall, though appreciable, has been comparatively slight.

Comparing 1913 with 1912, the year of lowest mortality as yet recorded in this country, it will be seen that the advantage of 1912 is almost confined to the first age-group dealt with, 0–5 years. The total mortality at all ages over 5 years was 11·04 per thousand living at these ages in 1913 as against 11·00 in 1912, but at ages under 5 years the mortality was 35·7 in 1913 as against only 32·4 in 1912 (Table 15). This increase is more than accounted for by increase of mortality from diarrhoea and enteritis, due to the fact that the summer was much warmer than that of 1912. The death-rate from this cause at ages 0–5 increased to the extent of 3·5 per 1,000, or 0·2 per 1,000 more than the increase from all causes. It may, therefore, be said that, apart from the effects of the warmer summer, the reduction of mortality below all previous records which could be claimed for 1912 was maintained in 1913.

**Infant Mortality.**—Of the 504,975 deaths registered during the year in England and Wales, 95,608, or 18·9 per cent., were those of infants under one year of age, corresponding to a mortality rate of 108 per 1,000 births. This rate was 13 per 1,000 births, or 11 per cent., below the average in the preceding 10 years, but exceeded that of 1912, the lowest hitherto recorded, by a like amount, 13 per 1,000 births. This excess is almost wholly accounted for by the increase in diarrhoeal mortality already referred to, and may thus be ascribed to the less favourable climatic conditions of the summer. From causes other than diarrhoea and enteritis, the mortality of infants rose from 87 per 1,000 births in 1912—the lowest rate of the kind on record in this country—only to 89 per 1,000 in 1913. It was not until 1909 that this rate fell below 100, and since then it has never reached that figure.

Table XV shows how the infant mortality of 1913 was distributed between the sexes and throughout the country. For infants of both sexes jointly the rate varied from 131 in the county boroughs of the North to 69 in the rural districts of the South.

TABLE XV.—INFANT MORTALITY (DEATHS UNDER 1 YEAR per 1,000 BIRTHS), 1913.

	Males.					Females.					Both Sexes.				
	North.	Midlands.	South.	Wales.	England and Wales.	North.	Midlands.	South.	Wales.	England and Wales.	North.	Midlands.	South.	Wales.	England and Wales.
London ... ..	—	—	115	—	115	—	—	96	—	96	—	—	106	—	106
County Boroughs ... ..	145	134	105	130	137	118	109	82	110	111	131	122	94	120	124
Other Urban Districts ... ..	139	104	89	139	118	109	83	69	107	93	124	94	79	123	105
Rural Districts ... ..	126	89	78	115	99	98	71	60	90	77	113	80	69	103	88
All areas ... ..	140	110	102	130	120	112	89	82	103	96	126	100	92	117	108

The fact that infant mortality is considerably higher under the conditions of town than of country life is well known, and the rate for the rural districts is exceeded accordingly by 19 per cent. in the case of the smaller towns, and by 41 per cent. in that of the county boroughs, but only by 20 per cent. in the case of London. The comparatively small excess in London shows to what a large extent the adverse influence of urban surroundings on infant life may be avoided. The mortality in the



County of London, the central portion of the largest urban population in existence, was lower than that in the country at large—a very remarkable fact.

The geographical variation of the mortality dealt with by the table is remarkable, especially in view of its constancy from year to year. In each sex and in every class of area the English mortality was highest in the North and lowest in the South, the position of the Midlands being in all cases intermediate. Even the rural districts of the North record a higher rate than London does, the excess being much greater in the male sex. All these statements apply equally to the year 1912, and, except for a slightly higher mortality in London than in the northern rural districts, also to 1911. The urban excess in 1913 is analysed by age, legitimacy and cause of death in Table 30, and Tables 24–28 provide the means of investigating, in somewhat less detail, the causes of death which are accountable for the differences between the various geographical areas.

It is of interest to extend the comparison of infant mortality up to school age, *i.e.*, to the end of the period of exclusively home influence. This is done in Table XVI, which gives the mortality during the second year of life, and the mean annual mortality between the ages of two and five years, in the different areas dealt with; and in Table XVII, which shows the survivors from 10,000 births at the end of the first, second, and fifth years of life in the same areas. The range of variation in the second year of life is very much greater than in the first. It extends in Table XVI from 14.47 in the rural districts of the South to 50.78 in the county boroughs of the North, the chances of survival during the second year of life in the latter being not very much greater than those during the first year of life in the former. In both sections of the table mortality in England increases without exception from South to North in each class of area, and from rural districts to large towns in all parts of the country; but in Wales it is higher in the small towns than in the county boroughs.

TABLE XVI.—MORTALITY IN EARLY CHILDHOOD, 1913: DEATHS PER 1,000 LIVING AT EACH AGE (Both Sexes).

	1-2 years.					2-5 years. (Mean Annual Mortality.)				
	North.	Midlands.	South.	Wales.	England and Wales.	North.	Midlands.	South.	Wales.	England and Wales.
London ...	—	—	37.23	—	37.23	—	—	8.58	—	8.58
County Boroughs ...	50.78	40.57	24.55	27.82	44.05	11.56	10.23	7.50	7.73	10.59
Other Urban Districts ...	40.01	25.74	19.32	31.79	30.25	9.78	6.99	6.05	8.00	7.88
Rural Districts ...	32.10	16.24	14.47	23.58	20.36	7.98	4.89	4.04	6.43	5.56
All areas ...	44.36	27.77	27.12	28.57	33.43	10.44	7.42	6.96	7.46	8.34

Table XVII exhibits the cumulative results of the mortalities shown in Tables XV and XVI. It shows that, judging by the experience of 1913, 20 per cent. of children born in the county boroughs of the North may be expected to die before completing their fifth year, while in the rural districts of the South the proportion lost is only 9 per cent., or less than half the other. Outside London there is no class of area in the South which does not, judging by the experience of each of the three years 1911–1913, reach a larger proportion of its children than even the rural districts of the North.

TABLE XVII\*.—MORTALITY IN EARLY CHILDHOOD, 1913: SURVIVORS OF 10,000 CHILDREN BORN.

	At end of First Year.					At end of Second Year.					At end of Fifth Year.				
	North.	Midlands.	South.	Wales.	England and Wales.	North.	Midlands.	South.	Wales.	England and Wales.	North.	Midlands.	South.	Wales.	England and Wales.
London ...	—	—	8,942	—	8,942	—	—	8,609	—	8,609	—	—	8,387	—	8,387
County Boroughs ...	8,687	8,784	9,061	8,798	8,756	8,246	8,423	8,839	8,553	8,370	7,960	8,169	8,640	8,355	8,104
Other Urban Districts ...	8,760	9,063	9,205	8,768	8,946	8,410	8,830	9,027	8,489	8,675	8,163	8,645	8,863	8,285	8,470
Rural Districts ...	8,874	9,196	9,308	8,970	9,118	8,589	9,047	9,173	8,758	8,932	8,383	8,914	9,062	8,589	8,783
All areas ...	8,737	9,004	9,079	8,835	8,916	8,349	8,754	8,833	8,583	8,618	8,087	8,559	8,649	8,391	8,402

\* A note as to the construction of Tables XVII and XVIII will be found in the Annual Report for 1911, page xxxvi.

The comparison may be carried a stage further, as is done in Table XVIII, by stating the combined effects of each population's fertility and early mortality, in other words, by showing the extent to which, on the basis of the experience of 1913, it produces *and rears* children. The result may be regarded as its effective fertility, and will give some indication of the extent to which success in preservation of young lives is likely to compensate for failure in their production.

The greatest effect of successful life preservation in compensating for its non-production is naturally shown by comparison of the county boroughs of the North with the rural districts of the South, since these populations present the greatest contrast of any in Table XVII. Table XVIII shows that while the birth-rate of the former was 25.9 as against 19.4 for the latter this difference would be reduced at age 5 to that between 20.7 and 17.6, the survivors per 1,000 population in each case. It appears therefore that if the conditions affecting child mortality in the country at large could be improved to the extent represented by the difference between the two extremes in the table even so great a change as this would not nearly compensate for a difference in birth-rates much less in extent than the fall of the past 30–40 years.

The advantage in regard to birth-rate held by the large towns in the first section of Table XVIII is still maintained, though to a diminished extent, when the age of five years is attained. The advantage in regard to fertility on the other hand is held on the whole by the rural districts (the higher birth-rates of the towns being accounted for by their higher proportions of women of conceptive age) and this advantage becomes gradually accentuated by their more favourable mortality experience.

One of the most striking features of Table XVIII is, as in 1911 and 1912, the extent to which the fertility of Wales, however stated, exceeds that of England. The survivors

TABLE XVIII.—EFFECTIVE FERTILITY, 1913.\*

	1.—Births per 100,000 Total Population.					2.—Births per 10,000 Women aged 15-45.					3.—Legitimate Births per 10,000 Married Women aged 15-45.				
	North.	Midlands.	South.	Wales.	England and Wales.	North.	Midlands.	South.	Wales.	England and Wales.	North.	Midlands.	South.	Wales.	England and Wales.
London ...	—	—	2,446	—	2,446	—	—	909	—	909	—	—	1,962	—	1,962
County Boroughs ...	2,595	2,571	2,079	2,690	2,534	1,003	1,003	788	1,108	983	1,966	1,976	1,649	2,086	1,940
Other Urban Districts ...	2,450	2,341	1,957	2,850	2,350	974	930	753	1,253	936	1,907	1,838	1,657	2,254	1,868
Rural Districts ...	2,452	2,175	1,944	2,469	2,204	1,063	1,011	860	1,110	993	2,094	1,952	1,769	2,244	1,966
All areas ...	2,524	2,364	2,181	2,694	2,389	1,001	974	847	1,178	959	1,961	1,912	1,814	2,220	1,923
SURVIVORS OF ABOVE AT END OF FIRST YEAR OF LIFE.															
London ...	—	—	2,187	—	2,187	—	—	813	—	813	—	—	1,754	—	1,754
County Boroughs ...	2,254	2,258	1,884	2,367	2,219	871	881	714	975	861	1,708	1,736	1,494	1,835	1,699
Other Urban Districts ...	2,146	2,122	1,801	2,499	2,102	853	843	693	1,099	837	1,671	1,666	1,525	1,976	1,671
Rural Districts ...	2,176	2,000	1,809	2,215	2,010	943	930	800	996	905	1,858	1,795	1,647	2,013	1,793
All areas ...	2,205	2,129	1,980	2,380	2,130	875	877	769	1,041	855	1,713	1,722	1,647	1,961	1,715
SURVIVORS OF ABOVE AT END OF SECOND YEAR OF LIFE.															
London ...	—	—	2,106	—	2,106	—	—	783	—	783	—	—	1,689	—	1,689
County Boroughs ...	2,140	2,166	1,838	2,301	2,121	827	845	696	948	823	1,621	1,666	1,457	1,784	1,624
Other Urban Districts ...	2,060	2,067	1,766	2,420	2,038	819	821	680	1,064	812	1,604	1,623	1,496	1,913	1,620
Rural Districts ...	2,106	1,968	1,783	2,163	1,969	913	915	788	973	887	1,798	1,766	1,623	1,966	1,756
All areas ...	2,107	2,070	1,926	2,312	2,059	836	853	748	1,011	826	1,637	1,674	1,602	1,905	1,658
SURVIVORS OF ABOVE AT END OF FIFTH YEAR OF LIFE.															
London ...	—	—	2,052	—	2,052	—	—	763	—	763	—	—	1,646	—	1,646
County Boroughs ...	2,066	2,100	1,797	2,248	2,054	798	819	680	926	797	1,565	1,615	1,424	1,743	1,572
Other Urban Districts ...	2,000	2,024	1,734	2,362	1,990	795	804	668	1,038	793	1,557	1,589	1,469	1,867	1,582
Rural Districts ...	2,056	1,939	1,761	2,121	1,936	891	902	778	954	872	1,755	1,740	1,603	1,928	1,727
All areas ...	2,041	2,024	1,886	2,260	2,007	810	834	732	988	805	1,586	1,637	1,569	1,862	1,617

\* The rates of mortality at ages 1–5 employed in the third section of this table are those applicable to all children without distinction of legitimacy, as the mortality of legitimate children is not separately tabulated except during the first year of life. The consequent error, however, is probably very small. See Annual Report for 1911, Table XXXIII.



at age 5 in Wales exceed the births in the South of England in each class of area and in each section of the table, and the smaller towns of Wales more nearly approximate to the old-fashioned standard of birth-rate than any other of the sections of the population dealt with.

**Causes of Infant Mortality.**—It will be seen from Table XIX, which compares the rates recorded in Table 29 with the experience of previous years, that infant mortality showed an increase in 1913 upon that in 1912 from all the principal causes of such deaths except the infectious diseases. The only notable increase was that from diarrhoea and enteritis, the mortality from which advanced from 7.72 per 1,000 births in 1912 to 19.32 in 1913, or by 150 per cent., thus accounting for no less than 86 per cent. of the total increase over 1912—13.56 deaths per 1,000 births. Had it not been, however, for the remarkable fall in mortality from whooping cough in 1913, which was far below any previously recorded (Table 22), the increase from causes other than diarrhoea would have been almost twice as great as it was. As the mortality from infectious diseases, like that from diarrhoea, fluctuates greatly from year to year, it is advisable, when examining the trend of infant mortality, to consider deaths from all other causes apart from these peculiarly unstable components of the total mortality. The deaths after exclusion of these causes correspond to a rate of 83.38 per 1,000 births, or 4.04 per 1,000 more than in 1912, but 3.39 less than in 1908–1912, the increase over 1912 amounting to about 5 per cent. This increase, as may be seen from Table XIX, is widely distributed over all the principal causes and over each portion of the first year of life.

The remarkable fall in mortality ascribed to tuberculosis, referred to in last year's Report, has not been fully maintained, the rate from this cause having risen from 2.81 to 3.02 deaths per 1,000 births. Even the latter figure, however, is far below any recorded prior to 1912, the rate in 1911 having been 3.81, while so recently as 1902–1906 it was as high as 5.63. The increase over 1912 applies solely to abdominal tuberculosis, and, as pointed out in last year's Report, the records under this heading may in a year of heavy diarrhoeal mortality be swollen by misdescription of deaths properly assignable to diarrhoea. The figures of the past few years show a certain parallelism of fluctuation between the two causes. Even in this case, however, the rate is well below that of any other year except 1912. The mortality ascribed to tuberculous meningitis fell from 1.24 deaths per 1,000 births in 1911 to 1.06 in 1912 and to 1.02 in 1913. This fall was accompanied by a decrease in the mortality from meningitis not described as tuberculous from 1.72 in 1911 to 1.28 in 1912 and 1.34 in 1913. The change which has occurred cannot therefore be ascribed to a mere difference in the method of certifying deaths from meningeal disease, but would seem to point to a true, and also to a strangely sudden decrease in the mortality of infants from meningeal disease of all varieties in 1912, which has been maintained in 1913.

TABLE XIX.—ENGLAND AND WALES, 1913.—PERCENTAGE INCREASE OR REDUCTION OF INFANT MORTALITY as compared with 1908–12 and with 1912.

	Under 1 month.		1–3 months.		3–6 months.		6–9 months.		9–12 months.		Under 1 year.	
	1908–12.	1912.	1908–12.	1912.	1908–12.	1912.	1908–12.	1912.	1908–12.	1912.	1908–12.	1912.
Whooping cough ...	-9	-17	-34	-39	-35	-36	-33	-35	-37	-38	-34	-37
Other common infectious diseases.	-	-	-25	-14	-	-12	-10	-17	-5	-10	-6	-13
Diarrhoea and enteritis ...	+10	+53	+10	+118	+7	+163	+7	+199	+10	+186	+8	+150
Premature birth ...	-	+1	+6	+13	+16	+22	+33	+33	-	-	+1	+2
Congenital defects...	-9	+5	-7	+6	+5	+24	-	+29	-17	+10	-8	+7
Atrophy, debility, marasmus	+1	+4	-21	+3	-12	+18	-22	-1	-12	+18	-8	+5
Developmental and wasting diseases	-1	+2	-11	+6	-8	+19	-17	+4	-11	+16	-4	+4
Tuberculous diseases	-17	+25	-27	-	-23	+13	-21	+2	-17	+10	-22	+7
Convulsions ...	-10	-	-12	+11	-9	+13	+10	+5	+23	+14	-6	+6
Bronchitis and pneumonia	+11	+3	-2	-1	+2	+10	+1	+10	-	+7	+1	+6
Other causes ...	+9	-	-	+3	-9	+10	-18	+12	-20	+12	-5	+6
All causes ...	-	+3	-5	+15	-4	+33	-6	+24	-5	+17	-3	+14

Another cause of mortality showing increase in 1913 which may be ascribable in reality to the increase of fatal diarrhoea is convulsions, as these often originate in intestinal disturbance, but in the case of respiratory diseases the increase shown, which chiefly affects pneumonia, is presumably more likely to be related to the atmospheric conditions of the winter than of the summer half of the year.

The important group of developmental and wasting diseases, which includes the whole of the three lines appearing above it in Tables XIX and XX, shows an increase over the previous year of 4 per cent.

TABLE XX.—ENGLAND AND WALES.—DEATHS OF CHILDREN under ONE YEAR OF AGE from DEVELOPMENTAL and WASTING DISEASES per 1,000 BIRTHS, 1886–1913.

	Sex.	Proportion of Deaths to 1,000 Births of each Sex.								
		1886–1890.	1891–1895.	1896–1900.	1901–1905.	1906–1910.	1911.	1912.	1913.	
Premature birth (151A)	Males	17.8	20.3	21.7	22.4	22.0	22.1	21.7	21.8	
	Females	14.4	16.4	17.5	18.1	17.8	18.0	17.4	18.2	
	Both sexes	16.1	18.4	19.6	20.2	19.9	20.1	19.6	20.0	
Congenital defects (150 and 152B).	Males	3.5	3.9	4.3	6.4	7.3	5.9	5.9	6.4	
	Females	2.9	3.3	3.5	5.0	5.9	4.8	4.7	4.9	
	Both sexes	3.2	3.6	3.9	5.7	6.6	5.4	5.3	5.7	
Atrophy, Debility, Marasmus (151 B–E).	Males	24.9	25.0	23.9	20.8	17.5	17.7	14.7	15.5	
	Females	20.6	20.3	19.3	16.6	13.7	14.1	10.9	11.6	
	Both sexes	22.8	22.7	21.7	18.7	15.6	15.9	12.9	13.6	
Total: Developmental and wasting diseases.	Males	46.2	49.2	49.9	49.6	46.8	45.7	42.3	43.7	
	Females	37.9	40.0	40.3	39.7	37.4	36.9	33.0	34.7	
	Both sexes	42.1	44.7	45.2	44.6	42.1	41.4	37.8	39.3	

Table XX, however, shows that as compared with years prior to 1912 the rates for 1913 are decidedly low. The largest increase shown in this table is that from atrophy, debility, and marasmus, a heading under which there is reason to believe that a certain number of deaths really due to diarrhoea, or at least dependent upon the conditions which make for increase of diarrhoeal mortality, are returned. The proportion of infants dying as the result of premature birth and of congenital defects is about equal to the average of recent years, during which it is very apparent from the table that many deaths which would formerly have been attributed to atrophy, &c., have been returned under the heading of premature birth. Even now there is reason to believe that this process is incomplete, and that a number of deaths of prematurely born infants are returned as due to "debility" without statement of its cause.

The sudden rise in mortality from congenital defects shown for the period 1901–05 in Table XX is in large measure at least due to the inclusion under this heading during the years 1901–10 of deaths from icterus neonatorum (151c) amounting to about 700 annually. Even after deducting this mortality, however, the rate from this cause shows steady increase, which is probably due largely to improvement of certification.

It will be seen that, apart from that recorded for diarrhoea, several of the other increases of mortality in Table XIX may be ascribed wholly or in part to the less favourable climatic conditions of the year, so that on the whole the remarkable improvement of recent years in regard to infant mortality may be said to have been fairly well maintained, even though no new ground has been won.

Table XXI, which contrasts the mortality of male with that of female, and of legitimate with that of illegitimate infants, shows that the mortality of males was 25 per cent. greater than that of females, and that all the principal causes of death except whooping cough display the same feature, and on the whole to a very uniform extent. The excess in the mortality of males was greatest in the second and third months of life, regularly decreasing thereafter. All these features of the table—excess in male mortality of about 25 per cent. from all causes and from the principal groups of causes, excess of female mortality from whooping cough, and the decrease with advancing age of the excess in male mortality—reproduce themselves with curious fidelity from year to year. The proportionate male excess was less in the case of illegitimate infants, as it has been in (at least) each of the past six years.

The table also resembles similar tables relating to previous years in showing that the mortality of illegitimate infants was about twice as great as that of the legitimate, the excess being rather greater in the case of females. This excess was highest (136 per cent.) in the second three months of life for males and at one to three months for females (150 per cent.), and thereafter fell to rather more than 50 per cent. in the last three months of the first year.



TABLE XXI.—ENGLAND AND WALES, 1913: INFANT MORTALITY by SEX and LEGITIMACY.

	Deaths per 1,000 Births.						Mortality per cent.					
	All Infants.		Legitimate Infants.		Illegitimate Infants.		Male of Female Infants.			Illegitimate of Legitimate Infants.		
	Male.	Female.	Male.	Female.	Male.	Female.	All Infants.	Legitimate.	Illegitimate.	Male.	Female.	
All causes	under one month ...	44.38	34.32	42.81	33.00	79.37	63.83	129	130	124	185	193
	1-3 months ...	23.09	17.47	21.88	16.42	49.64	41.13	132	133	121	227	250
	3-6 " ...	21.64	17.82	20.43	16.76	48.25	41.72	121	122	116	236	249
	6-9 " ...	16.81	14.04	16.12	13.45	31.95	27.33	120	120	117	198	203
	9-12 " ...	14.22	12.59	13.82	12.31	23.02	19.01	113	112	121	167	154
	Total under one year ...	120.14	96.24	115.06	91.94	232.23	193.02	125	125	120	202	210
All ages under one year.	Whooping cough ...	2.65	3.15	2.63	3.14	3.28	3.48	84	84	94	125	111
	Other common infectious diseases.	2.95	2.69	2.88	2.65	4.51	3.48	110	109	130	157	131
	Diarrhoea and enteritis	21.44	17.11	20.30	16.05	46.76	41.07	125	126	114	230	256
	Premature birth ...	21.81	18.16	21.11	17.63	37.07	30.15	120	120	123	176	171
	Congenital defects ...	6.40	4.93	6.29	4.87	8.66	6.24	130	129	139	138	128
	Atrophy, debility and marasmus.	15.50	11.56	14.66	10.90	34.00	26.35	134	134	129	232	242
	Developmental and wasting diseases.	43.71	34.65	42.06	33.40	79.73	62.74	126	126	127	190	188
	Tuberculous diseases ...	3.39	2.66	3.23	2.55	7.03	4.94	127	127	142	218	194
	Convulsions ...	10.16	7.88	9.68	7.56	20.77	15.05	129	128	138	215	199
	Bronchitis and pneumonia.	21.30	16.65	20.81	16.19	31.95	27.00	128	129	118	154	167
	Other causes ...	14.54	11.45	13.47	10.40	38.20	35.26	127	130	108	284	339
	All causes ...	120.14	96.24	115.06	91.94	232.23	193.02	125	125	120	202	210

The excess in mortality of illegitimate children varied greatly also for different causes of death. It was comparatively slight for infectious disease in general (Table 29) and especially for whooping cough. It was also slight in the case of deaths from congenital defects, and only moderate for bronchitis and pneumonia, but heavy for diarrhoea and atrophy. These are all very constant features of this table.

The mortality of illegitimate exceeds that of legitimate infants most of all in the case of deaths attributed to syphilis, being over eight times as heavy (Table 29). Probably there is much less reluctance to certify the true cause of death in such cases for illegitimate infants, but the difference is greater than could well be explained in this way, and it is, moreover, of a nature to be expected from the circumstances of the case. Fatal injury at birth is very much commoner with illegitimate infants. No doubt many of the confinements take place under disadvantageous circumstances. The excess of mortality amongst illegitimate infants ascribed to overlying is also greater than that from all causes.

Table 30 compares towns of various sizes and rural districts in respect of infant mortality. These effects are summarised by comparison of the death-rate from each cause in the urban areas as a whole and in the rural areas. The total mortality in the former exceeded that in the latter by 29 per cent., but this excess was very unevenly distributed over the different age-periods into which the first year of life is divided in the table, being only 5 per cent. in the first month, 41 per cent. at 1-3 months, 44 at 3-6, 43 at 6-9, and 57 per cent. at 9-12 months. The chances of survival seem to differ but little at birth in town and in the country, but the noxious influences of the former soon come into play, and make themselves felt to an increasing extent as the first year of life progresses, and to a still greater extent in the second and third years when the urban excess generally approaches 100 per cent., thereafter gradually declining.

When comparison is made between towns of varying size it is seen that apart from London, those of larger size are at a disadvantage at every age, in the case both of legitimate and illegitimate infants. The mortality of legitimate infants in London, however, was practically the same as that in the smaller towns. This is due mainly to the low mortality in London during the first month of life, which, as also in 1911 and 1912, was below that even of the rural districts. After the first month London comes between the county boroughs and the smaller towns, as it may be seen from Table XVI. to do also during the succeeding four years of life.

Apart from the special case of London, Table 30 shows that the mortality from each of the five groups of diseases under which it summarises infantile deaths increases regularly from the rural areas to the large towns, but the difference in the case of the wasting diseases is small. This statement applies also to each quarter of the first year of life, except in the case of the infectious diseases during the first six months and of tuberculous diseases during the first three months.

Comparison of individual diseases in town and country shows that measles and diphtheria followed the usual rule of urban excess, but that whooping cough is exceptional in this respect as well as in regard to the incidence of its mortality upon the sexes. The mortality from convulsions in London was only about half that in the rest of the country. This accords with statements made in previous Reports as to evidence of superiority of certification in London, for it has often been pointed out that this indefinite form of certificate, which continues to show a most satisfactory decline in frequency of use (Table 20), is one which should be used only when the condition causing the convulsions cannot be ascertained. Similarly it is perhaps not without significance that while tubercle of organs other than the intestine and peritoneum was more fatal in London than in any other class of area, "abdominal" tuberculosis was less fatal in London than even in the rural districts. For there is no doubt that the term "tabes mesenterica" at least has been loosely used to cover disease not all of which was due to tubercle, and it may be that this looseness has to some extent survived the gradual disuse of the term with which it was especially associated (*see* page xlvi). Another instance of the same kind is furnished by the relative mortality of bronchitis and pneumonia in London and other parts of the country. Reasons were given in the Report for 1909 (pages lxxix-lxxxi) for believing that, especially in former years, many deaths from pneumonia were erroneously ascribed to bronchitis. Table 30 shows that as far as deaths of infants are concerned, the reform which is taking place in regard to this matter has proceeded further in London than elsewhere.

The harmful effect of town life is well marked in regard to the respiratory diseases, but it is especially evident in the case of diarrhoea, the mortality from which in the urban areas was more than twice that in the rural districts. Syphilis shows an even greater variation with urban conditions, the mortality in the country districts, whether of legitimate or illegitimate children, being less than a quarter of that returned in the great towns. It is most fatal in the first month and thereafter progressively less so, the mortality being 0.46 per 1,000 births in the first month of life (Table 29) as against 0.57 for the second and third months jointly. Another cause of infant mortality particularly associated with the great towns is overlying, which caused about four times as many deaths in London as in the rural districts.

The total infant mortality in each administrative area will be found on pages 132-164.

Centenarians.—Among the deaths registered during the year there were 52 of reputed centenarians, 13 of whom were males and 39 females. In the preceding three years the numbers were 65, 63, and 67 respectively.

TABLE XXII.—ENGLAND AND WALES, 1913.—DEATHS OF CENTENARIANS.

	Males.					Females.					
	Age.					Age.					
	100 and over.	100.	101.	102.	103.	100 and over.	100.	101.	102.	103.	110.
London ...	2	—	1	—	1	5	1	2	1	1	—
County Boroughs ...	3	—	—	1	2	12	3	4	3	1	1
Other Urban Districts	5	3	1	1	—	9	5	—	3	1	—
Rural Districts ...	3	2	—	1	—	13	4	3	4	2	—
All areas ...	13	5	2	3	3	39	13	9	11	5	1

Particulars of the ages returned and of the class of area concerned are given in Table XXII. It will be seen that except in one single instance no death was registered at any age above 103. The returns of other years are in general harmony with this experience, and the absence of deaths registered at what might be regarded as fanciful ages may be regarded as confirming the credibility of the facts as tabulated.



Moreover, the numbers of deaths annually returned compare reasonably well with the number of centenarians (36 males and 92 females) recorded at the census of 1911.

The number of females who attain extreme old age is always very much greater than that of males; and the numbers of these deaths accredited to the various classes of area agree very well with their respective populations at extreme ages. Thus while the rural districts in 1911 contained only 22 per cent. of the total population at all ages, their share at ages over 85 amounted to 35 per cent., which is rather higher than their proportion of centenarians at the census or of the deaths in Table XXII. The advantage in regard to mortality held by the rural districts ceases in extreme old age (Table XXIV), and with this cessation the increase with age in the proportion of the population living in the rural districts comes to an end. In this instance again the credibility of the returns relating to these extreme ages is confirmed by the mutual support of those derived from the census and from the death registers.

**Mortality in Town and Country.**—Table XXIII states, both in the crude and in the standardized form, the annual rates of mortality for the year 1913 at all ages and from all causes in the four groups of areas employed in this Report, the rates in England and Wales being given also for 1912 and for the quinquennium 1906-10.

Standardization of the death-rates for persons on the 1901 basis slightly reduces that of the whole country, since the constitution of its population in 1913 was less favourable to low mortality than in 1901. The effect upon London and the smaller urban districts is a very slight reduction, but the mortality of the county boroughs is increased by three per cent., and that of the rural districts diminished by 14 per cent., the contrast between them being thus greatly increased. The standardized figures in the table show that outside the metropolis mortality in general increases with urbanization, but that the mortality of London is intermediate between that of the county boroughs and of the smaller urban districts, and in the case of females is even slightly lower than that of the urban districts as a whole. All of these statements apply to each of the three years 1911-1913.

TABLE XXIII.—MORTALITY FROM ALL CAUSES PER MILLION POPULATION, 1906-10, 1912 and 1913.

		1906-10.	1912.	1913.					All Urban Districts.
				England and Wales.	England and Wales.	London.	County Boroughs.	Other Urban Districts.	
Males	{Crude rates ...	15,636	14,120	14,655	15,736	16,414	13,758	12,992	15,129
	{Standardized rates	15,806	14,237	14,783	16,231	17,421	14,207	11,571	15,797
Females	{Crude rates ...	13,809	12,512	12,763	12,986	13,918	12,078	11,996	12,963
	{Standardized rates	13,218	11,753	12,043	12,509	13,983	11,508	9,914	12,652
Persons	{Crude rates ...	14,692	13,290	13,678	14,278	15,113	12,889	12,494	14,001
	{Standardized rates	14,431	12,914	13,331	14,255	15,591	12,774	10,690	14,126
Standardized mortality of males per cent. of that of females.		120	121	123	130	125	123	117	125

The standardized mortalities for the two sexes in 1906-10 and in 1912 as shown in Table XXIII differ from those given for the same periods in the similar tables of previous reports. The reason is to be found in the change in method of calculating standardized mortalities for the sexes separately to which attention is drawn on page xx. The rates for males are somewhat higher, and those for females lower, than those obtained by a method which did not take into account the less favourable age-constitution of the female population; but the comparison of the mortality of either sex in any class of area with that in the country at large is practically unaffected by the change in method.

As in the two preceding years the proportional as well as the actual excess of (standardized) male mortality was least in the rural districts and increased with urbanization to a maximum in London. Thus the evidence is consistent that urban conditions tell more severely on males than on females.

Table XXIV gives the mortalities of the various sex- and age-groups from which the standardized rates in Table XXIII are calculated, and Table XXV compares mortality by sex and age in the various classes of area with that in England and Wales as a whole.

Speaking generally, the same order of mortality prevails amongst the four classes of area at the several age-periods as at all ages jointly. The rates start wide apart in early childhood but rapidly approximate, or, in the case of females, even overlap considerably in early adult life, diverge very widely indeed in middle life, and approximate very closely in extreme old age. This holds good of each sex, but the approximation in early adult life is most marked in the case of females and the divergence at middle age in that of males.

The table shows that all the chief features of the diagrams dealing with this subject in the Reports for 1911 and 1912 are common also to the figures for 1913, notwithstanding the diversity of climatic conditions in the three years, so it would seem that for each type of area the distribution of mortality by sex and age possesses features characteristic of that type and clearly distinguishing it from all the others. Some of these may be enumerated:—

1. The London rates are particularly high in middle life for both sexes, but especially for males. Thus at most of the age-periods between 30- and 55- (in 1913 at 30-55) the rates for males in London have in each year exceeded those for the county boroughs, though the latter are almost uniformly higher at other times of life. The corresponding period of relatively high mortality in the female sex in London

TABLE XXIV.—MORTALITY FROM ALL CAUSES PER MILLION LIVING AT VARIOUS AGES, 1906-10, 1912 and 1913.

Sex and Age.	1906-10.	1912.	1913.					
	England and Wales.	England and Wales.	London.	County Boroughs.	Other Urban Districts.	Rural Districts.	All Urban Districts.	
0— ...	45,445	35,405	39,160	40,773	47,676	37,160	28,595	41,993
5— ...	3,326	3,068	3,149	3,243	3,575	3,131	2,516	3,327
10— ...	1,971	1,823	1,888	1,973	2,036	1,795	1,783	1,919
15— ...	2,975	2,816	2,722	2,929	2,988	2,649	2,371	2,826
20— ...	3,971	3,523	3,480	3,409	3,829	3,394	3,149	3,570
25— ...	5,251	4,174	4,056	4,253	4,458	3,844	3,659	4,156
30— ...		5,207	5,195	6,287	5,954	4,634	4,266	5,425
35— ...	8,615	6,957	6,973	8,575	8,221	6,284	5,223	7,420
40— ...		9,117	9,194	11,410	11,185	8,183	6,583	9,897
45— ...	15,511	12,522	12,642	16,039	15,259	11,631	8,645	13,792
50— ...		17,250	17,735	22,005	21,490	16,523	12,310	19,390
55— ...	31,218	24,784	25,241	29,245	30,399	24,183	18,340	27,460
60— ...		36,405	37,627	41,467	44,938	37,036	28,278	40,870
65— ...	64,400	51,140	52,028	58,856	60,779	52,107	40,707	56,518
70— ...		83,568	83,794	86,484	98,509	84,850	69,099	90,250
75— ...	137,722	121,487	123,619	132,546	142,303	123,548	108,131	131,635
80— ...		175,703	178,159	192,820	194,465	175,671	166,770	184,717
85 and upwards	283,035	266,022	266,819	284,949	281,549	256,623	263,342	269,070
0— ...	37,980	29,449	32,203	33,825	39,887	30,129	22,929	34,670
5— ...	3,438	3,047	3,096	2,880	3,626	3,017	2,558	3,244
10— ...	2,092	1,968	1,969	2,079	2,194	1,858	1,764	2,027
15— ...	2,764	2,688	2,536	2,476	2,666	2,441	2,523	2,539
20— ...	3,339	3,058	3,011	2,506	3,272	2,890	3,151	2,979
25— ...	4,462	3,554	3,422	2,864	3,814	3,282	3,406	3,425
30— ...		4,356	4,297	4,287	4,624	4,052	4,191	4,322
35— ...	7,051	5,783	5,653	5,913	6,561	5,143	4,890	5,838
40— ...		7,146	7,410	7,921	8,599	6,999	5,927	7,790
45— ...	12,000	9,646	9,785	11,529	11,373	8,861	7,846	10,304
50— ...		13,064	13,465	15,013	15,813	12,702	10,382	14,323
55— ...	24,278	18,886	19,091	20,646	22,458	18,327	14,838	20,343
60— ...		27,465	27,892	28,896	32,423	27,379	22,371	29,601
65— ...	53,125	40,018	39,654	41,785	44,585	38,656	34,319	41,447
70— ...		67,846	67,055	68,768	75,312	66,146	58,468	70,071
75— ...	119,591	102,830	101,141	103,286	112,926	100,137	90,422	105,319
80— ...		152,209	151,503	158,713	162,852	149,005	141,975	155,516
85 and upwards	250,862	245,609	240,951	250,181	242,502	237,617	239,557	241,592



TABLE XXIV.—continued.

Sex and Age.	1906-10.	1912.	1913.					
	England and Wales.		England and Wales.	London.	County Boroughs.	Other Urban Districts.	Rural Districts.	All Urban Districts.
PERSONS.								
0—	41,724	32,440	35,697	37,308	43,794	33,659	25,784	38,345
5—	3,382	3,058	3,122	3,060	3,601	3,074	2,537	3,286
10—	2,032	1,896	1,929	2,027	2,116	1,826	1,774	1,973
15—	2,869	2,751	2,628	2,692	2,820	2,544	2,441	2,678
20—	3,638	3,278	3,233	2,908	3,528	3,129	3,150	3,253
25—	4,837	3,847	3,721	3,490	4,115	3,549	3,531	3,767
30—		4,763	4,727	5,213	5,258	4,331	4,228	4,847
35—	7,806	6,350	6,290	7,159	7,361	5,695	5,054	6,598
40—		8,095	8,269	9,556	9,842	7,569	6,249	8,799
45—	13,687	11,029	11,159	13,647	13,233	10,187	8,241	11,968
50—		15,070	15,511	18,303	18,505	14,519	11,340	16,726
55—	27,546	21,691	22,016	24,641	26,201	21,089	16,563	23,691
60—		31,648	32,446	34,637	38,223	31,822	25,260	34,795
65—	58,124	45,062	45,266	49,277	51,749	44,627	37,409	48,116
70—		74,574	74,218	75,881	84,807	73,983	63,440	78,396
75—	127,003	110,504	110,388	114,109	124,264	109,512	98,557	115,589
80—		161,402	161,935	170,255	174,307	159,144	152,938	166,235
85 and upwards	262,398	252,855	250,138	260,219	255,219	244,151	249,241	250,605

is less prolonged, covering ages 40-50 only, and involving actual excess over the corresponding county borough rates in 1912 and 1913 only (at 45-50 in 1913).

2. The London rates, elsewhere above the mean, always fall short of it in youth. This feature is more marked in the female sex but is to be noted also amongst males in each one of the three years. The period with mortality below average has varied in extent from 20-25 (males in 1913) to 5-35 (females in 1912).

3. At much the same period of life the relative mortality of the county boroughs displays a wider but shallower depression which never reaches as low as the mean for the whole country in either sex.

4. The rates for males in the rural districts are uniformly below average at ages under 85, but in youth there is a distinct approximation to the average which may be related to the corresponding depression in the rates for London and the county boroughs. In the female sex this elevation is carried much further, the mortality exceeding average at 20-30 in 1911 and 1912 and at 20-25 in 1913.

5. Whereas with a few unimportant exceptions the rates for males were lowest at all ages in the rural districts in each of the three years, in the female sex the elevation just referred to has caused the rates of rural mortality in youth and early womanhood to stand higher than those for London or the smaller towns though lower than the county borough rates in each of the three years.

6. The advantage enjoyed by children under five years of age in the rural districts has been greater in each of the three years in the female than in the male sex.

7. The lowest relative rates for males in each of the three years have been those for the rural districts at some period from 45 to 60 (approximately the age at which mortality in London is particularly high), and for females the rural district rates in early childhood; but excluding this the period of lowest relative mortality for females also has been 45-50 or 50-55 in the rural districts.

8. Whereas the age at which mortality in the male sex has been most affected by the difference between urban and rural conditions has been about 40-50 in each of the three years, females have always been most affected in this way at 0-5, but with a secondary maximum at about the same age as males.

9. The relative mortality of females in London has been particularly low at ages 70-80 in each of the three years, falling below the mean in 1911 and 1912, and rising again at ages over 80. This feature may be traced also in the records of London mortality prior to 1911.

10. In both sexes mortality in the smaller towns departs much less from the average at most ages than that of any other type of area. It has been rather below average in each year, particularly at ages 30-50, or very nearly the same age at which the excess of mortality in the larger towns is greatest.

TABLE XXV.—MORTALITY at DIFFERENT AGES in various CLASSES of AREA PER CENT. of MORTALITY at same AGES in ENGLAND and WALES, 1913.

Sex and Age.	England and Wales.	London.	County Boroughs.	Other Urban Districts.	Rural Districts.	All Urban Districts.
MALES.						
0—	100	104	122	95	73	107
5—	100	103	114	99	80	106
10—	100	105	108	95	94	102
15—	100	108	110	97	87	104
20—	100	98	110	98	90	103
25—	100	105	110	95	90	102
30—	100	121	115	89	82	104
35—	100	123	118	90	75	106
40—	100	124	122	89	72	108
45—	100	127	121	92	68	109
50—	100	124	121	93	69	109
55—	100	116	120	96	73	109
60—	100	110	119	98	75	109
65—	100	113	117	100	78	109
70—	100	103	118	101	82	108
75—	100	107	115	100	87	106
80—	100	108	109	99	94	104
85 and upwards	100	107	106	96	99	101
FEMALES.						
0—	100	105	124	94	71	108
5—	100	93	117	97	83	105
10—	100	106	111	94	90	103
15—	100	98	105	96	99	100
20—	100	83	109	96	105	99
25—	100	84	111	96	100	100
30—	100	100	108	94	98	101
35—	100	105	116	91	87	103
40—	100	107	116	94	80	105
45—	100	118	116	91	80	105
50—	100	111	117	94	77	106
55—	100	108	118	96	78	107
60—	100	104	116	98	80	106
65—	100	105	112	97	87	105
70—	100	103	112	99	87	104
75—	100	102	112	99	89	104
80—	100	105	107	98	94	103
85 and upwards	100	104	101	99	99	100

Mortality in Different Parts of the Country.—Table 16 affords the means of comparing the mortality recorded for the North, Midlands and South of England and for Wales, with distinction of sex, age and class of area. It shows, as did the similar tables for the two preceding years, that the standardized death-rate of the North at all ages considerably exceeds that of the other portions of England, an excess common, without exception, to the various classes of area. The table generally indeed harmonises to a remarkable extent with its two predecessors, variations being confined to slight matters of detail. Thus, with four exceptions for males and one for females, but none at all for persons of both sexes, the rates for the North are higher in 1913 at every individual age-period in the table and in each class of area than the corresponding rates for the Midlands or South. Even if the mortality of London alone is compared with that of all areas, urban and rural together, of the North, the latter is everywhere in excess except for males of 25-55 and for females of 45-55.

The mortality of Wales falls, as usual, between that of the North and of the remainder of England, but in early adult life the customary tendency to excess of Welsh mortality over that even of the North of England asserts itself. This tendency is, as usual, more marked in the female sex and in the rural areas. Thus, taking the sexes jointly, actual excess in 1913 was confined to the age-period 20-25 in the county boroughs, but included ages 20-45 in the smaller towns and 15-75 in the rural areas.

The lowest rates in the table are, in nearly all cases, furnished by the Midlands or the South. To this rule there is no exception in the case of the smaller towns or rural districts, while in that of the county boroughs, ages 5-10 in both sexes and 85 and upwards in the male sex, where Wales has the advantage, form the only exceptions. This advantage is shared between the two areas with fair equality, when no distinction is made of the class of district, but when like districts are compared with like in each case, the lowest



mortality is in the great majority of instances that returned by the South. The latter method of comparison must be regarded as the fairer, and it is more favourable to the South, because by it London is necessarily excluded from the calculation, a fact the less to be regretted since London lies on the border line separating the two areas (*see* page xv).

Comparing all four areas without distinction of district, the Midlands have had the lowest standardized mortality at all ages and the majority of the lowest mortalities at age-groups in the male sex in each of the three years 1911-1913, while in the female sex the same statement holds good for the South. In the comparison by classes of district, however, the South has in each year held a great advantage in the male and an overwhelming advantage in the female sex. There are very few instances in which Wales holds the best position (most of them at age 85 and upwards); and the only case in which the North figures at all in this connexion is that of males aged 25-35 in the rural districts in 1913, where it will be seen that the rate for the North equals that for the Midlands and is below those of the other two areas.

In all three years the most favourable position for children under five years is entirely confined to the South in both sexes and in all classes of district.

It will be seen that for the three years covered by the records, the distribution of mortality indicated in Table 16 has been very nearly constant, and it seems to follow that in proportion as the peculiar features of the table are repeated year after year, the increasing significance thereby attaching to them must make them the more worthy of study.

#### CAUSES OF DEATH.

The causes of death of males and females at 27 groups of ages are stated in the abstracts at pages 182-283 for the whole country, for London, for county boroughs in the aggregate, for other urban districts in the aggregate, and for rural districts in the aggregate; and at pages 284-301 these deaths are shown by cause but not by age for each quarter of the year. These tables include the full International List of Causes of Death with certain sub-divisions introduced for reasons stated in the "Manual of the International List" (page vi). All other abstracts of the causes of death are arranged in the form of the short list of causes adopted by the Registrar-General and the Local Government Board. The relation of this list to the detailed and condensed International Lists as revised by the International Commission which met for the purpose at Paris, in 1909, is as follows:—

Short List of Registrar-General and of Local Government Board.	Corresponding Number.	
	Detailed International List.	Abridged International List.
1. Enteric fever ... ..	1	1
2. Small-pox ... ..	5	4
3. Measles ... ..	6	5
4. Scarlet fever ... ..	7	6
5. Whooping cough ... ..	8	7
6. Diphtheria and croup ... ..	9	8
7. Influenza ... ..	10	9
8. Erysipelas ... ..	18	12 part of.
9. Phthisis (pulmonary tuberculosis) ... ..	28, 29	13
10. Tuberculous meningitis... ..	30	14
11. Other tuberculous diseases ... ..	31-35	15
12. Cancer, malignant disease ... ..	39-45	16
13. Rheumatic fever... ..	47	37 part of.
14. Meningitis ... ..	61	17
15. Organic heart disease ... ..	79	19
16. Bronchitis ... ..	89, 90	20, 21
17. Pneumonia (all forms) ... ..	91, 92	22, and 23 part of.
18. Other diseases of respiratory organs ... ..	86-88, 93-98	23 part of.
19. Diarrhoea and enteritis, ages stated ... ..	104, 105	25, and 37 part of.
"                    "                    ages unstated ... ..	104	25
20. Appendicitis and typhlitis ... ..	108	26

Short List of Registrar-General and of Local Government Board.	Corresponding Number.	
	Detailed International List.	Abridged International List.
21. Cirrhosis of liver ... ..	113	28
21A. Alcoholism ... ..	56	37 part of.
22. Nephritis and Bright's disease ... ..	119, 120	29
23. Puerperal fever ... ..	137	31
24. Other accidents and diseases of preg- nancy and parturition. 134-136, 138-141		32
25. Congenital debility and malformation, including premature birth. 150, 151		33
26. Violent deaths, excluding suicide ... ..	164-186	35
27. Suicide ... ..	155-163	36
28. Other defined diseases ... ..	2-4, 11-17, 19-27, 37 36-38, 46, 48-55, 57-60, 62-78, 80-85, 99-103, 105-107, 109-112, 114-118, 121-133, 142-149, 152-154.	37 plus detailed list Nos. 2-4, 11-17, 19, 64, 65, 102, 103, 109, 128-132, 154; and less de- tailed list Nos. 47, 56, and, where ages are stated, 105.
29. Diseases ill-defined or unknown ... ..	187-189	38

The contents of every heading in both the short and the detailed list now in use, and their relation to the items in the list in use hitherto are defined in the Manual, which should be consulted in all cases where it is desired to ascertain the precise significance of any heading in the lists.

On pages 304-429 deaths are shown for urban and rural portions of administrative counties, and for county and metropolitan boroughs, arranged by sex, short list of causes as above, and the eight age-groups of Table III of the Local Government Board. These tables, in fact, are the same as the Board's Table III with the addition of the distinction of sex. For all other administrative areas the deaths are shown on pages 430-528 arranged by sex and short list of causes without distinction of age.

In addition to the above presentations, all of which follow the International List, the deaths of the year are shown in Tables 19 and 20 for England and Wales only, and with distinction of sex but not of age, arranged according to the list in use up to 1910. In these tables the deaths and death-rates from each cause in the old list are shown for each of the last 15 years, the series being uninterrupted by the adoption in 1911 of the International List. The method by which this result is secured is described in the "Manual" above referred to (pages vi and xxvi-xxxii).

#### GENERAL DISEASES.

1. **Enteric Fever.**—The deaths of 1,505 persons of all ages and of both sexes were classified to enteric fever during 1913.

These deaths correspond to a rate of 41 per million persons living as compared with 44 in 1912. These are the lowest mortalities as yet recorded for England and Wales, the only previous year with a rate of less than 60 having been 1910, while in no year previous to 1907 did the death-rate from this cause stand at less than twice its present level (Table 22).

As the crude death-rate from typhoid fever is but little modified by standardization, Table XXVI may be accepted as giving an adequate picture of the distribution of mortality from this cause in various parts of the country. The table shows that, as in 1911 and 1912, the mortality of London was very low, and that of the North of England much higher than elsewhere. In fact, the constancy of distribution from year to year shown by this table is one of its most marked characteristics, contrasting with similar tables for such diseases as measles and whooping cough, where the areas most severely affected in one year often escape lightly in the next. Other points in which Table XXVI resembles those for the two preceding years are the general association of relatively high death-rates with urban conditions of life, and the exceptions to this rule in the case of the North, where the smaller towns show a higher rate than the county boroughs, and of the South, where the rates for London are consistently below those for the other towns, large and small.



TABLE XXVI.—ENTERIC FEVER, 1913.—MORTALITY per MILLION POPULATION.

Class of Area.	Sex.	North.	Midlands.	South.	Wales.	England and Wales.
London ... ..	Males	—	—	30	—	30
	Females	—	—	21	—	21
	Persons	—	—	25	—	25
County Boroughs ... ..	Males	78	42	71	71	66
	Females	42	27	41	38	37
	Persons	59	34	55	54	51
Other Urban Districts ... ..	Males	87	29	35	45	51
	Females	52	20	22	44	32
	Persons	69	24	28	45	42
Rural Districts ... ..	Males	72	36	22	36	40
	Females	46	21	18	24	26
	Persons	59	28	20	30	33
All areas ... ..	Males	80	35	34	47	51
	Females	46	22	23	36	31
	Persons	63	28	29	42	41

Table XXVII, which is founded in part on the returns of notified cases published by the Local Government Board, shows, when compared with the similar table for the year before, that in 1913 the prevalence and fatality of the disease in the country at large both fell very slightly. In the North, where the cases in previous years were much more numerous than elsewhere, and in Wales, there was a trifling increase of prevalence, with a somewhat greater decline in the Midlands and South. Fatality fell in all parts of the country except the Midlands, particularly in Wales. It was highest in the North, the region of greatest prevalence. The position of London is particularly favourable in regard both to prevalence and fatality.

TABLE XXVII.—ENTERIC FEVER, 1913.—PREVALENCE and FATALITY.

Class of Area.	Cases per 100,000 Population.					Deaths per 1,000 Cases.				
	North.	Midlands.	South.	Wales.	England and Wales.	North.	Midlands.	South.	Wales.	England and Wales.
London ... ..	—	—	17	—	17	—	—	150	—	150
County Boroughs ... ..	29	18	27	18	25	207	190	207	299	206
Other Urban Districts ... ..	38	15	15	28	24	183	166	179	161	176
Rural Districts ... ..	33	13	14	17	18	178	214	146	179	183
All areas ... ..	32	15	17	22	22	193	186	167	187	185

The mortality of the year in individual administrative counties and county boroughs is stated in Table 23, from which it appears that the three counties with highest mortality were Lancashire, Northumberland and Flintshire; and the three county boroughs Wigan, Devonport and Kingston upon Hull. Lancashire, the county of highest mortality in 1913, occupied the same position in 1912, and was fifth highest in the list for 1911; while Wigan, the county borough of highest mortality in 1913, was also highest in 1911 with a death-rate of 358 per million, and came fourth in 1912. None of the three boroughs had a mortality of less than 110 in any of the three years. Such facts as these show that the maintenance of mortality from typhoid fever, even at its present level, is largely due to the relatively backward position of a comparatively small number of areas.

5. **Small-pox.**—Ten deaths were attributed to this disease, only one more than in 1912, when the number was lower than any previously recorded.

Of the ten persons who died during the year, one, a woman of 35, had been twice vaccinated, in infancy and again seven years before death; a second, a woman of 32, had been vaccinated in infancy only; a third, a man of 30, was stated to have been vaccinated in infancy, but bore no mark; the remaining seven were unvaccinated, one of them, a woman of 29, being stated to have been unsuccessfully vaccinated in infancy.

The ten deaths without exception occurred in sea ports, five at Newhaven, two (in separate outbreaks) at Liverpool, one in London, one in Gravesend, and one in Weymouth. The limitation of mortality from each of these outbreaks to the port of importation is a striking testimony to the efficacy of the methods of control employed.

6. **Measles.**—The deaths registered from this cause numbered 10,644, giving a death-rate of 288 per million living at all ages. This rate is below the average of the present century, and still more below that of previous years, but for such comparisons it is preferable to employ a rate based on the number of children, as is done in Table 22 (children under 15) and in Table 23 (children under 5). However calculated the rate for 1913 is a fairly low one, as was to be expected from the fact that the rates for the two previous years were both above recent average.

Table XXVIII shows the distribution of this mortality by parts of the country and classes of area in the last three years. In each year the mortality of the larger towns was over twice that of the rural districts, the smaller towns holding an intermediate position.

TABLE XXVIII.—MEASLES, 1911–13.—MORTALITY per 100,000 LIVING at AGES 0–15.

Class of Area.	Year.	North.	Midlands.	South.	Wales.	England and Wales.
London ... ..	1911	—	—	197	—	197
	1912	—	—	140	—	140
	1913	—	—	118	—	118
County Boroughs ... ..	1911	146	140	109	43	136
	1912	200	148	66	291	174
	1913	121	127	89	41	116
Other Urban Districts ... ..	1911	126	116	119	86	117
	1912	132	65	31	195	96
	1913	98	89	71	72	87
Rural Districts ... ..	1911	85	40	45	47	52
	1912	82	35	15	69	44
	1913	77	46	46	78	56
All areas ... ..	1911	130	101	137	65	118
	1912	158	82	80	173	114
	1913	107	89	89	68	93

There is also a tendency for the Northern rates to exceed those of the country at large and for the Southern, apart from London, to fall below them.

Table 23 shows that the administrative counties recording highest mortality in 1913 were Flint, Denbigh and Stafford, in the order named; and the county boroughs West Bromwich, St. Helens and Wigan, the rate for each of the three latter being over 1 per cent. of the population aged 0–5 years.

7. **Scarlet Fever.**—The deaths allocated to this disease during 1913 numbered 2,100 in all, corresponding to a rate of 57 per million population at all ages, and of 171 per million at ages under 15 years. These are the lowest death-rates from scarlet fever recorded except those of 1911 and 1912, which were very slightly lower. Table 22 shows to what a remarkable extent mortality from this disease has declined during the last 50 years. Until 1906 no year experienced a mortality at all ages less than double that of 1911.

Table XXIX shows the distribution of the mortality from scarlet fever throughout the country in each of the three years 1911–1913. It will be seen that this varies comparatively little from year to year; that the rate is about twice as high in the county boroughs as in the rural districts, though London escapes lightly; and that the mortality of the North is more than twice as high as that of the South, which is notably below that of any other part of the country in all classes of area.

The disease was appreciably more prevalent in 1913 than in either of the two preceding years, as shown by the returns of notified cases published by the Local Government Board. These amounted to 115 per 10,000 population of less than 15 years of age (Table XXX), as against 94 and 96 per 10,000 in 1911 and 1912 respectively. Had not this increase of prevalence been accompanied by decrease of fatality the slight increase.



of mortality would have been much greater than it was, but the deaths per 1,000 cases declined from 18 in 1911 and 19 in 1912 to 16 in 1913.

TABLE XXIX.—SCARLET FEVER, 1911-13.—MORTALITY per 100,000 LIVING at AGES 0-15.

Class of Area.	Year.	North.	Midlands.	South.	Wales.	England and Wales.
London ... ..	1911	—	—	13	—	13
	1912	—	—	12	—	12
	1913	—	—	13	—	13
County Boroughs ... ..	1911	24	23	15	18	22
	1912	24	27	17	18	24
	1913	26	23	16	29	24
Other Urban Districts ... ..	1911	22	14	7	19	16
	1912	24	11	7	19	16
	1913	22	10	6	20	15
Rural Districts ... ..	1911	11	11	3	9	9
	1912	17	11	4	10	10
	1913	27	9	5	15	13
All areas ... ..	1911	21	15	10	15	16
	1912	23	16	10	16	17
	1913	25	14	10	20	17

Corresponding rates cannot be stated for previous years, notifications not having been tabulated; but the fatality in London, where nearly all the deaths occur in hospitals and nursing homes, may be compared with the experience in the past of the Metropolitan Asylums Board, which controls the fever hospitals. The fatality during 1913 in the Board's hospitals was 1·2 per cent. of cases treated, as against 1·1 deaths per cent. of notifications shown in Table XXX for London cases as a whole, the difference no doubt being largely due to mistaken notifications. Comparing this rate of 1·2 with the Board's past experience we find that the ratio of deaths per cent. of admissions has gradually fallen from 13·1 in 1876-1880 (when, however, there was some selection of severe cases for admission) to 2·7 in 1906-10, so the type of disease prevailing in London in 1913 was mild even beyond the average of recent years. Table XXX shows that the fatality was considerably higher in the North of England than in the Midlands and South for each class of area compared. Thus, the extremes were a rate of 26 per 1,000 in the rural districts of the North and one of only 10 per 1,000 in the smaller towns and rural districts of the South. This experience is in close agreement with that recorded for 1911 and 1912.

TABLE XXX.—SCARLET FEVER, 1913.—PREVALENCE and FATALITY.

Class of Area.	Cases per 10,000 Population aged 0-15 years.					Deaths per 1,000 Cases.				
	North.	Midlands.	South.	Wales.	England and Wales.	North.	Midlands.	South.	Wales.	England and Wales.
London ... ..	—	—	135	—	135	—	—	11	—	11
County Boroughs ... ..	126	159	127	153	138	22	16	14	20	19
Other Urban Districts ... ..	119	100	77	150	108	20	11	10	14	15
Rural Districts ... ..	112	83	59	99	85	26	12	10	16	17
All areas ... ..	122	113	105	135	115	22	14	11	16	16

Table 23 shows the distribution of scarlet fever mortality (amongst children under 15 years of age) by administrative counties and county boroughs. The counties yielding the highest rates were Durham, the North Riding of York, and Monmouth, Northumberland, Warwick and Brecknock, in the order named, the latter four being equal. Of these Durham and Warwick have returned a mortality above the average for the counties in each of the last three years. The towns yielding the highest rates were Preston,

St. Helens, Newport (Mon.), South Shields and Birmingham, in the order named; and of these Preston, St. Helens, Newport and Birmingham have returned rates above the average for the county boroughs in each of the last three years. Preston returned the highest rate in 1912 also, and the sixth highest in 1911. This tendency to persistently high mortality year after year in the same locality may be compared with the same tendency already noted in the case of enteric fever, and contrasted with the behaviour of measles and whooping cough, which seldom furnish high rates of mortality for three consecutive years in the same locality. The explanation doubtless lies in the fact that the proportion of children attacked by scarlet fever is very much below the proportion for measles and whooping cough, so that even after a severe outbreak the majority would generally be unprotected by previous attack. This, of course, applies still more to enteric fever, whereas a severe outbreak of measles or whooping cough limits itself by almost exhausting the supply of susceptible children.

8. Whooping Cough.—The deaths allocated to this heading numbered 5,458—2,411 of males and 3,047 of females.

TABLE XXXI.—WHOOPING COUGH, 1911-13.—MORTALITY per 100,000 LIVING at AGES 0-15.

Class of Area.	Year.	North.	Midlands.	South.	Wales.	England and Wales.
London ... ..	1911	—	—	80	—	80
	1912	—	—	76	—	76
	1913	—	—	61	—	61
County Boroughs ... ..	1911	90	72	45	58	79
	1912	92	99	56	120	92
	1913	63	56	42	27	57
Other Urban Districts ... ..	1911	90	57	52	74	69
	1912	76	68	50	111	72
	1913	50	44	32	41	44
Rural Districts ... ..	1911	79	51	48	58	57
	1912	56	56	47	70	55
	1913	40	39	27	35	36
All areas ... ..	1911	88	60	63	66	71
	1912	81	74	61	100	75
	1913	55	46	45	36	48

These figures represent a rate of mortality very much lower than any previously recorded. Table 22 shows how rapidly the death-rate from this cause has fallen in recent years. It was not until 1893 that the deaths from whooping cough amongst children under 15 years of age amounted to less than 1,000 per million living at that age, but in 1913 the rate was only 482 per million, or 26 per cent. lower than the lowest previously recorded, that of 1909. Table XXXI shows that this fall was very general throughout the country, being common to the four sections dealt with in the table and to all classes of area in each of them. It was most marked in Wales, and especially in the Welsh county boroughs, where the previous year's rate had been notably high. The rates for the North of England were higher than those for the Midlands or South in each class of area. As in previous years the mortality of 1913 shows an increase with increased aggregation of population, from rural districts to large towns.

Table XXXII shows that, as in 1911 and 1912, the proportion of infant to total deaths was larger in all parts of the country in the rural districts than in the smaller towns, and larger in these than in the county boroughs.

The tendency to especially heavy incidence of mortality from whooping cough upon the earlier ages in the rural districts is also displayed in the distribution of the mortality of infants within the first year of life, as shown in Table 30. The section of this table relating to all infants shows that, as in 1911 and 1912, mortality in the rural districts was higher than in any other class of area at ages under three months and lower than in any other class of area at ages 9-12 months. If the first and the second six months of life are compared it may be seen from this table that the proportions of total infant mortality occurring during the first six months, are as follows:—London 38 per cent.,



county boroughs 46, other urban districts 47, and rural districts 50, per cent. This proportion rose in the same way with decreasing urbanization in each of the two preceding years.

TABLE XXXII.—WHOOPING COUGH, 1913.—DEATHS under ONE YEAR of AGE per 1,000 at ALL AGES.

Class of Area.	Sex.	North.	Midlands.	South.	Wales.	England and Wales.
London ... ..	Males	—	—	480	—	480
	Females	—	—	351	—	351
	Persons	—	—	411	—	411
County Boroughs ... ..	Males	461	438	493	400	455
	Females	444	407	476	273	432
	Persons	451	421	483	333	442
Other Urban Districts ... ..	Males	479	448	516	605	486
	Females	438	447	489	494	453
	Persons	456	448	500	548	467
Rural Districts ... ..	Males	611	649	563	614	618
	Females	484	608	500	612	557
	Persons	539	625	529	613	584
All areas ... ..	Males	482	491	498	579	494
	Females	446	471	409	500	448
	Persons	462	480	449	538	468

The administrative counties returning the highest mortality are shown by Table 23 to be Lincs. (Kesteven), Westmorland, Cambridge and Anglesey—all rural counties—and all, except Cambridge, having had a mortality far below average in 1912. The large towns with highest rates were Bootle, Stoke on Trent, Brighton, Rotherham and Newcastle on Tyne. Of these, Stoke has returned a death-rate above that for England and Wales in each of the last three years, but its experience in this respect is quite exceptional (*see page xxxvii*).

9. **Diphtheria and Croup.**—The 4,494 deaths in 1913 from diphtheria and croup, of which all but 52 were allocated to diphtheria, correspond to a death-rate of 121 per million living at all ages, which is lower than that of any year except 1912 since 1855, when the disease was first distinguished in these Reports. Dealing with the population under 15 years of age, amongst whom 97 per cent. of the deaths occurred in 1913, the mortality was 384 per million living, which is also the lowest figure recorded in Table 22 for any year except 1912.

Table XXXIII shows the effect upon the death-rate at all ages from diphtheria and croup of standardization by the direct method referred to on page xix. All the crude rates require increase to make them fairly comparable with those of 1901, the standard year, on account of the diminished proportion of children in our population at the present

TABLE XXXIII.—DIPHTHERIA and CROUP.—DEATH-RATES per MILLION POPULATION, 1906-10, 1912, and 1913.

		1906-10.	1912.	1913.					
		England and Wales.		England and Wales.	London.	County Boroughs.	Other Urban Districts.	Rural Districts.	All Urban Districts.
Males	Crude rates ...	163	120	122	99	143	128	94	130
	Standardized rates *	164	123	125	104	144	150	99	132
Females	Crude rates ...	161	117	121	92	147	121	102	127
	Standardized rates	173	128	133	108	161	131	107	140
Persons	Crude rates ...	162	118	121	95	145	124	98	128
	Standardized rates *	169	125	129	106	152	130	103	136

\* See page xx.

time. It will be observed that the standardized rates in this table differ from those in the corresponding tables of previous reports in showing a very much larger increase over the crude rates for females than for males. This is due to the change of practice described in the footnote on page xx. In contrast to the conditions obtaining with regard to mortality from all causes (*see page xxviii*), and from most individual causes not specially affecting children, the female population is more favourably constituted than the male in regard to diphtheria mortality. This results from the larger proportion of females at the higher ages, at which the mortality from diphtheria is practically negligible. To allow for this more favourable constitution the death-rate of females has to be increased relatively to that of males, just as in the case of mortality from all causes it has to be decreased because in that case the female population, being older, is less favourably constituted than the male.

As a result of this change of practice the standardized rates for females in 1906-10 and in 1912, which were formerly shown as lower than those for males, now show an excess over the rates for males.

TABLE XXXIV.—DIPHTHERIA and CROUP, 1913.—MORTALITY per MILLION living at AGE-GROUPS under 15 YEARS.

Age and Sex.	England and Wales.	London.	County Boroughs.	Other Urban Districts.	Rural Districts.	All Urban Districts.
0-1* ... {	M.	0·28	0·34	0·32	0·27	0·18
	F.	0·21	0·52	0·29	0·11	0·04
1-2 ... {	M.	639	756	813	626	333
	F.	601	830	714	545	391
2-5 ... {	M.	714	635	868	739	484
	F.	675	522	838	700	469
0-5 ... {	M.	617	606	755	628	396
	F.	570	593	711	554	368
5-10 ... {	M.	396	288	423	439	344
	F.	507	317	614	514	441
10-15 ... {	M.	70	20	64	76	96
	F.	93	49	93	96	109

\* Mortality per 1,000 births.

If the mortality of children is analysed by age, as in Table XXXIV, it is seen that it was somewhat higher for males during the first five years of life but considerably higher for females thereafter. This statement applies to all classes of area, but when the first two years of life are dealt with separately exceptions are met with in the cases of London and the rural districts.

The distribution of diphtheria mortality in different parts of the country and different classes of area during each of the last three years is shown in Table XXXV, from which it appears that, apart from a general tendency to increase of mortality with increase of urbanization, there are no very striking or constant differences to record.

The London mortality has been below the average for the whole country in each of the last two years, but the other large towns of the South, like those of Wales, have a heavy mortality. The advantage of the rural areas is much less in the North than in other parts of England.

Table XXXVI shows that although fatality was higher in the North than in other parts of England, the prevalence of the disease, as indicated by notifications, was at its lowest in that part of the country. This has been the experience of each of the years 1911-13. It does not follow that the disease is of a severer type or its treatment worse in the North, for the number of notifications has in recent years been increased by cases of a mild type the nature of which was only established on bacteriological examination. If the practice of making such examinations has been more developed in the South than in the North or in Wales, this fact alone may account for the much higher prevalence and lower fatality in the South (Table XXXVI). The fatality in London was the lowest in the table, as it has been in each of the three years for which



the comparison can be made. About 80 per cent. of the total deaths in London occur in the hospitals of the Metropolitan Asylums Board, and it is of interest to note how low the fatality of cases treated there, which is still falling, is in comparison with that of the years immediately preceding the introduction of antitoxic serum treatment. During the four years 1890-93 the proportion of deaths was 304 per thousand admissions to these hospitals, whereas in 1913 it was only 65 per thousand.

TABLE XXXV.—DIPHTHERIA and CROUP, 1911-13.—MORTALITY per 100,000 LIVING at AGES 0-15.

Class of Area.	Year.	North.	Midlands.	South.	Wales.	England and Wales.
London ... ..	1911	—	—	47	—	47
	1912	—	—	34	—	34
	1913	—	—	33	—	33
County Boroughs ... ..	1911	53	46	59	66	52
	1912	44	40	64	56	45
	1913	42	48	55	55	46
Other Urban Districts ... ..	1911	43	36	41	36	39
	1912	41	30	46	32	37
	1913	44	36	34	47	39
Rural Districts ... ..	1911	46	31	30	54	37
	1912	34	26	26	33	28
	1913	41	26	24	33	29
All areas ... ..	1911	48	37	44	47	43
	1912	41	32	39	37	37
	1913	43	36	34	44	38

From Table 23 it appears that the administrative counties with highest mortality were Cambridge and Westmorland, the former of which has returned a rate far above average for each of the last three years. The great towns of highest mortality were Barrow in Furness, Portsmouth, and Stoke on Trent, each of which has greatly exceeded the average in each of the last three years. In this tendency to recurrence of high rates in several successive years in the same area diphtheria resembles enteric fever and scarlet fever, and differs from measles and whooping cough.

TABLE XXXVI.—DIPHTHERIA, 1913.—PREVALENCE and FATALITY.

	Cases per 10,000 population, aged 0-15 years.					Deaths per 1,000 cases.				
	North.	Mid-lands.	South.	Wales.	England and Wales.	North.	Mid-lands.	South.	Wales.	England and Wales.
London ... ..	—	—	59	—	59	—	—	56	—	56
County Boroughs ... ..	41	50	78	56	48	106	99	74	103	98
Other Urban Districts ... ..	41	45	55	40	45	109	81	65	119	90
Rural Districts ... ..	40	28	35	36	33	109	99	72	100	95
All areas ... ..	41	42	55	42	45	107	91	63	110	88

10. **Influenza.**—The deaths allocated to this disease during the year numbered 6,394, the corresponding mortality being 173 per million living. Although this rate is higher than those of the two preceding years, reference to Table 20 will show that it is well below the average for the present century.

Table XXXVII outlines the distribution of this mortality during each of the last three years. It shows that the changes in mortality have been very uniform in the various parts of the country and classes of area, and that the decrease of recorded mortality with increase of urbanization is an almost constant feature. The exception to this rule, that the county boroughs have higher rates than the smaller towns in the South is also met with in all three years.

TABLE XXXVII.—INFLUENZA, 1911-13.—MORTALITY per MILLION POPULATION.

Class of Area.	Year.	North.	Midlands.	South.	Wales.	England and Wales.
London ... ..	1911	—	—	111	—	111
	1912	—	—	122	—	122
	1913	—	—	192	—	192
County Boroughs ... ..	1911	108	90	153	123	109
	1912	119	114	176	108	123
	1913	150	142	188	111	150
Other Urban Districts ... ..	1911	108	116	126	131	116
	1912	138	138	164	147	144
	1913	154	157	187	167	163
Rural Districts ... ..	1911	118	141	162	194	147
	1912	174	203	206	216	199
	1913	227	198	223	221	213
All areas ... ..	1911	110	116	130	151	120
	1912	133	149	155	162	146
	1913	162	164	196	174	173

18. **Erysipelas.**—This disease is returned as having caused the death of 802 persons, of whom 435 were males and 367 females. Table 20 shows the decline in mortality from this cause which has occurred of late years, the rate for 1913, 22 per million, being the lowest recorded. In 12 of the 15 years 1870-1884 the deaths exceeded 2,000, and in both 1874 and 1875 there were over 3,000 deaths.

TABLE XXXVIII.—ERYSIPELAS, 1911-13.—MORTALITY per MILLION POPULATION.

Class of Area.	Year.	North.	Midlands.	South.	Wales.	England and Wales.
London ... ..	1911	—	—	45	—	45
	1912	—	—	34	—	34
	1913	—	—	30	—	30
County Boroughs ... ..	1911	32	32	21	15	30
	1912	26	28	30	21	27
	1913	32	24	21	13	27
Other Urban Districts ... ..	1911	27	25	17	16	23
	1912	23	24	22	19	22
	1913	19	19	15	16	18
Rural Districts ... ..	1911	18	18	18	27	19
	1912	15	21	19	17	19
	1913	18	15	15	10	15
All areas ... ..	1911	28	25	30	19	27
	1912	24	24	28	19	25
	1913	25	19	22	13	22

Table XXXVIII shows that the mortality from this disease increases steadily with increasing aggregation of population. Contrary to the experience in the case of many other diseases mortality in London has in the past three years been consistently higher than in the county boroughs—indeed it is only for 1913 that the London figure is exceeded by any other in the table, that namely for the northern county boroughs. The table shows that, apart from the North, where there was a slight increase, all classes of area in all parts of the country contributed to the fall in 1913.

It appears from Table XXXIX that the prevalence of this disease is dependent upon aggregation of population in a similar way and to a very similar extent as its mortality, the fatality being but little affected by this factor. The prevalence was very slightly greater than in 1912, and very similarly distributed by class of area, the fall in mortality being entirely due to diminished fatality.



TABLE XXXIX.—ERYSIPELAS, 1913.—PREVALENCE and FATALITY.

Class of Area.	Cases per 100,000 Population.					Deaths per 1,000 Cases.				
	North.	Mid-lands.	South.	Wales.	England and Wales.	North.	Mid-lands.	South.	Wales.	England and Wales.
London ... ..	—	—	92	—	92	—	—	32	—	32
County Boroughs ... ..	74	75	63	49	72	43	32	34	26	38
Other Urban Districts ... ..	66	57	41	50	56	29	33	36	33	32
Rural Districts ... ..	54	42	35	36	42	34	35	44	26	36
All areas ... ..	68	58	65	46	63	37	33	34	30	35

20c. **Vaccinia.**—Four deaths have been assigned to this cause, the same number as in 1912. Until 1911 it was the practice to class to this heading not only deaths returned as due to it, but all in the case of which vaccination appeared to have been in any way connected with the cause of death. In 1911 and subsequent years, however, the general rule with regard to erysipelas, blood poisoning, &c., following slight injury (Manual, page xxxiii, 4 (e)), has been followed in the case of vaccination, with the result that in 1913, three deaths, all of infants, which in former years would have been assigned to effects of vaccination, appear under other headings. The causes to which they have been assigned are as follows:—Meningitis (1 death) and phlegmon (2 deaths).

24. **Tetanus.**—The deaths of 189 persons, of whom 146 were males, were attributed to this disease during the year. Included with these deaths are those of 23 infants, 15 of whom were males, of less than one month of age, from "tetanus" or "trismus neonatorum." The resulting mortality, 5 per million living, is small, but it is of interest in view of recent improvements in treatment to note whether it is diminishing. Owing to changes in the method of classification the mortality of this disease cannot be traced further back than 1902 or 1903, as it was then for the first time given preference over other causes mentioned on the same certificate. Trismus neonatorum was first classed with tetanus in 1900. Table 20, page 47, shows that since 1903, when these changes had full effect, the mortality has fallen from 8 to 5 per million. The smallest number of deaths in any one year however was 180, in 1908, so no very rapid reduction is in progress.

TABLE XL.—TETANUS, 1911-13.—MORTALITY per MILLION LIVING at ALL AGES.

		Males.	Females.	Persons.
London ... ..	1911	8.0	2.9	5.3
	1912	7.5	2.5	4.9
	1913	8.0	1.7	4.6
County Boroughs ... ..	1911	6.1	1.9	3.9
	1912	4.8	1.5	3.1
	1913	5.5	1.3	3.3
Other Urban Districts ... ..	1911	8.8	2.3	5.4
	1912	7.6	2.0	4.7
	1913	7.9	2.3	5.0
Rural Districts ... ..	1911	13.9	3.0	8.5
	1912	14.2	4.6	9.4
	1913	12.4	4.0	8.2
All areas ... ..	1911	9.0	2.4	5.6
	1912	8.2	2.4	5.2
	1913	8.2	2.3	5.1

As might be expected from the common sources of infection, tetanus is predominantly a rural disease as well as a disease of males. This is clearly shown by Table XL, from which it appears that the distribution both by sex and by type of area is approximately constant. Although it is so markedly a rural disease the mortality it causes in London is consistently higher than in the county boroughs, being about equal to that in the smaller towns. This is the more noteworthy in view of the fact that the newer

methods of treatment might be expected to be most generally used in London, but the majority of the deaths in the county boroughs as well as in London occur in hospitals.

A considerable proportion of the total mortality occurs in childhood; and it seems to be almost equally distributed over the four quarters of the year (page 286).

28-35. **Tuberculosis.**—The deaths assigned to tuberculous affections in the aggregate numbered 49,476, being fewer by 575 than those so returned in 1912, and by 5,130 than the average of the previous five years, corrected for estimated increase of population. The corresponding death-rate amounts to 1,340 per million living, which is less than that of any previous year, and forms 9.8 per cent. of the mortality from all causes. This fall has occurred notwithstanding a change in the constitution of the population favouring tubercle mortality, as indicated in Table XLI by the reduction of the crude rate for persons required in standardization to compensate for the change. Compared with the average rate for the five years 1906-10, the standardized mortality of 1913 shows a reduction of 15 per cent., the fall as compared with 1912 being 2 per cent., which is the more satisfactory in that it follows the substantial fall of 7 per cent. in the previous year.

TABLE XLI.—TUBERCULOSIS (ALL FORMS).—MORTALITY per MILLION POPULATION, 1906-10, 1912, and 1913.

	1906-10.	1912.	1913.						
			England and Wales.	London.	County Boroughs.	Other Urban Districts.	Rural Districts.	All Urban Districts.	
Males	Crude rates ...	1,798	1,569	1,549	2,125	1,905	1,344	1,058	1,689
	Standardized rates*	1,781	1,543	1,524	2,046	1,865	1,328	1,071	1,656
Females	Crude rates ...	1,350	1,175	1,145	1,237	1,325	1,054	963	1,192
	Standardized rates*	1,353	1,175	1,147	1,221	1,321	1,057	990	1,190
Persons	Crude rates ...	1,566	1,366	1,340	1,654	1,603	1,194	1,010	1,430
	Standardized rates	1,556	1,350	1,326	1,614	1,580	1,186	1,025	1,411

\* See page xx.

The fall in the standardized rates shown in Table XLI has been shared in almost equal proportions by both sexes, but the mortality of males, as in other recent years, exceeded that of females by about one-third. The excess, as in former years, was far greater in town than country, being 68 per cent. in London, 41 per cent. in the county boroughs, 26 per cent. in the smaller towns, and only 8 per cent. in the rural districts. For the population at large and for the male sex mortality from tubercle varied in the same way with urbanization, from a maximum in London to a minimum in the rural districts; but, as in 1912, a higher mortality was recorded for women in the county boroughs than in London. The excess of female mortality in the county boroughs over that in the rural districts was 33 per cent., but for males the excess of the London rate over that of the rural districts was 91 per cent., so it is evident that urban conditions of life increase the risk of tubercle much more for males than for females. It is of interest to inquire whether this is due to some inherent difference between the sexes or to the conditions of their life in town and country respectively. The woman's sphere of activity being so largely her own household whether in town or country, it seems natural that she should be less affected by the difference between the two environments than the man, who probably exchanges an outdoor life in the country for an indoor occupation in town. This view would seem to be supported by Table XLIII, the last two columns of which show that while at every age above 15 male rural mortality is smaller and male urban mortality greater in proportion to total male mortality than are the corresponding female rates in proportion to total female mortality, no such rule applies to ages 0-15. In other words, the adverse effect of town conditions upon mortality from phthisis is greater for males than for females at ages above 15, about which work may be taken to begin, but not in childhood. The same statements are applicable to tuberculosis generally; and if we examine the chief forms of tubercle characteristic of childhood we find that although Table XLVII shows a greater increase of mortality from tuberculous meningitis with increasing aggregation of population for male children than for female, no such difference is shown by



Table XLVIII in the case of abdominal tuberculosis. On the whole, therefore, the evidence here considered seems to show that the differentially adverse effect of town life upon the male sex is but little manifest prior to the age at which occupation commences, and hence that if the conditions of their lives were similar the two sexes would probably be about equally affected by the change from rural to urban surroundings. In this connexion it may be permissible to recall the fact, mentioned in last year's Report, that in the asylum population, where their conditions of life are similar, phthisis mortality is about equal for the two sexes, just as it is approximately equal for the two in the rural districts.

The mortality in each administrative county and county borough from tuberculosis of all forms and from phthisis is stated in Table 23. These however are crude rates, and though standardization for differences in sex- and age-constitution does not as a rule alter them greatly still it is preferable to make comparisons between the various areas on the basis of such standardized death-rates, which have been published for the years 1911 and 1912 jointly in the Report of the Medical Officer to the Local Government Board for 1913-14, where the question of the local distribution of tubercle is dealt with.

28 and 29. **Phthisis.**—This heading in the international list of causes of death now in use includes acute military tuberculosis in addition to the deaths entered under it prior to 1911. The addition from this cause in 1913 amounts to 852 deaths, and the total contents of the heading to 37,055 deaths, of which 22,116 were returned as pulmonary tuberculosis, 11,303 as "phthisis," and the remainder as acute forms of the disease. In comparison with those for 1912 these numbers show an appreciable transfer from the less to the more definite form of return. The 37,055 deaths form 75 per cent. of the total deaths allocated to tuberculosis, and correspond to a mortality of 1,004 per million living, or 7.3 per cent. of the death-rate from all causes.

For the reason indicated above, Table XLII, in so far as it supplies a comparison with years prior to 1911, necessarily excludes heading 29B, acute military tuberculosis, and applies only to phthisis as formerly understood in these reports, *i.e.*, to 28 and 29A. It shows that the standardized death-rate in 1913 was 4 per cent. below that of 1912 (which was also 4 per cent. below that of 1911) and 12 per cent. below that of the five years 1906-10, a rate of fall appreciably above the average.

TABLE XLII.—PHTHISIS.—MORTALITY per MILLION LIVING at ALL AGES, 1906-10, 1912, and 1913.

		1906-10.	1912.	1913.	1913 (28 and 29).					
		(28 and 29A.)								
		England and Wales.			England and Wales.	London.	County Boroughs.	Other Urban Districts.	Rural Districts.	All Urban Districts.
Males	Crude rates ...	1,299	1,194	1,154	1,178	1,757	1,442	993	784	1,290
	Standardized rates*	1,278	1,161	1,122	1,146	1,667	1,401	973	782	1,253
Females	Crude rates ...	926	852	818	840	961	975	757	700	877
	Standardized rates*	907	831	799	823	910	948	743	715	853
Persons	Crude rates ...	1,106	1,017	981	1,004	1,335	1,198	871	742	1,075
	Standardized rates	1,082	986	951	976	1,269	1,162	851	746	1,042

\* See page xx.

The features of this table as regards relative incidence upon various classes of area are very similar to those of Table XLI. There is the same increase of mortality with urbanization, strongly marked in the male sex, and but slightly in the female, so that the excess of male over female mortality regularly increases from the rural districts to London.

Table XLIII shows that the period of maximum mortality occurs earlier in life for both sexes in the rural districts than in the towns, and earlier in each class of area for females than for males. These may be regarded as constant features of the age distribution of the disease, since they are manifested with considerable regularity in these tables,

The fall in mortality shown in the table is very general for adult life in both sexes, but the mortality recorded for children of 0-5 is higher than in 1912, and for children of 10-15 it is higher than in 1912 or in 1906-10.

TABLE XLIII.—PHTHISIS.—MORTALITY at DIFFERENT AGES, 1906-10, 1912 and 1913.

	Mortality at Age-groups per Million Living.									Ratio per cent. of Mortality in England and Wales.					
	1906-10.	1912.	1913.	1913 (28 and 29).					1913.						
	(28 and 29A.)														
	England and Wales.			England and Wales.	London.	County Boroughs.	Other Urban Districts.	Rural Districts.	Total Urban Districts.	London.	County Boroughs.	Other Urban Districts.	Rural Districts.	Total Urban Districts.	
MALES.	0—	334	228	269	358	568	440	315	184	404	159	123	88	51	113
	5—	125	123	118	143	181	164	146	89	159	127	115	102	62	111
	10—	166	158	171	193	216	241	157	169	200	112	125	81	88	104
	15—	731	704	661	680	793	797	615	566	714	117	117	90	83	105
	20—	1,435	1,322	1,247	1,266	1,416	1,432	1,189	1,063	1,321	112	113	94	84	104
	25—	1,846	1,539	1,425	1,437	1,802	1,601	1,298	1,187	1,500	125	111	90	83	104
	30—		1,813	1,751	1,767	2,355	2,070	1,499	1,380	1,863	133	117	85	78	105
	35—	2,271	2,017	1,961	1,978	2,818	2,375	1,662	1,370	2,133	144	120	84	69	108
	40—		2,163	2,140	2,153	3,550	2,689	1,659	1,345	2,370	165	125	77	62	110
	45—	2,543	2,296	2,241	2,253	3,543	2,950	1,873	1,143	2,572	157	131	83	51	114
	50—		2,243	2,251	2,260	3,688	3,008	1,739	1,279	2,560	163	133	77	57	113
	55—	2,298	2,289	2,064	2,074	3,574	2,769	1,529	1,230	2,345	172	134	74	59	113
	60—		2,074	1,956	1,966	3,092	2,552	1,731	1,083	2,273	157	130	88	55	116
	65—	1,507	1,557	1,445	1,450	2,681	1,877	1,269	754	1,726	185	129	88	52	119
	70—		956	1,012	1,016	2,002	1,325	876	555	1,219	197	130	86	55	120
	75—	598	557	607	607	1,591	652	501	383	723	262	107	83	63	119
	80—		419	399	417	2,133	562	217	47	629	512	135	52	11	151
85—	224	260	215	215	—	668	272	—	355	—	311	127	—	165	
FEMALES.	0—	287	214	224	299	481	393	251	131	343	161	131	84	44	115
	5—	188	155	157	191	202	260	155	141	205	106	136	81	74	107
	10—	384	363	400	430	360	537	400	361	450	84	125	93	84	105
	15—	981	994	935	964	862	1,051	939	928	973	89	109	97	96	101
	20—	1,214	1,184	1,113	1,132	954	1,244	1,088	1,147	1,129	84	110	96	101	100
	25—	1,413	1,231	1,194	1,204	978	1,351	1,130	1,250	1,193	81	112	94	104	99
	30—		1,308	1,226	1,240	1,212	1,396	1,116	1,219	1,245	98	113	90	98	100
	35—	1,414	1,350	1,254	1,261	1,456	1,511	1,107	996	1,326	115	120	88	79	105
	40—		1,217	1,205	1,211	1,547	1,438	1,008	990	1,268	128	119	83	82	105
	45—	1,219	1,166	1,110	1,115	1,674	1,267	1,002	732	1,218	150	114	90	66	109
	50—		974	986	989	1,451	1,191	765	780	1,047	147	120	77	79	106
	55—	998	924	881	886	1,234	1,068	757	642	958	139	121	85	72	108
	60—		871	813	815	1,387	777	777	617	876	170	95	95	76	107
	65—	735	742	648	650	1,113	706	569	477	709	171	109	88	73	109
	70—		548	559	566	1,007	634	485	392	626	178	112	86	69	111
	75—	385	422	333	333	534	348	287	287	351	160	105	86	86	105
	80—		247	324	324	364	365	299	301	333	112	113	92	93	103
85—	141	263	142	142	181	107	213	75	173	127	75	150	53	122	
PERSONS.	0—	310	221	247	328	525	416	283	157	374	160	127	86	48	114
	5—	157	139	138	167	192	212	151	115	182	115	127	90	69	109
	10—	275	261	286	312	289	390	279	261	326	93	125	89	85	104
	15—	857	850	799	823	829	929	780	733	848	101	113	95	89	103
	20—	1,319	1,249	1,176	1,195	1,160	1,330	1,136	1,104	1,218	97	111	95	92	102
	25—	1,619	1,377	1,303	1,314	1,349	1,468	1,210	1,219	1,337	103	112	92	93	102
	30—		1,550	1,477	1,492	1,741	1,717	1,299	1,298	1,539	117	115	87	87	103
	35—	1,827	1,671	1,595	1,607	2,107	1,927	1,376	1,180	1,714	131	120	86	73	107
	40—		1,673	1,655	1,665	2,486	2,039	1,321	1,164	1,796	149	122	79	70	108
	45—	1,855	1,710	1,654	1,662	2,552	2,072	1,419	935	1,864	154	125	85	56	112
	50—		1,583	1,592	1,598	2,504	2,053	1,228	1,028	1,765	157	128	77	64	110
	55—	1,610	1,574	1,444	1,451	2,321	1,870	1,121	932	1,610	160	129	77	64	111
	60—		1,431	1,348	1,353	2,166	1,599	1,216	845	1,519	160	118	90	62	112
	65—	1,077	1,111	1,009	1,013	1,801	1,224	879	611	1,159	178	121	87	60	114
	70—		723	753	759	1,407	917	649	468	871	185	121	86	62	115
	75—	472	477	445	445	925	466	372	331	496	208	105	84	74	111
	80—		315	353	360	962	436	268	189	442	267	121	74	53	122
85—	161	262	168	168	129	290	234	45	233	77	173	139	27	139	



TABLE XLIV.—PHTHISIS.—CRUDE DEATH-RATES per MILLION LIVING, 1913.

	All Ages.					At Ages 65 Years and Upwards.					
	North.	Mid-lands.	South.	Wales.	England and Wales.	North.	Mid-lands.	South.	Wales.	England and Wales.	
London ...	Males	—	—	1,757	—	1,757	—	—	2,220	—	2,220
	Females	—	—	961	—	961	—	—	881	—	881
	Persons	—	—	1,335	—	1,335	—	—	1,422	—	1,422
County Boroughs	Males	1,506	1,422	1,239	1,286	1,442	1,590	1,410	958	1,509	1,437
	Females	1,027	921	845	1,049	975	595	537	612	719	583
	Persons	1,257	1,160	1,028	1,169	1,198	1,011	904	747	1,074	938
Other Urban Dis-tricts.	Males	1,006	963	1,090	873	993	1,021	878	932	871	934
	Females	801	720	693	896	757	432	401	596	389	460
	Persons	900	836	879	884	871	687	602	731	604	660
Rural Districts ...	Males	703	756	841	918	784	430	376	609	1,382	546
	Females	711	661	656	945	700	431	358	371	460	383
	Persons	707	708	748	931	742	430	366	482	882	459
All areas ...	Males	1,216	1,041	1,342	965	1,178	1,169	805	1,290	1,200	1,084
	Females	906	766	822	942	840	511	421	650	471	525
	Persons	1,056	900	1,069	954	1,004	798	589	917	801	766

Table XLIV reproduces for 1913 a similar table inserted in the two preceding Reports. It shows, as before, how great is the excess of phthisis mortality recorded for old men and women in London. It also shows that the excess of male over female mortality as well as its increase in proportion to urbanization is especially characteristic of old age. The higher mortality of females than of males at all ages in the rural districts and smaller towns of Wales forms a feature common to the tables for all three years.

Attention may also be directed to the fact that the mortality in Wales was higher in the rural districts than in the smaller towns in both sexes both at all ages and at ages over 65. This is true also of the two preceding years. The tendency to relatively high mortality in the rural districts of Wales has already been pointed out when dealing with mortality from all causes (page xxxi).

TABLE XLV.—PHTHISIS, 1911-13.—MORTALITY per 1,000 LIVING at ALL AGES.

	Year.	Males.					Females.					Persons.				
		North.	Midlands.	South.	Wales.	England and Wales.	North.	Midlands.	South.	Wales.	England and Wales.	North.	Midlands.	South.	Wales.	England and Wales.
London ...	1911	—	—	1.79	—	1.79	—	—	1.02	—	1.02	—	—	1.38	—	1.38
	1912	—	—	1.84	—	1.84	—	—	0.99	—	0.99	—	—	1.39	—	1.39
	1913	—	—	1.76	—	1.76	—	—	0.96	—	0.96	—	—	1.34	—	1.34
County Boroughs.	1911	1.64	1.49	1.40	1.51	1.56	1.08	1.03	1.04	1.41	1.07	1.35	1.25	1.21	1.46	1.31
	1912	1.64	1.44	1.30	1.39	1.53	1.07	0.96	0.87	1.12	1.01	1.34	1.19	1.07	1.25	1.26
	1913	1.51	1.42	1.24	1.29	1.44	1.03	0.92	0.84	1.05	0.97	1.26	1.16	1.03	1.17	1.20
Other Urban Districts.	1911	1.10	1.03	1.18	0.92	1.07	0.92	0.76	0.78	0.98	0.84	1.01	0.89	0.97	0.95	0.95
	1912	1.02	1.01	1.06	0.81	1.00	0.84	0.73	0.71	0.88	0.78	0.93	0.86	0.88	0.84	0.89
	1913	1.01	0.96	1.09	0.87	0.99	0.80	0.72	0.69	0.90	0.76	0.90	0.84	0.88	0.88	0.87
Rural Districts.	1911	0.76	0.83	0.89	1.08	0.85	0.77	0.73	0.76	1.23	0.80	0.76	0.78	0.82	1.16	0.83
	1912	0.73	0.77	0.83	0.98	0.80	0.69	0.72	0.76	1.07	0.76	0.71	0.74	0.79	1.03	0.78
	1913	0.70	0.76	0.84	0.92	0.78	0.71	0.66	0.66	0.94	0.70	0.71	0.71	0.75	0.93	0.74
All Areas	1911	1.31	1.10	1.41	1.08	1.26	0.98	0.83	0.92	1.15	0.92	1.14	0.96	1.15	1.12	1.08
	1912	1.29	1.07	1.38	0.97	1.22	0.93	0.80	0.86	0.99	0.87	1.10	0.93	1.11	0.98	1.04
	1913	1.22	1.04	1.34	0.97	1.18	0.91	0.77	0.82	0.94	0.84	1.06	0.90	1.07	0.95	1.00

It is illustrated by Table XLV, which shows that though the mortality of males as a whole was lower in Wales than elsewhere in each of the three years dealt with, yet the mortality of males in the rural districts was at its highest in Wales in each

year. For females Wales uniformly furnishes the highest rate in all classes of area. Compared with England the mortality of males has been low in Wales and that of females high for many years. In fact the table shows that in Wales the excess of male over female mortality, so marked in England, does not exist, the death-rates of the two sexes there being about equal. The greatest contrast to the state of equality in Wales is furnished by London, where the male excess amounts to about 80 per cent., and the South generally (about 60 per cent.). In Wales we have the lowest male and the highest female mortality, and in the South the highest male mortality together with a rate for females which was below the average in each of the three years represented in Table XLV. Whatever the explanation of this extraordinary difference in sex incidence may be it can hardly fail to possess significance in relation to the efforts now in progress for the suppression of the disease. The excess in mortality of Welsh females is most marked (Table 24) at the young adult ages, the period of life when female mortality in general most tends to excess in Wales.

The North records a high mortality for both sexes in its great towns, but not particularly high elsewhere, coming as a whole second to the South in the male sex and to Wales in the female in each of the three years. The position of the Midlands as a whole is good for both sexes, its mortality being lowest of all for females and lowest in England for males in each year.

30. Tuberculous Meningitis.—The deaths classed to this head during 1913 number 5,018, or 621 below the average of the previous five years corrected for increase of population. The death-rate, 136 per million living at all ages, is the lowest yet recorded. The mortality has been steadily declining for the last 60 years, and now amounts only to one-third of that returned at the commencement of this period. As mortality from non-tuberculous meningitis also shows rapid decline, the fall can scarcely be explained as due to transfer between the two headings.

This decline, during a period of rapidly increasing urbanization, is the more remarkable because the disease is one especially associated with urban conditions of life, as is shown by Tables XLVI and XLVII, which in order to avoid fallacies involved by differences in sex- and age-constitution, refer only to ages 0-15, at which 89 per cent. of the total deaths occurred in 1913.

TABLE XLVI.—TUBERCULOUS MENINGITIS, 1911-13.—MORTALITY per 100,000 LIVING at AGE-GROUPS under 15.

	Year.	0-5.	5-10.	10-15.
London ...	1911	122	35.1	8.0
	1912	103	25.1	12.2
	1913	104	36.0	10.5
County Boroughs...	1911	97	27.4	10.7
	1912	95	25.1	12.0
	1913	95	29.0	12.3
Urban Districts ...	1911	80	21.7	11.4
	1912	76	22.9	13.2
	1913	74	22.6	11.2
Rural Districts ...	1911	59	17.1	10.5
	1912	44	17.1	10.9
	1913	50	16.7	10.0
England and Wales ...	1911	87	24.0	10.6
	1912	78	22.5	12.2
	1913	79	24.9	11.2

Table XLVI shows that this association holds good only of the younger ages. At ages 0-5 the mortality in London has been over twice that of the rural districts in each of the three years dealt with, and at ages 5-10 the excess has been almost as great, but at 10-15 the mortality in London has been about the same as that in the rural districts, both being rather below the average for the country as a whole, which is but little departed from at this age in any class of area. The mortality at the earlier ages increases regularly with aggregation of population, from rural districts to London.



Table XLVII shows that increase of mortality in proportion to degree of urbanization is characteristic of all parts of England, but that, as in the case of phthisis, mortality is relatively high in the rural districts of Wales. The relation to aggregation of population is in fact reversed in Wales in 1913, mortality in both sexes having been highest in the rural districts and lowest in the county boroughs. Except in the rural districts the deaths returned from Wales are relatively few, the order of mortality for all classes of area jointly having been North, South, Midlands, Wales, in each of the three years represented in Table XLVII.

TABLE XLVII.—TUBERCULOUS MENINGITIS, 1911-13.—MORTALITY per 100,000 LIVING at AGES 0-15.

	Year.	Males.					Females.					Persons.				
		North.	Midlands.	South.	Wales.	England and Wales.	North.	Midlands.	South.	Wales.	England and Wales.	North.	Midlands.	South.	Wales.	England and Wales.
London ... ..	1911	—	—	60	—	60	—	—	56	—	56	—	—	58	—	58
	1912	—	—	53	—	53	—	—	46	—	46	—	—	49	—	49
	1913	—	—	58	—	58	—	—	47	—	47	—	—	52	—	52
County Boroughs ...	1911	55	44	44	35	49	45	42	51	41	44	50	43	48	38	47
	1912	54	41	41	41	48	50	37	34	27	44	52	39	38	34	46
	1913	60	43	48	27	52	48	37	35	23	42	54	40	42	25	47
Other Urban Districts	1911	49	39	33	36	41	47	34	31	26	37	48	36	32	31	39
	1912	49	35	37	30	40	44	35	33	24	37	46	35	35	27	38
	1913	44	39	35	33	39	38	33	36	24	35	41	36	35	29	37
Rural Districts ...	1911	27	32	23	38	29	34	26	31	29	29	30	29	27	34	29
	1912	29	23	22	36	25	26	21	20	31	23	27	22	21	33	24
	1913	39	21	22	37	27	28	21	23	38	25	33	21	22	37	26
All Areas ... ..	1911	49	38	44	37	43	44	34	44	30	40	46	36	44	33	42
	1912	48	34	41	34	41	45	32	36	27	37	46	33	39	30	39
	1913	51	35	44	33	43	42	31	38	28	36	46	33	41	31	40

Table XLVII and Tables 24-28 with the corresponding tables for 1911 and 1912 show that mortality from meningeal tubercle in Wales is highest relatively to that in the whole country in the same class of area—the rural districts—as is Welsh mortality from phthisis (page xlvi) and from all causes (page xxxi). The mortality of females in Wales as a whole is in considerable excess during early adult life in all three cases. London records the converse experience to that of Wales, showing a particularly high mortality from tuberculous meningitis in early life, when that of Wales is especially low, and a low rate from 15 to 45, when the Welsh rates are high. These appear not to be accidental differences, since they are met with in each of the three years available for comparison, so it would seem that, whatever the reason may be, tuberculous meningitis as a certified cause of death is much more restricted to early life in London than in Wales, the difference being similar to that already noted in Table XLVI between London and the rural districts generally.

31. Tuberculosis of Peritoneum and Intestines.—The deaths returned under this heading in 1913 number 3,760, corresponding to a mortality of 102 per million living at all ages. This rate is lower than that for any previous year except 1912, when it amounted to 89 per million. The mortality recorded has been falling very rapidly during the past 30-35 years, and amounts now only to about one-third of that prevalent at the commencement of this period. The increase from 89 per million in 1912 (Table 20) may be related to the increase in mortality from diarrhoea, for it is noticeable that in years of high diarrhoeal mortality there has generally been an increase, or at least a check to the rate of decline, in mortality from tuberculous peritonitis.

The tendency to disuse of the term *tabes mesenterica* as descriptive of this disease may be traced in Table 19. In 1901, when the deaths so described were first distinguished, they amounted to 52 per cent. of the whole, whereas in 1913 this proportion has fallen to 16 per cent.

Although the descriptive titles in the list in use prior to 1911, as given in Table 20, make no reference to tubercle of the intestines, this form of disease was included under

the term tuberculous peritonitis. Its importance as a constituent of the total heading may be gathered from the tables showing detailed classification of tubercle deaths in 1912 contained in the Report for that year. It is there shown (page 601) that tubercle of the peritoneum, intestines, mesenteric glands, and other abdominal organs listed to this heading was recorded upon 4,082 death certificates, including 836 allocated in the ordinary tabulation by single causes of death to other forms of tuberculosis, mainly pulmonary. Of these 4,082 fatal cases of "tuberculosis of the peritoneum and intestines" 12 per cent. were returned as *tabes mesenterica*, 26 per cent. as tuberculous enteritis or tubercle of the intestines, 3 per cent. as tubercle of the mesentery or mesenteric glands, 55 per cent. as tuberculous peritonitis or tubercle of the peritoneum, 3 per cent. as tubercle of the abdomen, and 1 per cent. in various other ways.

In the same table it appears also that the age distribution differs considerably in these different forms of tubercle. Tubercle of the intestines is much more a disease of adults than is tuberculous peritonitis, though the proportion of deaths under one year of age is the same in both cases, 17 per cent. But only 26 per cent. of the deaths from intestinal tubercle occurred at ages 1-15 as against 49 per cent. of those from peritoneal disease. The term *tabes mesenterica* is almost restricted to early childhood, 45 per cent. of the deaths occurring under 1 year, 82 per cent. under 5 years, and 96 per cent. under 15 years.

TABLE XLVIII.—TUBERCULOSIS OF PERITONEUM and INTESTINES, 1911-13.—MORTALITY per MILLION POPULATION.

		All Ages.			Ages 0-5 years.		
		1911.	1912.	1913.	1911.	1912.	1913.
London ... ..	Males ...	94	59	70	576	337	427
	Females	63	46	49	391	279	271
	Persons	77	52	59	484	308	349
County Boroughs ...	Males ...	155	121	147	953	693	904
	Females	130	104	117	808	612	695
	Persons	142	112	132	881	653	800
Other Urban Districts ...	Males ...	127	93	111	817	544	700
	Females	113	86	93	650	428	513
	Persons	120	89	102	734	486	607
Rural Districts ...	Males ...	86	75	79	529	403	455
	Females	96	76	86	472	292	351
	Persons	91	75	82	501	348	404
All areas ... ..	Males ...	122	93	111	768	535	682
	Females	108	84	94	629	439	509
	Persons	115	89	102	699	487	596

The mortality ascribed to abdominal tubercle in London is remarkably and consistently low. This is brought out by Table XLVIII, which shows that, whereas meningeal tubercle causes a heavier mortality in London than in other classes of area (Tables XLVI and XLVII), abdominal tubercle causes a lighter, whether mortality at all ages or under five years, at which 63 per cent. of the deaths occurred in 1913, be considered. The London rate indeed is less than half that in the county boroughs, though, London apart, the usual rule of increase in mortality with increasing aggregation of population holds good for each of the three years dealt with in the table. Unless, as seems unlikely, exposure of children to infection by means specially liable to implicate the intestine and peritoneum is at a minimum in London, the question must arise whether the extraordinary difference shown by the figures represents the facts. We have seen that the mortality tends to rise in years when fatal diarrhoea is prevalent. The most obvious explanation of this fact would seem to be the return as tuberculous of certain deaths from diarrhoea not of tuberculous origin, unless, indeed, diarrhoea can be held to prepare the ground for local infection with tubercle. If the deaths returned under this heading are not all due to tubercle this was probably the case still more thirty years ago, which would help to explain the very great reduction in recorded mortality since that time. It might also account for the low mortality in London, where there is much reason to believe that death certification is at its best.



32-35. Tubercle of the Spine, of the Joints, of other organs, and Disseminated Tuberculosis.—These forms of the disease jointly accounted for 3,643 deaths, or 7 per cent. of the total mortality from tubercle, and of these 2,028 were assigned to disseminated tuberculosis. This latter heading excludes miliary tubercle not described as chronic, but includes all deaths from tubercle of two or more organs where the lungs are not affected. Its mortality can only be traced in common with that from acute miliary tuberculosis. Table 20 shows that the joint death-rate is falling rapidly.

None of the causes numbered 32-35 appears to present any very striking or constant variations in the mortality associated with different degrees of urbanization.

39-45. Cancer.—The deaths ascribed to cancer or malignant disease during 1913 numbered 38,939, of which 25,109 were referred to carcinoma, 2,280 to sarcoma, and 11,550 to "cancer," not otherwise defined. The proportion of the latter ingredient in the total is steadily diminishing. The mortality of males was 947 per million living as compared with 913 in 1912, and that of females 1,155 as compared with 1,117. In the case of each sex these rates are the highest on record.

TABLE XLIX.—CANCER.—DEATH-RATES PER MILLION POPULATION, 1906-10, 1911, 1912 and 1913.

	Crude Rates.				Standardized Rates.*			
	1906-10.	1911.	1912.	1913.	1906-10.	1911.	1912.	1913.
England and Wales... {								
M.	819	891	913	947	814	872	894	928
F.	1,052	1,088	1,117	1,155	944	954	979	1,014
P.	939	993	1,019	1,055	882	914	937	972
London ... {								
M.	?	1,065	1,070	1,092	?	1,075	1,080	1,100
F.	?	1,083	1,212	1,228	?	961	1,076	1,090
P.	?	1,074	1,145	1,164	?	1,010	1,075	1,093
County Boroughs ... {								
M.	?	866	901	927	?	922	963	989
F.	?	1,074	1,071	1,127	?	1,014	1,012	1,065
P.	?	975	989	1,031	?	969	986	1,027
Other Urban Districts {								
M.	?	844	844	883	?	861	862	902
F.	?	1,074	1,104	1,126	?	960	986	1,006
P.	?	963	978	1,008	?	912	926	956
Rural Districts ... {								
M.	?	905	968	1,000	?	733	780	806
F.	?	1,134	1,166	1,203	?	867	883	915
P.	?	1,020	1,067	1,102	?	802	834	861
All Urban Districts ... {								
M.	?	887	901	932	?	919	936	968
F.	?	1,075	1,108	1,143	?	981	1,011	1,044
P.	?	985	1,009	1,042	?	950	974	1,006

\* See pages xix and xx.

Table XLIX compares the standardized death-rates from cancer in the four classes of area dealt with in this Report as well as in the country as a whole and the aggregated urban districts. The repetition of the rates for 1911 and 1912 is called for by the modification in the sex rates introduced by the change of method described on page xx. The effect of the change is roughly to increase the standardized male rate by 50 per million in each case and to decrease the female rate by a corresponding amount, with the result that the excess of standardized mortality in the female sex is reduced to very moderate dimensions, and in the case of London is negative for each of the three years in the table.

The table shows a very constant increase in standardized mortality in proportion to urbanization, which is of greater dimensions in the case of males than of females. It is quite conceivable that differences of the dimensions shown may be due to the better facilities for diagnosis in the urban areas where a much larger proportion of the deaths occurs in institutions in which *post mortem* examination is the rule rather than, as in private practice, the exception. It will be seen that the considerable increase in mortality recorded in the year under review is of a very uniform nature, being common to both sexes in every class of area. It is also widely spread over the different age-periods represented in Table L, the chief exception being in women of the two oldest categories.

TABLE L.—CANCER.—DEATH-RATES PER MILLION LIVING, 1906-10, 1912 and 1913.

Sex and Age.	1906-10.	1912.	1913.						
	England and Wales.		England and Wales.	London.	County Boroughs.	Other Urban Districts.	Rural Districts.	All Urban Districts.	
MALES.	0— ...	24	22	24	39	17	24	27	23
	15— ...	45	44	38	63	39	30	38	39
	25— ...	113	103	126	141	136	119	112	129
	35— ...	422	279	277	228	343	271	213	294
	40— ...		625	660	692	782	602	552	689
	45— ...	1,589	1,269	1,313	1,566	1,492	1,275	983	1,408
	50— ...		2,195	2,262	2,986	2,630	2,117	1,605	2,462
	55— ...	4,051	3,702	3,768	4,468	4,191	3,699	2,996	4,016
	60— ...		5,502	5,808	6,827	6,365	5,604	4,968	6,100
	65— ...	6,967	6,930	7,343	9,228	7,383	7,309	6,595	7,640
	70— ...		9,135	9,044	10,243	8,663	9,060	8,933	9,093
	75— ...	8,345	9,758	10,254	11,588	10,926	9,729	9,887	10,443
	80— ...		8,911	9,355	9,952	9,226	9,095	9,500	9,271
	85 and upwards	7,928	8,239	8,786	12,952	6,454	9,917	8,000	9,295
	FEMALES.	0— ...	20	19	19	18	18	21	16
15— ...		34	34	38	58	39	34	29	40
25— ...		164	148	153	176	171	134	140	156
35— ...		822	545	593	602	681	583	457	626
40— ...			1,072	1,159	1,235	1,311	1,141	903	1,224
45— ...		2,282	1,935	1,922	2,091	2,045	1,847	1,760	1,966
50— ...			2,888	2,906	3,149	3,117	2,826	2,587	2,995
55— ...		4,432	3,957	4,087	4,453	4,330	3,996	3,697	4,202
60— ...			5,122	5,547	5,607	5,870	5,590	5,046	5,703
65— ...		6,753	6,415	6,797	7,218	7,116	6,712	6,346	6,949
70— ...			8,246	8,432	9,197	8,550	8,529	7,824	8,645
75— ...		8,318	9,551	9,693	10,449	9,142	10,273	9,186	9,891
80— ...			9,166	9,073	10,726	8,708	9,165	8,584	9,279
85 and upwards		7,603	9,569	8,800	9,065	9,029	9,251	8,053	9,144
PERSONS.		0— ...	22	21	21	28	17	22	22
	15— ...	40	39	38	60	39	32	34	39
	25— ...	140	127	140	160	155	127	126	143
	35— ...	629	417	440	427	518	432	337	466
	40— ...		856	918	980	1,057	882	731	968
	45— ...	1,949	1,615	1,629	1,844	1,780	1,573	1,375	1,700
	50— ...		2,556	2,597	3,072	2,886	2,489	2,099	2,742
	55— ...	4,253	3,836	3,936	4,460	4,265	3,856	3,352	4,115
	60— ...		5,300	5,669	6,164	6,100	5,596	5,008	5,886
	65— ...	6,848	6,648	7,045	8,100	7,234	6,977	6,466	7,255
	70— ...		8,627	8,694	9,617	8,596	8,751	8,343	8,830
	75— ...	8,329	9,636	9,924	10,870	9,831	10,055	9,508	10,107
	80— ...		9,066	9,183	10,464	8,896	9,139	8,989	9,276
	85 and upwards	7,720	9,097	8,795	10,187	8,191	9,480	8,031	9,194

This table also shows that the excess in mortality of females over that of males was concentrated mainly upon ages 25-55. At other ages there was either practical equality or, as at all ages from 60 to 85 in the country as a whole, male excess.

Table LI refers to two groups of ages in making comparison of cancer mortality in different parts of the country. This limitation of age makes it unnecessary to calculate standardized death-rates in order to obtain a fair basis of comparison. At both age-periods the mortality of males in London was, as usual, higher than that of any of the other twelve sections of the population, while that of London females was exceeded only in three instances at 45-65 and one at 65 and over. Apart from the London excess, which is greatest in the male sex, the rates in the table are, on the whole, fairly uniform.

Table LII has been prepared to facilitate their comparison and to ascertain with what constancy such differences as do exist recur in succeeding years. It will be seen that the excess of mortality in London males is its most outstanding feature. It amounts to about 20 per cent. over the male average for the whole country at both age-periods dealt with and varies little in extent from year to year. The excess mortality of London females is much smaller and less constant. Except in Wales the



TABLE LI.—CANCER, 1913.—DEATH-RATES PER MILLION LIVING.

		Ages 45-65.					Ages 65 and over.				
		North.	Midlands.	South.	Wales.	England and Wales.	North.	Midlands.	South.	Wales.	England and Wales.
London	{ M. — F. —	—	—	3,463	—	3,463	—	—	10,012	—	10,012
County Boroughs	{ M. 3,411 F. 3,526	3,043	2,774	2,659	3,196	8,374	8,155	9,005	7,294	8,356	
Other Urban Districts	{ M. 2,777 F. 3,331	2,708	2,744	2,655	2,765	8,142	8,417	8,755	8,133	8,394	
Rural Districts	{ M. 2,321 F. 3,071	2,390	2,327	2,308	2,350	7,575	7,887	8,649	8,837	8,138	
All areas	{ M. 3,027 F. 3,397	2,739	2,958	2,533	2,884	8,140	8,141	9,190	8,326	8,480	

rule of increasing mortality with increasing aggregation of population is generally followed, but the smaller towns and even the rural districts of Wales frequently furnish rates higher than those of its county boroughs. The Welsh rates are generally low, except for women aged 45-65. The mortality recorded for the older women in Wales is considerably higher in the rural districts than elsewhere.

TABLE LII.—CANCER.—MORTALITY per cent. of that in ENGLAND and WALES in the SAME SEX.

	Sex.	North.			Midlands.			South.			Wales.			England and Wales.		
		1911.	1912.	1913.	1911.	1912.	1913.	1911.	1912.	1913.	1911.	1912.	1913.	1911.	1912.	1913.
Ages 45-65.																
London	{ M. — F. —	—	—	—	—	—	—	125	121	120	—	—	—	125	121	120
County Boroughs	{ M. 117 F. 109	116	107	106	99	104	106	102	104	96	92	87	92	109	110	111
Other Urban Districts	{ M. 95 F. 105	95	104	101	99	101	99	99	97	94	94	85	92	97	93	96
Rural Districts	{ M. 72 F. 100	79	93	93	89	88	94	87	88	83	94	94	106	91	89	92
All Areas	{ M. 102 F. 106	103	103	103	98	96	100	108	106	103	94	85	88	100	100	100
Ages 65 and over.																
London	{ M. — F. —	—	—	—	—	—	—	123	118	118	—	—	—	123	118	118
County Boroughs	{ M. 98 F. 101	103	99	105	103	103	106	106	102	102	102	81	86	100	103	99
Other Urban Districts	{ M. 100 F. 106	92	110	101	104	101	101	107	108	103	82	77	96	100	99	99
Rural Districts	{ M. 83 F. 98	89	98	93	98	95	93	90	94	102	83	88	104	92	93	96
All Areas	{ M. 96 F. 102	96	103	99	98	100	99	108	108	108	84	83	98	100	100	100

Comparing the two ages dealt with it will be seen that the proportions for the North and for Wales as a whole are higher at the earlier period, especially those for males in the great towns of the North, while in the South, apart from London, the position is reversed.

The parts of the body affected by fatal cancer in 1913 are shown in Tables LIII and LIV in greater detail than that provided by the International classification, five out of its seven headings (Nos. 39-45) relating to cancer being subdivided according to a scheme approved by the Director of the Cancer Research Fund, at whose request also deaths occurring in institutions are separately tabulated.

TABLE LIII.—ENGLAND AND WALES, 1913.—SITES OF FATAL CANCER—MALES.

	All Ages.	0-	5-	15-	25-	35-	40-	45-	50-	55-	60-	65-	70-	75-	80-	85-
		ALL DEATHS.														
Total ...	16,918	74	63	124	365	358	726	1,244	1,777	2,342	2,833	2,745	2,189	1,335	539	204
39 Lip ...	225	—	—	1	1	3	7	18	13	30	33	30	46	23	19	—
Tongue ...	995	—	—	4	14	50	97	145	170	158	158	106	65	21	7	—
Mouth ...	442	—	—	3	6	9	21	53	50	79	81	60	42	18	14	6
Jaw ...	482	1	3	4	13	6	9	39	52	82	90	80	55	27	14	7
Pharynx ...	203	1	3	3	3	2	11	18	24	45	29	28	24	10	—	2
40 Esophagus ...	1,177	—	—	—	2	11	34	83	184	215	228	208	119	59	26	8
Stomach ...	3,650	—	1	65	73	166	270	388	483	654	635	526	263	95	30	—
Liver and gall bladder ...	1,680	2	2	4	14	30	56	111	182	229	283	287	253	152	55	20
Mesentery and peritoneum ...	125	2	1	4	12	3	9	13	9	17	13	21	11	6	2	2
41 Intestines ...	1,892	2	3	6	32	48	67	142	157	244	294	332	289	175	83	18
Rectum ...	1,746	—	—	6	44	32	66	91	160	234	295	307	254	175	60	22
43 Breast ...	22	—	—	—	—	2	—	1	6	4	2	4	1	2	—	—
44 Skin... ...	571	—	1	—	13	11	26	35	35	49	78	68	90	82	48	35
Larynx ...	400	—	—	—	1	5	13	39	51	74	82	80	31	18	6	—
Lung and pleura ...	263	2	2	8	15	9	24	25	34	45	44	30	14	10	—	1
Pancreas ...	320	—	—	1	13	9	17	30	34	52	65	38	36	23	2	—
Kidneys and suprarenal glands ...	183	27	10	2	7	8	15	15	20	16	22	16	12	8	4	1
Bladder ...	516	2	—	—	5	7	16	26	42	58	90	103	73	53	33	8
Prostate ...	429	2	1	—	2	3	3	9	18	33	81	80	104	62	22	9
45 Testes ...	110	4	—	7	23	17	10	8	6	10	7	5	5	6	2	—
Brain ...	74	—	4	3	18	5	12	7	10	5	3	2	3	1	1	—
Bones (jaw excepted) ...	271	7	11	38	24	8	18	16	32	27	34	28	12	9	5	2
Other specified organs ...	598	16	17	21	30	26	38	61	63	86	90	73	41	27	8	1
Abdominal cavity, organ unspecified.	105	3	1	4	4	4	10	7	8	11	19	12	14	7	1	—
Other and undefined ...	439	3	3	8	14	15	32	41	49	61	61	57	44	31	14	6
DEATHS IN INSTITUTIONS.																
Total ...	4,933	28	32	48	133	147	293	418	607	740	886	737	490	242	91	41
39 Lip ...	71	—	—	—	—	1	—	3	2	10	12	14	11	11	6	—
Tongue ...	398	—	—	—	—	5	26	39	61	71	73	60	33	21	7	2
Mouth ...	167	—	—	—	4	6	9	23	21	35	26	27	6	7	2	1
Jaw ...	176	1	2	4	4	4	12	18	26	36	32	20	9	3	4	—
Pharynx ...	62	1	2	2	—	2	1	5	12	11	7	7	10	1	—	1
40 Esophagus ...	405	—	—	—	1	8	16	38	71	74	90	67	29	8	3	—
Stomach ...	847	—	—	1	18	25	64	79	105	125	168	138	85	24	12	3
Liver and gall bladder ...	274	—	—	—	2	6	16	24	41	42	58	31	34	12	5	3
Mesentery and peritoneum ...	37	2	1	4	5	2	4	7	1	2	1	7	1	—	—	—
41 Intestines ...	590	—	3	3	14	22	31	57	73	95	97	93	58	33	9	2
Rectum ...	505	—	—	3	18	11	29	29	53	72	98	76	65	40	9	2
43 Breast ...	4	—	—	—	—	1	—	—	2	1	—	—	—	—	—	—
44 Skin... ...	194	—	—	—	5	4	7	14	12	16	29	30	31	21	14	11
Larynx ...	155	—	—	—	—	2	5	15	20	34	29	33	9	8	—	—
Lung and pleura ...	84	1	2	2	7	2	10	6	15	13	14	7	3	2	—	—
Pancreas ...	134	—	—	1	9	5	6	14	15	25	29	8	16	4	2	—
Kidneys and suprarenal glands ...	60	13	6	1	3	2	6	5	3	6	6	3	—	—	—	—
Bladder ...	154	2	—	—	2	5	7	5	16	23	28	29	20	10	6	1
Prostate ...	126	1	—	—	1	2	1	2	8	11	30	23	26	18	3	—
45 Testes ...	30	—	—	1	7	5	2	3	2	5	—	—	—	2	1	—
Brain ...	40	—	2	11	1	7	3	6	4	2	2	2	—	—	—	—
Bones (jaw excepted) ...	84	3	2	14	7	6	9	6	8	8	10	8	—	1	1	1
Other specified organs ...	177	2	9	6	10	13	16	18	19	26	23	20	12	1	1	1
Abdominal cavity, organ unspecified.	21	—	1	2	2	3	4	—	2	1	2	2	1	1	—	—
Other and undefined ...	138	2	3	4	3	4	13	13	20	15	15	19	14	8	2	3



TABLE LIV.—ENGLAND AND WALES, 1913.—SITES OF FATAL CANCER—FEMALES.

		All Ages.	0-	5-	15-	25-	35-	40-	45-	50-	55-	60-	65-	70-	75-	80-	85-
		ALL DEATHS.															
Total...		22,021	60	45	130	489	820	1,373	1,965	2,480	2,801	3,078	3,062	2,728	1,806	813	371
39	Lip	21	—	—	—	1	1	—	—	2	1	4	3	5	1	3	—
	Tongue	71	—	—	—	1	6	6	5	4	10	12	8	9	6	2	2
	Mouth	52	—	2	1	—	1	3	4	9	7	5	11	7	2	—	—
	Jaw	183	3	3	1	5	9	11	17	33	17	21	23	21	11	7	1
	Pharynx	71	—	1	3	3	4	6	7	9	8	9	6	7	3	2	3
40	Œsophagus	408	—	—	—	13	26	35	49	43	30	62	56	50	32	10	2
	Stomach	3,299	—	1	7	35	91	121	207	299	412	530	564	516	330	134	52
	Liver and gall bladder	2,574	6	2	4	24	33	78	168	228	346	433	432	414	266	104	36
	Mesentery and peritoneum	269	—	2	4	7	11	13	23	30	37	39	41	20	24	15	3
41	Intestines	2,445	1	—	6	41	53	75	151	203	263	352	421	425	271	135	48
	Rectum	1,376	—	—	7	40	44	66	94	123	159	204	225	206	135	46	27
	Ovary and fallopian tube	555	—	1	16	27	30	57	70	86	81	62	50	40	26	4	5
42	Uterus	4,062	—	—	5	111	228	402	552	621	598	536	445	297	176	64	27
	Vagina and vulva	251	2	—	4	6	7	9	28	30	34	35	33	32	25	4	4
43	Breast	3,852	—	—	1	81	177	359	432	502	512	450	443	377	264	159	95
44	Skin	313	3	—	5	5	4	10	11	21	22	29	34	62	44	39	24
	Larynx	138	—	—	1	8	8	12	25	22	19	16	7	8	9	3	—
	Lung and pleura	178	—	1	10	8	13	13	11	26	19	28	18	17	11	2	1
	Pancreas	302	—	—	—	4	1	15	22	28	39	55	60	42	27	6	3
	Kidneys and suprarenal glands	149	17	4	1	5	5	7	13	13	25	18	10	19	7	3	2
	Bladder	249	3	—	—	1	1	5	18	21	24	36	48	36	33	13	10
45	Brain	77	2	2	6	11	12	6	6	12	7	7	2	3	1	—	—
	Bones (jaw excepted)	225	4	12	28	22	7	9	12	19	26	24	22	15	16	6	3
	Other specified organs	459	16	10	17	20	24	30	30	56	53	60	46	50	30	11	6
	Abdominal cavity, organ unspecified.	180	1	—	1	3	12	8	11	19	19	19	29	26	20	8	4
	Other and undefined	262	2	4	4	10	14	20	19	30	34	34	28	21	20	12	10
		DEATHS IN INSTITUTIONS.															
Total...		4,241	21	23	51	184	230	347	453	560	553	546	525	384	226	95	43
39	Lip	4	—	—	—	—	—	—	—	1	—	1	1	1	—	—	—
	Tongue	12	—	—	—	—	—	—	—	2	2	5	1	2	—	—	—
	Mouth	13	—	2	1	—	—	1	—	3	1	1	2	1	—	—	—
	Jaw	43	—	1	1	1	5	2	4	12	2	2	6	3	4	—	—
	Pharynx	13	—	—	—	4	2	1	—	2	—	—	—	—	1	—	—
40	Œsophagus	82	—	—	—	5	3	14	10	10	4	12	11	9	3	1	—
	Stomach	472	—	—	4	13	25	28	40	73	66	73	74	44	15	13	4
	Liver and gall bladder	273	—	—	—	10	6	14	20	25	43	42	52	36	18	6	1
	Mesentery and peritoneum	52	—	1	1	4	3	3	4	8	7	8	2	4	4	3	—
41	Intestines	540	—	—	3	23	29	27	47	69	65	83	75	69	36	12	2
	Rectum	320	—	—	—	15	14	27	34	30	43	55	50	27	22	2	1
	Ovary and fallopian tube	178	—	1	10	10	15	24	23	37	24	14	6	8	5	—	1
42	Uterus	988	—	—	2	43	64	107	141	141	157	122	108	49	35	11	8
	Vagina and vulva	56	1	—	1	4	4	2	6	6	7	4	7	9	5	—	—
43	Breast	601	—	—	1	18	29	63	72	66	79	60	69	63	41	28	12
44	Skin	70	1	—	—	2	3	—	1	4	2	6	13	17	7	7	7
	Larynx	38	—	—	—	2	3	5	8	8	4	4	1	—	3	—	—
	Lung and pleura	39	—	—	6	3	3	1	6	8	3	4	2	2	—	—	1
	Pancreas	79	—	—	—	2	—	4	8	6	12	15	14	8	8	1	1
	Kidneys and suprarenal glands	39	8	1	—	2	3	2	3	3	5	5	3	3	1	—	—
	Bladder	61	2	—	—	—	—	—	7	9	2	14	12	7	6	—	2
45	Brain	37	2	2	4	8	5	3	4	7	—	1	—	1	—	—	—
	Bones (jaw excepted)	58	1	7	8	7	3	1	2	8	7	5	3	4	1	1	—
	Other specified organs	98	5	7	7	8	4	6	12	15	8	8	6	10	—	1	1
	Abdominal cavity, organ unspecified.	25	—	—	1	—	5	4	1	4	2	1	3	2	2	—	—
	Other and undefined	50	1	1	1	4	4	5	3	8	4	2	3	7	2	3	2

The proportion of deaths occurring in institutions differs greatly in the case of different organs. It is greatest—just over 50 per cent.—in the case of brain cancer, and lowest in the case of cancers of the breast and liver. These differences are no doubt to some extent dependent upon differences in ease of diagnosis, but there are also other factors concerned. Table LV shows that, however originating, they are fairly constant from year to year. It shows, moreover, that the different seats of disease vary not only in the frequency with which they lead to death in an institution for the sick, but in the relative frequency with which these institutions are resorted to by persons of the two sexes. Thus the proportion of females dying in institutions from

TABLE LV.—ENGLAND AND WALES, 1911-1913.—DEATHS IN INSTITUTIONS PER CENT. OF TOTAL DEATHS FROM CANCER OF VARIOUS SITES.

		1911.	1912.	1913.			1911.	1912.	1913.
TOTAL	{ M. 30 F. 20	30	30	29	Breast	{ M. 9 F. 15	9	10	18
Lip	{ M. 28 F. 22	28	29	32	Skin	{ M. 35 F. 20	35	35	34
Tongue	{ M. 42 F. 25	42	43	40	Larynx	{ M. 33 F. 18	33	37	39
Mouth	{ M. 40 F. 30	40	40	38	Lung and pleura	{ M. 33 F. 19	33	32	32
Jaw	{ M. 41 F. 33	41	36	37	Pancreas	{ M. 36 F. 29	36	40	42
Pharynx	{ M. 36 F. 22	36	38	31	Kidneys and supra-renal glands.	{ M. 30 F. 22	30	35	33
Œsophagus	{ M. 37 F. 17	37	34	34	Bladder	{ M. 32 F. 23	32	29	30
Stomach	{ M. 25 F. 16	25	26	23	Prostate		24	28	29
Liver and gall bladder	{ M. 19 F. 14	19	17	16	Testes		18	35	27
Mesentery and peritoneum.	{ M. 28 F. 20	28	33	30	Brain	{ M. 57 F. 40	57	60	54
Intestines	{ M. 30 F. 22	30	31	31	Bones (jaw excepted)	{ M. 26 F. 26	26	31	31
Rectum	{ M. 25 F. 25	25	27	29	Ovary and fallopian tubes		32	30	32
					Uterus		24	22	24
					Vagina and vulva		21	20	22

TABLE LVI.—ENGLAND AND WALES, 1913.—MORTALITY PER MILLION LIVING AT SEVERAL AGES FROM CANCER OF VARIOUS PARTS OF THE BODY.

Part of Body affected.	All Ages.	0-	25-	35-	40-	45-	50-	55-	60-	65-	70-	75-	80-	85-
Tongue { M. 56 F. 4	56	—	1	11	45	102	185	274	324	423	438	499	364	302
Œsophagus { M. 66 F. 21	66	—	1	9	31	88	234	346	467	556	492	453	451	345
Stomach { M. 204 F. 173	204	0	22	57	151	285	494	777	1,341	1,699	2,173	2,020	1,649	1,292
Liver & gall bladder { M. 94 F. 135	94	1	5	23	51	117	232	368	580	768	1,045	1,167	955	861
Intestines { M. 106 F. 128	106	1	11	37	61	150	200	393	603	888	1,194	1,344	1,441	775
Rectum { M. 98 F. 72	98	1	15	25	60	96	204	376	605	821	1,049	1,344	1,041	948
Uterus { M. — F. 213	—	—	35	165	339	540	728	873	966	988	918	945	714	640
Breast { M. 1 F. 202	1	—	—	2	—	1	8	6	4	11	4	15	—	—
Skin { M. 32 F. 16	32	0	4	9	24	37	45	79	160	182	372	630	833	1,507



cancer of the rectum is almost equal to that of males, and for brain cancer is not much less; but in the case of the œsophagus the proportion of males is about twice that of females.

A few of the most important sites only have been selected for incorporation in Table LVI, which shows the rates of mortality at different ages from cancer of certain organs, and in Tables LVII and LVIII, which compare the returns of deaths at various ages in private houses with those occurring in institutions. The age distributions shown in Table LVI are very similar to those tabulated in previous reports, the same characteristic differences between the ages at which the chief brunt of mortality falls upon those suffering from disease of the various organs reappearing year after year. Even so small a point as the later maximum of mortality from cancer of the œsophagus and stomach in the female sex is reproduced year after year. It is evident, therefore, that these peculiarities of age distribution are of significance, though their explanation may not always be apparent at present.

TABLE LVII.—ENGLAND AND WALES, 1913.—SITES OF FATAL CANCER: PERCENTAGE OF DEATHS AT VARIOUS AGES TO TOTAL DEATHS FROM CANCER AT THE SAME AGES.

	0—		25—		35—		45—		55—		65—		75—		85—		All Ages.	
	Instn.	Private.	Instn.	Private.	Instn.	Private.	Instn.	Private.	Instn.	Private.	Instn.	Private.	Instn.	Private.	Instn.	Private.	Instn.	Private.
MALES.																		
Tongue...	—	—	—	1.7	7.0	5.1	9.8	7.1	8.9	5.2	7.6	4.6	8.4	3.8	4.9	3.1	8.1	5.0
œsophagus	—	—	0.8	0.4	5.5	3.3	10.6	7.9	10.1	7.9	7.8	6.2	3.3	4.8	—	4.9	8.2	6.4
Stomach	0.9	0.7	13.5	20.3	20.2	23.3	18.0	23.7	18.0	23.8	18.2	25.3	10.8	20.9	7.3	16.6	17.2	23.4
Liver and gall bladder.	—	5.2	1.5	5.2	5.0	9.9	6.3	11.4	6.2	11.6	5.3	12.8	5.1	12.3	7.3	10.4	5.6	11.7
Intestines	5.6	3.3	10.5	7.8	12.0	9.6	12.7	8.5	11.8	9.7	12.3	12.7	12.6	14.0	4.9	9.8	12.0	10.9
Rectum...	2.8	2.0	13.5	11.2	9.1	9.0	8.0	8.5	10.5	10.1	11.5	11.3	14.7	12.1	4.9	12.3	10.2	10.4
Skin	—	0.7	3.8	3.4	2.5	4.0	2.5	2.2	2.8	2.3	5.0	2.6	10.5	6.2	26.8	14.7	3.9	3.1
Other organs	90.7	88.1	56.4	50.0	38.7	35.8	32.1	30.7	31.7	29.4	32.3	24.5	34.6	25.9	43.9	28.2	34.8	29.1
All sites	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
FEMALES.																		
œsophagus	—	—	2.7	2.6	2.9	2.7	2.0	2.1	1.5	1.6	2.2	1.8	1.2	1.7	—	0.6	1.9	1.8
Stomach	4.2	2.9	7.1	7.2	9.2	9.8	11.2	11.5	12.6	16.8	13.0	19.7	8.7	19.0	9.3	14.6	11.1	15.9
Liver and gall bladder.	—	8.6	5.4	4.6	3.5	5.6	4.4	10.2	7.7	14.5	9.7	15.5	7.5	15.1	2.3	10.7	6.4	12.9
Intestines	3.2	2.9	12.5	5.9	9.7	4.5	11.5	6.9	13.5	9.8	15.8	14.4	15.0	15.6	4.7	14.0	12.7	10.7
Rectum...	—	5.0	8.2	8.2	7.1	4.3	6.3	4.5	8.9	5.5	8.5	7.3	7.5	6.8	2.3	7.9	7.5	5.9
Uterus	2.1	2.1	23.4	22.3	29.6	28.4	27.8	26.0	25.4	17.9	17.3	12.0	14.3	8.4	18.6	5.8	23.3	17.3
Breast	1.1	—	9.8	20.7	15.9	27.5	13.6	23.2	12.6	17.2	14.5	14.1	21.5	15.4	27.9	25.3	14.2	18.3
Skin	1.1	5.0	1.1	1.0	0.5	0.7	0.5	0.8	0.7	0.9	3.3	1.4	4.4	3.0	16.3	5.2	1.7	1.4
Other organs	88.3	73.5	29.8	27.5	21.6	16.5	22.7	14.8	17.1	15.8	15.7	13.8	19.9	15.0	18.6	15.9	21.2	15.8
All sites	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

The object of the separate tabulation of institutional deaths in Tables LIII, LIV, LVII and LVIII is to compare the experience of institutions, where presumably the details of the cause of death have as a rule been confirmed by *post mortem* examination, with the certification of other deaths from cancer in the case of which such facilities are, as a rule, lacking.

It cannot be assumed, however, that the institutional deaths are a fair sample of the whole. That they are subject to some selection by age is shown by the fact that the average age at death is lower in institutions than elsewhere. The proportion under the age of 65 amounts to 68.7 per cent. of deaths in institutions but only to 56.6 per cent. of other deaths (Tables LIII and LIV); and Table LVIII shows that in both sexes more deaths occur at 55-65 than at any other period in institutional practice, but that in private practice the period 65-75 furnishes the largest number of deaths. Moreover, it is very possible that there may be greater relative frequency of cancer of certain sites amongst that section of the population which chiefly furnishes the deaths reported from institutions. The tables, however, are of interest as showing, in institutional and private

practice respectively, the chance of a cancer at any given age in either sex affecting any particular organ (Table LVII); and the chance of a cancer of any organ occurring at any given age (Table LVIII). The principal features in these tables also recur with considerable regularity from year to year.

TABLE LVIII.—ENGLAND AND WALES, 1913.—SITES OF FATAL CANCER: PERCENTAGE OF DEATHS AT VARIOUS AGES TO DEATHS FROM CANCER OF THE SAME SITE AT ALL AGES.

	0—		25—		35—		45—		55—		65—		75—		85—		All Ages.	
	Instn.	Private.	Instn.	Private.	Instn.	Private.	Instn.	Private.	Instn.	Private.	Instn.	Private.	Instn.	Private.	Instn.	Private.	Instn.	Private.
MALES.																		
Tongue	—	—	7.8	25.1	36.2	23.4	7.0	0.5	100.0	—	0.7	5.5	23.8	30.9	28.6	9.7	0.8	100.0
œsophagus	—	—	0.2	5.9	26.9	40.6	23.7	2.7	—	100.0	—	0.1	2.7	20.5	36.2	29.9	9.6	1.0
Stomach	0.1	2.1	10.5	21.7	34.6	26.3	4.3	0.4	100.0	0.0	1.7	5.4	16.9	30.1	33.4	11.5	1.0	100.0
Liver and gall bladder	—	—	0.7	8.0	23.7	36.6	23.7	6.2	1.1	100.0	0.6	0.9	4.6	16.2	29.3	33.7	13.5	1.2
Intestines	1.0	2.4	9.0	22.0	32.6	25.6	7.1	0.3	100.0	0.4	1.4	4.8	13.0	26.6	36.0	16.6	1.2	100.0
Rectum	0.6	3.6	7.9	16.2	33.7	27.9	9.7	0.4	100.0	0.2	2.1	4.7	13.6	28.9	33.9	15.0	1.6	100.0
Skin	—	—	2.6	5.7	13.4	23.2	31.4	18.0	5.7	100.0	0.3	2.1	6.9	11.7	21.8	25.6	25.2	6.4
Other organs	5.7	4.4	9.9	19.1	30.1	23.1	6.7	1.0	100.0	3.9	3.3	6.6	17.6	29.8	26.0	11.5	1.3	100.0
All sites	2.2	2.7	8.9	20.8	32.9	24.9	6.8	0.8	100.0	1.3	1.9	5.4	16.7	29.6	30.8	12.9	1.4	100.0
FEMALES.																		
œsophagus	—	—	6.1	20.7	24.4	19.5	24.4	4.9	—	100.0	—	2.5	13.5	22.1	23.3	26.3	11.7	0.6
Stomach	0.8	2.8	11.2	23.9	29.6	25.0	5.9	0.8	100.0	0.1	0.8	5.6	13.9	28.4	34.1	15.4	1.7	100.0
Liver and gall bladder	—	—	3.7	7.3	16.5	31.1	32.2	8.8	0.4	100.0	0.5	0.6	4.0	15.3	30.2	32.9	15.0	1.5
Intestines	0.6	4.3	10.4	21.5	27.2	26.7	8.9	0.4	100.0	0.2	0.9	3.8	12.5	24.5	36.9	18.8	2.4	100.0
Rectum	—	—	4.7	12.8	20.0	30.6	24.1	7.5	0.3	100.0	0.7	2.4	6.5	14.5	25.1	33.4	14.9	2.5
Uterus	0.2	4.4	17.3	28.5	28.2	15.9	4.7	0.8	100.0	0.1	2.2	14.9	29.1	27.8	19.0	6.3	0.6	100.0
Breast	0.2	3.0	15.3	23.0	23.0	22.0	11.5	2.0	100.0	—	1.9	13.7	24.5	25.2	21.2	10.9	2.6	100.0
Skin	1.4	2.9	4.3	7.1	11.4	42.9	20.0	10.0	100.0	2.9	1.2	4.5	11.1	17.7	27.2	28.4	7.0	100.0
Other organs	9.4	6.1	13.9	25.6	20.9	16.0	7.2	0.9	100.0	3.7	3.0	9.5	18.3	26.9	24.3	12.4	1.9	100.0
All sites	2.2	4.3	13.6	23.9	26.0	21.4	7.6	1.0	100.0	0.8	1.7	9.1	19.3	26.9	27.5	12.9	1.8	100.0



TABLE LIX.—CANCER OF CERTAIN SITES.—ENGLAND AND WALES.—NUMBERS OF DEATHS OF SINGLE AND MARRIED WOMEN AND MORTALITY PER MILLION LIVING AT AGES 15 YEARS AND UPWARDS, 1911-13.

		Total at Ages 15 Years and upwards.	15-	20-	25-	30-	35-	40-	45-	50-	55-	60-	65-	70-	75-	80-	85 and upwards.
DEATHS.																	
Ovary	Unmarried	429	17	13	20	17	32	48	71	57	60	29	28	21	14	1	1
	Married and Widowed.	1,110	—	5	19	34	67	101	149	178	151	140	124	79	44	14	5
Uterus	Unmarried	1,072	6	11	16	38	43	109	125	151	169	129	104	74	56	33	8
	Married and Widowed.	10,655	—	2	56	228	608	1081	1476	1668	1539	1391	1144	774	453	171	64
Breast	Unmarried	2,147	2	4	8	40	112	189	275	287	282	251	229	213	133	73	49
	Married and Widowed.	8,868	—	—	20	137	409	773	1062	1116	1157	1061	957	943	657	366	210
DEATH-RATES PER MILLION LIVING.																	
Ovary	Unmarried	60*	3	3	9	14	37	76	142	150	218	137	174	178	211	31	63
	Married and Widowed.	31*	—	4	7	10	21	35	59	83	86	97	105	94	90	60	46
Uterus	Unmarried	169*	1	3	7	31	50	172	250	397	613	611	646	627	844	1020	504
	Married and Widowed.	293*	—	2	20	68	187	374	581	773	873	967	970	917	928	730	584
Breast	Unmarried	346*	0	1	4	32	129	299	550	755	1023	1189	1423	1806	2005	2256	3088
	Married and Widowed.	238*	—	—	7	41	126	268	418	517	657	737	812	1117	1346	1562	1916

\* Standardized to a million of persons aged 15 years and upwards, 1901.

Table LIX has been prepared in order to investigate the influence of marital condition upon mortality from cancer of the female genital organs. This effect is seen to be very considerable. During the three years 1911-1913 (which have been considered jointly in order to secure a basis of facts less liable to chance fluctuations than the records of a single year), the mortality of single women from cancer of the ovary has been twice as great as that of the married, due allowance being made for the differing age-distributions of these two sections of the population. The mortality of the unmarried from cancer of the breast similarly exceeded that of the married by 45 per cent., but from cancer of the uterus the married suffered from a mortality 73 per cent. greater than the single. For the sake of convenience the term married is used as including the widowed and divorced.

These relationships differ very considerably from some of those deduced from their material by surgical writers dealing with the subject, but so far as can be ascertained no comparison has hitherto been published based upon records on the scale of those now under review or so standardized as to make accurate allowance in the comparison for the widely varying age-distributions of the single and the married. A recent American series of cases, stated by the authority dealing with it to amount to "a number much higher than any that served as the basis for the deductions of previous writers," numbers little over 5 per cent. of those now being considered. Moreover, it may be noted that previous comparisons of this kind have not taken into account the variations in age-distribution of the mortality from each of these forms of cancer, as is done in Table LIX. Unless this allowance is made, false conclusions may easily be arrived at. For instance the table shows that cancer of the ovary affects young women much more, in proportion to the total mortality it occasions, than does cancer of the breast. If the comparison of marital condition in the two cases were made without taking this fact into account, it would appear that, relatively to breast cancer, the excess of mortality in single women from ovarian disease was greater than it is, because a larger proportion of the deaths occur at those early ages at which single women are relatively numerous. The share of single women in mortality from ovarian cancer should be greater, other things being equal, than their share in that from mammary cancer, on account of this peculiarity of the age incidence of mortality in the two cases—a factor in the situation which must be allowed for in making a valid comparison.

Were it not for this consideration, a fairly satisfactory indication of the relative prevalence of each form of the disease amongst the single and the married would be afforded by a simple statement of the proportion of the total deaths contributed by each class from each form and from all forms of cancer. These proportions have been as follows during the three years dealt with:—

	Single.	Married and Widowed.
Ovary	27.9	72.1
Uterus	9.1	90.9
Breast	19.5	80.5
All sites	15.0	85.0

It is necessary to consider each of these proportions for the various organs in relation to that for cancer in general in order to obtain from the latter some measure of the proportion in which a disease with the age-incidence of cancer might be expected to take toll of these two sections of the population. For want of such a standard, erroneous conclusions appear in the past to have been founded upon data which, if somewhat scanty, were sound enough. Thus one English authority, dealing with cancer of the breast, finds that about 20 per cent. of his cases are single women—just the proportion in the above table. The conclusion drawn, however, from this correct observation, is that "the above facts show how erroneous is the common assertion that the unmarried women are more liable to carcinoma of the breast than the married"—a "common assertion" vindicated by Table LIX.

It will be seen that the results obtained by taking the proportions of single and married in the case of each organ, without distinction of age, are in general agreement with the relations between the standardized rates in Table LIX. The latter however must be preferred, not only as taking into consideration the particular age-incidence of each form of cancer, but as capable of comparison with similar rates for all other causes of death among males or females. With this in view the population chosen in standardization is that of persons, not women, in 1901, as by this means, given the necessary data (which are not as yet obtainable for males) reliable comparisons can be instituted between the sexes when the investigation is extended to other forms of cancer and other diseases altogether which affect both sexes (see page xx). The comparison of proportions married on the other hand is restricted to cancer, since in the case of other diseases the age-incidence differs so greatly that such a comparison would be totally worthless. Moreover, in Table LIX the comparisons by marital condition are independent of each other, whereas the comparisons by proportion married only acquire significance when related to the proportion for cancer as a whole. As cancer mortality in general will presumably be found, when investigated later, to bear more heavily on one or other section of the female community, the precise significance of the proportions ascertained in each case cannot be determined by comparison with this standard.

While most English figures published upon the subject appear to point to about 20 per cent. as the proportion of deaths from cancer of the breast occurring amongst the unmarried, and a recent American series of 600-700 cases yields a ratio of 17 per cent. as occurring amongst virgins, it is remarkable that several series of cases reported by German writers yield very much lower proportions—10-16 per cent. of all carcinomas in "sterile" women, 9.75 per cent. in women who have not borne children, 9.75 per cent. in the unmarried. If these three observations truthfully represent the facts of the case in Germany then it would seem that in that country cancer of the breast must really be more common in the married\*. The low figures where sterile married women are included with the single are especially remarkable. It may well be that the preferable distinction to draw where possible is that between women who have and who have not borne children, on the grounds that only in the case of the former has the organ been put to its natural use. If it is objected, however, to the figures in Table LIX that the unmarried include a number of women who have borne children, it may be pointed out that the proportion of unmarried nursing mothers must be comparatively low, particularly in view of the movement of population to the towns and the decline in popularity of the wet nurse.

It should also be remembered that the figures in the table include sarcoma as well as other forms of cancer, whereas these are excluded from most other series. Their

\* The deficiency in the German figures for single women cannot be accounted for by excess in the proportion of the married in their population, for it is on record that in Prussia in 1895-6 the deaths of single women from cancer in general amounted to 17 per cent. of the total female mortality, as against the 15 per cent. just quoted for England and Wales in 1911-13.



number however is small (see page 571) and they can easily be excluded when consideration of the subject is resumed at a later date.

It will be seen from the table that during the period of active sexual life there is practical equality of mortality from breast cancer amongst the single and the married, but that after 45 the excess amongst the single becomes very pronounced. This fact appears to be in direct conflict with the statement of one of the German authorities above referred to, that "only a small number of women with late carcinoma have not nursed."

The great excess of mortality from cancer of the uterus amongst the married shown in Table LIX is in accordance with the generally accepted views upon this subject. The American authority quoted above, it is true, considers that "child bearing has not the direct etiological bearing on the disease which is ascribed to it," but his figures would scarcely appear to support his conclusion, for he reports a proportion of virgins amongst women dying from cancer of the breast about three times as great as amongst those from uterine cancer.

It is regretted that it has not been possible in Table LIX to distinguish cancer of the body of the uterus, which is stated not to be more common in mothers than other women or even to be commoner in women who have not given birth, from cancer of the cervix, which is thought to result from injury in labour; but few of the certificates received record cancer of the body (page 567). Cancer of the cervix however is often mentioned, and it will therefore be possible on another occasion to institute comparison for cases returned as such.

It will be noticed that in the case of uterine disease the difference in mortality between married and single is much greater before than after 50, and practically disappears after 75. Thus the difference is greatest with uterine cancer where least with mammary, and *vice versa*, but in each case it is the mortality of the single which increases relatively to that of the married with the advance of age.

The exclusion or separate treatment of sarcoma would be especially desirable in the case of cancer of the ovary where sarcoma is relatively more frequent than in the uterus or breast (see page 567). Here the excess of mortality amongst the single is very great at all ages after 35, at which the number of deaths is sufficient to attach significance to the figures. The effect of marital condition upon mortality would seem to be at its maximum in the case of the ovary, but has not perhaps attracted so much attention as in the case of the uterus and breast—presumably on account of the lesser frequency of the condition.

The rates of increase in mortality from cancer of various organs differ greatly. In both sexes the most rapid rates of increase are furnished by cancer of the alimentary tract, especially the intestine and stomach. Disease of the female breast also claims a rapidly increasing number of victims, while mortality from uterine cancer is diminishing. It is possible that there may be some connexion between the latter two facts and the relation of mortality to marital condition brought out in Table LIX. It would appear from that table that child-bearing increases the risk of uterine and diminishes that of mammary cancer, and it is therefore only to be expected that the present decrease in fertility should be accompanied by an increase in mammary but not in uterine cancer. The mortality ascribed to cancer of the liver remains almost stationary, in spite of the general increase.

The scheme for tabulation of deaths by the full cause as certified, including secondary and complicating causes, has now progressed so far as to deal with cancer in this Report, and deaths from this cause are accordingly presented in the fullest detail of causation which has been found practicable, on pages 548-587. For the reason there stated, the deaths dealt with are those registered during 1912, not 1913; and considerations of space have forbidden the statement of the precise form of malignant growth returned in combination with detailed site of growth and of secondary growths, secondary causes of deaths, and the sex and age of the deceased person. On page 583, however, will be found a complete statement of the varieties of growth reported, with sex and age of their victims, but without information as to the sites affected. It will be seen from this table that in the great majority of cases the information on the certificate does not extend beyond the distinction of sarcoma from carcinoma, while in over 31 per cent. of the returns even this is still to seek. This distinction is drawn for each site in which malignant disease was recorded in the tables marked B, the first three lines of which indicate the numbers of deaths classified in each case as due to carcinoma, sarcoma and "cancer," respectively.

Attention may very briefly be drawn to a few points of interest emerging from the various tables which are not brought out by the routine tabulation as carried out in other years.

Cancer of the lower jaw is relatively very much less frequent in females than cancer of the upper jaw, 44 per cent. of the persons returned as dying from the latter affection being females as against only 16 per cent. from the former (page 533). This difference may be compared with the fact that the very marked preponderance of male mortality from cancer of all parts of the upper alimentary canal down to and including the œsophagus, as well as of the larynx, does not apply to the naso-pharynx (page 557).

Where the upper alimentary tract or the larynx is the seat of cancer there is, as might be expected, especial frequency of pneumonia and other respiratory complications.

Cancer of the large intestine is returned with considerably greater frequency for females than for males, whereas in the case of the small intestine and of the rectum, the relation of the sexes is reversed (page 563).

Secondary growths are mentioned with especial frequency on certified cases relating to breast cancer. Deaths so certified amount to over 33 per cent. in the case of the breast (page 571), whereas in the case of the other most important sites in the aggregate (excluding the liver, which is always, in the absence of a definite statement to the contrary, assumed to be secondary to any other site mentioned along with it), this proportion falls short of 10 per cent.

The breast affected is mentioned in but a small minority of certificates (page 571), but where the information is forthcoming there is practical equality in the frequency with which the two sides of the body are affected.

The deaths from rodent ulcer numbered 219 (page 574). Of the 130 cases in which the site of disease was recorded, all but 7 involved the head or neck (pages 572-574).

Cancer of the lung differs from that of practically all other organs (except lymphatic glands), in being returned more frequently in association with disease of some other organ, to which it is presumably secondary, than otherwise (pages 585 and 580); the liver, on the other hand, was returned without mention of a primary growth elsewhere on no less than 3,887 out of the 5,174 certificates on which any mention of it was made (pages 558 and 584).

The conditions returned as complicating deaths from cancer are summarised on pages 586 and 587. Of those which are not presumably in some if not all cases dependent upon the existence of the growth, the most important are tuberculosis, 78 cases; diabetes, 54 cases; cerebral hæmorrhage, 101 cases; valvular disease of the heart, 110 cases; or other or unspecified forms of heart disease, 207 cases; Bright's disease, 195 cases; and child-birth, 16 cases.

**46. Other Tumours (situation undefined).**—This title includes only tumours not ascertained to be malignant, and (excepting only tumours of the pituitary body, for which there is no appropriate local heading) of which the situation either cannot be ascertained or is of an ill-defined nature. Other benign tumours, *i.e.*, those returned as affecting the various organs, are classified in the International List under the organ concerned; but in order to secure a comprehensive presentation of all deaths attributed to tumours, all those not returned as due to cancer are assembled in Table LX from the various headings to which that list of causes of death allocates them. It will be convenient, therefore, to deal here not only with tumours of undefined situation (46) but with all other tumours not returned as malignant.

The table includes 1,891 deaths, of which 988 were returned as due to tumours of non-malignant nature, and 903 as due to tumours the nature of which could not be ascertained. It will be seen that even if all the latter could be assumed to have been malignant the mortality from cancer would be increased by only a little over 2 per cent. Of these 903 cases of undetermined nature no less than 618 were cerebral tumours. Table LXXVII shows that it is only in a minority of cases certified simply as cerebral tumour that the nature of the growth can be stated. Replies were received to 654 inquiries as to such cases, but only 242 of these added to the information already given, transferring 29 deaths to tubercle, 47 to syphilis, and 70 to cancer. Where the facts can be ascertained, therefore, the deaths properly referable to cancer form only a minority of these cases.

The age-distribution of the deaths from tumour of unstated nature is sufficient in itself to show that a great many of them were non-malignant, for it does not at all resemble that of cancer mortality. A large proportion of the deaths, especially of those from cerebral tumour, occur before middle age, so it seems probable that these latter at least include a fair proportion of tuberculous cases, as more than half the deaths returned from tuberculous brain tumour occur at ages under 20 years (Annual Report for 1912, page 589). About half the deaths from cerebral syphilis are at ages under 45 (*Ib.*, page 608).



TABLE LX.—ENGLAND AND WALES, 1913.—TUMOURS NOT RETURNED AS MALIGNANT.

Part affected.	All Ages.		0—		15—		35—		45—		55—		65—		75—	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
<i>Tumours classed with other disease of organs affected.</i>																
74C. Brain ...	Cyst ...	8	9	—	3	3	2	3	2	1	1	—	1	—	—	—
	Fibroma ...	3	4	—	—	—	1	—	1	2	2	1	—	—	—	—
	Glioma ...	75	81	10	17	20	15	16	13	14	17	11	14	4	4	1
	Other benign ...	6	7	—	2	2	2	1	1	1	1	1	—	1	1	—
	Nature unstated ...	303	315	47	43	72	70	53	58	62	60	45	49	21	30	3
	<b>Total (74C) ...</b>	<b>395</b>	<b>416</b>	<b>57</b>	<b>65</b>	<b>97</b>	<b>90</b>	<b>73</b>	<b>75</b>	<b>80</b>	<b>80</b>	<b>59</b>	<b>64</b>	<b>26</b>	<b>36</b>	<b>3</b>
129. Uterus ...	Fibroid ...	—	256	—	—	—	14	—	74	—	76	—	43	—	39	—
	Fibro-cystic ...	—	3	—	—	—	—	—	1	—	1	—	—	—	1	—
	Fibro-myoma ...	—	29	—	—	—	3	—	3	—	16	—	3	—	2	—
	Myoma ...	—	14	—	—	—	2	—	3	—	4	—	2	—	3	—
	Polypus ...	—	3	—	—	—	—	—	1	—	2	—	—	—	—	—
	Other benign ...	—	4	—	—	—	—	—	—	—	2	—	1	—	—	—
	Nature unstated ...	—	7	—	—	—	2	—	—	—	2	—	1	—	2	—
	<b>Total (129) ...</b>	<b>—</b>	<b>316</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>21</b>	<b>—</b>	<b>82</b>	<b>—</b>	<b>103</b>	<b>—</b>	<b>50</b>	<b>—</b>	<b>47</b>	<b>—</b>
131. Ovary ...	Cyst ...	—	211	—	1	—	26	—	31	—	41	—	41	—	46	—
	Papilloma ...	—	6	—	—	—	—	—	1	—	3	—	1	—	1	—
	Other benign ...	—	9	—	—	—	—	—	1	—	—	—	1	—	—	—
	Nature unstated ...	—	44	—	—	—	2	—	—	—	11	—	16	—	9	—
	<b>Total (131) ...</b>	<b>—</b>	<b>270</b>	<b>—</b>	<b>1</b>	<b>—</b>	<b>28</b>	<b>—</b>	<b>35</b>	<b>—</b>	<b>55</b>	<b>—</b>	<b>59</b>	<b>—</b>	<b>60</b>	<b>—</b>
In 63. Spinal cord ...	Cyst ...	—	1	—	—	—	—	—	1	—	—	—	—	—	—	—
	Glioma ...	—	2	—	—	—	—	—	1	—	—	—	—	—	—	—
	Nature unstated ...	—	9	—	—	2	1	1	2	—	1	1	1	1	2	—
86. Nose ...	Polypus ...	—	5	1	1	—	—	—	—	—	2	—	1	—	—	—
	Nature unstated ...	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—
87. Larynx ...	Papilloma ...	—	5	3	3	1	—	—	—	—	1	1	1	—	1	—
	Other benign ...	—	2	3	—	—	—	—	—	—	1	—	—	—	—	—
	Nature unstated ...	—	2	2	—	—	1	—	—	—	1	—	—	—	1	1
88. Thyroid ...	Adenoma ...	—	3	10	1	—	1	2	—	—	1	5	—	1	—	—
	Cyst ...	—	1	3	—	—	—	—	—	—	—	—	—	—	2	1
	Non-malignant ...	—	1	1	—	—	—	—	—	—	—	—	—	—	—	1
98. Lung ...	Non-malignant ...	—	1	3	—	—	—	—	—	—	2	1	—	—	—	—
	Nature unstated ...	—	4	5	—	—	—	—	1	1	2	3	1	1	—	—
110. Intestine ...	Papilloma ...	—	1	4	—	1	—	—	—	—	1	2	—	1	—	—
	Other benign ...	—	1	1	—	—	—	—	—	—	1	1	—	—	—	—
	Nature unstated ...	—	5	15	—	—	2	—	1	—	1	2	3	2	1	7
115. Liver ...	Non-malignant ...	—	3	—	—	—	1	—	—	—	1	—	1	—	—	—
	Nature unstated ...	—	4	6	—	—	—	—	1	—	—	1	2	1	1	2
118. Pancreas ...	Cyst ...	—	6	4	1	—	—	—	1	2	1	—	2	—	1	1
	Non-malignant ...	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—
	Nature unstated ...	—	8	2	—	—	—	—	3	—	2	—	2	1	1	1
122. Kidney ...	Cyst ...	—	1	4	—	—	—	—	—	1	—	—	—	—	2	—
	Nature unstated ...	—	4	3	2	—	—	—	—	2	2	—	—	—	—	1
124. Bladder ...	Papilloma or villous ...	—	60	10	1	1	—	—	1	—	9	—	15	3	20	1
	Other benign ...	—	3	1	—	—	—	—	—	—	—	—	—	2	1	—
	Nature unstated ...	—	8	—	—	—	—	—	—	—	4	—	4	—	2	—
126. Prostate ...	Adenoma ...	—	59	—	—	—	—	—	—	—	11	—	34	—	14	—
	Non-malignant ...	—	1	—	—	—	—	—	—	—	1	—	—	—	—	—
	Nature unstated ...	—	4	—	—	—	—	—	—	—	2	—	2	—	—	—
132. Broad ligament ...	Cyst ...	—	6	—	—	—	—	—	—	—	—	—	—	—	2	1
	Nature unstated ...	—	1	—	—	—	—	—	—	—	—	—	—	—	—	1
Other sites ...	Non-malignant ...	—	12	17	4	3	3	2	—	2	1	1	1	3	3	3
	Nature unstated ...	—	16	13	3	1	—	1	5	3	2	3	5	1	1	2
	<b>Total ...</b>	<b>—</b>	<b>227</b>	<b>131</b>	<b>17</b>	<b>10</b>	<b>7</b>	<b>15</b>	<b>10</b>	<b>13</b>	<b>22</b>	<b>15</b>	<b>56</b>	<b>25</b>	<b>77</b>	<b>24</b>
<i>Tumours not classed with other disease of organ or part of body affected.</i>																
46. Pituitary body ...	Adenoma ...	—	2	—	—	—	1	—	—	—	—	—	1	—	—	—
	Nature unstated ...	—	1	4	—	1	—	—	3	—	—	—	—	—	—	—
Mediastinum ...	Non-malignant ...	—	1	1	—	—	1	—	—	—	1	—	—	—	—	—
	Nature unstated ...	—	31	30	1	—	3	1	7	1	5	11	5	9	7	1
Abdomen ...	Non-malignant ...	—	5	4	—	—	—	—	—	—	1	—	—	2	—	1
	Nature unstated ...	—	4	20	—	2	1	—	—	—	4	1	2	2	8	1
Other ill-defined sites ...	Non-malignant ...	—	4	2	—	—	—	—	—	—	1	—	2	—	1	—
	Nature unstated ...	—	6	14	—	1	—	1	—	3	1	1	1	2	3	—
Site not stated ...	Angioma ...	—	1	2	—	—	—	—	—	—	—	—	—	1	1	—
	Lipoma ...	—	1	1	—	—	—	—	—	—	—	—	—	—	—	—
	Nature unstated ...	—	3	3	—	—	—	—	1	1	2	1	—	1	—	—
	<b>Total (46) ...</b>	<b>—</b>	<b>53</b>	<b>83</b>	<b>1</b>	<b>5</b>	<b>6</b>	<b>5</b>	<b>7</b>	<b>6</b>	<b>10</b>	<b>21</b>	<b>10</b>	<b>13</b>	<b>17</b>	<b>21</b>
<b>Total, all tumours ...</b>		<b>675</b>	<b>1216</b>	<b>75</b>	<b>81</b>	<b>110</b>	<b>159</b>	<b>90</b>	<b>211</b>	<b>112</b>	<b>274</b>	<b>125</b>	<b>211</b>	<b>120</b>	<b>188</b>	<b>43</b>
" benign tumours ...		<b>262</b>	<b>726</b>	<b>22</b>	<b>32</b>	<b>31</b>	<b>76</b>	<b>24</b>	<b>139</b>	<b>32</b>	<b>176</b>	<b>52</b>	<b>125</b>	<b>71</b>	<b>121</b>	<b>30</b>
" nature unstated ...		<b>413</b>	<b>490</b>	<b>53</b>	<b>49</b>	<b>79</b>	<b>83</b>	<b>66</b>	<b>72</b>	<b>80</b>	<b>98</b>	<b>73</b>	<b>86</b>	<b>49</b>	<b>67</b>	<b>13</b>

While the mortality from tumours of doubtful nature does not differ greatly in the two sexes, growths of known non-malignant nature caused the deaths of nearly three times as many females as males. This is due to the comparatively large number of deaths from uterine and ovarian tumour in Table LX. Apart from these two organs the male mortality considerably exceeds the female, as a result of the comparative frequency among males of fatal non-malignant tumours of the bladder and prostate.

48B. Osteo-arthritis.—To this disease, or group of diseases, were attributed in 1913 the deaths of 312 males and of 890 females, corresponding to death-rates of 17 and 47 per million living respectively. Table 20 shows that since this cause of death was first distinguished in the returns for 1901 the death-rate of males has remained almost constant, while that of females shows considerable increase.

The mortality chiefly affects the aged, and its age-distribution is very similar in the two sexes, the incidence in each sex in the three years 1911–13 jointly being as follows:—

TABLE LXI.

	Sex.	All Ages.	0-	30-	35-	40-	45-	50-	55-	60-	65-	70-	75-	80-	85-
Proportion of deaths occurring at each age (per cent.) ...	Males	100	1.2	1.2	1.8	2.0	4.0	7.9	10.6	15.2	18.3	16.8	14.2	5.4	1.4
	Females	100	1.1	1.2	1.1	2.5	3.5	8.0	10.1	14.1	16.7	18.2	14.1	6.7	2.7
Proportion of deaths at and under each age ...	Males	100	1.2	2.4	4.2	6.2	10.2	18.1	28.7	43.9	62.2	79.0	93.2	98.6	100
	Females	100	1.1	2.3	3.4	5.9	9.4	17.4	27.5	41.6	58.3	76.5	90.6	97.3	100

It is thus apparent that only about 10 per cent. of the deaths occur under 50 years of age in either sex, and only 60 per cent. under 70 years of age.

The following statement shows that the mortality is approximately equal in town and country, and that the conditions of life implied by such residence have equally little effect upon its sex distribution.

Death-rate per million living—1911–13.

	Males.	Females.
London ...	18	47
County Boroughs ...	17	39
Other Urban Districts ...	17	43
Rural Districts ...	21	53
England and Wales ...	18	44

The rates in the county boroughs are no lower, and those in the rural districts no higher, than may easily be accounted for by the relative deficiency and excess of aged persons in these areas.

The seasonal distribution of the mortality resembles that of mortality in general, the rate being heaviest in the first and lightest in the third quarter of the year.

50. Diabetes.—The deaths allocated to this cause in 1913 number 4,311, almost equally divided between the sexes. The corresponding mortality, 117 per million living, is the highest as yet recorded in this country. It is steadily increasing, and is now more than double that of thirty years ago.

In view of this rapid increase in its mortality it is natural to regard the disease as one especially associated with the conditions of modern life, and it is indeed suggested that “modern city life is in itself a cause of diabetes.” Table LXII has been prepared

TABLE LXII.—DIABETES—DEATH-RATES PER MILLION POPULATION, 1911–13.

	England and Wales.	London.	County Boroughs.	Other Urban Districts.	Rural Districts.	All Urban Districts.
Males ...	Crude rates ...	115.4	108.7	110.2	119.0	120.8
	Standardized rates ...	113.3	109.3	116.9	120.8	105.4
Females ...	Crude rates ...	107.5	95.3	99.6		



in order to test the truth of this suggestion, and would almost seem to dispose of it, so far at least as this country is concerned. This table is in some respects better fitted to determine such a point than some of the statistics which have before been employed in its investigation. It is based upon the adequate number of 12,215 deaths during the three years 1911-13; it assigns to their place of residence the deaths of persons dying in institutions and elsewhere away from home, which might otherwise lead to an apparent excess of city mortality; and the death-rates included are standardized to compensate for differences in sex- and age-distribution between the populations compared. It is especially necessary to take the latter point into account in the case of a disease the stress of mortality from which falls upon one particular period of life. Thus the death-rate from diabetes, a disease fatal chiefly to elderly people (see Table LXIII), on that account alone appears to be particularly high in the rural districts, where elderly people are relatively numerous, and low in the county boroughs, where they are few.

When these factors are allowed for it is seen from Table LXII that there is no special association of diabetes with city life in this country. The standardized rates for London are the lowest in the table, and those for the county boroughs are below those of the smaller towns, which are the highest of all in both sexes.

The slight preponderance of male mortality is increased by standardization because of the larger proportion of elderly persons in the female population. Even after standardization, however, the difference remains far below the 50 per cent. male excess quoted in the text-books, and Table 20 shows that this excess has not been approached by the national records during the past 15 years, though the difference between the sexes was formerly much greater than it is now.

The male excess, however, shows itself with few exceptions (chiefly at 5-15, when mortality in general is relatively high in the female sex) at all periods of life in all classes of area (Table LXIII), and must therefore be regarded as a very definite feature. It is most marked in London and least in the rural districts (Table LXII).

TABLE LXIII.—DIABETES.—MORTALITY at DIFFERENT AGES, 1911-13.

Age.	Mortality at Age-groups per Million Living.											
	Males.						Females.					
	England and Wales.	London.	County Boroughs.	Other Urban Districts.	Rural Districts.	Total Urban Districts.	England and Wales.	London.	County Boroughs.	Other Urban Districts.	Rural Districts.	Total Urban Districts.
0—	7	4	6	7	11	6	5	—	6	5	9	5
5—	13	15	9	14	16	12	13	9	8	13	21	10
10—	20	12	18	26	19	21	26	25	23	21	40	22
15—	39	29	31	43	48	36	28	16	30	24	42	25
20—	43	33	39	40	60	39	32	15	28	31	54	27
25—	55	53	46	57	67	52	45	40	46	40	57	42
30—	63	58	64	61	69	62	56	41	48	54	82	50
35—	77	55	84	72	88	74	61	73	48	62	71	58
40—	85	79	85	80	96	82	72	67	72	70	77	70
45—	127	165	119	132	109	133	112	98	128	117	91	118
50—	190	227	194	193	164	199	192	202	191	198	178	196
55—	358	316	377	393	309	374	300	266	318	318	270	310
60—	574	590	558	650	487	605	518	526	532	559	438	543
65—	816	790	987	885	586	909	654	470	663	722	642	658
70—	949	821	986	1,060	847	995	790	732	741	828	822	779
75—	962	1,009	1,121	1,021	791	1,054	770	682	711	974	620	831
80—	759	947	800	815	636	831	623	788	626	633	541	658
85—	521	446	919	638	257	695	335	363	405	406	201	397

The significance of the approximate equality between the urban and rural rates recorded in Table LXII is increased by the facts as to age-distribution of the mortality embodied in Tables LXIII and LXIV. The former shows that with only a single exception for each sex the rural mortality exceeded the urban at all ages up to 45 and the urban the rural at higher ages. As the age-groups differ greatly in importance as contributors to the total mortality the differences between them may also be conveniently studied in the form of Table LXIV. This table, which allows for the differences in sex- and age-distribution of the populations compared, shows that the proportion of deaths at every age under 45 is higher in the rural districts than in any other class of area, the

proportions above that age being correspondingly low. The deaths occurring under 45 amount to 36.4 per cent. of the whole in the rural districts, but elsewhere this proportion varies from 24.9 to 25.7 per cent.

TABLE LXIV.—DIABETES, 1911-13.—AGE INCIDENCE of MORTALITY (Standardized for differences of sex- and age-constitution between the several populations).

Age-group.	Percentage of Deaths in Age-group to Total Deaths.					Age.	Deaths up to specified Age per cent. of Total Deaths.				
	England and Wales.	London.	County Boroughs.	Other Urban Districts.	Rural Districts.		England and Wales.	London.	County Boroughs.	Other Urban Districts.	Rural Districts.
0—	0.7	0.2	0.6	0.6	1.1	0	—	—	—	—	—
5—	1.3	1.3	0.9	1.3	1.9	5	0.7	0.2	0.6	0.6	1.1
10—	2.2	2.0	2.0	2.2	3.0	10	2.0	1.5	1.5	1.9	3.0
15—	3.2	2.3	2.9	3.0	4.4	15	4.2	3.5	3.5	4.1	6.0
20—	3.4	2.4	3.1	3.1	5.3	20	7.4	5.8	6.4	7.1	10.4
25—	4.1	4.1	3.8	3.7	5.2	25	10.8	8.2	9.5	10.2	15.7
30—	4.2	3.8	4.0	3.9	5.6	30	14.9	12.3	13.3	13.9	20.9
35—	4.3	4.4	4.1	4.0	5.1	35	19.1	16.1	17.3	17.8	26.5
40—	4.2	4.4	4.2	3.9	4.8	40	23.4	20.5	21.4	21.8	31.6
45—	5.6	6.5	5.7	5.4	4.7	45	27.6	24.9	25.6	25.7	36.4
50—	7.5	9.0	7.5	7.3	6.8	50	33.2	31.4	31.3	31.1	41.1
55—	10.2	9.6	10.7	10.4	9.1	55	40.7	40.4	38.8	38.4	47.9
60—	14.4	15.9	14.1	15.0	12.2	60	50.9	50.0	49.5	48.8	57.0
65—	13.6	12.3	14.9	14.0	11.6	65	65.3	65.9	63.6	63.8	69.2
70—	11.4	10.9	11.0	11.6	11.1	70	78.9	78.2	78.5	77.8	80.8
75—	6.6	6.9	6.9	7.4	5.6	75	90.3	89.1	89.5	89.4	91.9
80—	2.6	3.5	2.7	2.5	2.2	80	96.9	96.0	96.4	96.8	97.5
85 and upwards.	0.5	0.5	0.9	0.7	0.3	85	99.5	99.5	99.1	99.3	99.7
All ages	100.0	100.0	100.0	100.0	100.0	All ages	100.0	100.0	100.0	100.0	100.0

A fictitious excess in diabetes mortality in early life in the rural as compared with the urban districts could only be due to (1) deaths wrongly certified as due to diabetes in the rural districts, or (2) deaths from diabetes in the urban districts (a) not certified as such, or (b) if certified not so tabulated.

As to (1) the disease being one capable of positive demonstration to a degree equalled by few others it is most unlikely that the excess is due to mistaken diagnosis.

Against possibility 2 (a) it may be urged that the malady at this period of life is so fatal and so rapid in its course that its mention is unlikely to be omitted in the death certificate of any person in whom it has been recognised. And that it escapes recognition in a larger proportion of cases in the cities than in the rural districts is unlikely, both on general grounds and in view of the large proportion of institutional deaths in London and other large cities. About one-third of all diabetes deaths in London are returned from institutions for the sick, as against about one-eighth in the rest of the country.

Possibility 2 (b) would arise if diabetes were frequently returned on the certificates of city deaths concomitantly with some other cause, and if this other cause of death were preferred in tabulation. This is most unlikely to be the explanation of a rural excess in mortality limited to those earlier ages at which the course of the disease is most rapid, and at which therefore there is least likelihood of the simultaneous existence of another fatal disease. Fortunately, however, the matter can be put to an actual test in the light of recorded facts.

Diabetes is selected in tabulation in preference to most other causes of death which may appear on the same certificate, cancer, tubercle, the infectious diseases and a few other less important causes being alone preferred to it (see Registrar-General's Manual of the International List, page xxxiv). If their presence as a complication of diabetes were more frequently stated in the cities than in the rural districts this would tend to relative depression of the recorded diabetes mortality in the former. The deaths certified as due to the joint effect of tubercle and diabetes (and allocated to tubercle) were tabulated for 1912, and amounted to 198 only, as against the 4,051 allocated to diabetes. The corresponding figure for cancer (1912) is 54, and for infectious diseases, chiefly influenza (1911), it is 17. All these moreover are causes of death almost certain to be



certified when met with, whether in town or country, so possibility 2 (b) is abundantly negatived.

It seems most difficult to avoid the conclusion that there is a real excess in the rural districts of mortality from diabetes at the earlier ages, with approximate equality when all ages are considered jointly; and that the conditions of city life in London, at least, do not at all increase the liability to diabetes.

56. **Alcoholism.**—This heading differs from the "alcoholism, delirium tremens," of the list in use prior to 1911 in that, in accordance with international practice, it excludes organic disease attributed to alcoholism. Thus alcoholic cirrhosis of the liver, formerly referred to alcoholism, is now tabulated with other deaths from the same disease which are not stated to have been of alcoholic origin. As may be seen from page 200 the latter form the immense majority of the returns under this head. As most cases of the disease are generally considered to be of alcoholic origin it may be assumed that the omission to state the fact in certification should not be taken as an indication that any given case is considered not to be of this nature. It is therefore preferable that alcoholic cirrhosis should be grouped with other deaths from that disease, the returns of which are probably made fairly complete by its inclusion, rather than with those from alcoholism, the returns of which cannot possibly be made even approximately complete. The effect of the change may be gathered from comparison of the number of deaths (651) from alcoholism in the new list on page 188 with that (1,893) referred to the same heading in the old list in Table 19.

TABLE LXV.—ENGLAND AND WALES, 1913.—DEATHS FROM OR CONNECTED WITH ALCOHOLISM.

—	All Ages.		Under 25.		25—	35—	45—		55—		65—		75—	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Deaths attributed directly to alcoholism ...	406	245												
Deaths of which alcoholism was recorded as a secondary cause :														
10. Influenza ...	5	2			1	2		1			1	1		
18. Erysipelas ...	3	1			1			2		1				
20b. Septicæmia ...	2	1				1		1		1				
28, 29. Phthisis ...	25	7			2	8	4	9	3	4		2		
30-35. Other forms of tubercle ...	3	3				1	1	2	1			1		
37. Syphilis ...	4	2				2	1				1			
39-45. Cancer ...	5	4			1			2	2	1	2		1	
Other general diseases ...	8	6	1		1	2	2	2	2	2	2	1	1	1
60. Encephalitis ...		5					3		1			1		
61c. Meningitis ...	9	3			2		1	5	2	2				
63. Other diseases of the spinal cord ...		5					2		2					
64. Cerebral hæmorrhage, apoplexy ...	37	47	1		2	8	12	10	17	13	11	4	3	1
67. General paralysis of the insane ...	1							1						
Alcoholic paralysis ...	7	9			1	2	2		5	2	1	2	1	
69. Epilepsy ...	11	7			2	3	4	3	3					
73b. Neuritis ...	30	85			2	7	11	24	9	34	5	12	2	8
Other nervous diseases ...	9	13				3	4	4	4	1	4	1	1	
79a. Valvular disease of the heart ...	15	12	1		3	3	4	3	3	3	4	2		1
79b. Fatty degeneration of the heart ...	44	26			2	2	15	5	13	9	10	7	3	3
79c. Other organic disease of the heart ...	69	37			6	4	13	9	27	14	16	8	7	2
81b. Arterial sclerosis ...	7	4					1	2		4	2	1	1	
Other diseases of circulatory system ...	13	4				3	1	6	2	3	1	1		
89, 90. Bronchitis ...	25	17			1	1	3	3	11	7	8	2	3	1
91. Broncho-pneumonia ...	6	7			2	1	2	2	1	3	1		1	
92a. Lobar pneumonia ...	114	30	3	1	19	2	40	12	32	11	15	3	5	1
Other diseases of respiratory system ...	16	5			1	1	3	2	8		4	1	1	
103a. Inflammation of stomach ...	18	17	1		3	2			5	4	1			
103b. Other diseases of stomach ...	6	4						1	3	2		1	3	
104, 105. Diarrhoea and enteritis ...	6	4												
113. Cirrhosis of liver ...	176	146			9	9	41	38	55	47	48	30	19	19
Other diseases of digestive system ...	11	5			3	1	1		4	2	2	1	1	1
120. Bright's disease ...	30	43			2	3	6	12	12	17	7	6	3	5
124, 125. Diseases of bladder and urethra ...	6	2					1	2	1		4			
128-132. Diseases of female genital organs ...	2										1			
134a. Abortion ...	1							1						
144a. Phlegmon ...	1							1						
145. Diseases of integumentary system ...	2								1		1			
146-149. Diseases of the bones and of the organs of locomotion.	1	1							1	1				
155-186. Violence ...	159	51	7		23	4	44	8	50	17	20	18	9	3
Total ...	1288	865	18	4	143	52	347	239	416	300	247	173	97	85

Table 20 shows that there has been a very rapid decline in the mortality attributed to this cause in recent years, the death-rate, which reached 113 per million living so recently as 1900, now standing at 51 only. This rate, however, is higher than that of any year since 1908, the prosperity which has been enjoyed having apparently checked to some extent the remarkable fall in mortality attributed to alcohol.

In order that the change in classification referred to above might not lessen the information afforded with regard to mortality from over indulgence in alcohol, all the death certificates in which any mention of alcohol appears have been assembled in Table LXV.

It will be seen that these deaths make up a total of 2,153, or only 260 in excess of the 1,893 referable to the old heading.

The difference is partly accounted for by causes of death formerly selected in preference to alcoholism when recorded in conjunction with it. As it is comparatively small, the numbers in Table 19 may be regarded as forming a fairly complete statement of the deaths certified to have been in any way dependent upon intemperance.

The contents of Table LXV are on the whole very much what might have been expected from the general medical experience of the connexion of intemperance with disease, cirrhosis of the liver, lobar pneumonia and neuritis being the diseases most frequently associated with alcoholism on death certificates.

61. **Meningitis.**—The number of deaths allocated to this cause during 1913 was 4,251, of which 163 were returned as due to cerebro-spinal fever, 169 to posterior basal meningitis, and the remainder, 3,919, to "meningitis" without further qualification, the corresponding death-rates being 4, 5 and 106 per million living respectively. The corresponding heading in the list of causes of death in use prior to 1911 included encephalitis, No. 60 of the present list, but excluded cerebro-spinal fever. On this basis the meningitis death-rate of 1913 was 119 per million living (Table 20). This rate shows a great diminution from those of even a few years ago, a lower mortality having been only once recorded, in 1912 (113 per million).

The heading cannot be traced, with the significance attaching to it in Table 20, further back than 1882, and it is probable that it would in any case be unsafe to push the comparison much further. From 1882 to 1890 the recorded crude death-rate never fell below 300 per million; in 1902 it for the first time fell below 200, and by 1912 it had further fallen to 113. Simultaneously with this fall a similar decrease was occurring in mortality attributed to tuberculous meningitis.

On the other hand the mortality ascribed to cerebro-spinal fever has increased of recent years. Comparison in this case cannot be carried beyond the year 1901, when inquiry was first made as to cases of cerebro-spinal meningitis. Transfer of a large proportion of these deaths to cerebro-spinal fever as the result of these inquiries (see Table LXXVII) greatly increased the number of deaths so classed from that date onwards. Even so the number in any one year did not exceed 100 till 1905, and has never been below 100 since 1906, the figure for 1913 being the highest recorded (Table 19). If the deaths from posterior basal meningitis (61B) are reckoned along with those from cerebro-spinal fever (61A), the former disease being regarded as the sporadic type of the latter, the total mortality ascribed to meningococcal infection is raised to 9 per million, but it is to be borne in mind that prior to 1911 these deaths were classed to meningitis, not to cerebro-spinal fever, and that the words posterior basal or basic are sometimes used merely to signify the location of the disease indicated, without any implication that it is of meningococcal origin. The distinction attempted in the tables between the various forms of meningitis is not, in fact, altogether satisfactory in practice, and it may be that it would be wiser not for the present to attempt further subdivision than the distinction of deaths returned as due to the meningococcus.

Moreover it is probable that the majority of deaths due to meningococcal meningitis are returned simply as meningitis, and so allocated to 61C.

It will be seen, however, that the age incidence of the mortality from 61B differs appreciably from that allocated to 61A (the epidemic form), so it seems probable that the figures represent a distinction in type of infection, whether or not this distinction is exactly that drawn by the authors of monographs on the subject. The marked seasonal variation which is stated to characterise the sporadic type (greater frequency of the disease in the first half of the year) is not very evident in the figures relating to 61B. For the



three years 1911-13 the deaths and the proportion of mortality in each quarter of the year have been as follows:—

		March.	June.	September.	December.	Year.
Number of Deaths ...	61 A	96	118	109	116	439
	61 B	170	170	164	133	637
Proportion of Deaths	61 A	21.9	26.9	24.8	26.4	100.0
	61 B	26.7	26.7	25.7	20.9	100.0

The distribution between town and country of the mortality ascribed to meningitis is stated in Table LXVI. It will be seen that, taking it in the mass, it is highest in the county boroughs and lowest in London and in the rural districts, the difference between London and the other large towns being remarkable. The mortality over five years of age is considerably lower in London than even in the rural districts. On the other hand, the mortality ascribed to both types of meningococcal meningitis is much higher in London than elsewhere (except in females aged five and upwards). This probably implies merely that the nature of the infection is returned in a larger proportion of the London cases, where the proportion dying in institutions for the sick is very much higher than elsewhere.

TABLE LXVI.—MENINGITIS.—MORTALITY per MILLION LIVING at DIFFERENT AGES, 1911-1913.

	Age.	Males.					Females.				
		England and Wales.	London.	County Boroughs.	Other Urban Districts.	Rural Districts.	England and Wales.	London.	County Boroughs.	Other Urban Districts.	Rural Districts.
61A. Cerebro-spinal fever.	All ages	4.5	7.1	4.2	3.5	5.2	3.5	4.2	3.7	3.2	3.2
	0—	14.9	29.9	14.5	8.7	17.5	12.8	24.3	16.2	11.2	4.0
	5—	8.0	10.5	6.2	7.5	10.1	6.1	4.8	5.0	6.0	8.7
	15—	1.8	2.5	1.9	1.4	1.8	1.4	1.3	1.5	1.3	1.5
61B. Posterior basal meningitis.	All ages	6.6	11.3	7.7	5.6	4.3	5.0	8.9	5.0	4.5	3.6
	0—	48.4	88.2	57.0	40.1	27.1	38.7	81.6	36.3	35.1	24.2
	5—	3.5	4.8	3.3	2.9	4.1	2.6	1.6	2.6	2.6	2.9
	15—	0.8	0.9	0.8	0.7	0.9	0.8	1.0	1.0	0.5	0.7
61C. Meningitis—other forms.	All ages	124	88	157	127	93	102	69	132	102	77
	0—	703	519	891	714	512	598	457	792	595	396
	5—	96	62	114	104	75	94	59	116	95	78
	15—	38	27	47	38	33	31	19	38	31	29
61A, B, C. Meningitis.	All ages	135	107	169	136	102	110	82	141	110	84
	0—	766	637	962	763	557	650	563	845	642	424
	5—	107	77	124	114	90	102	65	124	104	90
	15—	41	31	50	40	36	34	21	41	33	31

Table LXVII shows the age incidence of mortality from the three subdivisions of meningitis tabulated. The posterior basic type is more confined to young children than the others, almost half the deaths occurring during the first year of life and three-quarters under three years. About seven per cent. of the deaths occurred over the age of 20 years. The incidence as described by clinicians is, however, even more confined to young children.

On the other hand the epidemic form of the meningococcal infection has a definitely later age-distribution, only 14 per cent. of the deaths occurring in the first year, and about 17 per cent. during adult life. This is in harmony with experience previously recorded, outbreaks amongst soldiers for instance having repeatedly occurred.

TABLE LXVII.—ENGLAND AND WALES, 1911-13.—AGE INCIDENCE of MORTALITY from MENINGITIS.

Age.	Percentage of Deaths											
	In each Age-group.						Up to and including each Age-group.					
	61A.		61B.		61C.		61A.		61B.		61C.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
0—	14.2	14.2	47.4	49.0	29.5	25.9	14.2	14.2	47.4	49.0	29.5	25.9
1—	8.8	7.7	23.0	17.5	16.5	16.0	23.0	21.9	70.4	66.5	46.0	41.9
2—	3.7	7.1	5.4	8.4	7.7	8.9	26.7	29.0	75.8	74.9	53.7	50.8
3—	6.2	4.5	2.8	2.5	5.6	5.4	32.9	33.5	78.6	77.4	59.3	56.2
4—	3.7	4.5	2.3	1.8	3.6	4.2	36.6	38.0	80.9	79.2	62.9	60.4
5—	36.6	38.0	80.9	79.2	62.9	60.4	36.6	38.0	80.9	79.2	62.9	60.4
10—	22.8	19.7	7.0	7.3	10.8	11.7	59.4	57.7	87.9	86.5	73.7	72.1
15—	13.7	14.1	3.7	2.5	5.1	6.1	73.1	71.8	91.6	89.0	78.8	78.2
20—	10.4	10.6	1.4	3.1	3.8	3.8	83.5	82.4	93.0	92.1	82.6	82.0
25—	5.8	5.1	1.7	1.4	2.4	2.7	89.3	87.5	94.7	93.5	85.0	84.7
30—	4.1	4.0	.6	.7	1.9	2.1	93.4	91.5	95.3	94.2	86.9	86.8
35—	2.9	2.0	1.1	.7	1.8	2.1	96.3	93.5	96.4	94.9	88.7	88.9
40—	1.7	2.0	.9	.7	1.8	1.7	98.0	95.5	97.3	95.6	90.5	90.6
45—	.8	1.0	.6	1.1	1.6	2.1	98.8	96.5	97.9	96.7	92.1	92.7
50—	.4	1.5	.6	1.8	1.7	1.7	99.2	98.0	98.5	98.5	93.8	94.4
55—	.4	1.0	.6	—	1.7	1.1	99.6	99.0	99.3	98.5	95.5	95.5
60—	.4	1.0	.6	.4	1.4	1.3	100.0	100.0	99.7	98.9	96.9	96.8
65—	—	—	—	.7	.9	1.1	—	—	99.7	99.6	97.8	97.9
70—	—	—	.3	—	1.3	1.3	—	—	99.7	100.0	98.7	98.7
All ages	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

**Poliomyelitis.**—Deaths from poliomyelitis and polioencephalitis are included under title 63, "other diseases of the spinal cord," unless it is apparent that the brain alone is affected, when they are listed to No. 74D. So much interest, however, attaches to this disease at the present time that it seems desirable to state its mortality separately.

Including the encephalic form the total number of deaths registered was 206, with sex- and age-distribution as follows:—

	All Ages.	0—	1—	2—	3—	4—	5—	10—	15—	20—	25—	35—	45—	55—	65—
Males ...	105	11	16	10	5	9	23	8	8	2	5	3	3	1	1
Females ...	101	10	10	15	3	9	23	14	3	4	3	3	1	2	1

The proportion of deaths occurring under five years of age was 48 per cent., and under 20 years 86 per cent.

Included in the above deaths are 13 from polioencephalitis and two from polioencephalomyelitis, with sex- and age-distribution as follows:—

	All Ages.	0—	5—	10—
Polioencephalitis ...	Males 6	1	2	3
	Females 7	1	3	3
Polioencephalomyelitis ...	Females 2	1	—	1

91 and 92. **Pneumonia.**—The deaths assigned to pneumonia in its various forms numbered 37,530,—21,505 being deaths of males and 16,025 of females. Included in this total are 17,760 deaths from broncho-pneumonia, 8,055 from lobar pneumonia, and 11,715 from pneumonia of undefined type. These numbers show an increase upon those of 1912 under each of the defined headings, together with a decrease under the undefined heading. Table 19 shows that from 1901, when the different forms were first distinguished, onwards, deaths returned as due to lobar pneumonia have been increasing,



with decrease under pneumonia (undefined), and minor changes only in mortality attributed to broncho-pneumonia.

The death-rate from pneumonia of all forms (as primary cause of death) amounted to 1,016 per million living. Including 243 deaths from hypostatic pneumonia, formerly classed to this head, the death-rate was 1,023 per million, the lowest recorded since 1889.

As standardizing for sex- and age-constitution causes no very material modification of this rate the following table of crude death-rates may be accepted as giving a fair indication of the distribution throughout the country of the total mortality from pneumonia. Apart from London, where it is fairly high, the mortality steadily decreases from North to South in all classes of area and in both sexes, the position of Wales being generally intermediate between the North and the Midlands. The range of mortality is extreme, being almost four times as great for males in the county boroughs of the North as for females in the rural districts of the South, and three times as great when males alone are compared. Even when comparison is restricted to the same class of area in each case the mortality of the North is in no instance very much less than twice that of the South. No doubt this depends to some extent upon industrial conditions, but these can scarcely explain the great difference between the North and the Midlands. Evidently pneumonia is to a large extent a preventable disease, and the North of England has still much to learn with regard to its prevention. It is a striking fact that all these statements as to relative mortality, copied verbatim from the Report for 1912, apply equally to the year 1913.

The table shows pneumonia to be largely a disease of town life, as in all parts of the country mortality increases with urbanization, though the county boroughs of the South suffer less than the rural districts of the North. Standardization to some extent accentuates these differences, slightly increasing the urban and decreasing the rural mortality.

TABLE LXVIII.—PNEUMONIA (ALL FORMS), 1913.—CRUDE DEATH-RATES PER MILLION POPULATION.

		North.	Midlands.	South.	Wales.	England and Wales.
London ... ..	Males ...	—	—	1,515	—	1,515
	Females ...	—	—	1,074	—	1,074
	Persons... ..	—	—	1,281	—	1,281
County Boroughs ... ..	Males ...	1,808	1,225	995	1,207	1,517
	Females ...	1,162	883	658	816	1,006
	Persons... ..	1,472	1,046	814	1,014	1,250
Other Urban Districts ... ..	Males ...	1,387	927	749	1,171	1,074
	Females ...	974	677	496	891	759
	Persons... ..	1,175	797	614	1,035	911
Rural Districts ... ..	Males ...	1,084	709	613	1,038	800
	Females ...	785	523	463	709	582
	Persons... ..	936	616	537	875	691
All areas ... ..	Males ...	1,557	953	1,079	1,134	1,204
	Females ...	1,046	639	762	816	841
	Persons... ..	1,294	822	912	978	1,016

Mortality from pneumonia is definitely influenced by season, being highest in winter and lowest in summer. This is shown in the following table to apply to both forms of the disease, though the variation was greater in the case of broncho- than of lobar pneumonia.

The uniformity of seasonal distribution in the three years available for examination is very striking. In the first or winter quarter the mortality from broncho-pneumonia was about three times as great as in the third or summer quarter, but in the case of lobar pneumonia the excess was very much less. This difference in seasonal distribution, if it proves to be a fairly constant feature from year to year, will furnish an additional test of the probable composition of the undefined group of cases. Reasons were given in the Report for 1910 for believing that this contains more lobar than broncho-pneumonia, but in regard to seasonal distribution in 1911-1913, at all events, it conforms very closely indeed to the average for pneumonia in general, suggesting that it may be made up of the two forms in much the same proportion as these bear to each other amongst the

defined returns. Fortunately the question is one of continuously decreasing importance owing to the steady growth in precision of certification.

TABLE LXIX.—ENGLAND AND WALES, 1911-1913.—MORTALITY FROM PNEUMONIA IN EACH QUARTER PER CENT. OF TOTAL ANNUAL MORTALITY.

	1911.				1912.				1913.			
	Broncho-Pneumonia.	Lobar Pneumonia.	Pneumonia not otherwise defined.	Pneumonia (all forms).	Broncho-Pneumonia.	Lobar Pneumonia.	Pneumonia not otherwise defined.	Pneumonia (all forms).	Broncho-Pneumonia.	Lobar Pneumonia.	Pneumonia not otherwise defined.	Pneumonia (all forms).
First Quarter ...	38	29	33	35	38	29	35	35	41	30	35	37
Second „ ...	23	28	26	25	22	28	25	24	23	27	25	24
Third „ ...	12	16	16	14	13	17	15	15	13	19	18	16
Fourth „ ...	27	27	25	26	27	26	25	26	23	24	22	23
Year ... ..	100	100	100	100	100	100	100	100	100	100	100	100

108. Appendicitis.—Deaths from this cause were first separately tabulated in 1901. Since then the mortality recorded has increased from 38 per million living in that year

TABLE LXX.—ENGLAND AND WALES.—AGE INCIDENCE OF MORTALITY FROM APPENDICITIS, 1911, 1912, and 1913.

Age.	COMPLETE YEAR.								
	Deaths.			Mortality in each Age-period per cent. of Total Mortality.			Mortality up to and including each Age-period per cent. of Total Mortality.		
	1911.	1912.	1913.	1911.	1912.	1913.	1911.	1912.	1913.
0— ... ..	123	104	119	4.5	4.4	4.7	4.5	4.4	4.7
5— ... ..	422	290	350	15.5	12.3	13.9	20.0	16.7	18.6
10— ... ..	423	322	349	15.5	13.5	13.8	35.5	30.2	32.4
15— ... ..	300	274	309	11.0	11.6	12.2	46.5	41.8	44.6
20— ... ..	244	230	208	8.9	9.8	8.2	55.4	51.6	52.8
25— ... ..	197	167	167	7.2	7.1	6.6	62.6	58.7	59.4
30— ... ..	170	150	165	6.2	6.4	6.5	68.8	65.1	65.9
35— ... ..	126	110	136	4.6	4.7	5.4	73.4	69.8	71.3
40— ... ..	122	123	127	4.5	5.2	5.0	77.9	75.0	76.3
45— ... ..	130	130	138	4.8	5.5	5.5	82.7	80.5	81.8
50— ... ..	128	105	116	4.7	4.5	4.6	87.4	85.0	86.4
55— ... ..	90	110	87	3.3	4.7	3.4	90.7	89.7	89.8
60— ... ..	92	70	79	3.4	3.0	3.1	94.1	92.7	92.9
65— ... ..	118	120	122	4.3	5.1	4.8	98.4	97.8	97.7
75— ... ..	45	52	57	1.6	2.2	2.3	100.0	100.0	100.0
All ages ...	2,730	2,357	2,529	100.0	100.0	100.0	100.0	100.0	100.0
JULY TO SEPTEMBER.									
0— ... ..	42	29	39	5.2	4.9	5.7	5.2	4.9	5.7
5— ... ..	139	81	95	17.1	13.7	13.9	22.3	18.6	19.6
10— ... ..	147	73	94	18.0	12.3	13.9	40.3	30.9	33.5
15— ... ..	79	65	93	9.7	11.0	13.6	50.0	41.9	47.1
20— ... ..	74	64	45	9.1	10.8	6.6	59.1	52.7	53.7
25— ... ..	62	30	39	7.6	5.1	5.7	66.7	57.8	59.4
30— ... ..	37	41	48	4.6	6.9	7.0	71.3	64.7	66.4
35— ... ..	30	15	27	3.7	2.5	4.0	75.0	67.2	70.4
40— ... ..	29	36	37	3.6	6.1	5.4	78.6	73.3	75.8
45— ... ..	43	38	39	5.3	6.4	5.7	83.9	79.7	81.5
50— ... ..	33	31	35	4.1	5.2	5.1	88.0	84.9	86.6
55— ... ..	25	27	19	3.1	4.6	2.8	91.1	89.5	89.4
60— ... ..	23	16	27	2.8	2.7	4.0	93.9	92.2	93.4
65— ... ..	36	30	29	4.4	5.1	4.3	98.3	97.3	97.7
75— ... ..	14	16	16	1.7	2.7	2.3	100.0	100.0	100.0
All ages ...	813	592	632	100.0	100.0	100.0	100.0	100.0	100.0



and 52 in 1903, when it may be taken that the new distinction would be fully operative, to 68 in 1913, the highest rate recorded being 75 per million in 1911 (Table 20). The 1911 maximum is probably related to the high level reached by diarrhoeal mortality in that year. In other years also a tendency is shown to fluctuation in sympathy with diarrhoea, and, as may be seen from Table LXX, the age incidence of the mortality shows variations in harmony with such an interdependence. Of the three years dealt with in the table, 1911, with heavy diarrhoeal mortality, showed the highest mortality and the lowest average age at death from appendicitis; and 1912, with the lightest diarrhoeal mortality of the three years, showed the lowest mortality and the highest average age at death. These facts suggest a correlation between the records of mortality from the two causes, whether due merely to confusion in diagnosis, or to the climatic conditions which set up the one form of intestinal irritation in the young setting up the other also, or to some other cause of actual parallelism between the two mortalities. Confirmatory evidence of the existence of such a relationship is afforded by the seasonal distribution of mortality from appendicitis.

TABLE LXXI.—ENGLAND AND WALES.—SEASONAL DISTRIBUTION OF MORTALITY FROM APPENDICITIS, 1911-1913.

Quarter.	Deaths.			Percentage of Total Deaths.		
	1911.	1912.	1913.	1911.	1912.	1913.
March ... ..	627	575	583	23·0	24·4	23·1
June ... ..	635	615	648	23·3	26·1	25·6
September ... ..	813	592	682	29·7	25·1	26·9
December... ..	655	575	616	24·0	24·4	24·4
Year ... ..	2,730	2,357	2,529	100·0	100·0	100·0

It will be seen from Table LXXI that in 1911, when diarrhoeal mortality was exceptionally high, appendicitis mortality rose very considerably in the third quarter; in 1912, a year of light diarrhoeal mortality, appendicitis mortality did not rise at all during the third quarter; and in 1913, with its moderate diarrhoeal mortality, appendicitis mortality rose to a moderate extent during the September quarter.

If, as this table suggests, the excess of mortality in 1911 was chiefly due to deaths dependent on the great heat of the summer quarter, and if, as the first portion of Table LXX suggests, the additional deaths returned in a year of unusually high mortality occur mainly at the earlier ages, then it follows that in such a year the average age of the deaths in the third quarter should be still lower than in the whole year, the additional and early deaths occurring mainly in this quarter. The second part of Table LXX shows that this is the case. In 1912 the age distribution of the deaths was very much the same in the third quarter as in the whole year, but in 1913 the proportion dying under the age of 20 was appreciably, and in 1911 considerably, larger in the summer quarter than in the whole year.

In view of the statements frequently made that appendicitis has greatly increased as a result of changes in the dietary of the people—increased consumption of meat, of preserved provisions or what not—it is of interest to compare its mortality in the large towns, where such changes are presumably at a maximum, with that in the rural districts where it may be supposed that diet has altered less. This is done for the three years 1911-1913 in Table LXXII, which shows after standardization a moderate excess of the kind indicated for males, but none at all for females, the standardized rate in that

TABLE LXXII.—APPENDICITIS.—DEATH-RATES PER MILLION POPULATION, 1911-1913.

—		England and Wales.	London.	County Boroughs.	Other Urban Districts.	Rural Districts.	All Urban Districts.
Males	{ Crude rates ...	81	92	78	85	74	83
	{ Standardized rates	82	94	79	86	73	84
Females	{ Crude rates ...	58	65	55	59	59	58
	{ Standardized rates	58	65	55	59	59	59
Persons	{ Crude rates ...	69	78	66	71	67	70
	{ Standardized rates	70	79	67	72	66	71

sex being the same for the urban as the rural districts. The urban excess for males is much less than that for mortality in general (Table XXIII), and on the assumption that diet has changed least in the rural districts no support for the dietetic theory can be found in Table LXXII. Of course the assumption may be questioned, or it may be supposed that there are other factors at work (such as, for instance, inaccessibility of hospitals) which would cause the rural mortality to be higher than average if diet were similar throughout. It would, therefore, be too much to say that the table disproves the theory, but it may perhaps be taken as to some extent telling against it.

Table LXXIII gives the age-group mortalities recorded for different classes of area. They are everywhere highest, except in old age, at 10-15 for males. For females the corresponding maximum occurs at 5-10 except in the rural districts, where it falls at 10-15, as for males. The high mortality at ages over 75 is interesting. Table LXXIII shows that it is a fairly regular feature of the returns. On the whole it may be said that mortality from appendicitis varies with age less than that from most other causes, no period of life being in the least immune. Comparing urban and rural mortality, at different ages it may be noted that the rural excess pointed out on page xxx for the general mortality of young women is well marked in the case of appendicitis. At all ages from 10 to 35 the death-rates of females are higher in the rural than in the urban districts, though those of males are lower. This is the more interesting as the explanation put forward to explain the similar facts met with in the case of tuberculosis—that young women, infected in the towns, frequently return to their country homes when invalided—cannot well apply in the case of an acute disease like appendicitis. The phenomenon may be compared with the depression in the mortality curve of pneumonia in London at similar ages (Annual Report for 1911, page lxxxviii).

TABLE LXXIII.—APPENDICITIS.—DEATH RATES PER MILLION LIVING, 1911-13.

Sex and Age.		England and Wales.	London.	County Boroughs.	Other Urban Districts.	Rural Districts.	All Urban Districts.
Males.	0— ... ..	35	46	29	39	34	36
	5— ... ..	102	127	100	102	93	105
	10— ... ..	121	144	119	128	100	127
	15— ... ..	106	114	110	111	90	111
	20— ... ..	87	75	83	101	78	90
	25— ... ..	72	55	77	76	67	73
	30— ... ..	63	63	53	75	58	65
	35— ... ..	57	64	63	57	46	61
	45— ... ..	83	108	74	81	84	82
	55— ... ..	89	117	81	98	75	94
	65— ... ..	96	156	72	81	111	90
75 and upwards ... ..	100	158	101	104	81	111	
Females.	0— ... ..	23	39	15	26	23	24
	5— ... ..	87	92	91	88	76	90
	10— ... ..	85	89	87	74	98	82
	15— ... ..	68	63	62	74	73	67
	20— ... ..	56	56	48	55	68	53
	25— ... ..	43	48	42	41	47	43
	30— ... ..	48	43	43	45	66	44
	35— ... ..	44	39	49	45	38	45
	45— ... ..	58	87	47	60	51	60
	55— ... ..	63	76	60	65	57	65
	65— ... ..	80	108	65	92	68	84
75 and upwards ... ..	96	154	94	100	69	107	

134-141. **The Puerperal State.**—The number of deaths assigned to pregnancy or childbirth was 3,492 (Table LXXIV), corresponding to a rate of 3·96 per 1,000 births. It will be seen from Table 19 that this number is 221 in excess of that assignable to these causes of death under the classification in use up to 1910 (*see* Manual of Causes of Death, pages xxvi. and xxx.). Deducting these 221 deaths, which are those allocated to puerperal nephritis and albuminuria, formerly not distinguished as puerperal, the mortality amounted to 3·71 per 1,000 births, as against an average rate of 3·83 in the ten years immediately preceding. Inclusion of the 803 deaths in Table LXXV raises the proportion to 4·87 deaths stated to have been caused by or associated with the puerperal state in its widest sense (*i.e.*, including pregnancy as well as childbirth) for every 1,000 births.



The mortality amongst women aged 15-45 years from all the causes included in Tables LXXIV and LXXV was 462 per million living, against 480 per million in 1911 and 473 in 1912.

Table LXXIV gives particulars of the deaths assigned to the puerperal state, and in the case of the headings "other accidents of pregnancy," "other accidents of childbirth," and "puerperal fever" amplifies the information on pages 204 and 205 by giving details of the causes comprised by those titles.

Table LXXV shows the causes of deaths stated to have been complicated by the existence of the puerperal state. Heart disease was much the commonest of these, and after it pneumonia and tuberculosis.

TABLE LXXIV.—ENGLAND AND WALES, 1913.—DEATHS OF WOMEN CLASSED TO PREGNANCY AND CHILDBEARING.

Cause of Death.	All Ages.	Ages.						
		15—	20—	25—	30—	35—	40—	45 and up-wards.
134A. Abortion ... ..	120	1	14	24	32	30	16	3
B. Hæmorrhage of pregnancy ... ..	109	1	4	17	22	40	24	1
C. Uncontrollable vomiting ... ..	42	3	7	6	10	10	6	—
D. Ectopic gestation ... ..	73	1	9	12	20	18	13	—
E. Other accidents of pregnancy:—								
Carneous mole ... ..	1	—	—	—	1	—	—	—
Hydatid mole ... ..	7	—	1	3	1	—	1	1
Vesicular mole ... ..	1	—	—	1	—	—	—	—
Hydræmia ... ..	3	—	1	—	—	1	1	—
Retroversion of gravid uterus ... ..	3	—	—	—	3	—	—	—
Incarceration of gravid uterus ... ..	1	—	—	—	1	—	—	—
Pregnancy apart from above complications:—								
(a) With secondary causes as follows:—								
Embolism, thrombosis ... ..	5	—	—	—	2	2	1	—
Phlebitis ... ..	2	—	—	—	—	1	—	—
Edema of lungs ... ..	1	—	—	—	1	—	—	—
Acute yellow atrophy of liver ... ..	1	—	—	—	1	—	—	—
Pyelitis ... ..	3	—	1	1	—	1	—	—
(b) Without stated secondary cause	5	—	1	1	1	1	1	—
135. Puerperal hæmorrhage ... ..	507	9	56	76	134	150	78	4
136. Other accidents of childbirth:—								
Contracted pelvis ... ..	27	1	3	6	8	7	1	1
Craniotomy ... ..	13	—	2	1	4	2	4	—
Cæsarean section ... ..	19	—	2	5	5	3	3	1
Version ... ..	4	—	—	—	1	1	1	1
Instrumental delivery ... ..	9	—	2	3	2	—	2	—
Rupture of uterus ... ..	33	—	2	3	11	10	7	—
Rupture of uterus and bladder ... ..	1	—	—	—	—	1	—	—
Rupture of bladder ... ..	1	—	1	—	—	—	—	—
Malpresentation ... ..	18	—	—	2	3	6	7	—
Inversion of uterus ... ..	10	—	1	2	5	2	—	—
Inertia of uterus ... ..	4	—	—	—	2	—	1	1
Hydrocephalic fœtus ... ..	4	—	—	—	2	2	—	—
Difficult and prolonged labour ... ..	44	1	1	10	12	15	5	—
Childbirth apart from above complications:—								
(a) With secondary causes as follows:—								
Anæmia ... ..	15	—	1	6	3	1	4	—
Meningitis ... ..	4	—	2	—	2	—	—	—
Hemiplegia ... ..	1	—	—	1	—	—	—	—
Acute endocarditis ... ..	2	—	—	1	1	—	—	—
Mitral regurgitation ... ..	2	—	—	1	1	—	—	—
Dilatation of heart ... ..	10	—	—	3	2	3	2	—
Bronchiectasis ... ..	1	—	—	1	—	—	—	—
Bronchitis ... ..	7	—	—	2	—	1	4	—
Broncho-pneumonia ... ..	4	—	2	2	—	—	—	—
Pneumonia ... ..	42	2	7	9	8	10	6	—
Pleurisy ... ..	5	—	—	2	1	2	—	—
Congestion of lungs ... ..	8	—	—	2	—	5	1	—
Asthma ... ..	1	—	—	—	—	1	—	—
Gastritis ... ..	5	—	1	2	1	1	—	—

TABLE LXXIV.—continued.

Cause of Death.	All Ages.	Ages.						
		15—	20—	25—	30—	35—	40—	45 and up-wards.
Childbirth apart from above complications—continued.								
(a) With secondary causes as follows—continued.								
Dyspepsia ... ..	2	—	—	—	1	1	—	—
Hæmatemesis ... ..	1	—	—	—	—	—	1	—
Diarrhœa and enteritis ... ..	7	1	—	3	2	1	—	—
Intestinal obstruction ... ..	1	—	—	—	—	—	1	—
Recto-vaginal fistula ... ..	2	—	—	1	—	—	1	—
Acute yellow atrophy of liver ... ..	5	—	1	1	2	1	—	—
Abscess of kidney ... ..	1	—	—	—	—	1	—	—
Suppression of urine ... ..	2	—	—	1	1	—	—	—
Pyelitis ... ..	2	—	—	1	—	1	—	—
Hæmaturia ... ..	1	—	1	—	—	—	—	—
Cystitis ... ..	2	—	—	—	2	—	—	—
Dropsy ... ..	1	—	—	—	—	1	—	—
(b) Without stated secondary cause	53	1	5	8	14	15	9	1
137. Puerperal fever:—								
Puerperal septicæmia ... ..	671	15	122	170	165	144	52	3
sapræmia ... ..	36	1	4	8	12	8	3	—
peritonitis ... ..	126	6	29	20	42	18	11	—
salpingitis ... ..	3	—	—	1	1	—	1	—
lymphangitis ... ..	1	—	—	1	—	—	—	—
metritis ... ..	8	—	1	3	1	3	—	—
endometritis ... ..	12	—	—	5	4	2	1	—
parametritis ... ..	7	—	1	2	1	1	1	1
perimetritis ... ..	8	—	2	2	2	1	1	—
erysipelas ... ..	4	—	—	1	1	2	—	—
pyæmia ... ..	36	—	5	6	10	12	3	—
pelvic cellulitis ... ..	31	—	7	7	9	5	3	—
pelvic abscess ... ..	4	—	—	—	2	2	—	—
blood poisoning ... ..	5	—	2	2	1	—	—	—
fever (not otherwise described).	156	8	31	50	37	26	4	—
138A. Puerperal nephritis and uræmia ... ..	169	4	34	27	43	36	23	2
B. Puerperal albuminuria and Bright's disease.	51	1	7	14	8	15	3	3
C. Puerperal convulsions ... ..	535	65	126	137	97	73	30	7
139A. Puerperal phlegmasia alba dolens and phlebitis.	65	1	10	12	20	16	4	2
B. Puerperal embolism and sudden death	267	—	32	60	55	76	40	4
140. Puerperal insanity ... ..	28	1	2	10	7	7	1	—
141. Puerperal diseases of the breast ... ..	11	—	5	—	3	1	2	—
Total ... ..	3,492	123	548	758	847	796	384	36

TABLE LXXV.—ENGLAND AND WALES, 1913.—DEATHS OF WOMEN NOT CLASSED TO PREGNANCY AND CHILDBEARING, BUT RETURNED AS ASSOCIATED THEREWITH.

Enteric fever ... ..	9	1	3	2	2	1	—	—
Measles ... ..	1	—	—	—	—	1	—	—
Scarlet fever ... ..	8	—	3	3	—	2	—	—
Diphtheria ... ..	1	—	—	1	—	—	—	—
Influenza ... ..	41	1	3	15	10	6	6	—
Erysipelas ... ..	1	—	—	—	1	—	—	—
Pulmonary tuberculosis ... ..	55	—	3	18	19	9	6	—
Phthisis ... ..	24	—	7	3	5	8	1	—
Acute phthisis ... ..	15	1	1	2	3	7	1	—
Acute miliary tuberculosis ... ..	5	—	4	1	—	—	—	—
Tuberculous meningitis ... ..	2	—	1	—	—	1	—	—
Tuberculosis of peritoneum and intestines ... ..	5	—	3	1	1	—	—	—
Other forms of tubercle ... ..	3	—	—	2	—	—	1	—
Syphilis ... ..	6	2	3	—	1	—	—	—
Gonococcus infection ... ..	1	—	—	—	—	1	—	—



TABLE LXXV.—continued.

Cause of Death.	All Ages.	Ages.						
		15—	20—	25—	30—	35—	40—	45 and upwards.
Cancer ... ..	18	—	—	1	5	5	6	1
Rheumatic fever ... ..	14	1	1	5	3	1	3	—
Diabetes ... ..	4	—	—	1	1	1	—	1
Exophthalmic goitre ... ..	2	—	—	1	—	—	—	—
Addison's disease ... ..	1	—	1	—	—	—	—	—
Leucocythæmia ... ..	3	—	1	—	—	—	—	—
Anæmia ... ..	12	—	—	2	3	5	2	—
Purpura ... ..	2	—	—	1	—	—	1	—
Hæmophilia ... ..	1	—	—	—	—	1	—	—
Meningitis ... ..	1	—	1	—	—	—	—	—
Diseases of the spinal cord ... ..	2	—	—	—	2	—	1	—
Cerebral hæmorrhage, apoplexy ... ..	5	—	—	—	2	2	—	—
Epilepsy ... ..	10	1	1	2	3	2	1	—
Chorea ... ..	8	—	3	4	1	—	—	—
Neuritis ... ..	4	—	—	—	—	—	3	1
Otitis media ... ..	1	—	1	—	—	—	—	—
Acute endocarditis ... ..	9	—	3	—	1	4	1	—
Valvular disease ... ..	114	—	15	27	25	28	19	—
Fatty degeneration of the heart ... ..	6	—	—	—	2	2	1	1
Other organic disease of the heart ... ..	81	—	7	9	20	29	15	1
Embolism and thrombosis ... ..	4	—	—	2	1	1	—	—
Varicose veins ... ..	1	—	—	—	—	—	1	—
Laryngitis ... ..	2	—	2	—	—	—	—	—
Diseases of the thyroid body ... ..	3	—	—	—	—	2	1	—
Bronchitis ... ..	25	—	3	—	5	7	7	1
Broncho-pneumonia ... ..	10	—	—	3	—	4	3	—
Lobar pneumonia ... ..	76	3	8	23	21	13	7	1
Pneumonia (type not stated) ... ..	51	3	7	6	16	12	7	—
Pleurisy ... ..	8	—	—	1	4	2	1	—
Asthma ... ..	6	—	1	—	2	1	2	—
Tonsillitis ... ..	1	—	—	—	—	—	—	—
Perforating ulcer of the stomach ... ..	14	3	—	3	1	5	2	—
Gastritis ... ..	2	—	—	—	1	1	—	—
Other diseases of the stomach ... ..	1	—	—	—	1	—	—	—
Diarrhœa and enteritis ... ..	13	—	1	2	4	4	2	—
Appendicitis ... ..	9	—	4	2	1	2	—	—
Hernia ... ..	1	—	—	—	—	1	—	—
Intestinal obstruction ... ..	7	—	—	2	1	—	4	—
Acute yellow atrophy of liver ... ..	4	—	—	1	2	—	1	—
Other diseases of the liver ... ..	7	—	—	1	2	—	1	—
Peritonitis ... ..	1	—	—	—	—	—	—	—
Bright's disease... ..	57	2	2	16	10	18	7	2
Other diseases of the kidney ... ..	5	—	—	1	—	3	1	—
Diseases of the bladder ... ..	2	—	—	1	—	1	—	—
Uterine tumour (non-cancerous) ... ..	7	—	—	2	2	1	2	—
Ovarian cyst, tumour (non-cancerous) ... ..	2	—	—	—	—	—	—	—
Other diseases of the female genital organs ... ..	2	—	—	1	—	1	—	—
Violence ... ..	7	1	1	2	1	—	2	—
Total ... ..	803	19	94	177	185	197	122	9

Anæsthetics.—For reasons stated in the Reports for 1911 and 1912 deaths during or connected with the administration of anæsthetics, classed until 1911 to the anæsthetic as primary cause except in the case of deaths from cancer and strangulated hernia, are now in all cases classified to the condition for which the anæsthetic was administered. At the same time, in order to record as fully as possible the information collected as to deaths under anæsthetics, a secondary tabulation was commenced of all deaths on the certificates relating to which any mention is made of the administration of an anæsthetic. These are classified in Table LXXVI according to sex and age and to the nature of anæsthetic, while the lists appended to the table show for each sex the disease or accident to which the death has been primarily classed and the age of the patient, but not the kind of anæsthetic. Causes of death in these lists are numbered in International List order. The bracketed figures following them denote the exact ages of the deceased, ages of males being printed thus (3) and of females thus (3).

TABLE LXXVI.—ENGLAND AND WALES, 1913.—DEATHS UNDER OF CONNECTED WITH THE ADMINISTRATION OF VARIOUS ANÆSTHETICS.

Anæsthetic.	All Ages.	Age.																	
		0—	1—	2—	3—	4—	5—	10—	15—	20—	25—	30—	35—	40—	45—	50—	55—	65—	
A.C.E. Mixture ... ..	M. 5	—	—	1	—	—	1	—	—	—	—	—	—	—	1	1	—	—	1
Alcohol and chloroform ... ..	F. 2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Chloroform ... ..	M. 1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Chloroform and ether ... ..	F. 71	5	8	4	3	—	5	6	4	—	3	4	5	9	6	3	4	2	2
Cocaine ... ..	M. 39	2	1	—	1	—	5	—	2	3	3	4	6	3	2	1	4	2	—
Ether ... ..	F. 16	1	1	—	—	—	1	—	2	—	—	2	—	4	4	—	—	—	—
Ethyl chloride ... ..	M. 9	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—
Hedonal ... ..	F. 2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Nitrous oxide ... ..	M. 16	1	1	—	—	—	—	—	—	—	1	1	1	—	—	1	2	3	2
Stovaine ... ..	F. 9	—	1	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—
Kind not stated ... ..	M. 3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total... ..	F. 4	18	8	3	—	10	12	10	3	7	10	15	21	17	13	13	11	—	—
	M. 113	4	2	1	1	2	13	3	7	9	6	9	13	8	12	6	9	8	—

CONDITIONS FOR WHICH ANÆSTHETICS WERE ADMINISTERED IN THE ABOVE CASES.

7. Scarlatinal nephritis, empyema (8). 9. Diphtheria, tracheotomy, (5, 5). 20. Sapræmia, wound of knee (50); septic condition, amputation of thumb (56); blood poisoning, splinter in thumb (45). 25. Actinomycosis, resection of rib (41). 28. Tuberculosis of lung and neck glands (5); tuberculous phthisis, fistula in ano (46). 31. Tuberculous anal fistula (38). 32. Retro-pharyngeal abscess (25). 34. Tuberculosis of—kidney (15); humerus (15); os calcis (6); breast (26); neck glands (1, 42); neck (1, 46). 36. Rickets (1). 37. Syphilitic laryngitis, tracheotomy (23). 39-45. Cancer of—lip (54, 60); tongue (43, 48, 49, 50, 54, 65); mouth (40, 46); jaw (39); pharynx (71); œsophagus (39, 46); intestines (undefined) (47, 60, 69); rectum (41, 46, 64); uterus (43, 55, 57); cheek (43); eyelid (50, 68); lung (40); parotid (54); kidney (1); bladder (38, 51, 63); prostate (70); neck (63); throat (46); nose (19). 50. Diabetes, abscess of tongue (45); diabetes, gangrene of foot, amputation (58) 51. Exophthalmic goitre (18). 63. Infantile paralysis, tenotomy (8). 74. Cerebral tumour (35). 76. Mastoid disease (5, 5, 26, 5); ear disease (31, 24). 79. Mitral disease, operation, nature not stated (29); fatty heart, operation not stated (47); degeneration of heart, difficult childbirth (38); heart disease, removal of fluid in chest (43); heart disease, operation not stated (6). 80. Angina pectoris, extraction of teeth (65). 82. Thrombosis of lateral sinus (19). 84. Glands in neck (6). 86. Adenoids (2, 11, 13, 3, 8, 9); deflected septum of nose (17, 28). 87. Growth on vocal cords (4). 88. Goitre (15, 15, 48); enlarged thyroid (31). 91. Broncho-pneumonia, operation not stated (6). 92. Pneumonia, empyema (1, 2, 34, 51, 52, 21). 93. Empyema (1, 1, 2, 5, 6, 10, 29, 36, 36, 39, 56, 56, 2, 4); pleurisy, fluid on lung (5). 99. Dental operations (16, 31, 31, 32, 8, 20, 23, 45, 51); septic mouth, abscess of neck (0). 100. Removal of tonsils (1, 2, 3, 5, 7, 11, 11, 12, 12, 5, 7, 14); abscess in throat (1, 27); diseased throat (0). 102. Gastric ulcer (35, 38, 39, 44, 53). 104. Duodenal ulcer (46). 108. Appendicitis (10, 11, 42, 45, 48, 7, 7, 14, 19, 22). 109. Hernia (0, 1, 1, 1, 1, 2, 2, 3, 17, 29, 38, 39, 51, 52, 55, 67, 69, 0, 34, 48, 48, 59, 66, 69, 77, 81); intestinal obstruction (0, 0, 60, 62, 65, 8, 35, 45, 50, 69); intestinal obstruction, operation for abscess in chest (36). 110. Gangrene of bowel (20); fæcal fistula (33, 43). 114. Gall stones (38). 115. Abscess of gall bladder (47); operation on gall bladder (51, 61); liver disease, operation for cyst on eyelid (22). 117. Peritonitis (11); cyst of mesentery (3). 118. Pancreatitis (57, 66); tumour of pancreas (49). 122. Pyonephrosis (39); pyelonephritis (43). 124. Neoplasm of bladder (60); retention of urine (67); rupture of bladder, anæsthetic for passing catheter (36). 125. Stricture of urethra (44); fistula of bladder (51).



126. Calculus of prostate (41). 127. Hydrocele (30). 129. Uterine tumour (31, 43, 45, 53). 130. Prolapse of uterus (19, 36); displacement of uterus (31); abscess round uterus (33). 132. Pyosalpinx (31); diseases of Fallopian tubes (39); abscess of external genitals (1); rupture of perineum (48). 134. Abortion (38, 38); ante-partum hæmorrhage (35). 135. Placenta prævia (35). 136. Version (40, 45); parturition (24, 29, 33, 34, 34, 40, 42). 137. Septic absorption after childbirth (24). 144. Abscess (33, 50). 146. Osteo-myelitis (2, 61); tumour of jaw (40); bony growth of spine (1); removal of a bone (42). 147. Removal of split cartilage (36). 149. Talipes (0, 0). 150. Phimosi (0, 0, 1, 1, 1, 1); harelip (0); cleft palate (5); nævus (0, 0); deformed feet (1). 155-186. Various forms of violence (11, 11, 15, 26, 27, 32, 32, 35, 37, 38, 40, 40, 41, 41, 41, 41, 46, 47, 48, 50, 55, 57, 64, 67, 79, 16, 16, 43, 69). 189. Operation, nature not stated (2, 11, 16, 26, 29, 39, 42, 14, 21, 41).

Of the males whose deaths are referred to in Table LXXVI, 22 per cent. were under 5 years of age and 40 per cent. under 20 years, the corresponding proportions for females being 9 and 29 per cent. Not only are boys frequently operated on for certain reasons, such as hernia and phimosi, which seldom or never apply in the case of girls, but where the object of operation is equally applicable to both sexes, *e.g.*, tuberculosis, enlarged tonsils, empyema, the mortality recorded for boys is very much higher. Very few deaths of aged persons appear in the table. The nature of the anæsthetic was stated in only 63 per cent. of the cases. In 59 per cent. of the cases in which it was stated chloroform is recorded as the only anæsthetic administered, and in 18 per cent. as administered in combination with some other agent. Mention is made of anæsthetics other than alcohol, chloroform, ether and nitrous oxide in ten instances as against nine in 1912 and four only in 1911, so the use of the newer agents would seem to be increasing.

Operations for tubercle, cancer, the removal of tonsils and adenoids, the extraction of teeth, empyema, appendicitis, hernia, intestinal obstruction, and various forms of injury, appear to involve the greatest mortality under or related to anæsthetics. In some cases this is evidently due to the frequency with which the operation is performed and in others to its gravity or the severity of the condition requiring it.

84A. **Status Lymphaticus.**—In addition to the 180 deaths primarily classified to this condition its presence was noted in the case of 27 deaths under anæsthetics, which were referred to the condition leading to the administration of the anæsthetic. The sex- and age-distribution of these was as follows:—

	0—	5—	10—	15—	20—	25—	35—
Males ...	7	2	3	4	—	2	1
Females ...	2	2	1	1	1	1	—

In seven of the cases the nature of the anæsthetic was not stated; in 14 of the remainder it was chloroform only, in one chloroform and ether, in three ethyl chloride, in one nitrous oxide, and in one A.C.E. mixture. The operations during which these deaths occurred seem for the most part not to have been of a dangerous nature.

The return of status lymphaticus as a cause of death is rapidly increasing, the number of deaths primarily so classified having grown from 121 in 1911 to 180 in 1913.

189. **Ill-defined Causes of Death.**—The deaths allocated to No. 189 of the list of causes, with which this title is particularly associated, number 2,469. Addition of Nos. 187 and 188 however, which are included under the same group title in the International List, brings this number up to 2,768. This figure excludes from the group as given in the old list of causes of death (see Tables 19 and 20) the ill-defined diseases of infancy and old age, which now appear under titles 151 and 154, and together accounted for 40,770 deaths in 1913, as well as 452 deaths from other causes of less numerical importance; and includes 1,585 deaths, mainly from syncope and heart failure, not formerly classified as ill-defined.\* When the appropriate additions and deductions have been made the number of ill-defined deaths in Table 19—42,405—is arrived at. This number is the lowest of recent years. It forms 8·4 per cent. of the total deaths, as against 8·9 per cent. in 1912, and 9·5 per cent. in 1901-1910.

\* See Manual of Causes of Death, page xxxi.

The inquiries sent to medical practitioners asking for further information respecting deaths which had been indefinitely certified were fewer than in 1911 and 1912, but more than in any previous year. Since 1911 they have been addressed to coroners as well as to medical practitioners. Thanks to the courtesy of the coroners applied to, only 61 deaths appear in 1913 under "Accident (not otherwise described)" without further qualification, and six under "Suicide (otherwise or not stated)," as against 320 and 122 respectively in 1910.

In order at once to facilitate inquiries and to diminish if possible their number in the future a list of indefinite forms of certificate, with indications of the further information desirable in each case, has been distributed with the inquiries from 1911 onwards, and is now bound with each book of death certificate forms issued. By its means the supplemental information desired in any given case is readily indicated, and it has been found moreover that the number of deaths certified in ways respecting which inquiry is at present made has fallen appreciably since the list came into use.

The total number of inquiries issued respecting deaths registered in 1913 was 8,852, and to these 7,575 replies were received, as against 12,563 inquiries and 10,718 replies in 1911, the subjects of inquiry in the two years having been substantially the same. In 1910 the number of inquiries was 6,130, to which 5,549 replies were received.

The principal subjects of inquiry, and the resultant classification of the deaths concerned, are indicated in Table LXXVII. In some cases the allocation of a death, after satisfactory information has been obtained by means of inquiry, is the same as that

TABLE LXXVII.—ENGLAND AND WALES, 1913.—REPLIES TO INQUIRIES RESPECTING INDEFINITELY CERTIFIED CAUSES OF DEATH.

Subject of Inquiry.	Replies received.	Replies amplifying previous information.	Deaths allocated as the result of inquiry to various important headings.
Croup ... ..	125	103	Diphtheria 14, Laryngismus stridulus 20, Laryngitis 51.
Membranous laryngitis ... ..	27	22	Diphtheria 12.
Pyæmia, septicæmia, &c. ... ..	246	127	Diseases of the teeth and gums 22, Puerperal fever 17, Carbuncle, Boil 7.
Tuberculosis ... ..	301	298	Pulmonary tuberculosis 106, Acute phthisis 46, Acute miliary tuberculosis 34, Tuberculosis of peritoneum, &c. 16, Disseminated tuberculosis 73, Other forms of tubercle 16.
Cancer (part or organ affected not stated).	976	887	Part or organ stated in 886 cases.
Tumour growth, &c. ... ..	474	267	Cancer 226.
Rheumatism ... ..	77	74	Rheumatic fever 37, Chronic rheumatism 15.
Basal or basic meningitis ... ..	84	47	Tuberculous meningitis 39.
Cerebro-spinal meningitis ... ..	132	111	Tuberculous meningitis 8, Cerebro-spinal fever 96.
Paraplegia ... ..	209	161	Syphilis 21, Diseases of the spinal cord 73, Cerebral hæmorrhage, apoplexy 17, Arterial sclerosis 17.
General paralysis (outside asylums)	194	169	Cerebral hæmorrhage, apoplexy 13, General paralysis of the insane 105.
Paralysis ... ..	221	185	Diseases of the spinal cord 32, Cerebral hæmorrhage, apoplexy 64, Hemiplegia 11, Arterial sclerosis 16, Cerebral embolism 9.
Cerebral tumour ... ..	654	242	Tuberculous meningitis 29, Syphilis 47, Cancer 70.
Fibroid phthisis ... ..	174	89	Pulmonary tuberculosis 85.
Hæmoptysis ... ..	93	62	Pulmonary tuberculosis 32, Phthisis 9.
Stomatitis ... ..	93	76	Thrush, aphthous stomatitis 55.
Stricture of œsophagus ... ..	71	57	Cancer 48.
Hæmatemesis ... ..	80	59	Cancer 12, Gastric ulcer 23, Cirrhosis of liver 11.
Pyloric obstruction, stenosis, &c. ...	51	31	Cancer 18, Gastric ulcer 7.
Jaundice ... ..	72	35	Cancer 14, Gallstones 11.
Peritonitis ... ..	399	207	Tuberculosis of peritoneum, &c. 24, Cancer 8, Gastric ulcer 19, Duodenal ulcer 8, Appendicitis 53, Hernia, intestinal obstruction 19, Diseases of female genital organs 11, Puerperal fever 12.
Pemphigus (of infants) ... ..	159	76	Syphilis 72.
Hydrocephalus ... ..	183	161	Tuberculous meningitis 23, Congenital hydrocephalus 98.
Violence ... ..	194	185	Precise form of suicide 14, Injury by fall 57, Injury in mines and quarries 19, Injury by machines 7, Injury by crushing 32.
Ascites dropsy ... ..	73	64	Diseases of the heart 26, Cirrhosis of liver 9.
Syncope, heart failure (ages 1-70)	446	355	Influenza 7, Diseases of the heart 214, Arterial sclerosis 7, Bronchitis 15, Old age 10.
Operation ... ..	192	164	Cancer 15, Gastric ulcer 7, Hernia, intestinal obstruction 19, Uterine tumour 7.
Other indefinite forms of certificate	1,575	1,181	
All Subjects ... ..	7,575	5,495	



provisionally assigned to it on the original incomplete information. Instances of this are afforded by the 106 deaths from "tuberculosis" classed as the result of inquiry to pulmonary tuberculosis, and the 37 deaths from "rheumatism" classed to rheumatic fever. It must not therefore be assumed that all entries in the table represent changes in classification, but in all cases they represent improvement in classification, whether by increase of correctness, of definiteness, or of reliability of the various entries.

Sometimes the significance of a term is so clearly established as the result of a year or two's inquiries that these need not be continued, but where, as is more frequently the case, an indefinite term is found to possess different meanings for different users, the inquiries have to be kept up. They form a most valuable means of increasing the accuracy of the returns of causes of death included in these Reports, and as the Registrar General is necessarily dependent in regard to them upon the goodwill of those to whom they are addressed it is fitting that acknowledgment should here be made of the services willingly rendered in replying to them as well as of the courtesy of those medical officers of health who transmit to the Registrar-General the results of similar inquiries made by them.

DEATHS IN INSTITUTIONS FOR THE SICK OR INFIRM.

The numbers of deaths occurring in various classes of institutions are shown on pages 302-3, with distinction of the four classes of area dealt with in this Report, and of sex and age, but not of cause. The additional distinction of cause is added on pages 588-590 for that portion of the list of causes selected for specially detailed analysis in the present Report (deaths of 1912).

The deaths in Poor Law Institutions (workhouses and workhouse infirmaries) numbered 55,059, those in lunatic asylums 11,324, and in hospitals 40,659. In addition to these, 963 occurred at addresses known as those of nursing homes, but as it is probable that many more deaths in nursing homes were not recognised as such, these deaths are not distinguished in the table on pages 302-3. The numbers quoted above yield the proportions in the following table, which is continued from previous Reports :-

TABLE LXXVIII.

Public Institutions.	Percentage of Total Deaths.			Rate per 1,000 living.		
	Ten years, 1903-12.	1912.	1913.	Ten years, 1903-12.	1912.	1913.
Workhouses and Workhouse Infirmaries.	10.06	11.34	10.91	1.49	1.51	1.49
Lunatic and Idiot Asylums ...	1.99	2.27	2.24	0.29	0.30	0.31
Hospitals ...	6.82	7.82	8.05	1.01	1.04	1.10
Total ...	18.87	21.43	21.20	2.79	2.85	2.90

In the tabulation on pages 302-3, the distinction of age has been substituted for that of cause of death, which was drawn in the corresponding portion of the Reports for 1911 and 1912. Both are of considerable interest, but as they cannot be simultaneously dealt with except on a limited scale it was decided this year to classify the deaths by age and to return later to the distinction of cause of death. The numbers tabulated are shown in Table LXXIX as proportions per 1,000 total deaths at each age.

Perhaps the most remarkable feature of the table is the very high proportion of institutional deaths in London, amounting to 46.5 per cent. for males and 40.9 per cent. for females as against 23.5 and 18.8 for the country at large. This proportion, as might be expected, declines regularly in both sexes with decreasing urbanization, but the gap between London and the county boroughs is by far the greatest.

At certain ages, however, the figures are even more remarkable. At all ages between 1 and 65 years the number of London males dying in institutions is practically half, if not more than half, of the total dying at the age, and at 5-15 years it is almost two-thirds of the total. The proportion of male deaths occurring in institutions is higher than that of female deaths at every age in every class of area, but at all ages between 5 and 45 years, at least half the deaths of London females occur in institutions. In early infancy and extreme old age, institutional deaths are comparatively few, except in London, where they do not fall as low as 30 per cent. at any age.

TABLE LXXIX.—DEATHS in VARIOUS CLASSES of INSTITUTIONS and ELSEWHERE per 1,000 TOTAL DEATHS at the SAME AGES.

		AGES AT DEATH.											
		All Ages.	0—	1—	5—	15—	25—	35—	45—	55—	65—	75—	85—
MALES.													
Poor Law Institutions.	London ...	252	126	125	93	179	249	306	304	322	351	351	298
	County Boroughs	138	36	47	49	98	155	181	191	206	234	202	154
	Other Urban Dist.	87	18	22	29	51	77	98	110	126	145	147	157
	Rural Districts ...	69	12	12	16	28	41	54	78	85	108	109	128
	England & Wales	122	37	44	41	78	124	155	165	173	189	171	159
Lunatic Asylums.	London ...	39	—	0	21	49	75	76	59	53	48	46	22
	County Boroughs	19	0	—	4	25	44	56	35	28	21	16	7
	Other Urban Dist.	19	0	0	9	28	37	52	39	25	23	12	11
	Rural Districts ...	21	—	1	14	25	60	55	45	25	21	16	9
	England & Wales	22	0	0	9	29	49	58	41	30	25	18	11
Hospitals.	London ...	174	199	364	506	314	221	184	162	120	54	26	11
	County Boroughs	96	56	152	301	222	188	140	111	70	37	17	12
	Other Urban Dist.	74	30	98	237	198	163	137	97	64	32	16	6
	Rural Districts ...	53	20	71	177	163	137	112	88	58	25	10	2
	England & Wales	91	59	151	280	215	176	142	111	72	34	15	6
Elsewhere.	London ...	535	675	511	380	458	455	434	475	505	547	577	669
	County Boroughs	747	908	801	646	655	613	623	663	696	708	765	827
	Other Urban Dist.	820	952	880	725	723	723	713	754	785	800	825	826
	Rural Districts ...	857	968	916	793	778	762	779	789	832	846	865	861
	England & Wales	765	904	805	670	678	651	645	683	725	752	796	824
FEMALES.													
Poor Law Institutions.	London ...	221	121	126	112	195	208	257	249	262	282	285	268
	County Boroughs	106	33	50	59	115	120	149	135	132	150	140	142
	Other Urban Dist.	62	20	21	26	46	60	67	70	75	86	101	101
	Rural Districts ...	46	10	16	15	35	35	40	46	45	59	68	88
	England & Wales	95	38	45	46	86	95	119	116	114	125	127	129
Lunatic Asylums.	London ...	45	0	1	16	52	66	75	67	70	64	52	39
	County Boroughs	19	0	0	3	20	42	43	40	29	24	18	9
	Other Urban Dist.	19	0	0	4	18	39	38	43	28	22	17	13
	Rural Districts ...	22	—	—	10	26	44	45	45	31	26	17	12
	England & Wales	23	0	0	6	24	44	46	46	34	29	22	15
Hospitals.	London ...	143	199	348	461	275	242	165	117	86	38	12	9
	County Boroughs	76	50	134	285	166	156	113	82	48	20	8	2
	Other Urban Dist.	53	24	80	227	137	114	96	75	43	18	7	4
	Rural Districts ...	39	14	65	171	107	96	90	75	37	14	4	—
	England & Wales	70	54	134	264	158	142	111	84	49	20	7	3
Elsewhere.	London ...	591	680	525	411	478	484	503	567	582	616	651	684
	County Boroughs	799	912	816	653	699	682	695	743	791	806	834	847
	Other Urban Dist.	866	956	899	743	799	787	799	812	854	874	875	882
	Rural Districts ...	893	976	919	804	832	825	825	834	887	901	911	900
	England & Wales	812	908	821	684	732	719	724	754	803	826	844	853

The table shows how remarkably different is the age-distribution of the deaths occurring in the two principal classes of institutions for the sick. Broadly speaking the hospital deaths are deaths of young, and the poor law institution deaths of old persons. At all ages up to 35 in the great towns, and to 55 in the country districts, hospital deaths are in excess of poor law, and above these ages poor law are in excess of hospital deaths.

The proportion of deaths occurring in lunatic asylums is greatest in middle age, and in the London population between the ages of 35 and 45 seven and a half deaths out of every 100 are those of lunatics. The proportion of London deaths occurring in asylums is indeed extraordinarily high, being about twice as great as that of the rural districts, which rank next



to London in this respect, and more than twice as great as those of the other towns of the country, great and small. If this difference between London and the other great towns especially is not of administrative origin, and can therefore be accepted as in any degree corresponding to the distribution of insanity, it seems anomalous that London conditions, comparatively favourable as they are to life in general, should so tend to its wastage by insanity, while in the other great towns, where the conditions of physical health are below the London standard, those affecting the mind should be so vastly superior, and not less so than even in the rural districts. The anomaly indeed is so great as to suggest that although in all parts of the country the great bulk of certified lunatics are now detained in asylums, the relative numbers of their deaths may not form a reliable indication of the distribution of insanity.

UNITED KINGDOM.

Population.

The first complete census of the United Kingdom was taken in 1821, when the population numbered 20,893,584 persons; during the 90 years, 1821-1911, the population more than doubled itself, the numbers enumerated at the beginning of April, 1911, amounting to 45,221,615 persons.

The method hitherto adopted, in the absence of precise information as to migration, for estimating the population of England and Wales, has been described on page ix. The populations of the several divisions of the United Kingdom are provisionally estimated as follows:—

TABLE LXXX.—POPULATION ESTIMATED to the MIDDLE of the YEAR 1913.

—	Persons.	Males.	Females.
England and Wales ... ..	36,919,339	17,857,014	19,062,325
Scotland ... ..	4,728,132	2,292,946	2,435,186
Ireland ... ..	4,379,012	2,186,476	2,192,536
United Kingdom ... ..	46,026,483	22,336,436	23,690,047

Marriages.

The marriages in the United Kingdom during the year 1913 numbered 342,538, corresponding to a rate of 14.9 persons married per 1,000 of the population at all ages.

This rate was 0.1 per 1,000 above the corresponding rate in 1912 and 0.2 per 1,000 above the average rate in the ten years 1903-1912.

TABLE LXXXI.

—	Marriages, 1913.	Persons Married per 1,000 Living.	
		Ten Years, 1903-1912.	1913.
England and Wales ... ..	286,583	15.4	15.5
Scotland ... ..	33,689	13.7	14.2
Ireland ... ..	22,266	10.4	10.2
United Kingdom ... ..	342,538	14.7	14.9

Births.

The births registered in the United Kingdom in the year 1913 numbered 1,102,533 and were in the proportion of 24.0 per 1,000 of the population at all ages.

This rate was 0.1 per 1,000 above the corresponding rate in 1912; compared with the average in the ten years 1903-1912 the birth-rate in 1913 showed a decrease of 2.2 per 1,000.

TABLE LXXXII.

—	Births, 1913.	Births per 1,000 Living.	
		Ten Years, 1903-1912.	1913.
England and Wales ... ..	881,890	26.3	23.9
Scotland ... ..	120,549	27.7	25.5
Ireland ... ..	100,094	23.3	22.8
United Kingdom ... ..	1,102,533	26.2	24.0

Deaths.

The deaths registered in the United Kingdom in the year 1913 numbered 652,742 and were in the proportion of 14.2 per 1,000 of the population at all ages.

This rate was 0.4 per 1,000 above the corresponding rate in 1912; compared with the average in the ten years 1903-1912 the death-rate in 1913 showed a decrease of 1.0 per 1,000.

TABLE LXXXIII.

—	Deaths, 1913.	Deaths per 1,000 living.	
		Ten years, 1903-1912.	1913.
England and Wales ... ..	504,975	14.9	13.7
Scotland ... ..	73,073	16.1	15.5
Ireland ... ..	74,694	17.2	17.1
United Kingdom ... ..	652,742	15.2	14.2

Infant Mortality.

The following Table shows the proportion of deaths of infants under one year of age to 1,000 births in each division of the United Kingdom.

TABLE LXXXIV.

—	Deaths under 1 year per 1,000 Births.	
	1903-1912.	1913.
England and Wales ... ..	121	108
Scotland ... ..	114	110
Ireland ... ..	94	97
United Kingdom ... ..	118	108

In Table 42 (pages 100, 102, 106 and 107) the population, marriages, births, deaths and principal causes of death are given for a series of years for the United Kingdom and for each of its three divisions.

MORTALITY IN THE ARMY.

The average regimental strength of the British Army at home and abroad during the year 1913 was 239,647, and the deaths during the year numbered 759, giving a death-rate of 3.2 per 1,000, as compared with 3.4, 3.4, and 3.0 per 1,000, respectively, in the three preceding years. The mortality in the Army abroad was 3.8 per 1,000, against 4.3, 4.4, and 3.8 in the three preceding years; whilst that in the Army at home was 2.6 per 1,000, against 2.5, 2.5, and 2.3 (Table 34).



MORTALITY IN THE NAVY.

The average strength of the service afloat during the year 1913 was 126,830, and the deaths during the year numbered 412, being in the proportion of 3·24 per 1,000 of the strength, against an average of 3·25 per 1,000 in the six years immediately preceding. Of the 412 deaths in 1913, 262 were caused by disease and 150 by violence; the death-rate from disease was therefore 2·06 per 1,000, and that from violence 1·18 per 1,000. Of the 150 deaths by violence, 76 were due to drowning, and 5 to heatstroke, while 14 were cases of suicide.

BIRTHS AND DEATHS AT SEA.

*Marine Register Book.*—In accordance with the Births and Deaths Registration Act of 1874 and the Merchant Shipping Act of 1894, Commanding Officers of ships trading to or from British ports are required, under penalty, to transmit returns of all births and deaths occurring on board their ships to the Registrar-General of Shipping and Seamen, who furnishes certified copies of such returns to the Registrars-General of Births and Deaths for England, Scotland, and Ireland. Similar returns are furnished to the Registrars-General of Births and Deaths by officers in charge of His Majesty's ships. These returns of births and deaths at sea constitute the "Marine Register Book." During the year 1913, this register was increased by the addition of 258 entries of birth and 2,957 entries of death.

*Mercantile Marine.*—A return received from the Marine Department of the Board of Trade shows the number of masters and seamen employed in sea-going vessels (excluding fishing vessels and yachts) registered in the United Kingdom and the Isle of Man under the Merchant Shipping Act in the years 1893–1913, and the number of deaths reported to the Board as occurring amongst this population. In the year 1912 the number employed was 251,598, of whom 12,565 were employed in sailing vessels, being 2,521 fewer than in the preceding year, and 239,033 in steam vessels, being 7,073 more than in the preceding year.

The reported deaths from all causes in sailing or steam vessels during the year ended 30th June 1913, numbered 1,989, of which 1,103 resulted from disease, suicide, &c., 368 from wreck or casualty to ship, and 518 from accident other than wreck or casualty to ship, showing a death-rate from all causes of 7·9 per 1,000 of the strength; this rate was 1·8 per 1,000 below the mean rate in the previous five years. (Table 36.) It must not be compared with the mortality in the Navy, where the average age of the men employed is very much lower.

PROGRESS OF REGISTRATION.

The names in the alphabetical indexes of births, deaths, and marriages recorded in the national registers of England and Wales were increased during the year 1913 by 1,960,031, this addition raising the total of names in the indexes, which at the end of 1913 embraced a period of 76½ years, to 126,457,464.

The following statements as to the number of prosecutions for offences against the Registration Acts and of searches in the registers have been prepared by the Secretary:—

OFFENCES AGAINST THE REGISTRATION ACTS.

In 1913, 15 persons, on prosecution by order of the Registrar-General, were convicted of different offences against the Registration Acts. The offences for which convictions were obtained were as under:—

For giving a false age when registering the death of an old-age pensioner ... ..	8
For otherwise giving false information to the registrar when registering a birth or death ... ..	1
For falsifying certificate of birth or death and using same as true ...	4
For neglecting to register a birth and failing to comply with requisitions to register it ... ..	1
For burying the body of a live-born child as still-born without production of proper authority, and for failing to notify such burial to the registrar ... ..	1

In addition to the above prosecutions initiated by the Registrar General, proceedings were taken by the Public Prosecutor in several cases of false notice and declaration for marriage.

SEARCHES AND CERTIFICATES.

Besides the certified copies of the registered births, deaths, and marriages kept in England and Wales pursuant to the Registration Acts, a large number of other registers and records are deposited in this Office under statute or other arrangement. A list of these various registers and records will be found on pages xxix–xxxii of the Annual Report for 1895. Searches may be made in any of these registers, and certificates obtained on payment of the prescribed fees.

During the 52 weeks ended 27th December, 1913, the total number of searches was 79,315, and of certificates issued 60,356. The total amount received in fees was 11,613l. 19s.

TABLE LXXXV.

Years.	Total Searches.	Certificates Issued.	Amount Received.
1866 (52 weeks) ... ..	12,135	10,017	£ s. d. 1,860 15 6
1875 (52 weeks) ... ..	26,356	20,282	3,879 15 6
1885 (52 weeks) ... ..	36,450	27,682	5,317 13 6
1895 (52 weeks) ... ..	53,289	35,727	7,200 12 6
1896 (53 weeks) ... ..	57,444	37,435	7,600 0 6
1897 (52 weeks) ... ..	58,664	37,485	7,686 8 6
1898 (52 weeks) ... ..	63,825	41,143	8,450 19 6
1899 (52 weeks) ... ..	57,670	44,793	8,551 19 6
1900 (52 weeks) ... ..	57,895	45,479	8,658 9 6
1901 (52 weeks) ... ..	58,445	45,254	8,645 10 0
1902 (53 weeks) ... ..	61,437	48,262	9,177 15 0
1903 (52 weeks) ... ..	63,519	49,469	9,437 9 6
1904 (52 weeks) ... ..	62,270	48,658	9,274 12 0
1905 (52 weeks) ... ..	65,142	50,310	9,611 9 0
1906 (52 weeks) ... ..	64,340	49,429	9,458 6 0
1907 (52 weeks) ... ..	69,249	53,058	10,194 9 0
1908 (53 weeks) ... ..	72,370	54,870	10,550 8 0
1909 (52 weeks) ... ..	73,543	54,674	10,568 8 0
1910 (52 weeks) ... ..	75,369	57,019	10,939 5 6
1911 (52 weeks) ... ..	75,005	56,347	10,875 6 0
1912 (52 weeks) ... ..	80,601	61,143	11,752 6 0
1913 (52 weeks) ... ..	79,315	60,356	11,613 19 0

Table LXXXV affords an indication of the extent to which the copies of the records kept in this Office have been utilised by the public for legal evidence of births, deaths, and marriages since 1866.

In addition to the above, 71,225 searches were made during 1913 free of charge for the purpose of verifying the ages of persons claiming old age pensions, and 91,917 searches were also made free of charge in connexion with a test by the National Insurance Audit Department of the statements of insured persons under the National Insurance Act.

T. H. C. STEVENSON.



## METEOROLOGY OF THE YEAR 1913.

## REMARKS ON THE CONSPICUOUS OCCURRENCES IN THE BRITISH ISLES IN 1913.

(Prepared in the Meteorological Office under the direction of  
W. N. SHAW, Esq., LL.D., Sc.D., F.R.S., Director.)

## A DULL YEAR.

An open winter, a wet spring, a summer very dry but neither sunny nor warm,  
and a uniformly mild autumn.

The following are the outstanding features of the meteorology of the year 1913:—

1. *Gales*.—A good deal of stormy and unsettled weather prevailed during the year and many gales—some of them severe and widespread—were experienced. January was a stormy month; the wind, practically always from points in the southern half of the compass, attained the force of a gale at one or other of the reporting stations on 23 days, and of a strong gale on over 18 days. The most stormy period set in on the 9th, when a strong South-Easterly gale sprang up locally in the far west and north; by the following day it spread over the country generally and became very violent under the influence of the exceptionally deep cyclone on the ocean and an anticyclone covering the greater part of Europe. To the west of Ireland the gradient was 2·2 inches in 750 miles. The situation was complicated on the 11th and 12th by the passage of a secondary depression over southern England. From the 9th to the 12th a whole gale was of daily occurrence on many portions of our coasts, Malin Head reporting a storm on the 10th and 11th, and Roche's Point registering gusts of 70 miles per hour on the 10th. Heavy rains at first accompanied the gales, changing to snow over the most of the Kingdom with the development of the secondary on the 11th. Strong gales again occurred on some coasts from the 14th to the 16th, some gusts at Roche's Point on the 14th reaching 75 miles per hour. At Lerwick a whole gale from the South-East was maintained daily from the 9th to the 16th. During the rest of the month there were several gales, some strong locally, and altogether only two days (25th and 26th) could be described as quiet. The next severe gale was from a south-westerly direction on the 7th and 8th February, there being then many instances of a strong gale, while Aberdeen, Donaghadee, Malin Head, Trevoise Head and Outer Farne reported a whole gale, and Southport and Lundy a storm. During squalls the wind rose to 72 miles per hour at Pendennis, 74 at Shields, 76 at Aberdeen, 79 at Dwyran, 80 at Quilty, 83 at Holyhead, and 86 at Southport. The gale was destructive, and on the 7th caused in the Shannon the highest tide known for 50 years. March, again, was a somewhat boisterous month. On the 4th, 5th, and 6th, following the appearance of a deep depression off the south-west of Ireland, a strong Southerly to Westerly gale was experienced on several parts of the northern, western, and southern coasts, and a whole gale in Shetland, Donegal, and Mayo. Severe squalls accompanied, and at Dwyran a gust of 76 miles per hour was recorded on the 6th. The eastward translation of a deep system along the Arctic Circle was associated with a strong gale round the north of Scotland on the 9th and 10th. The gales of the 15th to the 18th were due to a comparatively shallow disturbance which, while moving eastward beyond the north of Scotland on the 16th, threw off a secondary. Strong gales were felt on many coasts each day, and a whole gale off Pembroke. Again on the 19th and 20th several districts experienced a strong gale, and at Dungeness the wind rose to storm force. On the 22nd a secondary depression brought about a stormy night over southern England and caused numerous casualties, Worthing pier being destroyed. From the 15th to the 20th April a Southerly to Westerly gale, or strong gale, was felt daily on various sections of our coasts, with wet weather and some small falls of snow. A deep and irregularly moving depression approached our western coasts on the 25th, and until the 29th gales and strong gales from North-West, South-West, or South-East were common on most parts of the western coasts, with gusts ranging up to 72 miles per hour at Pendennis, which station also registered 59 miles in an hour. Thunder and hail-storms—severe and destructive in some instances—visited various parts of Ireland and England at the same time, and there were many heavy falls of rain. The weather during May was of a breezy

character generally, with occasional instances of gales, the most important being from the 8th to the 10th from between South and East; Malin Head reported a whole gale. This more windy period was attended by numerous thunderstorms and many heavy falls of hail and rain. Again between the 15th and 18th there were several reports of gales from North-East, North, and North-West. The second week of June was rough generally, and marked by the unusually severe and widespread summer gale of the 9th and 10th. During the passage of a deep cyclonic depression along the 60th parallel a gale or strong gale from the West or North-West blew in many localities on the 9th, and a strong gale to a whole gale on the 10th. Several high gusts, including one of 64 miles per hour at Aberdeen, were registered.

The months of July, August and September were on the whole quiet with occasional instances of gales at the more exposed stations, particularly between the 12th and 14th, and again between the 22nd and 25th of September. Though the conditions in October were frequently very unsettled, the various disturbances produced no gales of any great severity. A tornado which appeared over the eastern valleys of Glamorgan on the evening of the 27th developed great energy and occasioned some loss of life and much destruction of property.

Numerous and deep depressions made November a stormy month, a gale being felt at one or more stations on as many as 27 days, and a strong gale on 18 of these. A depression, whose centre passed the Faroe on the 3rd, caused boisterous weather very generally during the first three days, a gale as far south as Pembroke and Roche's Point, and a whole gale at Holyhead, where also the anemometer recorded gusts up to 75 miles per hour. A week of comparative quietness was succeeded by the appearance off the Kerry coast of another depression which maintained a disturbed state of weather through the rest of the month, the wind attaining the force of a strong gale on 15 out of 20 days. At Holyhead a whole gale blew from North-West on the 13th, and from West on the 15th, when a gust of 79 miles per hour was recorded at Southport during a strong gale. The most widespread gale of the month blew on the 19th and 20th while the cyclonic centre was passing eastward between Iceland and the Faroe, the gale being felt as far south as the English Channel. At Blacksod, Malin Head, Glasgow, Hexham, and Lerwick it was a strong gale, and at Southport a whole gale, the highest gust velocities being 74 miles per hour at Southport and 83 miles per hour at Hexham. Another instance of a whole gale occurred at Malin Head on the 23rd, when the depression was centred over Denmark Strait. On the 3rd December, during the passage of a deep depression eastwards beyond the north of Scotland, a strong or whole gale blew on many parts of the coast. Some of the gusts were of great violence—as high as 82 miles per hour at Southport.

2. *Rainfall*.—For the country as a whole, the rainfall was slightly below the normal. In Ireland and in South-Western England there was a small excess, but in all other districts there was a deficiency; the aggregate over the East of Scotland in particular was only about 85 per cent. of the normal. The number of days of rain was also as a rule somewhat under the average. Some exceptionally small totals were registered, 16·2 in. at Cromer, 17·9 in. at Leith, 18·0 in. at Spurn Head, 18·2 in. at Fortrose and Southend, 18·7 in. at Cambridge, and 18·8 in. at Skegness and Clacton. Large records were few, 81·0 in. at Ardnadam, 87·2 in. at Glencarron, 87·9 in. at Caragh Lake, 89·9 in. at Princetown, and 124·5 in. at Seathwaite. Six stations situated on the slopes of Snowdon returned amounts of over 140 in., the highest being Copper Mill with 161·0 in. Falls of an inch or more in a day were fairly numerous in the course of the year and there were many reports of over 2·5 in.; the heaviest recorded was one of 4·62 in. at Copper Mill on the 17th June. On May 9th many heavy falls were recorded—1·2 in. at Carnoustie, 1·6 in. at Crathes, and next day 1·6 in. at Dyce and 2·8 in. at Crathes; at Crathes this rainstorm was continuous for 36 hours, during which time 4·4 in. fell. On June 9th a great rainstorm affected the mountainous districts, giving 1·5 in. at Mount Callan in Ireland, 1·8 in. at Fort William, 1·9 in. at Inverary, 4·2 in. at Seathwaite, over 2 in. generally in Snowdonia, and up to 3·9 in. at Intake, 4·4 in. at Llanberis, 4·6 in. at Copper Mill. A violent thunderstorm on the night of the 14th–15th July gave over 3 in. at Mayfield, Sussex. On 31st August many stations in the south had over 1 in. and up to 2·5 in. at Worthing. On September 16th 2·65 in. fell at Newcastle-on-Tyne; next day the Midlands had heavy downpours, up to 1·7 in. at Sheffield and 2·1 in. at Bawtry. On the 17th September a remarkable rainstorm visited the neighbourhood of Doncaster. An area of about 27 square miles (including the city) received over 5 in. in 24 hours and about 1,000 square miles received over 1 in. Ireland had heavy falls on the 19th—1 $\frac{3}{4}$  in. round Dublin; on 22nd 1·4 in. at Valencia and on 24th 2 in. at Broadford (Clare). On the 26th the North of England had the heavy falls, up to 1·6 in.



at Lancaster and 1.8 in. at Kirkby Lonsdale. A very heavy downpour over the inland districts of England on 5th October gave amounts up to  $1\frac{3}{4}$  in. at Welshpool, Wistanstow and Little Massingham, 2.2 in. at Fulbeck, 2.6 in. at Rauceby and Rugeley, 2.8 in. at Claypole, 2.9 in. at Temple Bruer, and 3.1 in. at Boston; it was followed next day by heavy falls in the southern counties ranging up to 2 in. at Dorchester. Some of the heavy falls in short periods noted by observers were 2.12 in. at Brampton Grange in  $1\frac{1}{4}$  hours and 2.80 in. at Great Panton in the same time on June 17th; 4.30 in. at Hafod Fawr in 8 hours on June 19th; 0.61 in. at Heathfield in 15 minutes on July 10th; 2.65 in. in  $1\frac{1}{2}$  hours at Newcastle-on-Tyne on September 16th; 1.20 in. in 24 minutes at New Malden on October 2nd; 0.85 in. at Norwich in 13 minutes on October 3rd.

3. *Snowstorms*.—From the 10th to the 12th of January occurred the heaviest snowfall for years; accompanied as it was by a severe gale it caused considerable drifting in many localities. In several instances drifts up to 10 ft. deep were reported and railway and postal services were considerably delayed. In Western Perthshire the depth (undrifted) was estimated at over 3 ft. and many places reported depths of over 12 in. During the first four months of the year there were many minor and local falls of 5 in. or less. In particular a cold southerly wind on the 11th of April brought with it a remarkably widespread fall, amounting in many places to from 3 to 6 in., and being in some parts of the country one of the heaviest of the year.

4. *Thunderstorms*.—In the latter half of January and the first week of February thunderstorms were (for the season) fairly numerous, being noted in many places and accompanied frequently by hail or snow. From the 15th to the 17th March they were widely distributed and heavy rain fell in the lower levels; again, on the 22nd, they were general over England and severe in places. Thunderstorms with hail, sleet or snow occurred at a number of stations on the 17th of April. Various parts of Ireland were visited by thunder and hailstorms on the 27th and 28th, and in the evening of the following day they were common throughout England, very severe and destructive in a number of instances and accompanied by extraordinarily vivid lightning. These storms were practically simultaneous, occurring in most localities between the hours of 7 and 11 p.m. The accompanying rainfall was fairly heavy. On the 30th of this month and the first few days of May and again on the 10th, thunder occurred in many parts of the Kingdom, accompanied on the latter occasion by many heavy falls of rain and hail. The unusual heat of the 25th to 30th was accompanied in nearly all parts of England by more or less severe thunderstorms, resulting in a number of casualties; there were few heavy falls of rain or hail, but from some places sharp falls in short periods were reported and an exceptional hailstorm visited Southend. During June, July and August thunderstorms were, for the season, unusually few and slight, with the exception of that which occurred in the Eastern Counties on the 17th June; in this instance several places received over an inch of rain and one or two had over 2 inches in an hour and a quarter. Comparatively slight storms, severe in places and violent at Princetown, visited the south of England on the 4th September and were accompanied by very heavy rain. On 14th and 15th various districts had thunderstorms; a waterspout was observed crossing the mouth of the Towy River, and Oundle was visited by an extraordinary hailstorm, the hail lying 7 to 9 in. deep and yielding 0.52 in. of water after a fall of 20 minutes. The 16th witnessed further sporadic thunder and rainstorms, Newcastle-on-Tyne receiving 2.65 in. of rain in  $1\frac{1}{2}$  hours. During October thunderstorms were unusually frequent and widely distributed over England, while Scotland and Ireland were seldom affected. These visitations were numerous during the first eight days, and again from the 27th to the 29th; in many instances they were accompanied by more or less heavy hail, very violent in particular at Cullompton on the 27th (the day of the whirlwinds in Glamorgan and Shropshire). On the 11th, 12th and 13th of November several districts in England had thunderstorms, accompanied mostly by hail, and on the 28th and 29th December they occurred in all districts, sometimes accompanied by snow.

5. *Dry Periods*.—During the first half of April little or no rain fell in many localities, more especially in Ireland, and in the latter part of May there was a complete drought of from 14 to 19 days in the south-eastern districts of England. In the three months June, July, August many districts reported long dry or partially dry periods. In particular, during the 103 days ending on the 29th August, only about 1 in. of rain fell at Exmouth. In the last three weeks of June a great many places had less than .1 in., and in the period ending on August 8th Exmouth had 29, Teignmouth 30 and South Hanningfield 34 consecutive days without rain, whilst several other stations had from 20 to 24 dry days; Redruth enjoyed the driest July in 34 years' records. In many parts of Scotland October was an unusually dry month, the records of several

places showing rainless periods of 8 or 10 days. During December many consecutive days after the first week were quite rainless over a wide area in England. At Tottenham no rain fell between the 7th and 22nd—a period of 16 days; and at Durham there were 20 days without rain—from the 5th to 24th.

6. *Temperature*.—All over the country the mean temperature for the year was above the normal, the most remarkable feature being the absence of any very high or very low readings. On the 13th and 14th January there were several sharp frosts with many records below  $20^{\circ}$ — $10^{\circ}$  at Newton Rigg and  $8^{\circ}$  at Mayfield (Staffs). May was an extremely variable month, with frost in many localities on the 6th and 7th, and unusual heat from the 25th to the 30th. In the latter case day readings of  $80^{\circ}$  were numerous over England and  $84^{\circ}$  was reached at some London stations; the nights were also very warm—in many instances the minima lying between  $55^{\circ}$  and  $62^{\circ}$ . On the 16th and 17th June the highest temperatures of the year were registered in eastern and south-eastern England, the extreme value, however, being only  $85^{\circ}$  (at Chelmsford, New Malden and London). The last four months of the year were remarkable, on the whole, for their mildness, but the lowest temperatures of the year occurred during the frost which affected a large portion of Scotland, England and Wales towards the end of December. In many places the minima lay between  $9^{\circ}$  and  $13^{\circ}$ , and  $4^{\circ}$ , the lowest for the year, was reached at Braemar on the 31st. The extreme range for the year was in most places less than  $70^{\circ}$ , but rose to  $72^{\circ}$  at Balmoral,  $73^{\circ}$  at Braemar and  $74^{\circ}$  at Worksope. The localities of smallest range were the Hebrides, Shetland Islands and Scilly Isles. At Castlebay the range was only  $35^{\circ}$ , at Lerwick and Scilly  $38^{\circ}$ ; on the mainland the lowest ranges were  $40^{\circ}$  at Blacksod Point and Malin Head,  $43^{\circ}$  at Holyhead and  $46^{\circ}$  at Falmouth and Penzance.

7. *Bright Sunshine*.—The duration of bright sunshine was everywhere considerably less than the normal. August was an unusually bright month in Ireland, in the greater part of Scotland, and in the north-west of England. In October the amount of insolation was in most places above the average, but in almost all other months there was a general deficiency. The aggregate total for the year was as low as 814 hours at Hull, 829 at Bolton, 876 at Fort Augustus, and 884 at Manchester. The southern parts of the country had, as usual, the highest records, 1,599 at Hastings, 1,600 at Bexhill and Worthing, 1,691 at Felixstowe, 1,700 in Jersey, 1,707 in Guernsey, and 1,622 at Broadstairs, whilst Bognor had 1,621 hours.

8. *Fog*.—Inland and on the coasts fogs were more than usually frequent in January and particularly prevalent, both in this country and on the continent, in February. About the middle of the latter month several localities experienced very dense fogs, and in London on the 15th the fog, rising above the housetops, formed a thick canopy which completely shut out the daylight. March and April brought a considerable falling off in the records of fog. The English Channel until now had been unusually free from fog, but the warm weather towards the close of May was accompanied by much fog in this quarter and on the western coasts, often dense and leading to numerous casualties. From June to October fogs were noted frequently on the eastern and western coasts (and inland on several days in the latter month) but only seldom along the south coast. In November the inland districts were uncommonly free from fog, but it again occurred rather frequently on the eastern and western coasts. As a whole the atmosphere in December was clear, especially inland.

9. *Barometer*.—All over the country the mean pressure for the year differed but little from the normal, the chief difference being in the West of Ireland; at Blacksod there was a deficiency of .042 in. and at Valencia a deficiency of .024 in. Pressure over the most of the country was unusually high on February 12th and again on December 21st, the height of the barometer in both cases being about 30.7 in. over a large area. On the former occasion 30.72 in. was reached at Kew. The White Star Liner "Celtic" registered the remarkably low reading of 27.44 in. on the morning of the 10th of January in lat.  $50^{\circ}$  N. long  $29^{\circ}$  W., not far from the position where on February 5th, 1870, the s.s. "Tarifa" registered 27.33 in., the lowest Atlantic reading known. The 19th of March was notable in that on that day the pressure over the whole of Scotland was under 28.5 in.

10. *Floods*.—The floods of December, 1912, in the Thames and other valleys continued for a few days in January, 1913. The great volume of water which fell on the flat country round Doncaster on the 17th September caused considerable flooding and inconvenience for a short time but fortunately resulted in little damage.



11. *High Tides.*—The severe gales of the 7th February, as already noted, caused in the Shannon the highest tide known for 50 years; at Limerick many houses were flooded. Salcombe on the 29th October had an unusually high tide.

12. *Waterspouts.*—A waterspout was observed crossing the mouth of the Towy River on the 15th September. Three were reported at Claypole during the heavy rainstorm of the 5th October; one at Rousdon on the 7th and several on the 8th of the same month.

13. *Whirlwinds.*—On the 27th October one of the most violent tornados ever known in this country visited the Taff Valley in Glamorganshire, and some parts of Shropshire and Cheshire. The phenomena were so remarkable and unusual that a detailed investigation was made and a special report issued. On May 9th a similar storm but of moderate intensity caused considerable damage to trees, &c., near Crosshaven, Co. Cork. Like the tornados of the United States it was preceded by remarkable noises, the affected area consisting of a narrow path a few miles long.

14. *Earthquakes.*—An earth tremor was felt at Isleworth, Middlesex, at about 5 p.m. on March 22nd. A thunderstorm was then in progress, and a line squall was passing across the neighbourhood from west to east, marked by a sudden and sharp rise of the barometer.

15. *Luminous Sky.*—Luminous skies were noted by several observers during the year. In November magnificent glows at sunrise and sunset were frequently reported, especially from the 27th to the 30th.

16. *Meteors.*—A brilliant meteor visible for half a minute was observed at Tavistock on May 26th. A large one was seen from several places in South Wales and Ireland on August 3rd. Its height above the earth's surface was calculated at about 87 miles.

17. *Aurora.*—There were a few reports of aurora but none were described as bright.

18. *Extremes of Temperature, etc.*—As in previous Annual Reports the following notes refer exclusively to the stations the results from which are given in the tables on pages 92–95.

The highest temperatures of the air were 87° at Greenwich; 85° at Camden Square; and 84° at Cambridge.

The lowest temperatures were 11° at Llangammarch Wells; 14° at Buxton; and 15° at Belvoir Castle.

The heaviest totals of rain were at Llangammarch Wells, 56·0 ins.; at Falmouth, 45·3 ins.; and at Stonyhurst, 42·1 ins.

The least falls of rain were at Cromer, 16·2 ins.; at Spurn Head, 18·0 ins.; and at Cambridge, 18·7 ins.

The stations with the greatest numbers of days of rain were Buxton with 232; Salisbury with 228; and Llangammarch Wells with 226.

The stations with the least numbers of days of rain were Tottenham, with 127; Clacton, with 145; and Lincoln, with 147.

19. *Further Information.*—Charts showing the distribution of pressure, temperature, sunshine, and rainfall for the year will be found in the Annual Summary of the Monthly Weather Report (issued by the Meteorological Office) for 1913.

A list of publications concerning the weather will be found in Circular 001 "Statement of Provisions for the Supply of Information to the Public" which can be obtained on application at the Meteorological Office.