THE

REGISTRAR-GENERAL'S

STATISTICAL REVIEW

OF

ENGLAND AND WALES,

FOR THE YEAR

1923.

(New Annual Series, No. 3.)

TEXT.

LONDON:
PRINTED AND PUBLISHED BY HIS MAJESTY'S STATIONERY OFFICE
To be purchased directly from H.M. STATIONERY OFFICE at the following addresses:
Adastral House, Kingsway, London, W.C.2; 28, Abingdon Street, London, S.W.1;
York Street, Manchester; 1, St. Andrew's Crescent, Cardiff;
or 120, George Street, Edinburgh;
or through any Bookseller.

1925.

Price 5*s.* 0*d.* net.

REGISTRAR-GENERAL FOR ENGLAND AND WALES.

THE REGISTRAR-GENERAL'S STATISTICAL REVIEW :—

1922 :—Tables, Part I. Medical. Price 15*s.* (15*s.* 6*d.*)
Tables, Part II. Price 5*s.* (5*s.* 2*d.*)
Text (New Annual Series, No. 2). Price 5*s.* 0*d.* (5*s.* 2½*d.*)

1923 :—Tables, Part I. Medical. Price 15*s.* (15*s.* 6*d.*)
Tables, Part II. Price 5*s.* (5*s.* 2*d.*)

And similar volumes for 1921, *which replace the Annual Report of the Registrar-General from* 1838 *to* 1920.

CENSUS 1921 :—

PRELIMINARY REPORT : Population enumerated in each Administrative and Parliamentary Area. [Cmd. 1485]. Price 1*s.* (1*s.* 2*d.*)

COUNTY OF LONDON :—
Tables, Part I. Price 2*s.* 6*d.* (2*s.* 8*d.*)
Tables, Part II. Price 8*s.* (8*s.* 3*d.*)
Tables, Part III (Supplementary). Workplaces in London and Five Home Counties. Price 3*s.* (3*s.* 1½*d.*)
Text. Price 1*s.* 6*d.* (1*s.* 8*d.*)

TEXT AND TABLES. COUNTY OF :—		TEXT AND TABLES. COUNTY OF :—	
BEDFORD.	Price 6*s.* (6*s.* 2*d.*)	HERTFORD.	Price 7*s.* 6*d.* (7*s.* 8*d.*)
BERKSHIRE.	Price 7*s.* 6*d.* (7*s.* 8*d.*)	KENT.	Price 14*s.* (14*s.* 4*d.*)
BRECKNOCK AND RADNOR.	Price 9*s.* (9*s.* 2½*d.*)	LANCASTER.	Price 20*s.* (20*s.* 6*d.*)
BUCKINGHAM.	Price 6*s.* 6*d.* (6*s.* 8*d.*)	LEICESTER.	Price 8*s.* 6*d.* (8*s.* 8½*d.*)
CAMBRIDGE AND HUNTINGDON.	Price 10*s.* (10*s.* 2*d.*)	LINCOLN AND RUTLAND.	Price 16*s.* (16*s.* 4*d.*)
CARDIGAN.	Price 5*s.* 6*d.* (5*s.* 8*d.*)	MERIONETH AND MONTGOMERY.	Price 9*s.* (9*s.* 2½*d.*)
CARMARTHEN.	Price 6*s.* (6*s.* 2*d.*)	MIDDLESEX.	Price 10*s.* (10*s.* 3½*d.*)
CARNARVON AND ANGLESEY.	Price 10*s.* (10*s.* 2½*d.*)	MONMOUTH.	Price 8*s.* 6*d.* (8*s.* 8½*d.*)
CHESTER.	Price 12*s.* 6*d.* (12*s.* 9½*d.*)	NORFOLK.	Price 9*s.* (9*s.* 3*d.*)
CORNWALL.	Price 8*s.* (8*s.* 2½*d.*)	NORTHAMPTON.	Price 10*s.* (10*s.* 2½*d.*)
CUMBERLAND AND WESTMORLAND.	Price 10*s.* (10*s.* 3*d.*)	NORTHUMBERLAND.	Price 9*s.* (9*s.* 3*d.*)
DENBIGH.	Price 6*s.* (6*s.* 2*d.*)	NOTTINGHAM.	Price 7*s.* 6*d.* (7*s.* 8½*d.*)
DERBY.	Price 10*s.* (10*s.* 3*d.*)	OXFORD.	Price 7*s.* (7*s.* 2*d.*)
DEVON.	Price 11*s.* 6*d.* (11*s.* 9*d.*)	PEMBROKE.	Price 6*s.* (6*s.* 2*d.*)
DORSET.	Price 7*s.* (7*s.* 2*d.*)	SALOP.	Price 7*s.* 6*d.* (7*s.* 8*d.*)
DURHAM.	Price 12*s.* 6*d.* (12*s.* 9½*d.*)	SOMERSET.	Price 10*s.* (10*s.* 3*d.*)
ESSEX.	Price 12*s.* 6*d.* (12*s.* 9*d.*)	STAFFORD.	Price 12*s.* (12*s.* 3½*d.*)
FLINT.	Price 5*s.* 6*d.* (5*s.* 8*d.*)	SUFFOLK.	Price 10*s.* (10*s.* 3*d.*)
GLAMORGAN.	Price 10*s.* (10*s.* 4*d.*)	SURREY.	Price 10*s.* (10*s.* 2½*d.*)
GLOUCESTER.	Price 9*s.* (9*s.* 3*d.*)	SUSSEX.	Price 11*s.* (11*s.* 3*d.*)
HAMPSHIRE.	Price 12*s.* (12*s.* 3*d.*)	WARWICK.	Price 6*s.* 6*d.* (6*s.* 8½*d.*)
HEREFORD.	Price 6*s.* (6*s.* 2*d.*)	WILTSHIRE.	Price 7*s.* 6*d.* (7*s.* 8½*d.*)
		WORCESTER.	Price 8*s.* (8*s.* 2½*d.*)
		YORKSHIRE.	Price 25*s.* (25*s.* 9*d.*)

SECTIONAL VOLUMES :—
Classification of Industries. Price 3*s.* 6*d.* (3*s.* 8½*d.*)
Classification of Occupations. Price 7*s.* 6*d.* (7*s.* 11*d.*)
Ecclesiastical Areas [England]. Price 17*s.* 6*d.* (17*s.* 10½*d.*)
Occupations. Price 24*s.* (24*s.* 6*d.*)
Index of Names and Places. Price 31*s.* (31*s.* 9*d.*)
Isle of Man. Price 2*s.* 6*d.* (2*s.* 7*d.*)
Jersey, Guernsey and adjacent Islands. Price 4*s.* (4*s.* 1½*d.*)
Industry Tables. Price 47*s.* 6*d.* (48*s.* 3*d.*)
Dependency, Orphanhood and Fertility. Price 30*s.* (30*s.* 6*d.*)
General Tables. Price 13*s.* (13*s.* 5*d.*)
Workplaces. Price 16*s.* (16*s.* 4½*d.*)

May be purchased through any Bookseller or directly from the Sale Offices of H.M. STATIONERY OFFICE *at the Addresses shown on the front cover.* (*All prices are net and those in parentheses include postage.*)

THE

REGISTRAR-GENERAL'S

STATISTICAL REVIEW

OF

ENGLAND AND WALES,

FOR THE YEAR

1923.

(New Annual Series, No. 3.)

TEXT.

LONDON:
PRINTED AND PUBLISHED BY HIS MAJESTY'S STATIONERY OFFICE
To be purchased directly from H.M. STATIONERY OFFICE at the following addresses:
Adastral House, Kingsway, London, W.C.2; 28, Abingdon Street, London, S.W.1;
York Street, Manchester; 1, St. Andrew's Crescent, Cardiff;
or 120, George Street, Edinburgh;
or through any Bookseller.

1925.

Price 5*s.* 0*d. net.*

TABLE OF CONTENTS.

TEXT.

(14386) Wt. 31231B/977/1961 625 10/25 Harrow G.94/14A A*2

LIST OF CORRIGENDA IN THE STATISTICAL REVIEW, 1923.

TABLES: PART I—MEDICAL.

Table 14. (*page* 84.)—Holborn Met. B. Col. 3. Male Legitimate Births. For 71 *read* 271.

Table 17. (*page* 154.)—No. 65 (*a*). Deaths from Leukæmia. Males, aged 70–75, *read* 2.

,, (*page* 182.)—No. 1 (*a*). Deaths from Typhoid Fever. Females, aged 50–55, for 0 *read* 3.

,, (*page* 195.)—XIV. Nos. 165–203. Deaths from External Causes. Females, aged 30–35, for 5 *read* 55.

Table 20. (*page* 363.)—County of Denbigh. Aggregate of Urban Districts. Deaths from All Causes. All Ages—Males, *read* 364.

TABLES: PART II—CIVIL.

Table E. (*page* 29.)—Holborn Met. B. Col. 3. Male Legitimate Births. For 1 *read* 271.

Table BB. (*page* 125.)—Heading of last col. of middle section should *read* Chester-le-Street R.D. to Washington U.D. (new U.D.)

STATISTICAL REVIEW, 1923.

Note.—Of the tables referred to below, those numbered in Arabic will be found in "Tables, Part I—Medical," and those lettered in "Tables, Part II—Civil," while those numbered in Roman numerals appear in the text of this volume.

DEATHS.

The deaths of 444,785 persons were registered in England and Wales during 1923, 226,858 (viz., 226,438 civilians and 420 non-civilians) of these being males and 217,927 females. This is the smallest number registered since 1862, when the population was only 53 per cent. of that estimated for 1923.

Deaths of civilians, including all deaths of females and 99·81 per cent. of those of males, are referred in tabulation to their administrative area of residence, and therefore figure in all tables relating to portions of the country. It has been found however that similar treatment cannot be satisfactorily applied to the deaths of non-civilians, which are therefore excluded from all tables relating to local areas. Table 17, accordingly, so far as it refers to England and Wales as a whole, includes all deaths registered, but when referring to the population as sub-divided by class of area, includes only deaths of civilians; and the same restriction to civilian mortality only applies to all tables embodying distinction of local area.

The 444,785 deaths correspond to a rate of 11·6 per 1,000 of the estimated population. When standardized* to correct for the deviation of the sex and age distribution of the population, as shown in Table LXII, from that of the standard population of 1901, this death-rate is reduced to 10·3.

As the population of this country in 1901 included relatively few infants and old people it forms a standard exceptionally favourable to low mortality. Its use for this purpose accordingly yields comparatively low standardized rates all round. In order

* The term "standardized death-rate" means the death-rate corrected for differences of sex and age constitution of the population. For a description of two methods of effecting this "standardization" of recorded death-rates *see* the Annual Report for 1911 (pages xxvii-xxxi). Standardized death-rates for the sexes separately quoted in this review are based upon the age distribution of persons of undistinguished sex in the general population of England and Wales in 1901. (*See* Annual Report for 1913, page xx.)

to correct any wrong impression which might arise from this fact, and to provide standardized rates for this country comparable with those of countries using the standard recommended by the International Statistical Institute (a composite population made up of those of a large number of European countries in 1900 or 1901), rates calculated upon the latter by the method suggested by the Institute on p. viii of the "Annuaire international de statistique, II. Mouvement de la population (Europe)," are shown in Table XIV, as well as those based on the 1901 English standard, which is that always used elsewhere in this Review. It will be seen that use of the less favourable standard increased the rate from 10·3 to 11·4 per thousand.

Table 3 (Part 1, page 6) shows that the rate of 10·3 is much the lowest hitherto recorded, the nearest approach to it having been in 1921, when the corresponding rate was 11·3. Only one other year in the table compares so favourably with previous records, namely 1910, when the rate was 13·2, and the lowest previously recorded, in 1909, 14·3. But though the absolute reduction of 1·1 per 1,000 was slightly greater in that case the percentage fall of 8·85 per cent. below the lowest previous rate is greater for 1923 than for any preceding year. The progress thus recorded applies almost equally to both sexes.

Table 2 (Part 1, page 3) shows that the death-rates for the first and third quarters of 1923 were the lowest on record, while that for the second has been exceeded in only two, and that for the fourth quarter in only one previous year. The year was thus one of sustained low mortality throughout. Out of its first nine months, dealt with in Table 18, January and March returned the highest mortality, and August the lowest, and it is probable that those of the last three months of the year will prove when available to be intermediate between the March and August levels. This distribution of mortality throughout the year was much more uniform than in 1922, when 13·1 per cent. of the deaths of males, and 13·9 per cent. of those of females occurred in January alone. During 1923 the mean monthly proportion of 8·3 per cent. was much less widely departed from in any month, and was more closely adhered to by each sex, as follows :—

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
Males	9·5	8·5	9·6	9·1	8·8	7·7	7·3	6·9	6·9
Females	9·7	8·4	9·7	9·0	8·8	7·7	7·2	6·6	6·7

As might be expected, concentration of mortality upon the colder half of the year is much greater in the case of deaths from diseases of the respiratory system than of those from other causes. For persons of both sexes jointly the monthly proportions compare as follows :—

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
Respiratory diseases	11·6	9·6	11·2	10·3	9·1	7·1	4·9	3·8	4·4
Other causes ..	9·2	8·2	9·4	8·8	8·7	7·9	7·7	7·3	7·3

Mortality of each sex.—Table 1 (Part I) shows that no previous year has shown so low a mortality for either sex as 1923, the nearest approach for each sex being in 1921, when the standardized rate for males was 12·6, and that for females 10·2 per thousand, as compared with 11·5 and 9·3 respectively in 1923.

The standardized mortality of males regularly exceeds that of females. Up to 1860 or so the excess was only about 9 per cent., but for the 15 years ending with 1914 it averaged about 20 per cent.

Table I.—England and Wales : Mortality of Males of Various Ages per cent. of that of Females of Like Age.

—	All Ages (standardized).	0—	5—	10—	15—	20—	25—	35—	45—	55—	65—	75—	85 and upwards
1911–14	121	120	102	95	109	119	121	125	130	132	125	117	111
1921 ..	123	125	104	96	106	110	114	126	130	134	128	118	113
1922 ..	122	123	104	95	105	116	113	130	128	132	126	119	108
1923 ..	124	124	105	100	104	113	118	131	132	132	127	120	113

During the war this excess increased to a maximum of 39 per cent. in 1917, as a consequence of deterioration, by selective recruiting, of the male element in the civilian population, to which the mortalities compared necessarily refer during the war period.

The estimates made for this period of populations at various ages, which were largely based upon the returns derived from the National Register of 1915, have proved to accord so badly with the numbers returned at the same ages in the census of 1921 that these years have been omitted from Table I, which compares the mortality of males with that of females at various ages in the years 1911–14, 1921, 1922 and 1923. This table shows that the disturbance of the ratio of sex mortalities brought about by the war has now for the most part disappeared, there being no marked contrast at any age between the ratios for 1911–14 and for 1922 and 1923, though the tendency already noted for the ratio to rise still continues.

Infant Mortality.

Of the 444,785 deaths registered during the year, 52,582, or 11·8 per cent., were those of infants under one year of age. This is the smallest proportion ever recorded in this country except during the year 1918, when, owing mainly to reduction of the birth-rate by the war, it was 10·5. So recently as 1901–10 the proportion was 22·6 per cent.

The rate of infant mortality resulting from these deaths is 69 per 1,000 births. This rate is much the lowest hitherto recorded in this country, its lowest predecessor being that of 1922—77 per 1,000 (Table 1).

It has been pointed out in previous Reviews that for the years 1915–22 the conventional statement of infant mortality (deaths under one year of age registered in the year per thousand

births registered in the same year) was an unreliable measure of the extent of infantile mortality, owing to violent fluctuations in the birth-rate during, or immediately preceding, those years. In the Report for 1920 a method was described for obtaining a more exact statement of infant mortality by stating the deaths in proportion, not to the births registered in the same year but to all the infants born during the same three monthly periods as those which died. The results of this correction are applied in Table II (rates in brackets), where it may be seen that for the first time since 1916 this revision of the crude rate is without numerical effect. It may be hoped therefore that in future this refinement, which had its first considerable effect as a consequence of the rapid reduction of the birth-rate by the war in 1915, will no longer be required. For a few years however the restated rates must be retained to secure any accurate presentation of the recent history of infant mortality.

Table II also shows that the fall in corrected infant mortality from 75 to 69 has occurred notwithstanding a slight rise in that portion of it ascribed to diarrhœa (from 5 to 7), the yearly variations in which are dependent rather on climatic than on sanitary conditions. The decline thus appears all the more remarkable, but it should be noted that the recent fall in infant mortality is a phenomenon by no means peculiar to this country, but common to most of, at least, the civilized world. Its remarkable confinement, for this country, to the present century forms the most notable feature of Table II.

Table II.—England and Wales : Infant Mortality, 1861–1923, distinguishing Mortality from Diarrhœal Diseases.

Deaths under 1 year of age per 1,000 Births.

	Diarrhœal Diseases.	Other Causes.	All Causes.		Diarrhœal Diseases.	Other Causes.	All Causes.		Diarrhœal Diseases.	Other Causes.	All Causes.
1861–65	15	136	151	1900	28	126	154	1912	8 (8)	87 (87)	95 (95)
1866–70	20	137	157	1901	32	119	151	1913	19 (19)	89 (90)	108 (109)
1871–75	19	134	153	1902	15	118	133	1914	17 (17)	88 (87)	105 (104)
1876–80	16	129	145	1903	18	114	132	1915	15 (15)	95 (91)	110 (106)
1881–85	14	125	139	1904	30	115	145	1916	11 (10)	80 (81)	91 (91)
1886–90	17	128	145	1905	21	107	128	1917	10 (9)	86 (82)	96 (91)
1891–95	20	131	151	1906	31	101	132	1918	10 (10)	87 (88)	97 (98)
1896–00	31	125	156	1907	13	105	118	1919	9 (9)	80 (84)	89 (93)
1901–05	23	115	138	1908	20	100	120	1920	8 (9)	72 (76)	80 (85)
1906–10	18	99	117	1909	13	96	109	1921	14 (14)	69 (67)	83 (81)
1911–15	19 (19)	91 (90)	110 (109)	1910	13	92	105	1922	6 (5)	71 (70)	77 (75)
1916–20	9 (9)	81 (83)	90 (92)	1911	36 (36)	94 (93)	130 (129)	1923	7 (7)	62 (62)	69 (69)

The rate of fall in infant mortality has been very different in different portions of the first year of life. Table III shows the mortality per 1,000 registered births at ages under three months, at 3–6, and 6–12 months, for the forty-three years 1881–1923, and the proportions of the total infant mortality occurring at each age, the corrected figures for the last thirteen years being shown in brackets.

Table III.—England and Wales : Age Distribution of Infant Mortality, 1881–1923.

	Deaths per 1,000 Births registered.						Proportion of Deaths at each age.					
	Under 4 weeks.	4 Weeks to 3 months.	Total under 3 months.	3–6 months.	6–12 months.	Total under 1 year.	Under 4 weeks.	4 Weeks to 3 months.	Total under 3 months.	3–6 months.	6–12 months.	Total under 1 year.
1881–1885	—	—	67	28	44	139	—	—	484	199	317	1,000
1886–1890	—	—	69	30	46	145	—	—	480	204	316	1,000
1891–1895	—	—	74	31	46	151	—	—	488	207	305	1,000
1896–1900	—	—	74	34	48	156	—	—	477	215	308	1,000
1901–1905	—	—	70	28	40	138	—	—	505	202	293	1,000
1906–1910	40	23	63	22	32	117	344	194	538	188	274	1,000
1911–1915	39 (39)	20 (20)	59 (59)	20 (20)	31 (30)	110 (109)	356	185	541	180	279	1,000
1916–1920	37 (37)	17 (17)	54 (54)	14 (15)	22 (23)	90 (92)	412	183	595	160	245	1,000
1905	41	25	66	25	37	128	326	194	520	193	287	1,000
1906	41	26	67	27	38	132	317	194	511	203	286	1,000
1907	42	23	65	21	32	118	346	198	544	181	275	1,000
1908	40	24	64	24	32	120	335	200	535	196	269	1,000
1909	41	20	61	19	29	109	366	187	553	177	270	1,000
1910	38	20	58	19	28	105	365	190	555	178	267	1,000
1911	40 (40)	25 (25)	65 (65)	26 (26)	39 (38)	130 (129)	313	190	503	201	296	1,000
1912	38 (38)	18 (18)	56 (56)	15 (15)	24 (24)	95 (95)	405	186	591	156	253	1,000
1913	39 (40)	20 (20)	59 (60)	20 (20)	29 (29)	108 (109)	364	188	552	182	266	1,000
1914	39 (38)	19 (19)	58 (57)	19 (19)	28 (28)	105 (104)	368	185	553	179	268	1,000
1915	38 (38)	19 (19)	57 (57)	19 (18)	34 (31)	110 (106)	346	173	519	174	307	1,000
1916	37 (37)	17 (17)	54 (54)	15 (15)	22 (22)	91 (91)	404	185	589	166	245	1,000
1917	37 (37)	17 (17)	54 (54)	16 (15)	26 (22)	96 (91)	388	181	569	167	264	1,000
1918	36 (37)	17 (17)	53 (54)	16 (16)	28 (28)	97 (98)	376	175	551	163	286	1,000
1919	40 (41)	15 (16)	55 (57)	13 (14)	21 (22)	89 (93)	446	174	620	148	232	1,000
1920	35 (35)	16 (16)	51 (51)	12 (13)	17 (21)	80 (85)	441	196	637	156	207	1,000
1921	35 (35)	15 (15)	50 (50)	14 (14)	19 (17)	83 (81)	427	179	606	169	225	1,000
1922	34 (34)	13 (12)	47 (46)	11 (11)	19 (18)	77 (75)	442	165	607	143	250	1,000
1923	32 (32)	11 (11)	43 (43)	10 (10)	16 (16)	69 (69)	460	163	623	144	233	1,000

Table IV.—England and Wales : Infant Deaths at various Ages during each Quarter of the Years 1911–23, per 1,000 corresponding Births.

	1st Qr.	2nd Qr.	3rd Qr.	4th Qr.	Year.	1st Qr.	2nd Qr.	3rd Qr.	4th Qr.	Year.	1st Qr.	2nd Qr.	3rd Qr.	4th Qr.	Year.
	Under 4 Weeks.					4 Weeks—3 Months.					3–6 Months.				
1911	41.0	36.3	41.8	43.7	40.6	21.8	14.5	38.7	23.5	24.7	18.7	13.9	52.3	18.3	25.9
1912	43.8	37.4	34.5	38.1	38.4	24.5	14.8	14.2	17.5	17.7	19.2	12.7	12.4	15.1	14.9
1913	44.7	37.8	35.6	40.0	39.5	23.2	14.8	21.3	22.2	20.3	20.2	13.7	24.4	20.8	19.8
1914	43.0	37.6	34.4	39.2	38.5	21.8	14.7	21.8	19.0	19.3	19.7	13.1	24.4	17.7	18.7
1915	42.8	35.9	32.6	39.6	37.7	23.7	14.8	16.0	20.2	18.6	21.7	14.0	18.2	19.1	18.2
1916	41.4	35.4	31.7	39.5	36.9	20.2	13.8	13.9	19.9	16.9	17.7	12.5	14.4	16.1	15.2
1917	44.6	37.0	31.6	35.3	37.1	23.1	13.1	13.8	17.6	16.9	19.9	11.6	12.9	15.5	15.0
1918	38.0	34.0	33.3	41.0	36.6	22.3	14.3	15.2	17.0	17.1	19.2	11.9	15.8	17.6	16.1
1919	47.5	38.5	35.9	39.6	40.4	27.1	11.1	12.6	15.3	16.4	23.0	10.3	12.2	12.1	14.4
1920	38.4	35.4	30.8	35.7	35.0	21.7	14.8	10.9	15.0	15.5	18.1	12.4	8.8	12.7	13.0
1921	40.2	34.2	31.3	35.3	35.2	19.4	10.9	14.8	14.1	14.7	16.0	8.8	16.9	13.0	13.7
1922	37.8	35.1	29.0	33.8	33.9	15.3	13.9	8.9	11.6	12.4	14.1	11.8	6.3	10.2	10.6
1923	36.0	31.0	27.7	32.9	31.9	15.6	9.6	8.8	11.7	11.4	12.5	8.9	8.5	10.3	10.0
	6–9 Months.					9–12 Months.					Total under one Year.				
1911	17.3	13.3	39.8	12.3	20.6	16.7	13.6	28.4	11.1	17.4	115.5	91.7	201.1	108.8	129.2
1912	15.0	12.1	9.7	12.9	12.5	12.9	11.1	8.7	12.8	11.4	115.3	88.0	79.5	96.5	94.7
1913	17.9	12.4	17.8	14.5	15.7	16.0	12.3	13.9	12.1	13.6	122.0	90.9	112.9	109.7	108.9
1914	16.2	12.2	18.9	12.7	15.0	13.6	11.8	14.6	11.9	13.0	114.3	89.1	114.0	100.5	104.4
1915	20.7	14.6	14.4	14.2	16.0	20.7	16.0	11.6	12.5	15.2	129.6	95.3	93.0	105.8	105.8
1916	14.5	11.4	10.3	10.6	11.7	13.3	10.7	7.9	8.9	10.3	107.2	84.0	78.2	95.1	91.1
1917	15.3	12.1	8.9	9.9	11.6	13.8	11.7	7.8	8.9	10.6	116.9	85.5	75.1	87.3	91.1
1918	17.2	12.2	11.4	16.7	14.4	15.9	13.1	10.2	15.3	13.7	112.6	85.8	85.8	107.7	97.9
1919	21.2	9.2	8.2	8.2	11.8	18.7	8.3	6.4	7.6	10.3	137.5	77.3	75.2	82.8	93.2
1920	16.4	12.2	6.9	8.3	11.0	14.7	12.5	5.5	6.9	10.0	109.3	87.4	63.0	78.7	84.5
1921	11.7	7.0	11.3	8.7	9.7	9.5	6.5	7.5	7.7	7.8	96.8	67.5	81.9	78.9	81.2
1922	14.3	10.5	5.0	7.0	9.2	13.4	9.4	4.6	6.7	8.6	94.9	80.7	53.8	69.3	74.7
1923	10.7	8.9	6.7	7.0	8.3	8.9	9.4	5.6	6.3	7.6	83.7	67.8	57.3	68.2	69.2

Whether corrected or not the mortality recorded in the table for each of the four sub-divisions of the first year of life there shown is lower than in any previous year, this year being unique in the table in presenting a record at each age distinguished which excels that of any of its predecessors. Of special interest is the continued decline for the first four weeks of life, for this so-called " neo-natal " mortality, which has often been regarded as comparatively little subject to environmental influence, now exhibits a total decline since the start of the record with 41 deaths per 1,000 births in 1905, of no less than 22 per cent.

Table IV shows corrected mortalities at various ages for each quarter of each of the last thirteen years. During the first month of life, and at this age only, the record for each quarter of 1923 is seen to have been lower than that for the same quarter of any other year dealt with. The decline in " neo-natal " mortality, at times referred to as non-existent, is thus seen to have been remarkably consistent throughout 1923. The third quarter shows the effect of increased diarrhœal mortality, especially at 3–6 months, but even so the rates for this quarter at all ages under nine months are lower than those for any previous year except 1922, while their contrast with those for 1911 is indeed extraordinary. For the first year of life as a whole the rates were the lowest recorded in each of the two winter quarters, and very nearly so in the second or spring quarter. In the third or summer quarter the 1923 rate is excelled only by that of 1922. when diarrhœa was at a minimum.

Distribution of Mortality.—Table V shows how infant mortality was distributed in 1923 between the sexes and throughout the country.

Comparison of this table with that for 1922, which recorded the lowest rates till then returned for each class of area, shows that every rate quoted in the table is lower than that for the preceding year. Taken in conjunction with what has been already noted as to mortality in different stages of infancy and in the various quarters of the year this evidence of the universality of the improvement recorded in 1923 becomes all the more remarkable. Infant life is being saved at all ages and in both sexes, at all seasons of the year, in all parts of the country, and in all classes of area.

The rates for the county boroughs and for the North are, as usual, in considerable excess, the highest rate in the table for infants of both sexes being 90 for the Northern county boroughs and the lowest 48 for the small towns of the South. The advantage of the latter over the rural districts of the South (49) is a new feature in this table, there having been no previous exception from 1911 onwards, so far as the sexes jointly are concerned, to

the rule of Northern county borough maximum and Southern rural district minimum, which has thus been one of the most constant features of our yearly records.

The comparisons suggested by Table V are facilitated by Table VI, which states them, for infants of both sexes jointly, in percentage form. It shows that while, viewed in relation to the total for the country as a whole, excess of mortality is

Table V.—Distribution of Infant Mortality throughout England and Wales, 1923.*

	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	—	—	68	—	68	—	—	54	—	54	—	—	61	—	61
County Boroughs ..	101	82	61	83	90	79	61	44	67	69	90	71	53	75	80
Other Urban Districts	91	67	56	82	75	69	51	40	67	57	80	59	48	75	66
Rural Districts ..	85	64	57	84	69	64	50	40	57	52	75	57	49	71	61
All Areas	95	71	63	83	78	74	54	47	64	60	85	63	55	74	69

greatest in the county boroughs of the North, at 30 per cent., it is much decreased for these, and considerably increased for the smaller towns and rural districts of the North when comparison is made only with similar areas. Viewed in the latter way the advantage of the South is greatest for its county boroughs and least for its rural districts. The universality of the decline from the North to South of England remains, of course, unaffected.

* 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 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.	Monmouthshire.
Lancashire.	Hertfordshire.	Herefordshire.	Surrey.	Glamorganshire.
Yorks, West Riding	Buckinghamshire.	Shropshire.	Kent.	Carmarthenshire.
,, East Riding.	Oxfordshire.	Staffordshire.	Sussex, East.	Pembrokeshire.
,, North Riding.	Northamptonshire.	Worcestershire.	,, West.	Cardiganshire.
Durham.	Soke of Peterborough.	Warwickshire.	Southampton.	Brecknockshire.
Northumberland.	Huntingdonshire.	Leicestershire.	Isle of Wight.	Radnorshire.
Cumberland.	Bedfordshire.	Rutlandshire.	Berkshire	Montgomeryshire.
Westmorland.	Cambridgeshire.	Lincolnshire,	Wiltshire.	Flintshire.
	Isle of Ely.	Parts of Holland.	Dorsetshire.	Denbighshire.
	Essex.	,, Kesteven.	Devonshire.	Merionethshire.
	Suffolk, East.	,, Lindsey.	Cornwall.	Carnarvonshire.
	,, West.	Nottinghamshire.	Somersetshire.	Anglesey.
	Norfolk.	Derbyshire.		

Table VI.—Proportionate Distribution of Infant Mortality, 1923 (Both Sexes).

	Mortality per cent. of that in England and Wales.					Mortality per cent. of that in England and Wales in the same class of Area.				
	North.	Midlands.	South.	Wales.	England and Wales.	North.	Midlands.	South.	Wales.	England and Wales.
London	—	—	88	—	88	—	—	—	—	—
County Boroughs ..	130	103	76	108	115	113	89	66	94	100
Other Urban Districts.. ..	116	86	70	108	96	121	89	73	113	100
Rural Districts..	107	82	70	102	88	123	94	80	116	100
All Areas	122	91	79	106	100	—	—	—	—	—

Note.—These percentages are based on the rates in Table IX.

Table 11 compares classes of administrative areas in respect of infant mortality, with distinction of age, cause and legitimacy. The total mortality in the urban areas as a whole exceeded that in the rural by 18 per cent. Table VII shows that this is less than the usual excess, and that this excess on the whole tends to decrease. As usual it increases with age.

Table VII.—Infant Mortality in Urban Districts of all types per cent. of that in Rural Districts, 1911-23.

	Under 4 Weeks.	4 Weeks–3 Months.	3–6 Months.	6–9 Months.	9–12 Months.	Total under 1 year.
1911–1915 ..	104	133	145	149	157	128
1916–1920 ..	102	129	146	144	154	122
1921	107	125	149	144	148	124
1922	102	122	140	155	174	122
1923	100	119	145	150	148	118

A statement of infantile deaths and mortality for each administrative area in the country will be found in Table 14; while Table 13 supplements this information for each metropolitan and county borough, and for the urban and rural portions of each administrative county, by distinctions of age and legitimacy.

Mortality of Separate Weeks and Months of Age.—Tables VIII and IX continue the analysis of infant mortality by detail of age, initiated in 1905 with distinction of registration counties mainly urban and mainly rural, and expanded in 1917 to the degree of geographical distinction now in use. Distinctions of sex and legitimacy are shown only for England and Wales as a whole, but are available for each of the populations dealt with. Some of the facts and rates applying to the illegitimate will be found in Table 13.

Table IX, like its six predecessors, shows that the decrease of mortality from North to South is well marked from the very first day of life. The excess in the North over the Southern rate

Table VIII.—Deaths under One Year by Week and Month of Age, 1923.

			Under 1 Day.	1–7 Days.	Weeks. 1–2	2–3	3–4	Months. Total under 4 Weeks	4 Weeks to 2 Months	2–3	3–4	4–5	5–6	6–7	7–8	8–9	9–10	10–11	11–12	Total under 1 Year.
England and Wales.	All Infants	M	4,425	4,820	2,010	1,576	1,129	13,960	3,071	2,022	1,627	1,399	1,338	1,246	1,176	1,179	1,170	1,050	1,086	30,324
		F	3,287	3,473	1,512	1,117	812	10,201	2,079	1,418	1,222	1,066	947	960	910	891	900	822	842	22,258
		P	7,712	8,293	3,522	2,693	1,941	24,161	5,150	3,440	2,849	2,465	2,285	2,206	2,086	2,070	2,070	1,872	1,928	52,582
	Legitimate	M	4,074	4,533	1,863	1,463	1,041	12,974	2,790	1,828	1,456	1,280	1,220	1,169	1,089	1,098	1,091	986	1,012	27,993
		F	2,954	3,239	1,422	1,036	762	9,413	1,892	1,255	1,104	977	866	880	842	816	842	760	787	20,434
		P	7,028	7,772	3,285	2,499	1,803	22,387	4,682	3,083	2,560	2,257	2,086	2,049	1,931	1,914	1,933	1,746	1,799	48,427
	Illegitimate	M	351	287	147	113	88	986	281	194	171	119	118	77	87	81	79	64	74	2,331
		F	333	234	90	81	50	788	187	163	118	89	81	80	68	75	58	62	55	1,824
		P	684	521	237	194	138	1,774	468	357	289	208	199	157	155	156	137	126	129	4,155
All Areas.	North		2,995	3,304	1,511	1,207	838	9,855	2,157	1,431	1,186	1,054	1,052	1,011	989	994	943	869	968	22,509
	Midlands		2,411	2,506	1,024	752	566	7,259	1,511	951	752	708	597	579	528	565	555	508	441	14,954
	South		1,702	1,794	699	507	382	5,084	1,056	734	665	500	474	452	396	362	404	334	349	10,810
	Wales		604	689	288	227	155	1,963	426	324	246	203	162	164	173	149	168	161	170	4,309
London			795	815	342	241	184	2,377	498	383	421	290	307	285	228	187	239	198	202	5,615
County Boroughs	North		1,571	1,731	860	680	488	5,330	1,200	833	738	640	635	648	599	588	565	518	609	12,903
	Midlands		846	921	379	298	217	2,661	584	397	332	306	267	253	224	237	250	231	193	5,935
	South		209	239	80	57	35	620	152	102	75	53	56	46	60	40	39	40	42	1,325
	Wales		118	135	55	44	32	384	95	82	53	44	45	32	34	34	43	35	48	929
	England and Wales		2,744	3,026	1,374	1,079	772	8,995	2,031	1,414	1,198	1,043	1,003	979	917	899	897	824	892	21,092
Other Urban Districts	North		973	1,102	466	390	243	3,174	712	448	328	285	315	272	285	300	276	263	252	6,910
	Midlands		919	859	374	274	183	2,609	585	337	261	249	214	190	196	226	200	165	162	5,394
	South		378	415	147	102	88	1,130	225	144	104	98	65	63	68	78	72	50	59	2,156
	Wales		320	365	151	115	80	1,031	190	138	112	102	86	95	104	82	90	93	88	2,211
	England and Wales		2,590	2,741	1,138	881	594	7,944	1,712	1,067	805	734	680	620	653	686	638	571	561	16,671
Rural Districts	North		451	471	185	137	107	1,351	245	150	120	129	102	91	105	106	102	88	107	2,696
	Midlands		646	726	271	180	166	1,989	342	217	159	153	116	136	108	102	105	112	86	3,625
	South		320	325	130	107	75	957	181	105	65	59	46	58	40	57	54	46	46	1,714
	Wales		166	189	82	68	43	548	141	104	81	57	31	37	35	33	35	33	34	1,169
	England and Wales		1,583	1,711	668	492	391	4,845	909	576	425	398	295	322	288	298	296	279	273	9,204
England and Wales	First Quarter		1,943	2,360	1,037	912	643	6,895	1,769	1,087	840	776	695	709	701	707	672	574	569	15,994
	Second ,,		1,997	2,147	856	618	459	6,077	1,093	762	582	552	515	536	546	580	640	576	636	13,095
	Third ,,		1,923	1,727	770	486	377	5,283	1,015	685	643	523	496	464	412	356	339	347	357	10,920
	Fourth ,,		1,849	2,059	859	677	462	5,906	1,273	906	784	614	579	497	427	427	419	375	366	12,573

Table IX.—Infant Mortality by Week and Month of Age, 1923.

			Under 1 Day.	1–7 Days.	Weeks. 1–2	2–3	3–4	Months. Total under 4 Weeks	4 Weeks to 2 Months.	2–3	3–4	4–5	5–6	6–7	7–8	8–9	9–10	10–11	11–12	Total under 1 Year.
England and Wales.	All Infants	M	11·42	12·44	5·19	4·07	2·92	36·04	7·93	5·22	4·21	3·61	3·45	3·22	3·04	3·04	3·03	2·71	2·80	78·30
		F	8·86	9·37	4·08	3·01	2·19	27·51	5·61	3·82	3·30	2·87	2·55	2·60	2·45	2·40	2·42	2·22	2·27	60·02
		P	10·17	10·95	4·65	3·55	2·56	31·88	6·79	4·54	3·76	3·25	3·01	2·91	2·75	2·73	2·73	2·47	2·54	69·36
	Legitimate	M	10·99	12·22	5·02	3·94	2·80	34·97	7·51	4·93	3·92	3·45	3·29	3·15	2·93	2·96	2·93	2·66	2·73	75·43
		F	8·31	9·12	4·00	2·91	2·14	26·48	5·32	3·53	3·10	2·75	2·44	2·47	2·37	2·30	2·37	2·14	2·21	57·48
		P	9·67	10·70	4·52	3·44	2·48	30·81	6·45	4·24	3·52	3·11	2·87	2·82	2·66	2·63	2·66	2·40	2·48	66·65
	Illegitimate	M	21·71	17·75	9·09	6·99	5·44	60·98	17·37	12·00	10·57	7·36	7·30	4·76	5·38	5·01	4·88	3·96	4·58	144·15
		F	21·69	15·24	5·86	5·28	3·26	51·33	12·18	10·62	7·68	5·80	5·28	5·21	4·43	4·89	3·78	4·04	3·58	118·82
		P	21·69	16·53	7·52	6·15	4·38	56·27	14·84	11·33	9·17	6·60	6·31	4·98	4·92	4·95	4·35	4·00	4·09	131·81
All Areas	North		11·27	12·45	5·69	4·54	3·15	37·10	8·12	5·39	4·46	3·97	3·96	3·81	3·72	3·74	3·55	3·27	3·64	84·73
	Midlands		10·14	10·54	4·30	3·17	2·38	30·53	6·36	4·00	3·17	2·98	2·51	2·44	2·22	2·38	2·34	2·14	1·86	62·93
	South		8·66	9·12	3·56	2·58	1·95	25·87	5·38	3·74	3·39	2·55	2·41	2·30	2·02	1·84	2·06	1·70	1·78	55·04
	Wales		10·33	11·80	4·93	3·88	2·65	33·59	7·29	5·54	4·21	3·47	2·77	2·81	2·96	2·55	2·87	2·75	2·91	73·72
London			8·67	8·89	3·73	2·63	2·01	25·93	5·43	4·18	4·60	3·16	3·35	3·11	2·49	2·04	2·61	2·16	2·20	61·26
County Boroughs	North		10·96	12·08	6·00	4·74	3·40	37·18	8·37	5·81	5·15	4·46	4·43	4·52	4·18	4·10	3·94	3·61	4·25	90·00
	Midlands		10·17	11·08	4·56	3·58	2·61	32·00	7·02	4·77	3·99	3·68	3·21	3·04	2·69	2·85	3·01	2·78	2·32	71·36
	South		8·36	9·55	3·20	2·28	1·40	24·79	6·08	4·08	3·00	2·12	2·24	1·84	2·40	1·60	1·56	1·60	1·68	52·99
	Wales		9·55	10·94	4·45	3·56	2·59	31·09	7·69	6·64	4·29	3·56	3·64	2·59	2·75	2·75	3·48	2·83	3·88	75·19
	England and Wales		10·40	11·47	5·21	4·09	2·93	34·10	7·69	5·36	4·54	3·95	3·80	3·71	3·47	3·41	3·40	3·12	3·38	79·93
Other Urban Districts	North		11·30	12·79	5·41	4·53	2·82	36·85	8·27	5·20	3·81	3·31	3·66	3·16	3·31	3·48	3·20	3·05	2·93	80·23
	Midlands		10·10	9·45	4·11	3·01	2·01	28·68	6·44	3·71	2·87	2·74	2·35	2·09	2·16	2·49	2·20	1·82	1·78	59·33
	South		8·50	9·35	3·31	2·29	1·98	25·43	5·06	3·24	2·34	2·20	1·46	1·42	1·53	1·75	1·62	1·12	1·33	48·50
	Wales		10·82	12·34	5·11	3·89	2·71	34·87	6·43	4·67	3·79	3·45	2·91	3·21	3·52	2·77	3·04	3·15	2·98	74·79
	England and Wales		10·32	10·91	4·53	3·51	2·37	31·64	6·82	4·25	3·21	2·92	2·71	2·47	2·60	2·73	2·55	2·27	2·23	66·40
Rural Districts	North		12·47	13·02	5·12	3·79	2·96	37·36	6·78	4·15	3·32	3·57	2·82	2·52	2·90	2·93	2·82	2·43	2·96	74·56
	Midlands		10·17	11·43	4·26	2·83	2·61	31·30	5·38	3·41	2·50	2·41	1·83	2·14	1·70	1·60	1·65	1·76	1·35	57·03
	South		9·08	9·22	3·69	3·03	2·13	27·15	5·13	2·98	1·84	1·67	1·30	1·64	1·13	1·62	1·53	1·30	1·30	48·59
	Wales		10·04	11·42	4·96	4·11	2·60	33·13	8·53	6·29	4·90	3·45	1·88	2·24	2·12	2·00	2·12	2·00	2·06	70·72
	England and Wales		10·45	11·28	4·41	3·25	2·58	31·97	6·00	3·80	2·80	2·63	1·95	2·12	1·90	1·97	1·96	1·84	1·80	60·74

on this day was 30 per cent., the lowest excess for the seven years open to comparison being 17 per cent. in 1917, and the highest 33 per cent. in 1920. In each of these years much the highest rate for the first day has been returned by the rural districts of the North.

As is usually the case, more deaths of illegitimate infants occurred on the first day than during the remainder of the first week, whereas with the legitimate this ratio is reversed. London, as usual, returns a particularly low neo-natal mortality, its rate for the first four weeks of life being bettered only by those for the county boroughs and small towns of the South, while at 1–7 days its rate is the lowest in the table. It is interesting to note that this has been a feature of London infant mortality for at least fifty years. Manuscript records show that for the five years 1874–78 the mortality of six registration sub-districts then taken as representative of London was lower than that of certain representative rural districts, consisting of Herefordshire, Dorsetshire, Wiltshire and Buckinghamshire less their large town registration districts for each of the first four days of life, equal for the fifth, and greater at each subsequent age distinguished, the rate for the twelfth month being 9·5 in London as compared with 4·8 in the rural districts, or almost exactly double. For the first month of life the rates were practically equal—37·9 in London and 37·4 in the selected rural districts. This characteristic of London was shared then, as now, by certain other large towns, *e.g.*, Liverpool (Table 13).

The comparisons suggested by Table IX are facilitated by Table X, which, with certain condensation of ages, states the rates recorded for the various populations as ratios to those for England and Wales as a whole, and thus serves to analyse by age the comparison made in Table VI for the first year of life as a whole.

The facts brought out in this table may be considered from three points of view according as they measure at each age the excess mortality (1) of males over females, (2) of the towns over the rural districts, and (3) of the North over the South of England.

(1) The excess mortality of males was shown in last year's Review to be established in full measure from the very first day of life, thence slightly increasing to a maximum at the end of the first or beginning of the second month, after which it gradually declines to comparatively small dimensions at the end of the first year, disappearing altogether about the fourth year of life. Table X shows that, in accordance with this rule, excess for males was greatest in the second month.

(2) The excess mortality of the great towns is little marked on the first day, but becomes rapidly established thereafter, and continues to increase throughout the year, reaching a maximum of 28 per cent. in the last three months.

Table X.—Infant Mortality at various Ages, in different classes of Area and Sections of the Country, per cent. of that of all Infants of the same Age in England and Wales, 1923.

		Under 1 day.	1–7 days.	1–2 weeks.	2–3 weeks.	3–4 weeks.	Under 4 weeks.	4 weeks –2 months.	2–3 months.	3–6 months.	6–9 months.	9–12 months.	Total under 1 Year.
All Areas													
England and Wales ..	P	100	100	100	100	100	100	100	100	100	100	100	100
	M	112	114	112	115	114	113	117	115	112	111	110	113
	F	87	86	88	85	86	86	83	84	87	89	89	87
North		111	114	122	128	123	116	120	119	124	134	135	122
Midlands		100	96	92	89	93	96	94	88	86	84	82	91
South		85	83	77	73	76	81	79	82	83	73	72	79
Wales		102	108	106	109	104	105	108	122	104	99	110	106
London		85	81	80	74	79	81	80	92	111	91	90	88
County Boroughs—													
England and Wales ..		102	105	112	115	114	107	113	118	123	126	128	115
North		108	110	129	134	133	117	123	128	140	153	152	130
Midlands		100	101	98	101	102	100	103	105	109	102	105	103
South		82	87	69	64	55	78	90	90	73	70	63	76
Wales		94	100	96	100	101	98	113	146	115	96	132	108
Other Urban Districts—													
England and Wales ..		101	100	97	99	93	99	100	94	88	93	91	96
North		111	117	116	128	110	116	122	115	108	119	119	116
Midlands		99	86	88	85	79	90	95	82	79	80	75	86
South		84	85	71	65	77	80	75	71	60	56	53	70
Wales		106	113	110	110	106	109	95	103	101	113	118	108
Rural Districts—													
England and Wales ..		103	103	95	92	101	100	88	84	74	71	72	88
North		123	119	110	107	116	117	100	91	97	100	106	107
Midlands		100	104	92	80	102	98	79	75	67	65	61	82
South		89	84	79	85	83	85	76	66	48	52	53	70
Wales		99	104	107	116	102	104	126	139	102	76	80	102

(3) The excess mortality of the North over the South is greater than that of the county boroughs over the rural districts, amounting for the whole twelve months to 54 as against 32 per cent. It is, as already noted, strongly marked from the very first day of life, when it amounts to 30 per cent., reaching 43 per cent. for the first four weeks, when that for the county boroughs over rural districts is only 7 per cent., and a maximum of 89 per cent. in the fourth trimester as against 77 per cent. excess for the county boroughs over the rural districts in the third and the fourth. The Northern excess is thus much more uniform as well as greater than the urban. It is greater at each of the portions of the first year above compared except the second three months, when it amounts to 48 per cent. as against 67 for the county boroughs over the rural districts. The Midlands are as a rule intermediate in position between North and South, the only exception to this rule recorded in Table IX being at 3–4 months, when their mortality was slightly below that of the South. Wales ranks, as in regard to many other matters, between the North and the Midlands. The constancy as well as the degree of the decrease in mortality from North to South is very great. When the comparison is made between districts of similar class in each case exceptions to the rule are few and unimportant, as has been the case also in each of the previous six years. The fact that the only exception in Table X to the rule of progressive decrease from North to South applies to the rural districts in a single week of life, the third, shows how remarkably constant this rule is for 1923. There is no exception in any class of area at any age period distinguished in Table X to the Northern maximum, so far as England is concerned.

Causes of Infant Mortality.—The causes of infant mortality are set forth in Tables 8–12, which compare the records of 1923 with those of previous years, and show the incidence of mortality from each cause upon infants distinguished by sex, age, legitimacy, class of area, and section of the country. From these tables has been prepared the comparison in Table XI between the mortality from the chief causes distinguished at various ages in 1923, 1922, and 1918–22. It will be seen that the fall of infant mortality from all causes in 1923, 7 per cent. as compared with that of the previous year when the revised rates are compared, is distributed over the whole period of infancy, amounting to 6 per cent. for even the first four weeks. The decrease of 12 per cent. at 9–12 months exceeds that at any other period, but this has to be viewed in light of the fact that mortality at this age increased by 10 per cent. in 1922 simultaneously with a decrease for every other portion of the first year. Comparison with the

average for the previous five years, on the other hand, shows a substantial decrease at all ages, but much more for ages over four weeks, especially when the revised rates are compared. The understatement by the crude rates of the reduction which has occurred at 6–12 months should be borne in mind when studying the differences from the five year average under the separate cause headings, for which crude rates only are available.

Dealing first as regards causes with the comparison with the preceding quinquennium, as best representing the general movement in progress, we find a substantial reduction of mortality

Table XI.—England and Wales : Comparison of Infant Mortality Rates in 1923 with those of recently preceding years.

	Under 4 weeks.	4 weeks to 3 months.	3–6 months.	6–9 months.	9–12 months.	Under 1 year.
	Increase or Decrease of Mortality in 1923, per cent. of that in 1922.					
Crude	− 6	−11	− 9	−15	−17	−10
Revised.. ..	− 6	− 8	− 6	−10	−12	− 7
	Increase or Decrease of Mortality in 1923, per cent. of that in 1918–22.					
Crude	−11	−25	−24	−22	−18	−18
Revised.. ..	−12	−25	−26	−26	−25	−20
	Increase or Decrease from various Causes, as compared with 1918–22.					
Measles (7)	− 0·01	—	+ 0·01	+ 0·02	+ 0·10	+ 0·12
Whooping Cough (9)	− 0·01	− 0·08	− 0·13	− 0·15	− 0·07	− 0·44
Other common infectious diseases (6, 8, 10, 25 : 2).	—	—	—	− 0·02	− 0·08	− 0·10
Influenza (11)	− 0·04	− 0·13	− 0·25	− 0·37	− 0·36	− 1·15
Tuberculous diseases (31–37).. ..	− 0·02	− 0·07	− 0·06	− 0·06	—	− 0·21
Convulsions (80)	− 0·53	− 0·45	− 0·29	− 0·12	− 0·06	− 1·45
Bronchitis and pneumonia (99–101)	− 0·26	− 1·07	− 1·00	− 1·00	− 0·96	− 4·29
Diarrhœa and enteritis (113) ..	− 0·16	− 0·66	− 0·89	− 0·37	− 0·25	− 2·33
Congenital defects (malformations and atelectasis) (159, 162 : 2).	− 0·06	+ 0·08	+ 0·07	+ 0·01	+ 0·02	+ 0·12
Congenital debility, sclerema and icterus (160).	− 1·29	− 0·66	− 0·34	− 0·09	− 0·02	− 2·40
Premature birth (161 : 1)	− 1·56	− 0·18	—	—	—	− 1·74
Developmental and wasting diseases (159, 160, 161 : 1, 162 : 2).	− 2·91	− 0·76	− 0·27	− 0·08	—	− 4·02
Suffocation—in bed or not stated how (180 part).	− 0·06	− 0·02	− 0·03	—	—	− 0·11
Other causes	− 0·13	− 0·52	− 0·29	− 0·15	− 0·05	− 1·14
All causes	− 4·13	− 3·76	− 3·20	− 2·30	− 1·73	−15·12
	Percentage.					
Measles (7)	− 50	—	+ 9	+ 5	+ 13	+ 9
Whooping Cough (9)	− 13	− 14	− 19	− 19	− 9	− 15
Other common infectious diseases (6, 8, 10, 25 : 2).	—	—	—	− 20	− 53	− 31
Influenza (11)	− 50	− 68	− 71	− 80	− 80	− 75
Tuberculous diseases (31–37) ..	− 67	− 39	− 15	− 12	—	− 13
Convulsions (80)	− 22	− 36	− 33	− 20	− 13	− 26
Bronchitis and pneumonia (99–101)..	− 18	− 28	− 24	− 23	− 24	− 24
Diarrhœa and enteritis (113) ..	− 18	− 28	− 29	− 22	− 22	− 25
Congenital defects (malformations and atelectasis) (159, 162 : 2)	− 1	+ 9	+ 20	+ 6	+ 22	+ 2
Congenital debility, sclerema and icterus (160).	− 25	− 32	− 32	− 26	− 13	− 27
Premature birth (161 : 1)	− 9	− 12	—	—	—	− 9
Developmental and wasting diseases (159, 160, 161 : 1, 162 : 2).	− 11	− 17	− 17	− 15	—	− 12
Suffocation—in bed or not stated how (180 part).	− 19	− 10	− 27	—	—	− 17
Other causes	− 3	− 26	− 17	− 12	− 5	− 12
All causes	− 11	− 25	− 24	− 22	− 18	− 18

Note.—The percentages in this Table are based on rates per 100,000 births.

from all causes, with unimportant exceptions in the cases of measles and congenital defects. The chief decreases are from bronchitis and pneumonia (4·3 per 1,000 births), congenital debility (2·4), diarrhœa and enteritis (2·3), and premature birth (1·7), these causes accounting for 71 per cent. of the total fall. Of the other causal decreases recorded, that for convulsions (1·45 or 26 per cent.) is no doubt largely due to continued increase in precision of nomenclature. The fall of 11 per cent. in neo-natal mortality is chiefly accounted for by premature birth and congenital debility, for both of which the rate for 1923 is the lowest recorded in Table 9. These two causes, of the prospects of improvement from which very pessimistic views are often taken, are responsible for 69 per cent. of the total decline at this age. It may be noted that every cause distinguished in the table shows some decline for the first four weeks of life.

The fall in mortality from suffocation in bed, which has been in progress since 1915, and which has now been uninterrupted for six years in succession (Table 9), made further satisfactory progress in 1923 at all the ages affected. This heading includes 415 of the 435 infantile deaths allocated to the international heading No. 180 " accidental mechanical suffocation." As pointed out in the Review for 1921, where the significance of the movement was discussed, decline of mortality attributed to this cause set in suddenly in 1915 (Table 9) after having remained steady for 30 years. In 1921, however, the customary excess for London and the South had practically disappeared, whereas Table 12 shows that in 1923 the pre-eminence of the South, including London, has been re-established.

Table 9 shows that the total fall of 7·7 deaths per 1,000 births as compared with 1922 was contributed to by the mortality from almost all the causes distinguished in the table, diarrhœa being the only exception of any importance. The rate from this cause rose from the remarkably low level of 5·57 to 6·82, also a very low rate. Other increases are insignificant, but that from birth injury may be noted, as this mortality has risen from 1·00 in 1918 to 1·39 in 1921 and 1923. The decline in mortality ascribed to tubercle, which has been so prominent a feature of recent years, made further progress in 1923, the rate of 1·36 deaths per 1,000 births being the lowest yet recorded in Table 9 or its predecessors.

Table XII, which contrasts the mortality of male with that of female and of legitimate with that of illegitimate infants, shows that the excess in mortality of males, which has greatly increased along with and in consequence of (Review for 1921) the fall in infant mortality during the present century, was 30 per cent. in 1923, as against its maximum of 31 per cent. in 1922.

The male excess is shared, as usual, by all the principal causes of death quoted except whooping cough, its extent varying from 25 per cent. in the case of premature birth to 44 in that of congenital debility, etc.

Table XII.—England and Wales, 1923 : 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 four weeks	36·04	27·51	34·97	26·48	60·98	51·33	131	132	119	174	194
	4 weeks—3 months	13·15	9·43	12·44	8·85	29·37	22·80	139	141	129	236	258
	3–6 months	11·27	8·72	10·66	8·29	25·23	18·76	129	129	134	237	226
	6–9 ,,	9·30	7·45	9·04	7·14	15·15	14·53	125	127	104	168	204
	9–12 ,,	8·54	6·91	8·32	6·72	13·42	11·40	124	124	118	161	170
	Total under 1 year	**78·30**	**60·02**	**75·43**	**57·48**	**144·15**	**118·82**	**130**	**131**	**121**	**191**	**207**
All ages under one year.	Measles (7)	1·72	1·26	1·66	1·22	3·03	2·15	137	136	141	183	176
	Whooping cough (9)	2·45	2·58	2·43	2·54	2·91	3·52	95	96	83	120	139
	Other common infectious diseases (6, 8, 10, 25 : 2)	0·28	0·18	0·28	0·19	0·49	—	156	147	—	175	—
	Tuberculous diseases (31–37)	1·56	1·17	1·51	1·15	2·71	1·63	133	131	166	179	142
	Syphilis (38)	1·23	0·86	0·99	0·70	6·93	4·49	143	141	154	700	641
	Convulsions (80)	4·89	3·44	4·70	3·29	9·28	6·91	142	143	134	197	210
	Bronchitis and pneumonia (99–101)	15·22	11·55	14·89	11·25	22·75	18·37	132	132	124	153	163
	Diarrhœa and enteritis (113)	7·81	5·78	7·41	5·39	17·01	14·85	135	137	115	230	276
	Congenital defects (malformations and atelectasis) (159, 162 : 2).	6·32	4·95	6·24	4·90	8·16	6·25	128	127	131	131	128
	Congenital debility, sclerema and icterus (160).	7·58	5·26	7·07	4·92	18·92	13·22	144	144	143	268	269
	Premature birth (161 : 1)	19·53	15·68	19·17	15·16	27·70	27·82	125	126	100	144	184
	Developmental and wasting diseases (159, 160, 161 : 1, 162 : 2).	33·43	25·89	32·48	24·98	54·78	47·29	129	130	116	169	189
	Other causes	9·71	7·31	9·08	6·77	24·26	19·61	133	134	124	267	290
	All causes	**78·30**	**60·02**	**75·43**	**57·48**	**144·15**	**118·82**	**130**	**131**	**121**	**191**	**207**

Table XIII.—Comparison of Infant Mortality from the Principal Causes in Various Areas, 1923.

		Measles (7).	Whooping Cough (9).	Other Common Infectious Diseases (6, 8, 10, 25 : 2).	Tuberculosis, all forms (31–37).	Syphilis (38).	Convulsions (80).	Bronchitis and Pneumonia (99–101).	Diarrhœa and Enteritis (113).	Congenital Malformations (159).	Congenital Debility and Sclerema (160 : 1).	Premature Birth (161 : 1).	Injury at Birth (161 : 2).	Suffocation—in bed, or not stated how (180 pt).	Other Causes.	All Causes.
		Differences from Rates for England and Wales per 100,000 Births.														
All Areas	North	+ 72	+ 69	+ 4	+29	+53	+144	+545	+116	+33	+ 93	+253	+12	−14	+128	+1537
	Midlands	− 37	− 58	− 3	−10	−28	− 89	−233	− 83	− 9	− 27	− 21	—	+ 7	− 52	− 643
	South	− 77	− 49	+ 3	−19	−27	−208	−443	− 50	−32	−121	−306	− 8	+14	−109	−1432
	Wales	+ 78	+ 83	− 5	−16	−38	+414	− 48	− 27	− 4	+ 96	− 40	−21	−17	− 19	+ 436
London		− 54	− 29	+19	−15	−23	−242	193	+225	−30	−124	−299	− 7	+22	− 60	− 810
County Boroughs	North	+ 96	+ 89	+ 9	+45	+97	+111	+766	+281	− 2	+115	+256	+10	−11	+202	+2064
	Midlands	+ 1	− 67	+ 4	+17	− 5	−101	+ 33	+209	−19	− 48	+135	− 4	+23	+ 22	+ 200
	South	− 54	− 84	− 2	−28	+15	−210	−511	−214	−16	− 59	−357	− 3	+ 9	−123	−1637
	Wales	+133	+145	−22	+ 2	+65	+149	+ 17	+281	+29	− 53	−122	+39	−23	− 57	+ 583
	England and Wales	+ 53	+ 26	+ 6	+27	+56	+ 16	+379	+212	− 7	+ 39	+142	+ 6	+ 1	+101	+1057
Other Urban Districts	North	+ 35	+ 45	+ 5	+22	+16	+181	+392	− 31	+96	+101	+198	+24	−12	+ 15	+1087
	Midlands	− 39	− 63	− 2	− 9	−29	−115	−304	−170	− 7	− 37	−113	—	+ 4	−119	−1003
	South	− 98	− 74	−16	−12	−42	−184	−693	−268	−40	−168	−355	−13	− 3	−120	−2086
	Wales	+121	+ 56	+ 5	−31	−68	+441	+ 44	− 93	− 7	+173	+ 31	−51	−11	− 67	+ 543
	England and Wales	− 5	− 14	− 1	− 1	−21	+ 40	− 93	−131	+23	+ 12	− 32	—	− 4	− 69	− 296
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Rural Districts	North	+ 66	+ 47	−17	−23	−30	+185	+ 34	−187	+24	− 10	+370	−12	−27	+100	+ 520
	Midlands	− 85	− 41	−12	−45	−55	− 37	−483	−339	+ 1	+ 14	− 93	+ 6	− 9	− 55	−1233
	South	−124	− 45	−14	−34	−48	−149	−728	−373	−36	− 98	−226	− 9	+16	−209	−2077
	Wales	− 41	+ 87	−10	− 3	−63	+562	−261	−138	−23	+ 70	−108	−12	−25	+101	+ 136
	England and Wales	− 54	− 7	−13	−32	−48	+ 55	−392	−289	− 5	− 11	− 15	− 4	− 9	− 38	− 862
		Rates per cent. of those for England and Wales.														
All Areas	North	148	127	118	121	150	134	141	117	108	116	114	109	75	115	122
	Midlands	75	77	86	93	73	79	83	88	98	95	99	100	113	94	91
	South	49	81	114	86	74	50	67	93	92	79	83	94	125	88	79
	Wales	152	133	77	88	64	199	96	96	99	117	98	85	69	98	106
London		64	88	186	89	78	42	86	133	93	78	83	95	140	93	88
County Boroughs	North	164	135	141	133	192	127	157	141	100	120	115	107	80	123	130
	Midlands	101	73	118	113	95	76	102	131	95	92	108	97	142	102	103
	South	64	67	91	79	114	50	62	69	96	90	80	98	116	86	76
	Wales	189	158	—	101	162	136	101	141	107	91	93	128	58	94	108
	England and Wales	135	110	127	120	153	104	128	131	98	107	108	104	102	111	115
Other Urban Districts	North	123	118	123	116	115	143	129	95	123	118	111	117	78	102	116
	Midlands	74	75	91	93	72	72	77	75	98	94	94	100	107	87	86
	South	35	71	27	91	60	56	48	61	90	71	80	91	95	86	70
	Wales	181	122	123	77	35	206	103	86	98	130	102	63	80	92	108
	England and Wales	97	94	95	99	80	110	93	81	106	102	98	100	93	92	96
Rural Districts	North	144	119	23	83	71	144	103	73	106	98	121	91	51	111	107
	Midlands	43	84	45	67	48	91	64	50	100	102	95	104	84	94	82
	South	17	82	36	75	54	64	46	45	91	83	87	94	129	76	70
	Wales	73	135	55	98	40	234	81	80	94	112	94	91	55	111	102
	England and Wales	64	97	41	76	54	113	71	58	99	98	99	97	84	96	88

As is regularly the case, the excess mortality of males was greater for legitimate than for illegitimate infants—31 per cent. for the legitimate as against 21 for the illegitimate (Table XII). This has been so in at least each of the last 18 years, including the 13 years 1911–23, the records of which have been utilized for the purposes of the following comparisons of the mortality of legitimate and illegitimate male and female infants. The excess mortality of males is greater for the legitimate because excess for the illegitimate is greater for females in each of these years. These statements apply to total mortality as well as, for the great majority of the years compared, to that from diarrhœa, bronchitis and pneumonia, syphilis, premature birth, and convulsions. The mortality of males exceeds that of females for the legitimate and the illegitimate alike. This statement holds good in each of the thirteen years dealt with for each of the causes distinguished in Table XII, except whooping cough and measles. The well-known excess mortality of females from whooping cough applies to legitimate infants in each of the thirteen years, and to the illegitimate in nine of these years. Measles shows no exception for the legitimate to the general rule of male excess in any of the thirteen years, but the mortality of females was in excess for the illegitimate in three of these years. The general tendency is thus towards heavier relative mortality of females amongst illegitimate infants. Although in their case also the mortality of males is greater in each of these 13 years, it is not so much greater as for the legitimate in any of them.

Distribution throughout the country of Mortality from various causes.—Table XIII, which is derived from Table 12, furnishes an analysis by cause of the differences in total mortality under one year of age shown in Tables V and VI. Table 12 having been first prepared for 1917, the results for six years only are available for comparison.

The greatest departures from the average mortality of the whole country in Table 12 are furnished by the county boroughs of the North, with excesses under nearly every cause distinguished, aggregating to 20·64 deaths per 1,000 births, and by the urban and rural districts of the South, which hold advantages under every head, except overlying in the rural districts, aggregating to 20·86, and 20·77 per 1,000 births respectively. In 1921 and 1922 very much the same statements applied.

In each of these three populations the first place in order of numerical importance amongst the causes of death accounting for the differences, is occupied by bronchitis and pneumonia and in two of them the second by diarrhœa, in accordance with the general experience of the years 1917–22. In the urban districts of the South, the second place is taken by premature birth, diarrhœa coming third.

The details of Table XIII are so similar to those of its six predecessors, as noted and commented upon in previous reports, that little further reference to them is here required.

Apart from the usual frequency of ascription of infantile deaths to convulsions in Wales, the greatest excess above the general average from any of the causes in any of the populations compared is 92 per cent. from syphilis in the county boroughs of the North. Mortality ascribed to this cause in the North generally was more than twice as high as that in the Midlands, South, or Wales (Table 12). Other striking excesses are 57 per cent. from bronchitis and pneumonia in the Northern county boroughs, and 41 per cent. in the North generally, and 41 per cent. from diarrhœa in the county boroughs both of the North and of Wales. The variations shown for measles are very great, much larger than those for whooping cough. The mortality from the following causes in each section of England increases regularly with urbanization—bronchitis and pneumonia, diarrhœa, and syphilis. On the other hand, with one trifling exception in the Midlands, that from convulsions is recorded as decreasing regularly with increasing urbanization. It may be surmised with considerable probability that the first statement corresponds with the actual facts, but that the decrease of convulsions with urbanization is apparent rather than real, being due to ascription in the urban areas of a larger proportion of these deaths to the causes provocative of the convulsions.

Attention may once more be drawn to the remarkable differences in regard to mortality from premature birth revealed by Table XIII. In England this varies from a maximum in the North, 14 per cent. above the general average, to a minimum in the South 17 per cent. below it. Both Northern maximum and Southern minimum apply to all classes of area alike, the extreme range being from 21 per cent. above average in the rural districts of the North to 20 per cent. below average in both the county boroughs and the smaller towns of the South. In fact, the variation of this mortality, which in 1923 accounted for more than half the deaths occurring during the first four weeks of life (Table 17A), is seen to be entirely geographical, and scarcely influenced by urbanization at all (Table 12). It seems to follow that reduction of "neo-natal" mortality in this country is largely dependent on the possibility of approximating the conditions of life, for fœtus and new born infant alike, in the North of England to those obtaining in the South.

Mortality at Ages over One Year.

Table XIV gives the crude and standardized death-rates for sexes and persons for the whole country, as well as the mortality per million living at different ages for 1922 and 1923, and, in order to provide means of comparison with the most recent pre-war experience, for 1911–14.

Table XIV.—England and Wales : Mortality from all Causes per Million Population, 1911–1914, 1922, and 1923. (Total deaths registered.)

	Males.			Females.			Persons.		
	1911–14.	1922.	1923.	1911–14.	1922.	1923.	1911–14.	1922.	1923.
All Ages :									
Crude	14,870	13,565	12,368	13,041	12,018	10,863	13,926	12,757	11,582
Standardized A ..	14,962	12,852	11,462	12,335	10,577	9,276	13,571	11,645	10,296
Standardized B ..	16,080	13,648	12,349	13,892	11,853	10,598	14,949	12,712	11,437
0–	40,228	30,192	24,294	33,647	24,463	19,617	36,957	27,365	21,987
5–	3,276	2,616	2,340	3,221	2,508	2,163	3,248	2,562	2,252
10–	1,953	1,740	1,640	2,051	1,836	1,634	2,002	1,788	1,637
15–	2,910	2,684	2,558	2,662	2,564	2,496	2,785	2,624	2,527
20–	3,681	3,734	3,442	3,091	3,226	2,952	3,370	3,463	3,184
25–	4,822	4,359	3,985	3,976	3,850	3,418	4,378	4,081	3,675
35–	8,167	6,910	6,324	6,556	5,331	4,799	7,333	6,066	5,506
45–	15,023	11,990	11,223	11,522	9,337	8,509	13,203	10,615	9,812
55–	30,500	25,964	24,122	23,162	19,682	18,150	26,627	22,665	20,988
65–	64,597	61,199	56,015	51,584	48,557	44,134	57,350	54,192	49,440
75–	139,355	143,911	130,188	119,280	120,862	108,453	127,412	129,944	117,015
85 and upwards	271,185	271,253	262,012	244,078	251,002	231,875	253,709	257,675	241,833

A. English Standard (Population of England and Wales, 1901). B. International Standard. (*See* page 1.)

It will be seen that at every age distinguished in the table mortality was appreciably lower for each sex in 1923 than immediately before the war. It is remarkable that this should be so for males aged 25–55, the survivors of the men who during the war were of military age, so large a proportion of whom were

Table XV.—England and Wales : Mortality at various ages of Males and Females from all causes in 1922 and in 1923 per cent. of that for the same sex and age in 1911–14.

	Males.		*Females.*	
	1922.	1923.	1922.	1923.
0— ..	75	60	73	58
5— ..	80	71	78	67
10— ..	89	84	90	80
15— ..	92	88	96	94
20— ..	101	94	104	96
25— ..	90	83	97	86
35— ..	85	77	81	73
45— ..	80	75	81	74
55— ..	85	79	85	78
65— ..	95	87	94	86
75— ..	103	93	101	91
85— ..	100	97	103	95

exposed to all the risks to health involved by active service. Yet year after year since 1918 decreased mortality for those males who were of military age during the war has had to be recorded. The extent of the fall can be better appreciated from Table XV, in which the mortality in 1922 and in 1923 of each sex and age group is shown as a proportion of the corresponding rate for 1911–14. It will be seen that at ages 25–55 the reduction is rather over 20 per cent. for males as well as for females.

For both sexes alike the post-war reduction of mortality is large in infancy, gradually lessens to a minimum at 20–25, thereafter rising again to a second maximum at 35–55, after which it again falls to reach a second minimum in extreme old age. It would seem therefore that factors of a more fundamental nature than the conditions and effects of active service have been influencing the mortality of both sexes very similarly at each period of life. It seems to follow that the attempt to explain changes in the mortality of young adult males in reference to their service in the field, or of young adult females in reference to their service in munition factories, may be abandoned, as conditions peculiar to either sex can obviously not form the whole explanation of a movement common to both.

Table XIV shows that as compared with the preceding year the mortality of males and of females alike fell at all stages of life in 1923. At each age group distinguished in the table males experienced a higher mortality than females in 1923, whereas in both 1911–14 and in 1922 the rate for females was the higher at age 10–15. The rates for 1923, indeed, are seen from Table 3 to be with few exceptions lower, not only than those of 1922, but of any previous year. This statement applies to each sex at all ages under 65 as well as to females of 75–85.

The great decrease in mortality at age 0–5 (Table XV) is somewhat lessened when allowance is made for change in the proportions at the five years of life making up the group (Table XVI), that of infants under one year of age having fallen, as a result of the falling birth-rate.

Stated in either manner, however, the progress at these ages in 1923 is very remarkable, the decline from the previously lowest rate of 1922 amounting to 20 per cent. by the crude form of statement, and to 13 per cent. by the standardized (Table XVI). Such decrease in a single year is extraordinary, especially when accompanied by declines of 25 per cent. (crude) and 27 per cent. (standardized) for the eight years covered by Table XVI. The change applies in almost equal degree to both sexes. The standardized rates for both males and females in Table XVI are less than half those recorded in Table 3 for any year before 1907.

Table XVI.—England and Wales, 1916–23 : Comparison of Crude and Standardized Death-Rates at Age 0–5.

	Males.		Females.		Both Sexes.	
	Crude.	Stand-ardized.	Crude.	Stand-ardized.	Crude.	Stand-ardized.
1916	32·5	34·0	26·5	27·9	29·5	31·0
1917	31·7	34·1	26·2	28·3	29·0	31·2
1918	38·5	42·5	33·8	37·1	36·2	39·8
1919	32·4	36·4	26·1	29·3	29·3	32·9
1920	35·7	31·7	28·5	25·9	32·2	28·8
1921	32·3	29·2	25·8	23·6	29·1	26·4
1922	30·2	28·5	24·5	23·1	27·4	25·8
1923	24·3	25·0	19·6	20·1	22·0	22·5

Mortality at 1–5.—Table XVII shows that for each sex the fall at each of these four years of life has been considerably greater than that for infants, remarkable as the latter has been. For the sexes jointly it has varied from 28·6 per cent in the fourth year to 24·5 in the second and 14·0 in the fifth, while as compared with the most recent pre-war experience the mortality of each sex has been reduced by not far from half at each of the first five years of life. Considerable increase for each of the four years 1–5 was noted for each sex in the Review for 1922 over the unprecedentedly low rates of 1921, especially at 1–2, as the result of increased mortality from infectious disease; but the ground lost at these ages in 1922 has been more than regained in 1923. At each of them the rate for 1923 is lower than that of 1921 for males and for children of both sexes, though for females aged 1–2 it is very slightly higher.

The distribution throughout the country of mortality at these ages is shown in Table XVIII, which may be compared with Tables V and VI (infant mortality). It will be seen that the exceptionally unfavourable position of London noted in last year's Review, when its mortality was 48 per cent. in excess of the general average at 1–2, and 55 per cent. at 2–5, has completely disappeared in 1923, which exhibits London in the unwontedly favourable position of 19 per cent. below the general average at 1–2, and 7 per cent. below at 2–5, its position during each of the years 1911–1914, the only others available for comparison, having been one of slight excess at both ages. The greatest excess over the general average recorded in Table XVIII is one of 60 per cent. for the county boroughs of the North at 1–2 years, while the most favourable position occupied by any of the populations compared is that of 54 per cent. below the general average by the rural districts of the South at the same age, at which variation in mortality are greater than at 2–5. It may be noted that the

Table XVII.—England and Wales : Mortality per 1,000 living in each of the First Five Years of Life, 1911–14, 1922, and 1923.

Year of Life.	Males.					Females.					Both Sexes.				
	1911–14.	1922.	1923.	1923 per cent. of		1911–14.	1922.	1923.	1923 per cent. of		1911–14.	1922.	1923.	1923 per cent. of	
				1911–14.	1922.				1911–14.	1922.				1911–14.	1922.
0–1	132·06	88·77	82·79	62·7	93·3	104·47	66·55	62·66	60·0	94·2	118·40	77·83	72·88	61·6	93·6
1–2	35·12	25·87	19·62	55·9	75·8	32·43	23·88	17·95	55·3	75·2	33·79	24·89	18·79	55·6	75·5
2–3	13·71	10·93	8·22	60·0	75·2	13·37	10·43	7·65	57·2	73·3	13·54	10·68	7·94	58·6	74·3
3–4	8·26	6·89	4·95	59·9	71·8	8·13	6·47	4·60	56·6	71·1	8·19	6·69	4·78	58·4	71·4
4–5	6·08	4·43	3·89	64·0	87·8	6·05	4·41	3·70	61·2	83·9	6·07	4·42	3·80	62·6	86·0
0–5 Crude	40·23	30·19	24·29	60·4	80·5	33·65	24·46	19·62	58·3	80·2	36·96	27·36	21·99	59·5	80·4
0–5 Standardized* ..	40·71	28·48	24·95	61·3	87·6	34·17	23·14	20·09	58·8	86·8	37·45	25·82	22·53	60.2	87·3
1–5 Crude	15·85	13·09	9·47	59·7	72·3	15·03	12·25	8·75	58·2	71·4	15·44	12·68	9·11	59·0	71·8
1–5 Standardized* ..	15·79	12·03	9·17	58·1	76·2	14·99	11·29	8·47	56·5	75·0	15·39	11·66	8·82	57·3	75·6

* Based on the constitution of the population in 1901.

Table XVIII.—Distribution of Mortality in Early Childhood, 1923.

	1—2 years.					2—5 years. (Mean Annual Mortality.)				
	North.	Midlands.	South.	Wales.	England and Wales.	North.	Midlands.	South.	Wales.	England and Wales.
Deaths per 1,000 Living (Both Sexes).										
London	—	—	15·25	—	15·25	—	—	5·26	—	5·26
County Boroughs	30·12	19·49	12·26	23·97	24·77	7·78	5·84	4·62	6·11	6·77
Other Urban Districts ..	23·99	14·72	9·89	22·28	17·91	7·39	4·67	3·62	6·31	5·60
Rural Districts	19·28	10·23	8·57	11·19	12·07	5·85	3·76	2·81	4·37	4·09
All Areas	26·66	15·18	12·44	19·39	18·79	7·39	4·82	4·33	5·71	5·65
Mortality per cent. of that in England and Wales.										
London	—	—	81	—	81	—	—	93	—	93
County Boroughs ..	160	104	65	128	132	138	103	82	108	120
Other Urban Districts ..	128	78	53	119	95	131	83	64	112	99
Rural Districts	103	54	46	60	64	104	67	50	77	72
All Areas	142	81	66	103	100	131	85	77	101	100
Mortality per cent. of that in England and Wales in the same class of Area.										
County Boroughs	122	79	49	97	100	115	86	68	90	100
Other Urban Districts ..	134	82	55	124	100	132	83	65	113	100
Rural Districts	160	85	71	93	100	143	92	69	107	100

differences recorded in Table XVIII, especially those at age 1–2, greatly exceed those shown for the first year of life in Table VI. As it may be seen from Table XXIII that susceptibility of mortality to environmental influences is greater at 0–5 than at any subsequent period of life, it follows that it is greatest of all in the second year.

Table XVIII also shows that, when similar classes of area are compared in each case, mortality at these, as generally at other, ages decreases from the North to the South of England, no exception to this rule occurring at either age dealt with. The lower section of the table shows that the Northern excess was greatest, both at 1–2 and at 2–5, in the rural districts, where it amounted to no less than 60 per cent. at 1–2 and 43 at 2–5. The advantage of the South, on the other hand, was greatest in the county boroughs at 1–2, where it amounted to 51 per cent.

The results of the mortalities recorded in Tables V and XVIII are demonstrated in Table XIX by showing, in life table form, the numbers of survivors at the end of each of the first five years of life, out of 10,000 children born to the various populations dealt with in these tables, assuming continuance of the mortality experience of 1923. This table continues a series commenced in 1911, but interrupted during 1915–21 on account of the obstacles raised by the war to estimations of local mortality at different ages. The method of its construction is that described in the Review for 1922, except that the three years 2–5 have been dealt with individually, and not as a whole.

Table XIX.—Mortality of Early Childhood in 1923 : Survivors of 10,000 Children born.

	North.	Midlands.	South.	Wales.	England and Wales.
At end of First Year.					
London	—	—	9,389	—	9,389
County Boroughs ..	9,102	9,288	9,471	9,250	9,203
Other Urban Districts ..	9,200	9,408	9,516	9,254	9,338
Rural Districts	9,256	9,431	9,515	9,295	9,394
All Areas	9,155	9,372	9,451	9,265	9,308
At end of Second Year.					
London	—	—	9,247	—	9,247
County Boroughs ..	8,832	9,109	9,356	9,031	8,978
Other Urban Districts ..	8,982	9,271	9,423	9,050	9,172
Rural Districts	9,079	9,335	9,434	9,191	9,281
All Areas	8,914	9,231	9,334	9,087	9,135
At end of Third Year.					
London	—	—	9,183	—	9,183
County Boroughs ..	8,729	9,037	9,299	8,954	8,890
Other Urban Districts ..	8,886	9,215	9,378	8,966	9,101
Rural Districts	9,000	9,288	9,397	9,140	9,229
All Areas	8,817	9,172	9,281	9,014	9,063
At end of Fourth Year.					
London	—	—	9,143	—	9,143
County Boroughs ...	8,675	8,991	9,263	8,910	8,841
Other Urban Districts ..	8,832	9,177	9,348	8,922	9,058
Rural Districts	8,956	9,255	9,374	9,100	9,194
All Areas	8,764	9,133	9,246	8,971	9,019
At end of Fifth Year.					
London	—	—	9,104	—	9,104
County Boroughs ..	8,635	8,955	9,229	8,870	8,802
Other Urban Districts ..	8,790	9,144	9,323	8,883	9,022
Rural Districts	8,926	9,234	9,357	9,073	9,171
All Areas	8,725	9,102	9,216	8,935	8,985

Of Table XIX itself little need be said. It shows that at each age and in each class of area dealt with the number of survivors increases in England from a minimum in the North to a maximum in the South, while the only exception to the rule of similarly

regular increase of survivors by class of area, from county boroughs to rural districts, is that applying to the South at the end of the first year. The advantage held by London over the county boroughs during the whole period may also be noted, the survivors in London at the end of the fifth year exceeding those in the county boroughs of the North at the end of the first. It is also of interest to note that for the whole country all but about ten per cent. of infants born now have the prospect of attaining the age of five years, whereas it was only in 1912 that for the first time such proportion attained the age of one year (Table 1).

The causes of death accounting for the great decrease shown in Table XVII of mortality at ages 1–5 in 1923 (about 25 per cent.) may be gathered from Table XX. The death-rate is seen to have fallen from nearly every cause distinguished, but especially from infectious and respiratory diseases, which account for a very large proportion of the mortality at this age, and are especially subject to yearly fluctuation. To the total decline, as compared with 1922, of 3,563 deaths per million population, the largest contribution of any one cause distinguished is that of broncho-pneumonia, 1,291, the total under respiratory diseases being 1,796, just over half the decline from all causes. This fall is doubtless closely connected with that from infectious diseases. Measles, scarlet fever, whooping cough, diphtheria and influenza jointly contribute 1,620 to the total decline of 3,563, the chief items being those from whooping cough, 593, and from influenza, 510. Other changes are of comparatively small importance, chief amongst them being decreases of 81 from tuberculous diseases (chiefly of the nervous system, these deaths being almost entirely from tuberculous meningitis, and so described prior to 1921, though including, then and now, a few from other forms of cerebral tubercle, etc.), and of 49 from convulsions, and an increase of 76 from diarrhœa. It is noteworthy that the latter is the only increase of any numerical significance whatever.

Perhaps comparison with 1921, though not provided by Table XX, is of more interest than with 1922, as 1921 was a year of unprecedentedly low mortality at ages 1–5. It shows reduction in 1923 under every cause distinguished in Table XX except measles, the mortality from which in 1921 was only 603 per million. If measles mortality, which of course fluctuates from year to year without much reference to sanitary conditions, had been as low in 1923 as in 1921 the total death-rate of the former year would have been only 8,384 per million. It may be seen from Tables VI and XVIII and Diagram 1, taken in conjunction, that mortality at these ages is more responsive to environment than that for any other period of life. It might well therefore take the place sometimes formerly assigned to infant mortality as an index of sanitary progress. Viewed in this light its extraordinary reduction, measles apart, in 1923 is of great and happy significance.

Table XX.—England and Wales: Deaths from Various Causes per Million living at Ages 1–5 Years in 1911–14, 1922, and 1923. (Both Sexes.)

Cause of Death.	Death-rate.			Cause of Death.	Death-rate.		
	1911–14.	1922.	1923.		1911–14.	1922.	1923.
7. Measles	2,643	1,530	1,332	98:2. Laryngitis	151	65	52
8. Scarlet Fever	369	229	169	99. Bronchitis	862	710	461
9. Whooping Cough ..	1,202	1,338	745	100. Broncho-pneumonia ..	2,146	3,015	1,724
10. Diphtheria	772	723	464	101. Pneumonia (Lobar and not otherwise defined).	856	736	515
11. Influenza	59	624	114	Other respiratory diseases	138	104	82
31. Tuberculosis of Respiratory System.	235	170	130	112 : 1 Inflammation of the Stomach.	93	64	50
32. Tuberculosis of Nervous System.	697	521	475	113 & 114. Diarrhœa and Enteritis.	1,621	403	479
33. Tuberculosis of Intestines and Peritoneum.	387	190	197	128. Acute Nephritis ..	88	49	51
34–37. Other tuberculous diseases.	284	171	169	159. Congenital Malformations.	84	92	83
56. Rickets	170	86	98	179. Burns	356	301	272
71. Meningitis	446	263	233	Other Violence ..	271	201	215
80. Convulsions	455	268	219	Other Causes ..	1,060	823	784
				All Causes	15,445	12,676	9,113

Mortality of the Aged.—The growing importance of this portion of our total mortality may be gathered from the fact that whereas from 1911 to 1921 the total population increased by 5 per cent., that at ages over 70 showed an increase of no less than 22 per cent., its proportion to the total increasing from 2·97 to 3·44 per cent.

The principal causes to which mortality at ages over 70 is attributed are set out in Table XXI in comparison with corresponding figures for other recent years. In making these comparisons the declining vogue of " old age " as a form of death return causes a difficulty. The proportion of deaths so certified at over 70 years of age has fallen from 28·9 per cent. in 1911 to 18·2, the lowest figure yet reached, in 1923, with, of course, a corresponding increase in the proportions and death-rates assignable to defined causes.

All the causes distinguished in the table, except cancer, show a decrease of mortality in 1923 for each sex, the chief of these decreases being those from influenza, bronchitis and old age. The increases, as compared with 1911–15, from diseases of the heart and blood vessels may well be due to transfer to these headings of some of the mortality formerly attributed to old age.

Centenarians.—Among the deaths registered during the year there were 96 of reputed centenarians, 22 of whom were males and 74 females. In the preceding three years the numbers were 55, 59 and 77 respectively. Particulars of the ages returned and of the classes of area concerned are given in Table XXII.

Table XXI.—England and Wales: Mortality over 70 Years of Age in 1911–15, 1916–20, 1922, and 1923, from the Chief Causes of Death.

	Deaths from each Cause per 1,000 Total Deaths.				Mortality per 1,000 Living.			
	1911-15.	1916-20.	1922.	1923.	1911–15.	1916–20.	1922.	1923.
Males.								
Influenza (11)	15	25	33	15	1·8	2·9	3·8	1·6
Cancer (43–49)	79	84	91	104	9·5	9·7	10·5	10·8
Heart Diseases (87–90)	143	154	162	166	17·1	17·9	18·6	17·3
Disease of Blood Vessels, including Cerebral Hæmorrhage (74, 91–93)	139	154	177	190	16·6	17·9	20·3	19·7
Bronchitis (99)	136	139	138	123	16·2	16·2	15·9	12·8
Pneumonia (100. 101)	34	35	36	35	4·1	4·0	4·2	3·6
Chronic Nephritis (129)	30	28	26	28	3·6	3·2	3·0	2·9
Old Age (164)	237	208	178	170	28·3	24·2	20·5	17·6
Other Causes	187	173	159	169	22·3	20·3	18·0	17·5
All Causes	1,000	1,000	1,000	1,000	119·5	116·3	114·8	103·8
Females.								
Influenza (11)	19	28	38	19	1·9	2·9	3·8	1·7
Cancer (43–49)	85	90	93	106	8·9	9·0	9·4	9·6
Heart Diseases (87–90)	146	161	179	188	15·3	16·2	18·1	17·1
Disease of Blood Vessels, including Cerebral Hæmorrhage (74, 91–93)	132	146	161	174	13·8	14·7	16·2	15·8
Bronchitis (99)	147	151	148	130	15·4	15·3	14·9	11·8
Pneumonia (100, 101)	33	32	34	34	3·4	3·2	3·5	3·1
Chronic Nephritis (129)	22	19	20	21	2·3	1·9	2·0	1·9
Old Age (164)	263	234	201	192	27·5	23·6	20·3	17·4
Other Causes	153	139	126	136	16·0	13·9	12·7	12·4
All Causes	1,000	1,000	1,000	1,000	104·5	100·7	100·9	90·8
Persons.								
Influenza (11)	17	27	36	17	1·9	2·9	3·8	1·7
Cancer (43–49)	82	87	92	105	9·1	9·3	9·8	10·1
Heart Diseases (87–90)	145	158	172	178	16·0	16·9	18·3	17·1
Disease of Blood Vessels, including Cerebral Hæmorrhage (74, 91–93)	135	149	168	181	14·9	16·0	17·9	17·4
Bronchitis (99)	142	146	144	127	15·7	15·6	15·3	12·2
Pneumonia (100, 101)	33	33	35	35	3·7	3·5	3·7	3·3
Chronic Nephritis (129)	26	23	23	24	2·8	2·5	2·4	2·3
Old Age (164)	251	222	191	182	27·8	23·8	20·3	17·5
Other Causes	169	155	139	151	18·8	16·7	15·1	14·5
All Causes	1,000	1,000	1,000	1,000	110·7	107·2	106·6	96·1

Table XXII.—England and Wales, 1923 : Deaths of Centenarians.

	Males.						Females.							
	Age.						Age.							
	100 and over	100	101.	102.	103	105.	100 and over	100.	101.	102.	103.	104.	105.	106.	107.
London	3	1	2	—	—	—	12	4	3	3	1	—	—	1	—
County Boroughs	4	1	2	1	—	—	22	8	7	3	—	2	—	—	2
Other Urban Districts	8	4	1	2	1	—	20	8	4	3	1	—	3	1	—
Rural Districts	7	3	1	—	2	1	20	9	4	2	3	1	1	—	—
All Areas	22	9	6	3	3	1	74	29	18	11	5	3	4	2	2

Mortality at different Periods of Life in Town and Country and in different Portions of England and Wales.—The comparisons of mortality at different ages in town and country and in various sections of England and Wales suggested by Table XXIII are facilitated by Table XXIV and by Diagram 1, based upon it. These bring out how constantly at every age mortality in the North of England as a whole and in Wales as a whole exceeds the general average, which is made good by equally constant divergence in the opposite direction in the Midlands and South. And similarly, in England and Wales as a whole, the mortality experience of the rural districts at every age is favourable, and of the county boroughs unfavourable, that of the smaller towns being generally very slightly better than the average. The London experience is distinctly favourable in early childhood, and in a less degree till the age of 35 is reached, after which it is unfavourable till 65, especially at 45–55. Its mortality in old age, as well as its standardized rate for all ages, is about the same as for England and Wales. But it may be noted that as in other years this approximation to average of the standardized rate for both sexes in London is compounded of an appreciable inferiority for males and a similar superiority for females, urban conditions telling more severely, in London as elsewhere, on males than on females, especially in later middle life.

Other points which may be noted are the extreme sensitiveness to environment of young children (which has already been seen from Table XVIII to be greatest in the second year of life) the death-rate at 0–5 varying from 39 per cent. above average in the county boroughs of the North to 35 and 39 per cent. below average in the small towns and rural districts of the South, the rate for the last being less than half that for the first. No other period of life provides nearly so wide a range of variation. While in the North of England, except in its rural districts, mortality exceeds the general average at all ages, and in the Midlands and South, except in the county boroughs of the Midlands, falls short of it at all ages, the excess mortality of Wales, though of general application except to its rural districts, is greatest at those ages, 15–35, at which that of the North is least. In all classes of area in Wales the mortality of young adult life is excessive, as compared with the experience of similar areas in England. This is especially true of the rural districts, for which at 25–35 mortality is 32 per cent. higher in Wales than in England and Wales (Table XXIV). As a result the standardized mortality at all ages of rural Wales exceeds that of the rural districts of even the North of England.

The range of variation from county boroughs to rural districts, as a whole is very similar to that from the North as a whole to the Midlands and South, but is of less even application at all ages, being but slight at 25–35. The comparatively high rural mortality

Table XXIII.—Civilian Mortality from All Causes per 100,000 living at Various Ages, 1923.

	All Areas.					London.	County Boroughs.				
	North.	Midlands.	South.	Wales.	England and Wales.		North.	Midlands.	South.	Wales.	England and Wales.
MALES.											
All Ages—											
Crude	1,349	1,158	1,223	1,234	1,246	1,262	1,415	1,215	1,262	1,289	**1,331**
Standardized ..	1,332	1,035	1,036	1,198	1,145	1,166	1,429	1,175	1,046	1,313	**1,300**
0	3,107	2,117	1,880	2,526	2,429	2,159	3,348	2,490	1,864	2,789	**2,904**
5	232	175	172	216	197	201	238	195	164	229	**217**
15	333	266	283	355	300	298	349	286	308	427	**329**
25	426	376	381	459	401	390	444	390	397	486	**425**
35	706	560	614	688	634	704	784	660	613	792	**729**
45	1,262	998	1,102	1,097	1,124	1,331	1,415	1,210	1,096	1,297	**1,313**
55	2,733	2,157	2,283	2,615	2,412	2,693	2,981	2,520	2,253	2,995	**2,754**
65	6,548	5,114	5,140	5,782	5,602	5,816	7,037	5,780	5,369	5,872	**6,365**
75 and upwards ..	15,852	13,820	13,865	14,067	14,355	14,498	16,403	14,692	13,912	14,593	**15,318**
FEMALES.											
All Ages—											
Crude	1,165	1,033	1,048	1,102	1,086	1,039	1,195	1,046	1,104	1,072	**1,133**
Standardized ..	1,093	853	813	1,014	930	897	1,146	947	819	1,058	**1,041**
0	2,515	1,719	1,480	2,075	1,962	1,758	2,738	2,025	1,412	2,236	**2,360**
5	218	165	170	214	188	189	221	192	203	206	**209**
15	289	255	248	355	272	259	301	257	268	372	**287**
25	371	322	302	458	342	305	387	355	324	449	**373**
35	539	446	431	555	480	479	572	475	409	632	**525**
45	963	786	783	902	851	870	1,018	878	778	953	**943**
55	2,143	1,630	1,637	1,948	1,815	1,822	2,256	1,785	1,620	2,073	**2,019**
65	5,323	4,067	3,909	4,499	4,413	4,340	5,522	4,538	3,925	4,470	**4,938**
75 and upwards ..	13,731	12,041	11,866	12,855	12,441	12,340	13,775	12,866	12,070	13,175	**13,133**
PERSONS.											
All Ages—											
Crude	1,254	1,093	1,128	1,168	1,162	1,141	1,300	1,126	1,174	1,180	**1,226**
Standardized ..	1,205	938	918	1,101	1,031	1,023	1,279	1,054	925	1,178	**1,163**
0	2,815	1,921	1,683	2,304	2,199	1,961	3,046	2,261	1,642	2,517	**2,635**
5	225	170	171	215	193	195	230	193	183	218	**213**
15	310	260	264	355	286	277	324	270	285	399	**307**
25	396	346	335	458	368	342	413	370	354	467	**396**
35	617	499	512	621	551	580	670	561	496	712	**619**
45	1,109	888	929	1,002	982	1,086	1,211	1,038	919	1,131	**1,121**
55	2,426	1,883	1,933	2,288	2,099	2,228	2,601	2,134	1,897	2,548	**2,367**
65	5,878	4,539	4,438	5,116	4,944	4,975	6,191	5,089	4,515	5,149	**5,564**
75 and upwards ..	14,555	12,742	12,611	13,353	13,181	13,097	14,733	13,536	12,710	13,746	**13,927**

	Other Urban Districts.					Rural Districts.					All Urban Districts.				
	North.	Midlands.	South.	Wales.	England and Wales.	North.	Midlands.	South.	Wales.	England and Wales.	North.	Midlands.	South.	Wales.	England and Wales.
MALES.															
All Ages—															
Crude	1,311	1,107	1,185	1,181	1,199	1,192	1,160	1,159	1,282	1,180	1,374	1,157	1,239	1,213	1,264
Standardized ..	1,289	1,019	961	1,198	1,116	1,089	906	862	1,118	956	1,374	1,091	1,083	1,232	1,201
0	2,932	2,013	1,604	2,569	2,316	2,593	1,788	1,548	2,268	1,973	3,190	2,240	1,955	2,632	2,547
5	234	173	152	225	195	205	155	137	194	166	237	183	180	226	205
15	322	267	284	356	299	299	239	234	303	259	338	276	295	377	312
25	412	372	361	458	393	385	365	376	439	381	432	380	383	467	406
35	661	539	549	665	596	503	463	486	651	498	736	595	643	704	668
45	1,182	955	966	1,081	1,047	833	802	766	986	819	1,325	1,072	1,182	1,145	1,202
55	2,650	2,169	2,114	2,677	2,365	2,034	1,778	1,729	2,296	1,867	2,850	2,328	2,438	2,774	2,576
65	6,486	5,230	4,847	5,991	5,606	5,221	4,443	4,300	5,503	4,652	6,810	5,472	5,412	5,955	5,942
75 and upwards ..	15,895	13,740	14,077	13,077	14,340	14,575	13,387	12,942	14,764	13,569	16,185	14,121	14,228	13,522	14,725
FEMALES.															
All Ages—															
Crude	1,154	990	1,034	1,059	1,059	1,071	1,083	1,049	1,192	1,083	1,179	1,016	1,048	1,063	1,087
Standardized ..	1,069	832	742	1,026	908	940	776	720	961	814	1,116	885	836	1,036	962
0	2,341	1,638	1,241	2,264	1,881	2,062	1,439	1,140	1,629	1,536	2,587	1,823	1,557	2,256	2,070
5	229	162	142	223	188	181	137	138	202	154	224	176	177	219	197
15	281	248	218	339	262	258	264	248	369	270	294	253	248	350	272
25	357	302	276	436	328	340	309	310	501	336	376	326	300	440	343
35	505	440	384	535	458	485	416	399	533	438	546	456	438	564	490
45	932	763	700	910	817	813	705	709	855	743	985	815	800	923	878
55	2,118	1,627	1,543	1,902	1,787	1,758	1,468	1,413	1,936	1,553	2,201	1,697	1,694	1,954	1,888
65	5,368	4,067	3,686	4,605	4,399	4,482	3,632	3,439	4,391	3,796	5,460	4,272	4,037	4,565	4,605
75 and upwards ..	14,052	11,746	11,762	12,598	12,377	12,894	11,740	11,142	12,980	11,844	13,887	12,204	12,075	12,766	12,656
PERSONS.															
All Ages—															
Crude	1,229	1,045	1,101	1,120	1,125	1,131	1,121	1,101	1,237	1,131	1,273	1,082	1,135	1,138	1,170
Standardized ..	1,173	919	844	1,107	1,006	1,010	837	786	1,034	881	1,238	981	951	1,128	1,074
0	2,640	1,829	1,426	2,419	2,102	2,332	1,616	1,348	1,954	1,758	2,891	2,034	1,759	2,447	2,312
5	232	168	147	224	192	193	146	138	198	160	230	180	179	222	201
15	301	257	247	348	280	280	251	241	334	264	315	263	269	364	291
25	382	333	311	447	357	361	335	339	471	357	401	350	335	453	371
35	578	486	455	600	521	493	438	438	591	466	635	520	528	634	572
45	1,053	855	818	999	926	823	752	735	921	780	1,150	938	975	1,038	1,032
55	2,372	1,883	1,794	2,300	2,059	1,896	1,621	1,564	2,116	1,707	2,511	1,996	2,031	2,376	2,212
65	5,874	4,576	4,163	5,268	4,929	4,846	4,014	3,838	4,928	4,202	6,062	4,800	4,614	5,232	5,190
75 and upwards ..	14,769	12,494	12,602	12,790	13,117	13,660	12,451	11,911	13,735	12,591	14,747	12,917	12,839	13,070	13,417

at this age is a constantly recurring feature of our records, and may be largely attributable to selective recruiting of healthy adolescents in the rural districts for migration to the towns, just as during the war exceedingly high mortality of civilian males at these ages resulted from selective recruiting of the able bodied for military service. This may be tested on the rates in Table XXIII, by comparing the rural with the total rates for males and females separately. Migration from the rural districts to the towns occurs earlier in life for females than for males (Report on 1911 Census, vol: vii, p. xiii). Consequently, if the loss in advantage as regards mortality by rural dwellers at and after the age of adolescent migration is due, as suggested above, to this migration, it should apply earlier in life to females than to males. Table XXIII shows that this was the case in 1923, as in other years tested. Writing the mortality of England and Wales at each age in this table as 100, those of males and of females in the rural districts are as follows :—

	0–	5–	15–	25–	35–	45–	55–	65–	75–
Males ..	81	84	86	95	79	73	77	83	95
Females ..	78	82	99	98	91	87	86	86	95

The 1911 Census figures (vol. vii, Table VI and Diagram VI) indicate that for females emigration from the rural districts sets in seriously at about 15 years of age, whereas for males it begins to affect the numbers living in these districts fully five or more years later in life. These facts are in obvious accord, on the assumption that mortality is comparatively high in the rural districts at 25–35 as the result of emigration a little earlier in life of a considerable proportion of their healthiest population, with the mortality ratios for the sexes stated above. Rural females, migrating from 15 on, lose their mortality advantage over the general population almost completely at 15–25 (in most years their mortality ratio exceeds 100 in early adult life—Diagram I, Review for 1922, and Diagram III, Report for 1911), whereas males, migrating five or more years later in life, retain the greater portion of their rural mortality advantage till 25–35. The fact that they regain more at 35–45, than females do is largely due to the more adverse effect of urban conditions on males than on females in middle life which is indicated by the diagrams just referred to.

This explanation of the tendency to excess of rural mortality in early adult life is in accordance with the conclusions arrived at by Mr. A. B. Hill, B.Sc., in a recent report on " Internal Migration and its Effects upon the Death-Rates : with special reference to the County of Essex " (Medical Research Council, Special Report Series, No. 95) and with the views on this subject expressed for a number of years past by the Medical Officer of Health for London.

Diagram 1. England and Wales, 1923 : Mortality of various Sections of the Population at different Ages per cent of that of the whole Country at the same Age.

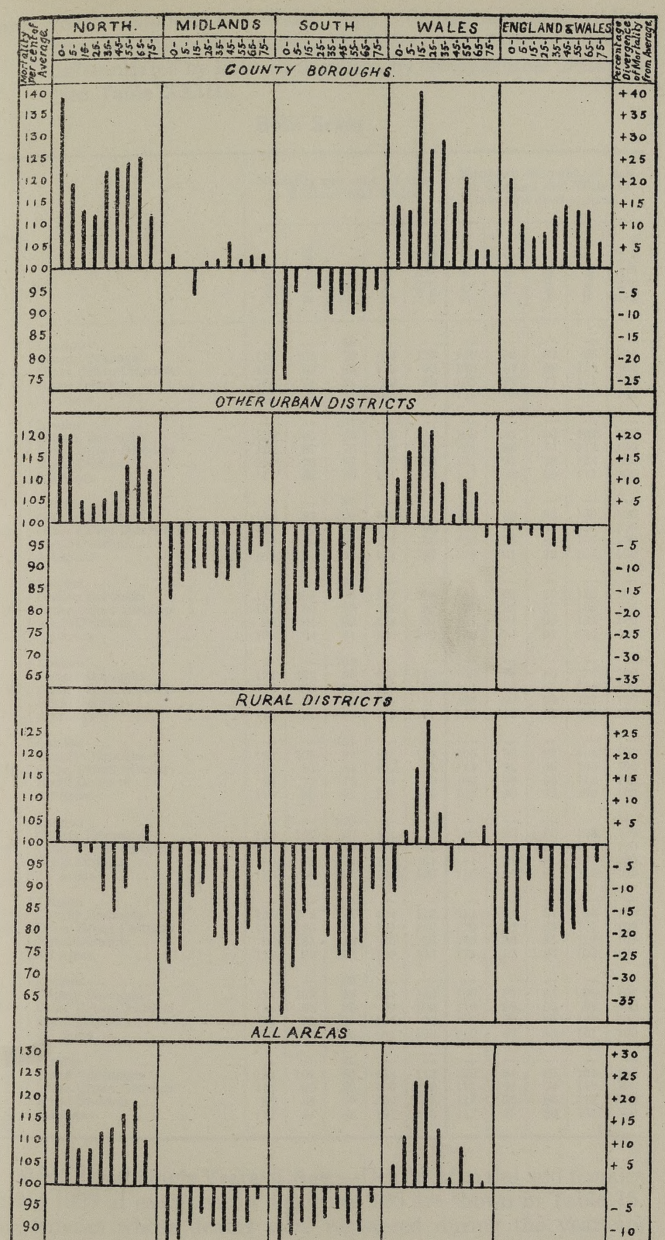


Table XXIV.—England and Wales, 1923 : Comparison of Mortality from All Causes at various Ages in Sections of the Population differentiated by Urbanization and by Geographical Situation (see Table XXIII).

Both Sexes.

Age.		Mortality per cent. of that in England and Wales.					Mortality per cent. of that in England and Wales in the same class of Area.				
		North.	Midlands.	South.	Wales.	England and Wales.	North.	Midlands.	South	Wales.	England and Wales.
0-5	London	—	—	89	—	—	—	—	—	—	—
	County Boroughs	139	103	75	114	120	116	86	62	96	100
	Other Urban Districts	120	83	65	110	96	126	87	68	115	100
	Rural Districts	106	73	61	89	80	133	92	77	111	100
	All Areas	128	87	77	105	100	128	87	77	105	100
5-15	London	—	—	101	—	—	—	—	—	—	—
	County Boroughs	119	100	95	113	110	108	91	86	102	100
	Other Urban Districts . ..	120	87	76	116	99	121	88	77	117	100
	Rural Districts	100	76	72	103	83	121	91	86	124	100
	All Areas	117	88	89	111	100	117	88	89	111	100
15-25	London	—	—	97	—	—	—	—	—	—	—
	County Boroughs	113	94	100	140	107	106	88	93	130	100
	Other Urban Districts	105	90	86	122	98	108	92	88	124	100
	Rural Districts	98	88	84	117	92	106	95	91	127	100
	All Areas	108	91	92	124	100	108	91	92	124	100
25-35	London	—	—	93	—	—	—	—	—	—	—
	County Boroughs	112	101	96	127	108	104	93	89	118	100
	Other Urban Districts	104	90	85	121	97	107	93	87	125	100
	Rural Districts	98	91	92	128	97	101	94	95	132	100
	All Areas	108	94	91	124	100	108	94	91	124	100
35-45	London	—	—	105	—	—	—	—	—	—	—
	County Boroughs	122	102	90	129	112	108	91	80	115	100
	Other Urban Districts	105	88	83	109	95	111	93	87	115	100
	Rural Districts	89	79	79	107	85	106	94	94	127	100
	All Areas	112	91	93	113	100	112	91	93	113	100
45-55	London	—	—	111	—	—	—	—	—	—	—
	County Boroughs	123	106	94	115	114	108	93	82	101	100
	Other Urban Districts	107	87	83	102	94	114	92	88	108	100
	Rural Districts	84	77	75	94	79	106	96	94	118	100
	All Areas	113	90	95	102	100	113	90	95	102	100
55-65	London	—	—	106	—	—	—	—	—	—	—
	County Boroughs	124	102	90	121	113	110	90	80	108	100
	Other Urban Districts	113	90	85	110	98	115	91	87	112	100
	Rural Districts	90	77	74	101	81	111	95	92	124	100
	All Areas	116	90	92	109	100	116	90	92	109	100
65-75	London	—	—	101	—	—	—	—	—	—	—
	County Boroughs	125	103	91	104	113	111	91	81	93	100
	Other Urban Districts	119	93	84	107	100	119	93	84	107	100
	Rural Districts	98	81	78	100	85	115	96	91	117	100
	All Areas	119	92	90	103	100	119	92	90	103	100
75-	London	—	—	99	—	—	—	—	—	—	—
	County Boroughs	112	103	96	104	106	106	97	91	99	100
	Other Urban Districts	112	95	96	97	100	113	95	96	98	100
	Rural Districts	104	94	90	104	96	108	99	95	109	100
	All Areas	110	97	96	101	100	110	97	96	101	100
All Ages (Standardized).	London	—	—	99	—	—	—	—	—	—	—
	County Boroughs	124	102	90	114	113	110	91	80	101	100
	Other Urban Districts	114	89	82	107	98	117	91	84	110	100
	Rural Districts	98	81	76	100	85	115	95	89	117	100
	All Areas	117	91	89	107	100	117	91	89	107	100

Mortality at Single Years of Age.—Deaths of males and females during 1923 at each year of age up to 100 are shown in Table 15. The females whose deaths were registered during the year are

there distinguished as single, married, or widowed, but not the males, for whom this information is not afforded by the registers. As in the Report for 1912 the deaths at each year of age of the three year period—in this case 1920–22—symmetrically disposed about the date of the recent census have been assembled in Table XXV, and the mortalities resulting from collation of these deaths with three times the numbers enumerated at each corresponding year of life, stated in Table XXVI.

In the 1912 Report diagrams were included showing the distribution of the deaths and of the mortality recorded at each age. Similar diagrams are not shown for 1920–22 because even in their details these would appear almost indistinguishable from those of ten years earlier date. It will suffice, therefore, to note any points of difference, and to draw attention to the curiously precise repetition of certain apparently anomalous records.

Table XXV.—England and Wales. Deaths at each Year of Age in the Three Years 1920–22.

Age.	Males.	Females.	Age.	Males.	Females.	Age.	Males.	Females.
All Ages	721,814	689,725	33	3,788	3,790	67	12,217	10,904
0	119,388	87,535	34	4,043	3,883	68	13,102	12,185
1	26,124	23,201	35	4,196	4,102	69	13,718	12,642
2	10,285	9,487	36	4,374	4,089	70	13,098	13,026
3	5,801	5,514	37	4,482	4,183	71	11,838	12,129
4	4,486	4,320	38	4,987	4,551	72	13,048	13,421
5	4,248	4,259	39	5,227	4,480	73	12,341	13,497
6	3,626	3,308	40	5,312	4,586	74	12,140	13,559
7	2,946	2,859	41	5,087	4,555	75	11,916	13,858
8	2,460	2,317	42	5,884	5,090	76	11,658	13,903
9	2,172	2,041	43	5,662	4,808	77	10,928	13,067
10	1,996	2,002	44	5,800	4,983	78	10,405	12,873
11	1,965	1,866	45	6,555	5,171	79	9,628	12,030
12	1,946	1,999	46	6,431	5,262	80	8,774	11,587
13	1,964	2,179	47	6,664	5,527	81	7,414	10,382
14	2,070	2,321	48	7,239	5,970	82	7,051	10,122
15	2,409	2,583	49	7,567	6,270	83	5,858	8,938
16	2,769	2,739	50	7,726	6,393	84	5,423	8,558
17	2,966	2,845	51	7,219	5,969	85	4,241	6,973
18	3,253	2,940	52	8,489	7,068	86	3,597	6,026
19	3,307	3,050	53	8,522	6,919	87	2,883	5,205
20	3,222	3,200	54	8,806	7,192	88	2,295	4,128
21	3,287	3,302	55	8,401	6,771	89	1,755	3,298
22	3,294	3,205	56	9,568	7,667	90	1,305	2,592
23	3,267	3,410	57	9,605	7,581	91	953	1,965
24	3,271	3,483	58	10,261	8,337	92	753	1,533
25	3,141	3,532	59	10,406	8,405	93	535	1,163
26	3,136	3,515	60	10,717	8,811	94	371	858
27	3,254	3,592	61	10,010	8,429	95	253	627
28	3,368	3,661	62	11,517	9,719	96	158	470
29	3,355	3,741	63	11,434	9,777	97	105	305
30	3,422	3,641	64	11,997	10,401	98	62	206
31	3,299	3,525	65	12,778	11,230	99	43	128
32	3,848	3,853	66	11,794	10,437	100 and over.	55	136

Table XXVI.—England and Wales. Annual Death-Rates per 1,000 Living at each Year of Age in the Three Years 1920–22.

Age.	Males.	Females.	Age.	Males.	Females.	Age.	Males.	Females.
All Ages	13·3	11·6	33	5·0	4·2	67	47·7	35·9
0	98·4	74·6	34	5·4	4·4	68	51·2	39·3
1	20·8	19·0	35	5·5	4·6	69	57·1	42·6
2	12·3	11·6	36	5·7	4·6	70	60·2	45·9
3	7·2	6·9	37	6·0	4·9	71	69·5	54·4
4	4·9	4·8	38	6·4	5·0	72	76·4	58·3
5	4·3	4·4	39	6·8	5·1	73	82·9	66·3
6	3·4	3·1	40	6·7	5·0	74	90·7	71·9
7	2·7	2·6	41	7·1	5·8	75	96·9	78·8
8	2·3	2·1	42	7·9	6·0	76	104·8	85·5
9	2·0	1·9	43	7·9	6·0	77	116·4	92·7
10	1·8	1·9	44	8·3	6·4	78	130·6	107·0
11	1·8	1·7	45	8·9	6·5	79	141·8	117·7
12	1·7	1·8	46	9·2	7·1	80	145·8	119·9
13	1·8	2·0	47	9·6	7·6	81	162·1	139·5
14	1·9	2·1	48	10·4	7·9	82	184·0	152·2
15	2·2	2·4	49	11·4	8·9	83	192·6	166·7
16	2·6	2·5	50	11·5	8·7	84	205·8	180·7
17	2·9	2·7	51	12·6	10·1	85	209·1	187·1
18	3·2	2·8	52	14·6	11·3	86	244·3	206·3
19	3·4	2·9	53	15·5	11·7	87	255·2	225·4
20	3·5	3·1	54	16·4	12·3	88	262·4	232·2
21	3·6	3·2	55	17·0	12·7	89	295·3	260·4
22	3·9	3·2	56	19·0	14·3	90	299·8	254·6
23	3·9	3·4	57	20·9	15·3	91	329·2	290·7
24	4·0	3·4	58	22·1	16·1	92	369·1	314·8
25	3·9	3·6	59	24·6	18·1	93	365·4	329·9
26	3·9	3·6	60	24·4	17·7	94	382·9	350·1
27	4·1	3·7	61	28·0	21·6	95	388·6	346·0
28	4·2	3·7	62	32·6	24·3	96	376·2	390·7
29	4·2	4·0	63	34·4	25·5	97	309·7	360·5
30	4·2	3·7	64	37·3	27·9	98	344·4	373·2
31	4·4	4·1	65	40·2	30·2	99	349·6	302·6
32	5·0	4·2	66	42·5	31·9	100 and over.	611·1	566·7

As for 1910–12, the curve showing numbers of deaths at different ages brings out certain errors of statement of age, which also characterise the census returns of the living at each year of life. These are mainly two—those of "round numbers" and of "even numbers." The error of round numbers results from the tendency to return 30, 40, etc., or to a less extent 35, 45, etc., as the age when it is actually only within a year or two of these "round" numbers; and the error of "even" numbers expresses the preference of the public, for whatever reason, for ages evenly divisible by two. Thus the years of age in 1920–22 at which there is for each sex apparent overstatement of the number of deaths, a indicated by convexity of the corresponding curve, are as follows:—32, 38, 40, 42, 45, 50, 52, 54, 56, 58, 60, 62, 65, 72, 76, 82 and 84. All of these, except 45 and 65, accounted for as 'round numbers," are even numbers. Almost exactly the same statement had to be made of the 1910–12 returns, but the following even numbers, for which excess was then recorded, have in 1920–22

dropped out of the list—30, 68, 70, 74 and 78—while two new even numbers, 76 and 84, are added. It will thus be seen that between the ages of 30 and 68 the history of mis-statement of age in 1910–12 has exactly repeated itself in 1920–22. This applies in a very remarkable manner to the deficiency at the " round number " 55, noted in the report on the 1910–12 returns. As there stated " the absence of age 55 from the above list of preferred ages is very remarkable. Instead of an elevation at this point the diagram shows a very definite depression, statement of age in the fifties following the rule of even numbers strictly. The same difference between age 55 on the one hand and ages 45 and 65 on the other, characterises the census table of ages for each sex." All these statements are as applicable to the deaths of 1920–22 and to the census of 1921 as to the records of ten years earlier date. The basis of the allurement of 45 and 65 and of the repulsion of 55 would form an interesting subject for psychological discussion which cannot be pursued here, but the exact repetition of the facts after an interval of ten years shows the reality of these affections of the public mind by the numbers in question.

Table XXV shows that at ages under 71 the numbers of deaths of males are generally in considerable excess (exceptions being mainly at 12–15, corresponding to the higher death-rate for females at the same ages, shown in Table XXVI, which is seen from Table 3 to be a usual feature of mortality at this time of life, and at 23–31, when childbearing risks contribute considerably to female mortality), but that from 71 onwards the relationship is reversed ; the excess of females in the population being so great that even though their mortality at each year of life until the data become too scanty to yield reliable results is shown in Table XXVI to be below that of males, the absolute number of deaths is greater for females. A further feature of some interest in Table XXV is the constancy of the numbers of deaths of males at ages 18–31, whereas at the same ages those of females show steady increase with age. The explanation is to be found in the depletion of the male population at this time of life resulting from the war, which suffices to neutralize the steadily increasing death-rates shown in Table XXVI for the same ages. At age 18 the census population of males was 343,868, but at 31 only 247,562.

The errors in the return of ages in death registration and at the census enumeration are on the whole very similar. This point can be tested by calculating death-rates from the numbers of persons enumerated at the census and of deaths as registered for each year of age, when the curve of mortality values resulting should be smooth in proportion as there is parallelism of mis-statement in the two returns. This has been done for the combined deaths of 1920–22 for each sex in Table XXV and the resultant curve, when plotted, proves to be remarkably smooth in comparison with that representing either of the two series of facts (population and deaths) compared. There are depressions in the mortality curves for both sexes at each multiple of ten from 30

onwards. These show that the heaping up at years of age ending in 0, which is a feature common to both the population and the death returns, is somewhat smaller in the case of the deaths.

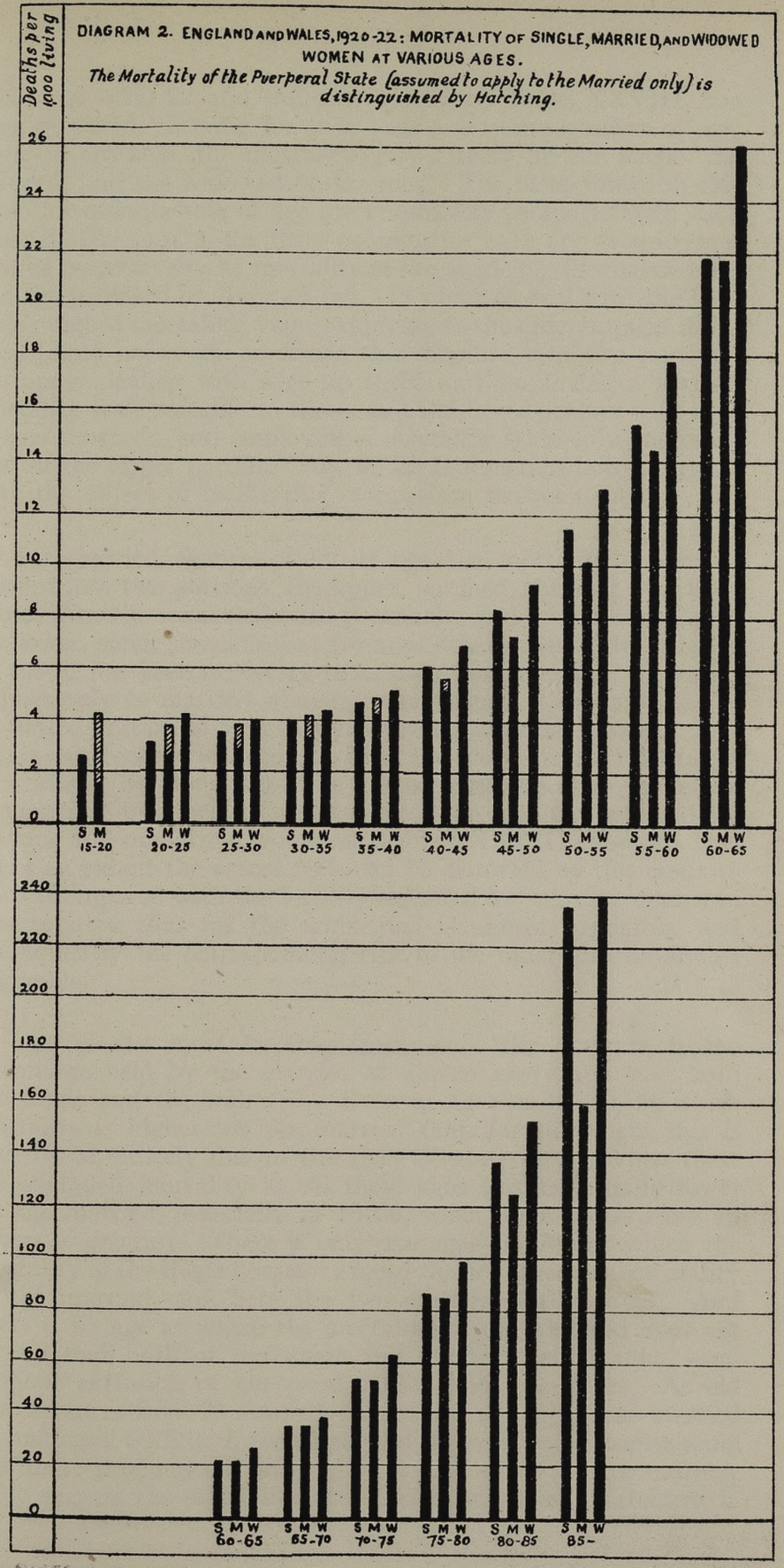
Mortality of Women in relation to Marital Condition.—For the reason already stated distinction can be made of the marital condition of females, but not of males, in the tabulation of deaths by separate years of age in Table 15. From the corresponding

Table XXVII.—England and Wales. Deaths of Single, Married, and Widowed Females at each Year of Age from 15 upwards in the Three Years 1920–22.

Age.	Single.	Married.	Widowed and Divorced	Age.	Single.	Married.	Widowed and Divorced.
Total 15 years and upwards.	104,300	215,743	214,474	57 ..	1,155	4,621	1,805
				58 ..	1,236	4,987	2,114
15 ..	2,583	—	—	59 ..	1,272	4,789	2,344
16 ..	2,730	9	—	60 ..	1,321	4,881	2,609
17 ..	2,822	22	1	61 ..	1,262	4,523	2,644
18 ..	2,836	103	1	62 ..	1,409	5,160	3,150
19 ..	2,783	265	2	63 ..	1,338	4,943	3,496
20 ..	2,738	460	2	64 ..	1,401	5,006	3,994
21 ..	2,538	758	6	65 ..	1,543	5,167	4,520
22 ..	2,225	969	11	66 ..	1,436	4,711	4,290
23 ..	2,087	1,304	19	67 ..	1,430	4,632	4,842
24 ..	1,898	1,546	39	68 ..	1,560	4,900	5,725
25 ..	1,687	1,807	38	69 ..	1,602	4,795	6,245
26 ..	1,527	1,918	70	70 ..	1,690	4,450	6,886
27 ..	1,345	2,154	93	71 ..	1,543	3,929	6,657
28 ..	1,280	2,283	98	72 ..	1,708	3,993	7,720
29 ..	1,214	2,403	124	73 ..	1,724	3,691	8,082
30 ..	1,051	2,460	130	74 ..	1,700	3,382	8,477
31 ..	938	2,439	148	75 ..	1,739	3,237	8,882
32 ..	992	2,682	179	76 ..	1,702	2,875	9,326
33 ..	937	2,661	192	77 ..	1,511	2,523	9,033
34 ..	863	2,812	208	78 ..	1,580	2,275	9,018
35 ..	844	3,045	213	79 ..	1,492	1,799	8,739
36 ..	830	3,015	244	80 ..	1,438	1,559	8,590
37 ..	831	3,117	235	81 ..	1,246	1,311	7,825
38 ..	874	3,390	287	82 ..	1,222	1,066	7,834
39 ..	891	3,289	300	83 ..	1,101	793	7,044
40 ..	900	3,349	337	84 ..	1,072	761	6,725
41 ..	864	3,364	327	85 ..	924	494	5,555
42 ..	966	3,717	407	86 ..	787	362	4,877
43 ..	910	3,452	446	87 ..	657	267	4,281
44 ..	900	3,629	454	88 ..	538	195	3,395
45 ..	1,034	3,638	499	89 ..	425	106	2,767
46 ..	981	3,681	600	90 ..	348	83	2,161
47 ..	1,003	3,908	616	91 ..	260	52	1,653
48 ..	1,086	4,211	673	92 ..	216	31	1,286
49 ..	1,095	4,377	798	93 ..	154	18	991
50 ..	1,190	4,270	933	94 ..	113	11	734
51 ..	1,041	4,026	902	95 ..	89	8	530
52 ..	1,216	4,646	1,206	96 ..	64	2	404
53 ..	1,107	4,556	1,256	97 ..	41	3	261
54 ..	1,121	4,668	1,403	98 ..	29	3	174
55 ..	1,126	4,241	1,404	99 ..	16	1	111
56 ..	1,304	4,702	1,661	100 and over.	18	2	116

Table XXVIII.—England and Wales. Annual Death-Rates of Single, Married, and Widowed Females per 1,000 Living at Quinquennial Groups of Ages and at each Year of Age from 15 upwards in the Three Years 1920–22.

Age.	Single.	Married.	Widowed and Divorced	Age.	Single.	Married.	Widowed and Divorced.
15–20 ..	2·6	4·3	6·8	49 ..	9·6	8·5	10·4
20–25 ..	3·1	3·7	4·2	50 ..	9·7	8·2	10·1
25–30 ..	3·5	3·8	4·0	51 ..	10·9	9·6	12·3
30–35 ..	4·0	4·1	4·4	52 ..	12·5	10·5	13·6
35–40 ..	4·7	4·9	5·2	53 ..	12·0	11·1	14·0
40–45 ..	6·1	5·6	6·9	54 ..	12·3	11·8	14·4
45–50 ..	8·3	7·2	9·2	55 ..	13·5	11·9	14·9
50–55 ..	11·4	10·1	12·9	56 ..	15·5	13·5	16·0
55–60 ..	15·4	14·4	17·7	57 ..	15·0	14·5	17·8
60–65 ..	21·9	21·8	26·1	58 ..	15·7	15·4	18·3
65–70 ..	33·8	34·1	37·9	59 ..	17·8	17·0	21·1
70–75 ..	53·2	53·0	62·6	60 ..	16·8	17·1	19·5
75–80 ..	86·0	84·7	98·1	61 ..	20·9	20·2	25·3
80–85 ..	136·4	124·2	152·2	62 ..	23·7	23·1	26·9
85–90 ..	216·3	161·3	217·9	63 ..	23·8	24·3	28·3
90–95 ..	292·1	160·9	298·8	64 ..	26·4	26·4	30·9
95–100 ..	327·8	70·8	382·7	65 ..	28·9	28·9	32·4
100 and over.	461·5	333·3	594·9	66 ..	31·0	30·8	33·4
15 ..	2·4	—	—	67 ..	33·4	34·9	37·9
16 ..	2·5	9·3	—	68 ..	37·5	37·8	41·1
17 ..	2·7	3·9	15·2	69 ..	40·0	41·4	44·4
18 ..	2·7	4·4	5·7	70 ..	41·8	43·0	49·3
19 ..	2·8	4·2	6·9	71 ..	48·4	50·9	58·5
20 ..	3·0	3·7	2·2	72 ..	53·7	53·6	62·4
21 ..	3·0	3·7	3·7	73 ..	62·3	61·4	69·8
22 ..	3·0	3·6	4·0	74 ..	66·6	65·3	76·1
23 ..	3·2	3·7	3·7	75 ..	72·6	74·3	81·9
24 ..	3·3	3·6	4·9	76 ..	79·0	77·5	89·7
25 ..	3·4	3·8	3·2	77 ..	82·5	86·6	96·5
26 ..	3·4	3·6	4·2	78 ..	100·6	99·6	110·2
27 ..	3·5	3·9	4·5	79 ..	108·5	103·1	123·1
28 ..	3·6	3·8	3·8	80 ..	112·0	106·1	124·3
29 ..	4·0	3·9	4·1	81 ..	126·4	123·3	145·1
30 ..	3·6	3·7	3·6	82 ..	143·0	129·5	157·5
31 ..	4·0	4·1	4·3	83 ..	154·5	132·4	173·9
32 ..	4·2	4·2	4·4	84 ..	172·5	163·7	184·2
33 ..	4·4	4·2	4·6	85 ..	194·1	155·6	189·4
34 ..	4·3	4·4	4·7	86 ..	213·3	157·5	210·0
35 ..	4·3	4·7	4·6	87 ..	221·2	160·1	231·9
36 ..	4·4	4·6	5·1	88 ..	238·8	190·6	234·1
37 ..	4·9	4·9	4·9	89 ..	246·4	159·9	269·3
38 ..	4·9	5·0	5·5	90 ..	288·6	179·7	253·8
39 ..	5·4	5·0	5·8	91 ..	265·8	163·5	302·6
40 ..	5·2	4·9	5·6	92 ..	320·0	154·2	322·1
41 ..	6·1	5·6	6·3	93 ..	305·6	122·4	344·8
42 ..	6·4	5·8	6·8	94 ..	303·8	131·0	367·9
43 ..	6·5	5·7	7·7	95 ..	315·6	88·9	368·1
44 ..	6·7	6·2	7·8	96 ..	361·6	39·2	414·4
45 ..	7·3	6·2	7·6	97 ..	350·4	58·8	385·0
46 ..	7·8	6·6	9·5	98 ..	386·7	142·9	381·6
47 ..	8·3	7·2	9·2	99 ..	205·1	37·0	349·1
48 ..	8·8	7·6	8·9	100 and over.	461·5	333·3	594·9



P 117A 3123/0. 1237. 625. 9/25.

Malby & Sons, Photo-Litho

tables for 1920–22 and the census returns, Table XXVIII has been prepared, showing for each year and quinquennium of age, from 15 onwards, the mortality, respectively, of the single, the married, and the widowed or divorced. The rates shown in this table for quinquennia of age are graphically compared with each other in Diagram 2, the three columns for each age group representing respectively the mortality of the single (s), the married (m) and the widowed or divorced (w). In order to deal with the very wide range of mortality values applying to the different ages it has been found necessary to divide this diagram into two portions, the upper dealing with ages up to 65 and employing a vertical mortality scale suitable to these, and the lower dealing with ages 60 and upwards, and employing a mortality scale only one-tenth that of the upper portion. Age 60–65 is shown in both portions, with the object of facilitating comparison between them.

For married women of fertile age the mortality column is divided into two portions, the upper, hatched, showing that from causes directly connected with pregnancy and childbearing, and the lower, solid, showing that from all other causes. In order to do this it has been necessary to assume that puerperal mortality applies only to married women, as no record is available of the marital condition of women dying from particular causes. This gap in our records will soon be filled for the years 1911–20 taken as a whole, but for 1920–22 it has been necessary to make the assumption described. Comparison of the fertility recorded for married and unmarried women in Table LXXVIII shows to how slight an extent the actual facts can be distorted by this assumption. Compared with the fertility recorded for married women in this country that for the unmarried is almost negligible, and consequently the corresponding risk to life must also be almost negligible.

One of the most striking features of the diagram is the advantage held by the married at almost every age over both the single and the widowed. Even at ages under 40, at which mortality is higher for the married than for the single, this is seen to be entirely due to the risks of maternity. When these are excluded mortality at all these ages is substantially lower for the married, especially at 15–20, when their excess from all causes is greatest. There is only one age—65–70—at which the mortality of the single does not exceed the non-puerperal mortality of the married, and here the two are practically equal. And there is no age at which the mortality of the widowed does not exceed that both of the single and of the married alike, even without exclusion of puerperal causes from the latter. As old age advances from 70 onwards this excess vitality of the married as compared with both the single and the widowed becomes more and more pronounced, until at 85 and upwards it is so extreme as to suggest the possibility of its being due to mis-statement in

the records. Against the likelihood of this, however, due weight must be attached to the progressive nature of the change with advancing age, which certainly suggests that Joan has a firmer hold on life so long as Darby is left to her—firmer not only than it will be when Darby is lost, but also firmer than it would have been without a Darby at all.

At the other extremity of the range of ages covered another explanation must apply to the superiority in vitality of the married over the single. Selective recruiting for wedlock no doubt has the same effect upon the mortality of the unselected as that for military service during the war, and as has been noted for selective recruiting for migration from the rural districts to the towns (page 34). Women suffering from mortal disease will frequently refrain from marriage, as from migration, and remain to swell the mortality of the ranks from which transfer is for them barred. Of course, so far as this factor operates it must tend to diminish the force of the lesson otherwise apparently conveyed by the diagram—that the married condition is more favourable to vitality than the single—except in old age, when the effect of selective recruiting for marriage in early life will, to judge by insurance experience, certainly have disappeared. Possibly some significance may attach, from this point of view, to the fact that the single hold an advantage over the married only at 65–70, when the effect of selection may be assumed to have completely disappeared, without the favourable influence of married life in extreme old age having as yet asserted itself.

As the marriage-rate of widows is higher than that of spinsters at every age group distinguished in Table LXV, except 25–35 in 1923, selective recruiting must presumably increase their mortality still more than that of the single—a fact well worth bearing in mind, as otherwise the natural tendency would be to ascribe their excess mortality to poverty and hardship, which probably, indeed play their part in its causation. The excess is great in early life, when the effect of poverty would be least, but that of selective matrimony greatest. The very high mortality of 6·8 shown in Table XXVIII for widows of 15–20 may be due to the latter cause, but as, being based on only four deaths, it may also be very largely if not entirely accidental, it has been thought best to omit it from the diagram, and so to confine this to rates based on numbers sufficient to guarantee their significance.

It is unfortunately impossible, in the absence of information in the death registers as to duration of widowhood, to exclude the effects of selective recruiting, and so to measure the inherent influence of marital condition upon vitality, except towards the close of life, but as the advantage of the married is so great here, where it can only be due to their conditions of life, it may well be that at other ages also these conditions, as well as selection, promote the vitality of the married.

CAUSES OF DEATH.

The causes of death of males and females at 18 groups of ages are stated in Table 17 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 in Table 17A further detail of age is shown for all causes of significance at ages 0–5. In Table 18 deaths from each cause distinguished are tabulated by month of occurrence and by sex, but not by age. This table differs from all others in referring to date of occurrence and not of registration. So far as they relate to the whole country these tables include all deaths, but deaths of non-civilians are excluded from all tables relating to portions of the country (*see* page 1). The causes and ages of the latter are stated in Table 19 for the country as a whole. Table 17 includes the full International List of causes of death, as revised in 1920. Certain of the numbered items in it are subdivided, and where this occurs the letters (*a*), (*b*), etc., indicate subdivisions in international use, and numbers (1), (2), etc., subdivisions made without international agreement. All other abstracts of the causes of death are arranged in the form of the short list of causes adopted by the Registrar General in consultation with the Ministry of Health for use during 1921–30. 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 1920, is as follows :—

	Short List of Registrar General.	Corresponding Number. Detailed International List.	Corresponding Number. Abridged International List.
1	Enteric fever	1	1
2	Small-pox	6	4
3	Measles	7	5
4	Scarlet fever	8	6
5	Whooping cough	9	7
6	Diphtheria	10	8
7	Influenza	11	9
8	Encephalitis lethargica	23	12 pt.
9	Meningococcal meningitis	24	12 pt.
10	Tuberculosis of respiratory system	31	13
11	Other tuberculous diseases	32–37	14 & 15
12	Cancer, malignant disease	43–49	16
13	Rheumatic fever	51	37 pt.
14	Diabetes	57	37 pt.
15	Cerebral hæmorrhage, &c.	74 & 75*a*	18 pt. 37 pt.
16	Heart disease	87–90	19
17	Arterio-sclerosis	91*b*	37 pt.
18	Bronchitis	99	20 & 21
19	Pneumonia (all forms)	100 & 101	22 & 23pt.
20	Other respiratory diseases	97, 98 & 102–107	23 pt.

	Short List of Registrar General—*contd.*	Corresponding Number. Detailed International List.	Abridged International List.
21	Ulcer of stomach or duodenum	111	24 pt.
22	Diarrhœa, &c. (under 2 years)	113	25
23	Appendicitis and typhlitis	117	26
24	Cirrhosis of liver	122	28
25	Acute and chronic nephritis	128 & 129	29
26	Puerperal sepsis	146	31
27	Other accidents and diseases of pregnancy and parturition	143–145 & 147–150	32
28	Congenital debility and malformation, premature birth	159–161	33
29	Suicide	165–174	36
30	Other deaths from violence	175–203	35
31	Other defined diseases	2–5, 12–22, 25–30, 38–42, 50, 52–56, 58–73, 75*b*–86, 91*a*, 91*c*–96, 108–110, 112, 114–116, 118–121, 123–127, 130–142, 151–158, 162–164	2, 3, 10, 11, 12 pt., 17, 18 pt., 24 pt. 27, 30, 34, & 37 pt.
32	Causes ill-defined or unknown	204 & 205	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 previously used, will be defined in the Registrar General's "Manual of the International List of Causes of Death" (1920 Revision), which is in course of preparation and should be consulted in all cases where it is desired to ascertain the precise significance of any heading in the lists.

In Table 20, deaths of civilians are shown for different classes of area in various sections of the country, for urban and rural portions of administrative counties, and for county and metropolitan boroughs, arranged by sex, age, and the short list of causes as above. For other administrative areas of over 10,000 population in 1921 deaths of civilians are shown in Table 21, arranged by sex and short list of causes, but without distinction of age.

In addition to the above tables, which relate exclusively to the year 1923, Table 4 contains a statement of the number of deaths registered in each year 1913–23 from each cause distinguished in Table 17, so far as available, with distinction of sex but not of age; while Table 5 states the corresponding crude death-rates per million living for persons, males, and females, so far as these can be regarded as of any significance. Similar tables (Nos. 8 and 9) state the mortality during the same eleven years of infants under one year of age from the causes of chief importance at that age, but without distinction of sex.

1. **Enteric Fever.**—The deaths classified to this heading during 1923 numbered 450, of which 1 occurred amongst the non-civilian population. Of these, 31, or 7 per cent., were returned as paratyphoid, as against 6, or 0·25 per cent., in 1911, 18, or 3 per cent., in 1921, and 21, or 5 per cent., in 1922, the only previous years for which the information has been published. It is thus evident either that the distinction between the typhoid and paratyphoid varieties of enteric fever is being increasingly drawn, or that the paratyphoid element in the total infection is increasing.

The mortality corresponding to these deaths, 12 per million living, as in 1922, is the lowest ever recorded in this country, comparing with a previous lowest record of 14 per million in 1920. The reduction is no longer due, as it was to some extent during the war, to decrease by foreign service of the most susceptible elements of the population. For each sex the crude rate in 1923 as in 1921 and 1922 remains unaltered by standardization, as was the case also before the war.

The death-rate in 1923 is only about one-quarter of what it was but ten years earlier, in 1911–14. Its distribution throughout the country is outlined in Table XXIX.

The fall is greater for males than for females, the death-rate being now much the same for both sexes (Table 5), whereas before the war it was consistently and considerably higher for males. In this connexion the possible effect of inoculation with typhoid vaccine during military service has to be borne in mind; but Table 5 shows that the approach to equality between the sexes has only occurred gradually during, and since, the war. The greatest fall in mortality from 1911–15 to 1921–23, however, is for just those sex and age groups—males aged 20–35 in 1923—which would be most affected by inoculation during military service. For them mortality in 1921–23 was only 21 per cent. of that in 1911–15, whereas for the population generally it was 28 per cent. of the earlier rate. The fall is widespread and on the whole uniform, but greatest for those affected by military service.

Table XXIX.—Enteric Fever, 1923: Mortality (Unstandardized) per Million Civilian Population.

Class of Area.	North.	Midlands.	South.	Wales.	England and Wales.
London	—	—	9	—	9
County Boroughs	10	6	14	5	9
Other Urban Districts	20	11	10	18	14
Rural Districts	13	12	15	13	13
All Areas	14	10	11	14	12

As in the eight preceding years, mortality was at its maximum in the smaller towns; and as in each year but one (1917), from 1911 onwards, London returned the lowest rate for any class of area, though, as in 1918, its record was equalled by that of the county boroughs. As in every other year from 1912 onwards, except 1922, when the Welsh rate was lowest, the Midlands returned the lowest rate for any of the four sections of the country distinguished. The North returns the highest rate in the table, shared on this occasion by Wales, as in each year 1911–22 except 1919, when that for Wales was slightly higher.

Table 23 shows that the rate of prevalence recorded in Table XXX is a little higher than for 1922, but is otherwise the lowest recorded for any year from 1913 onwards. In 1911, the first year for which the record is available, the rate was 0·38 cases per 1,000 population, as against 0·08 in 1923.

Table XXX shows that in the North there were fewer cases notified in proportion to population than in any other part of the country, in contrast to the previous year, when there were more, but that there were more deaths in proportion to cases in the North than elsewhere. The greater fatality in the smaller towns than elsewhere accounts for the fact that mortality was highest in the smaller towns, for prevalence was greatest in the rural districts (and least in the great towns).

Table XXX.—Enteric Fever, 1923 : Prevalence and Fatality.*

Class of Area	Cases per 1,000,000 Population.					Deaths per 1,000 Cases notified.				
	North.	Midlands.	South.	Wales.	England and Wales.	North.	Midlands.	South.	Wales.	England and Wales.
London	—	—	78	—	78	—	—	118	—	118
County Boroughs	60	69	105	39	67	174	86	133	136	138
Other Urban Districts ..	82	91	123	86	94	243	120	79	211	154
Rural Districts	85	132	66	81	100	150	92	221	167	131
All Areas	71	94	90	75	84	197	101	121	188	140

The fatality-rates returned for this and other notifiable diseases from 1911 onwards are compared in Table XXXI.

The rate for 1923 is the lowest since the commencement of the record in 1911. This statement applies also to small-pox and diphtheria, and, save for 1921, to scarlet fever. The fatality of the two latter diseases, as of enteric fever, was highest in 1918, a curious parallelism characterising the fatality of these three diseases.

* Excluding non-civilian cases and deaths.

Table XXXI.—England and Wales : Fatality of certain Infectious Diseases (Deaths per 1,000 Notified Cases) 1911–23.*

Year.	1. Enteric Fever.	6. Small-pox.	8. Scarlet Fever.	10. Diphtheria.	21. Erysipelas.	22. Poliomyelitis.	24. Meningococcal Meningitis.
1911	174	78	18·1	103	39	?	?
1912	191	73	18·6	96	39	?	?
1913	182	87	16·1	88	35	283	1,089
1914	194	62	17·2	99	42	348	1,257
1915	197	144	18·2	109	45	333	623
1916	188	107	17·8	103	40	270	704
1917	203	429	15·0	103	42	468	692
1918	206	32	20·0	109	46	1,013	767
1919	160	82	14·7	90	41	294	732
1920	171	114	12·0	81	52	404	911
1921	158	16	9·5	72	55	314	1,007
1922	191	28	12·7	78	53	383	1,046
1923	140	3	11.6	68	50	203	944

Table 7 shows that the highest mortalities returned by the larger administrative counties, *i.e.* those with a population exceeding 100,000, were 48 per million in Flint, and 27 in Gloucester and Sussex West, Cornwall and Devon coming next with 25 and 24. The rate for the West Riding of Yorkshire, which was highest at 31 in 1922, was 23 in 1923.

Thus the traces of the Bolton-upon-Dearne outbreak of 1921, notwithstanding remedy of the defects in the water supply to which it was due, still seem to have lingered in 1923, when the West Riding was sixth in the list of the larger administrative counties, after being first in 1921 and 1922. Of the 35 deaths recorded in Table 20, it may be seen from Table 21 that the following numbers occurred in the coal mining districts lying between Barnsley and Rotherham which were mainly affected by the 1921 outbreak—Rotherham R.D. (3), Wombwell U.D. (2), Mexborough U.D. (2), Bolton-upon-Dearne U.D. (1); another death occurred in Darfield U.D., an area with a population not exceeding 10,000 and consequently not shown in Table 21, making a total of 9 in these five districts, with a joint population of 95,396, yielding a death-rate of 94 per million, as against 23 for the county as a whole.

The highest rates for county boroughs were those of Huddersfield (54), Portsmouth (48), and Gloucester (38), the corresponding deaths numbering 6, 11, and 2 respectively. Of these three Huddersfield alone returned at all a high rate (27) in 1922.

* The rates in this table are given with reserve, being in some respects unsatisfactory. For the years 1911–13 cases of disease among non-civilians have been excluded from the notification returns, but it has not been possible to distinguish their deaths; for 1914 both cases and deaths relate to the total population; while for subsequent years the figures relate exclusively to the civilian population.

The numbers of small-pox cases in some years are too small to yield significant rates, but their basis of fact can be inferred from Table 4, and the rates quoted serve to bring out the extremely mild type of disease prevalent in 1921–1923. The rates for poliomyelitis include polioencephalitis, which was not distinguished in the notification returns until 1919. The extraordinary rise in 1918 is partly ascribable to certification of a number of deaths from the then "new disease," encephalitis lethargica, as polioencephalitis, but mainly to a reduction in notifications unaccompanied by significant change in the number of deaths (*see* Report for 1918). The rates from this disease will be found to differ from some of those published in the Annual Reports of the Chief Medical Officer of the Ministry of Health, partly because polioencephalitis is included throughout and partly because special inquiries made by the Ministry in certain years have led to revision of the returns for those years, which is not embodied in Table XXXI. The cases there referred to are similar for each year dealt with, being in all cases derived from the published notification returns. The latter source of discrepancy applies also to meningococcal meningitis, and in this case there is a possibility that some cases of posterior basal meningitis may not have been notified as cerebro-spinal fever though all such deaths are included in the table.

5. **Malaria.**—The number of deaths allocated to this cause, which gradually increased during the war from a total of 58 in 1912 and 1913 to 268 in 1919, has since then continuously declined to 81 in 1923 (Table 4). The proportion of females included in the total has been remarkably small throughout, showing the extent to which the mortality has been due to imported disease; whereas till near the close of the nineteenth century, females furnished a considerable proportion of the total deaths. As the total deaths are now fewer than during any part of that century, and as the share of them borne by children and adult females is very much smaller, it may probably be inferred that the disappearance of indigenous disease, which has long been in progress, has not been interrupted by war-time importation, the effects of which are also now disappearing.

6. **Small-pox.**—The deaths certified as due to this cause in 1923 numbered 7, as against 27 in 1922. Of these, 4 are seen from Table 20 to have occurred in the county borough of Gloucester, where an extensive outbreak of mild small-pox, at first diagnosed as chickenpox, resulted in 698 notifications (Table 28), with 180 in the neighbouring rural district of East Dean and United Parishes. The history of this outbreak, including the vaccinal condition of the victims, is related in the Annual Report of the Chief Medical Officer of the Ministry of Health. The rest of the 2,485 cases notified in England and Wales were chiefly returned from Derby Administrative County (463), Nottingham C.B. (28), and Administrative County (392), the West Riding Administrative County (277), Middlesbrough C.B. (106), and Nelson M.B. (69), these numbers aggregating 2,213, or 89 per cent. of the total of 2,485. The latter figure compares with 973 in 1922 and 315 in 1921; and the fact that notwithstanding this great increase in notified cases the deaths numbered only 7 as against 27 in 1922 and 5 in 1921 (Table 4), shows the remarkable mildness of the prevalent type of disease. Isolated importations of a severer type, however, occurred, especially in London (as also in 1922), but fortunately their spread was very limited. The general fatality is seen from Table XXXI to have been only 0·3 per cent.—an unprecedentedly low figure for this country.

7. **Measles.**—The deaths registered from this cause numbered 5,316, corresponding to a mortality of 138 per million population. This is a lower rate than that for any year previous to 1919, when the unprecedented figure of 96 was attained, followed by 59 in 1921 (Table 6), these two years alone recording a lower rate than that for 1923. At ages under 15 years, however, which, owing to the decreasing proportion of children in the population, afford a better basis for comparison than all ages jointly, the record for 1916 also was somewhat better than that for 1923. Table 6 shows that during the nineteenth century the mortality was consistently at least double that of 1923.

The distribution throughout the country of this mortality is stated in Table XXXII in the form of death-rates per 100,000 living at ages 0–5. Deaths at these ages in 1923 formed 93 per cent. of the total, and statement in this form prevents the comparison being prejudiced by varying proportions of children in the populations compared.

Table XXXII.—Measles, 1923 : Mortality per 100,000 aged 0–5.

	North.	Midlands.	South.	Wales.	England and Wales.
London	—	—	89	—	89
County Boroughs ..	209	157	101	240	184
Other Urban Districts	188	113	54	259	145
Rural Districts ..	156	63	26	82	78
All Areas	195	115	71	204	138

The death-rate in London, which was in great excess in 1922, was exceptionally low in 1923, being only 64 per cent. of the general average, whereas some excess is the general rule. London apart, the table provides no exception to the very constant general rule of decreasing mortality, for similar types of area, from the North to the South of England; or, for the various sections of England distinguished, to that of increase with increasing urbanisation.

Table 7 shows that the highest death-rates were all returned by industrial and mining administrative counties, as follows: Durham, 450 deaths per million total population; Monmouth, 410; Stafford, 375; Northumberland, 335; Yorks N.R., 319; and Glamorgan, 318. All of these counties had returned rates much below the general county average in 1922. The highest rates returned by the county boroughs were as follows: Dudley, 946; Carlisle, 833; Tynemouth, 796; Darlington, 757; Gateshead, 710; Merthyr Tydfil, 701; South Shields, 667; and Middlesbrough, 598, the average for all county boroughs being 184. All of these also had rates much below the average in 1922, a high death-rate from measles being largely dependent upon an accumulation of susceptible population.

Table 18 shows that mortality was highest in March, when 956 deaths occurred, April, with 772, coming next.

8. **Scarlet Fever.**—The deaths allocated to this disease during 1923 numbered 993. They correspond to a rate of 26 per million total population at all ages, and of 83 per million at ages under 15 years.

Table 6 shows that for eight years in succession each of these rates has been much lower than any recorded previous to this period, the mortality being now trifling compared with that

prevalent a generation ago. The increase from the minimum rate reached in 1917 is due entirely to greater prevalence, for Table 23 shows that this has greatly increased since that time, while Table XXXI shows that the fatality-rate of 11·6 deaths per 1,000 notified cases was lower than for any previous year except 1921.

Table XXXIII.—Scarlet Fever, 1923 : Mortality per Million Living at Ages 0-15.

	North.	Midlands.	South.	Wales.	England and Wales.
London	—	—	89	—	89
County Boroughs ..	114	126	35	74	108
Other Urban Districts	102	52	53	89	73
Rural Districts ..	87	39	51	52	54
All Areas	106	74	66	75	83

Table XXXIII shows that the two main rules governing the distribution of scarlet fever mortality decline—for each type of area compared, from North to South, and, for each part of the country, from great towns to rural districts—apply less regularly in 1923 than in most other years. The rate was highest in the county boroughs, not of the North, but of the Midlands, and lowest in the county boroughs not rural districts of the South. The large London excess of 1921 and 1922 has now disappeared, London's mortality approximating, as it has usually done of late years, to that for the country as a whole.

Table XXXIV.—Scarlet Fever, 1923 : Prevalence and Fatality.

	Cases per 10,000 Population aged 0–15 years.					Deaths per 1,000 Cases notified.				
	North.	Midlands.	South.	Wales.	England and Wales.	North.	Midlands.	South.	Wales.	England and Wales.
London	—	—	85	—	85	—	—	11	—	11
County Boroughs	97	103	79	63	96	14	14	6	14	13
Other Urban Districts ..	97	70	67	74	79	12	9	9	13	11
Rural Districts	83	63	57	51	65	12	8	11	12	10
All Areas	95	79	75	65	82	13	11	10	13	12

Table XXXIV shows that the excess mortality of the Midland county boroughs was due mainly to comparatively high prevalence of the disease, fatality for them being the same as for those of the North and of Wales. On the other hand, the county boroughs of the South apparently experienced an exceptionally mild type of disease, fatality for them being only half that for England and Wales. In each section of the country prevalence was lowest in the rural districts, and in the North, Midlands, and Wales fatality varied in the same way; but in the South, outside London, this order was reversed for fatality, which was highest in the rural districts and lowest in the county boroughs, thereby causing the exceptional distribution of mortality already noted. In 1922 also, fatality decreased with urbanisation in the South (apart from London), and increased in the Midlands and North.

Table 7 shows that amongst counties with over 100,000 population, Glamorgan, as in 1922, returned the highest mortality (43 deaths per million population). The three northern counties of Cumberland (41), Durham (40) and Northumberland (37), as well as Berkshire (40) had an almost equal mortality; but of these the latter alone returned a rate in 1922 in excess of the administrative county average. The highest rates amongst the county boroughs were those of Middlesbrough (140), Norwich (105), West Bromwich (90), Oxford (88), Stoke-on-Trent (87), and Burnley and Rochdale (86 each), all of which, except Norwich and Middlesbrough, returned high rates also in 1922. For the first time since 1916 neither Bootle, which during 1917–22 stood at or near the top of the mortality list, but in 1923 only slightly exceeded the average, nor any of the neighbouring boroughs of Liverpool, Birkenhead and St. Helens, appears in this list of highest city mortalities.

9. **Whooping Cough.**—The deaths allocated to this heading numbered 4,162, 1,909 of males and 2,253 of females. The excess for females is shown by Table 4 to be a constant feature of this disease, and tends to increase with age. The mortality was 108 per million total population at all ages, and 399 at ages under 15 years. These rates are shown by Table 6 to be lower than those for any previous year except 1919. They are less than one-third of those prevalent during the nineteenth century.

The distribution of mortality from this cause is indicated in Table XXXV.

Table XXXV.—Whooping Cough, 1923 : Mortality per 100,000 Living at Ages 0-5.

	North.	Midlands.	South.	Wales.	England and Wales.
London	—	—	100	—	100
County Boroughs ..	171	93	76	170	137
Other Urban Districts	136	84	65	130	104
Rural Districts ..	126	86	71	120	96
All Areas	153	87	84	135	113

It will be seen that extra-metropolitan mortality increased with urbanisation, as it has done with regularity in eleven out of the thirteen years 1911–23. For each class of area also, considered separately, decrease in mortality, is, as usual, regular from North to South. The rate for London, in large excess in 1922, was below the general average in 1923.

Table XXXVI.—Whooping Cough, 1923: Deaths under One Year of Age per cent. of those at all Ages.

	North.	Midlands.	South.	Wales.	England and Wales.
London	—	—	47	—	47
County Boroughs ..	42	41	43	51	42
Other Urban Districts	45	47	53	48	47
Rural Districts ..	49	49	56	57	51
All Areas	44	45	49	51	46

Table XXXVI shows that, as usual, the proportion of total deaths occurring in the first year of life declined with increasing urbanization, exceptions to the rule being noted only for London and for the county boroughs of Wales. This proportion was, as usual, higher for males (49·7) than for females (42·5).

In six out of the past 13 years (1911–23) the proportion of these early deaths has been higher in London than in the county boroughs, but in none of them has it been lower in the smaller towns than in the county boroughs, or in the rural districts than in the smaller towns.

It was pointed out in the Review for 1922 that while, as is well known, mortality from whooping cough is, contrary to the general rule, in constant excess for females, this excess, clearly manifest in the first three months of life, almost disappears in the second three months, thereafter to become more pronounced as age advances. These statements were based on the experience of the decades 1901–10 and 1911–20 and of the single years 1911–22. It happens, however, that they are less applicable to 1923 than to any of these periods. In 1923 there were more deaths of males than of females both at 0–3 and 3–6 months; and the excess in deaths of females reached a maximum of 48 per cent. in the third year of life, after which it regularly declined to 10 per cent. at 5–10 years.

The highest death-rates in administrative counties, excluding those with less than 100,000 population, are shown by Table 7 to have been 241 per million at all ages in Durham, 218 in Monmouth, and 203 in Hereford. Similar figures for the county boroughs are Tynemouth 459, South Shields 458, and Sunderland 427.

10. **Diphtheria.**—The fact that from 1921 onwards this heading excludes "croup," a term now seldom met with and shown by Table LXI and its predecessors for the most part no longer to signify diphtheria, makes little difference to the number of deaths included, as in 1920, the last year for which these deaths were distinguished, they totalled 18, as against 5,648 from diphtheria.

The 2,722 deaths from diphtheria in 1923 include 1,317 of males and 1,405 of females. Table 4 shows that in this excess of deaths of females 1923 resembles every other year since 1912 except 1922, and comparison of earlier reports shows that the rule of female excess has applied to every year except 1922 since the disease was first distinguished about the year 1859. From Table 5, indeed, it would appear that the mortality of males is greater, but the comparison here is between crude rates; and after standardization mortality is found to have been higher for females in each of the five decades 1861–1910, diphtheria in this respect resembling whooping cough, though the female excess is much less.

The death-rate for persons of both sexes, 71 per million living, is shown by Table 6 and its predecessors to be much the lowest on our records—a position which could not be affected by inclusion with the 2,722 deaths from diphtheria of the one death from croup in Table LXI. In fact only one previous year since 1857—1872, with a mortality of 93—has recorded a rate of less than 100 per million population. This, however, was without croup. For diphtheria and croup the rate in that year was 250.

Table 6 shows that the decline in mortality at all ages from diphtheria and croup, which was continuous by quinquennia from 1891–95, the period of highest rate since 1866–70, to 1911–15, but was arrested by increase in 1916–20 to 143, is now once more being fully maintained.

Table XXXVII.—Diphtheria, 1923: Mortality per 100,000 Living at ages 0–15.

	North.	Midlands.	South.	Wales.	England and Wales.
London	—	—	50	—	50
County Boroughs ..	21	33	36	27	26
Other Urban Districts	21	20	15	32	21
Rural Districts ..	10	17	13	27	16
All Areas	19	24	33	29	25

As in 1921 and 1922, the outstanding feature in Table XXXVII is the high mortality in London. In each of these years the London rate was at least twice that of the country at large, an

experience not previously met with since 1897. It was, indeed, only in the five years 1893–97 inclusive, that the London rate was ever, before 1921, double that for the country at large. Table XXXVIII shows that this great excess in London mortality has been due entirely to greater prevalence of the disease, for the fatality rate in London was slightly below that for England and Wales, in fact one of the lowest in the table. The recent history of diphtheria prevalence in London may be read in Table 23, which shows that while the rate for England and Wales has decreased from 1·39 cases per 1,000 population in 1913 to 1·05 in 1923, or by 24 per cent., that for London increased from 1·70 to 2·27, or by 34 per cent., the London excess growing during the same period from 22 to 116 per cent. Table 28 shows that, as in 1922, prevalence was greatest in the metropolitan borough of Bermondsey, where it reached the level of 4·82 cases per 1,000 population (9·05 in 1922), Southwark, 4·11, and Finsbury, 4·05, coming next.

Table XXXVIII shows how far variation in mortality has been due to variation in prevalence and in fatality respectively.

Table XXXVIII.—Diphtheria, 1923 : Prevalence and Fatality.

	Cases per 10,000 Population aged 0–15 years.					Deaths per 1,000 Cases notified.				
	North.	Midlands.	South.	Wales.	England and Wales.	North.	Midlands.	South.	Wales.	England and Wales.
London	—	—	87	—	87	—	—	59	—	59
County Boroughs	30	46	52	44	38	73	74	72	64	73
Other Urban Districts ..	28	34	29	41	32	76	62	57	81	68
Rural Districts	23	23	20	31	23	50	82	72	89	74
All Areas	29	35	56	38	39	71	71	61	79	68

There were proportionately fewer cases of the disease notified in the North than in the South of England, but their fatality was somewhat higher—an experience repeated year after year, the contrast being often much greater than in 1923. The fatality rate for the country at large, 6·8 per cent., is the lowest in Table XXXI, which covers the whole of the period for which this comparison can be made.

Table 7 shows that amongst counties with at least 100,000 population the civilian death-rate for London, 135 per million, was exceeded only by those for Cumberland, 155, and Berkshire, 144. In 1922 the rate for London was the highest in the table, that for Middlesex, 94 in 1923, coming next ; and in 1920 and 1921 also the rates for these two counties were specially high. This differential incidence upon London contrasts with the experience of the one larger city in the world—New York—where, very possibly as a result of the work of Park and his colleagues in the application

of the Schick test for immunity and toxin-antitoxin immunisation to children of school age, mortality from diphtheria has been reduced by over 50 per cent. during the five years 1919–1923.

As in 1922, by far the highest rate for any county borough was that of West Bromwich (490, 577 in 1922), Norwich (251) and Smethwick (242) coming next. The London rate of 135 was exceeded also by Carlisle, Portsmouth, Brighton, Merthyr Tydfil, and Birmingham. The exceptional mortality in West Bromwich was due, as in the previous year, largely to high fatality (140 deaths per 1,000 notified cases), as well as to high rate of prevalence, this being 3·51 per 1,000 population (Table 26), as against 1·05 for the county boroughs as a whole. This experience is exceptional, for it may be seen from Table XXXVIII that while prevalence varies greatly for different populations, fatality as a rule varies much less. In Bermondsey, for instance, where the London prevalence was greatest and mortality lower only than that of Deptford and of Southwark, fatality, at 56 deaths per 1,000 cases, compares with the general average of 59 for London as a whole (Table XXXVIII), the highest fatality ratio for any Metropolitan Borough being, as in 1922, that of Chelsea, which at 102 is much below that of West Bromwich. These two instances, West Bromwich and Chelsea, accordingly suggest that though fatality varies less on the whole than prevalence, specially virulent types of the disease may reproduce themselves from year to year in certain localities.

11. **Influenza.**—The deaths assigned to this cause numbered 8,461—4,305 of males and 4,156 of females—yielding a mortality of 220 per million persons living. This rate compares as follows with the years of highest mortality since the commencement of our continuous series of records in 1847. These years, with the mortality per million population recorded in each, were :—

1848	459
1891	574
1892	533
1900	504
1918	3,129
1919	1,217
1922	563

Table 18, together with the corresponding table for 1924, shows that deaths were most numerous from March to May, and especially in the latter month, when 1,489 occurred out of 8,456 in the year, or 17·6 per cent. of the whole.

The age distribution of influenza mortality, which underwent a sudden and remarkable change at the outset of the great epidemic of 1918, has since then reverted in great measure to its previous type, but the characteristics then impressed upon it

have by no means completely disappeared. Table I of the special Influenza Supplement to the Report for 1918 shows the age distribution of the mortality (standardized, and, to permit of comparison throughout the period of the war, for females only), for each year 1890–1917. The average for the whole period compares as follows with the corresponding figures for 1918–23.

	1890–1917.	1918.	1919.	1920.	1921.	1922.	1923.
0– ..	104	249	193	186	169	176	139
15– ..	107	454	366	281	187	182	157
35– ..	181	176	197	201	184	191	171
55– ..	388	98	184	229	294	310	348
75– ..	220	23	60	103	166	141	185
	1,000	1,000	1,000	1,000	1,000	1,000	1,000

From this statement it appears that the movement of return towards the age distribution prevailing prior to the great epidemic, which showed itself during the years 1919–21 and was arrested in 1922, has made further progress during 1923, the proportions of deaths at 0–15 and at 15–35 being lower, and of those at 55–75 and at 75 and over, higher than in any previous year since the great epidemic.

The excess in mortality of males over that of females, which in 1922 had fallen to 2 per cent., has in 1923 risen again to 13 per cent.

The distribution of influenza mortality throughout the country is indicated in Table XXXIX.

Table XXXIX.—Influenza, 1923 : Civilian Mortality per Million Living at all Ages.

	North.	Midlands.	South.	Wales.	England and Wales.
London	—	—	168	—	168
County Boroughs ..	291	193	160	156	241
Other Urban Districts ..	293	189	139	199	214
Rural Districts	253	246	198	212	232
All Areas..	287	206	165	194	221

For each class of area mortality in 1923 decreased regularly from the North to the South of England, but this is not, as in the case of so many other diseases, a characteristic feature of influenza mortality.

The sub-division of influenza deaths into those with pneumonic, other pulmonary, and non-pulmonary complications, and without stated complication, was made in 1921 for the first time. It will be seen from Table 5 that as in 1921 and 1922, pneumonic complications are commoner in males to a significant extent. This experience can be compared with that of 1911 and of the epidemic of 1918–19, when causes complicating influenza mortality were tabulated in detail. In both cases the proportion of deaths complicated by pneumonia was definitely in excess for males, and that of deaths with other pulmonary complications and without stated complication, in some excess for females, as in 1921–23. It appears, therefore, that even the minor sex differences brought out by Table 5 in regard to the two latter classes of returns may have significance.

23. **Encephalitis Lethargica.**—This malady first makes its appearance in the records for 1918 (Tables 4 and 5) when, however, nearly all the deaths were returned under other designations. Notifications among civilians, which increased from 541 in 1919 to 1,470 in 1921, but fell to 454 in 1922, have risen again to 1,025 in 1923 (Table 27) ; while deaths, after increasing from 284 in 1919 to 724 in 1921, and falling to 337 in 1922, rose to 530 in 1923. Particulars of the sex and age incidence of mortality from this cause are shown for the third time in Table 17, as 1921 marks its first appearance in the list of causes of death there distinguished. As in 1921 and 1922, the mortality was widely spread over the greater part of life except old age, but deaths of males were in excess for the first time in 1923. The excess in deaths of females at ages 20–45, which was noted in 1921 and 1922 (73 per cent. in 1921 and 65 in 1922) has practically disappeared in 1923. The distribution throughout the country shows no striking differences either by section of the country or by class of area, rates per million living being as follows :—North 16, Midlands 11, South 14, Wales 14, London 11, County Boroughs 16, other Urban Districts 13, Rural Districts 13. Table 24 shows that notifications were most numerous in March, and Table 18 that deaths were most numerous in April, preponderant incidence upon the early part of the year being so far a characteristic of this " new " disease.

24. **Meningococcal Meningitis.**—This title corresponds to 61A, cerebro-spinal fever, and 61B, posterior basal meningitis, of the 1911–20 List. Experience having shown that the differentiation of these two types of meningococcal infection yields results of somewhat doubtful value, this has been abandoned. The mortality of 1923 is the lowest since the epidemic outburst of 1915 (Table 5). Excess in the mortality of males was less pronounced than in any of the other years (1913–22), included in that table.

Tables 18 and 24 show the incidence of the disease to have been widely distributed over the year.

31–37. **Tuberculosis.**—The deaths assigned to tuberculous affections in the aggregate numbered 40,788—22,085 of males and 18,703 of females—or 1,989 less than those so classified in the previous year. The crude mortality, which in the case of this disease is little affected by standardization (Table XL), amounted to 1,062 per million, representing a reduction of no less than 5·3 per cent. upon that of the previous year. The proportion of the total crude death-rate due to this cause has increased from 8·8 per cent. in 1922 to 9·2, the fall of 9·2 per cent. in mortality from all causes exceeding that in mortality from tubercle. If the standardized rates are considered, tuberculosis still accounts for 10·2 per cent. of our total mortality. The standardized mortality of 1,049 per million population (Table XL) is for the fifth year in succession the lowest yet recorded, each year since 1918, when the temporary rise associated with the war and the great epidemic of influenza reached its highest point, having returned a lower rate than its predecessor. This fact may suffice to establish the validity of the surmise made in previous Reviews that the tendency to decline is real and continuous, and that the fall from the 1918 crest is not merely an accidental after-effect of the influenza epidemic resulting from the deaths in 1918 of sufferers from the disease who would otherwise have survived to swell the mortality of the next two or three years. For by 1923 the force of this influence must have been almost spent, and yet a further considerable fall has occurred, instead of the rise to be expected if the cause of the previous fall (after 1918) had been of the adventitious nature considered. The fall in mortality is seen from Table XL to apply in larger degree to males than to females, the decline from the standardized rate for 1922 being 6·6 per cent. for males and 4·3 for females. In 1922 the rate for males was slightly above that of 1921, though lower than that of any previous year. For 1923, of course, the rates for both sexes are the lowest yet recorded.

Table XL shows that the fall in mortality applies to practically all ages. For persons of both sexes jointly there are only two of the age periods distinguished, and those of minor importance as regards tuberculosis mortality—5–10 and 85 and upwards—at which slight increases are recorded. In the male sex increase has occurred only in old age, 75 and upwards, but in the female appreciable increase is found in early childhood and adolescence —5–10 and 15–20—with a nominal increase at 25–30, and decreases at all the higher ages. As compared with the pre-war standard afforded by the experience of 1912–14, males and females alike show increase at 20–25 (males 4·4 per cent., females 9·5) and females also at 15–20 (6·7 per cent.). At all other ages mortality has declined for each sex. These figures illustrate a definite

shifting, noted in previous post-war reports, of mortality towards early adult life. Thus, in 1912–14 the age of highest mortality for males was 45–55, but in 1923, 35–45 (45–55 in 1922). For females it was 35–45 in 1912–14, but only 20–25 in 1923 and 1922. The age of maximum mortality for females, after remaining at 25–35 in each of the four decades 1851–90, shifted to 35–45 in 1891–1900 and remained there, as a rule, up to 1915, but in 1916 it suddenly shifted to 20–25, and has since remained there, except in 1917, when it was 15–20. That this latter change is not entirely a consequence of the war may be inferred from certain premonitory indications of it, in evidence from the beginning of the century, which are discussed in the Review for 1921. For males as for females, the age of maximum mortality was gradually postponed during the nineteenth century, from 20–25 in 1851–60 to 45–55 in 1891–1900 (and also 1901–10), so that in their case also the change recorded for 1923 represents reversion towards an earlier type.

Table XL.—England and Wales: Mortality from Tuberculosis (All Forms) per Million Population, 1912–14, 1922, and 1923.

	Males.			Females.			Persons.		
	1912–14	1922	1923	1912–14	1922	1923	1912–14	1922	1923
All Ages {Crude	1,569	1,279	1,204	1,167	976	932	1,361	1,121	1,062
All Ages {Standardized ..	1,546	1,246	1,164	1,168	984	942	1,347	1,108	1,049
0–	2,063	1,230	1,170	1,701	1,033	957	1,883	1,133	1,065
5–	566	379	371	572	396	411	569	388	391
10–	442	361	330	685	539	513	564	449	421
15–	927	913	833	1,214	1,275	1,295	1,071	1,095	1,065
20–	1,478	1,651	1,543	1,326	1,587	1,452	1,398	1,617	1,495
25–	1,774	1,577	1,537	1,369	1,287	1,289	1,561	1,419	1,401
35–	2,233	1,811	1,689	1,405	1,088	1,015	1,804	1,424	1,327
45–	2,437	1,835	1,659	1,208	859	793	1,798	1,329	1,208
55–	2,283	1,600	1,479	1,004	729	664	1,608	1,143	1,051
65–	1,421	1,069	1,002	767	657	555	1,057	841	755
75–	649	466	475	496	409	345	558	431	396
85 and upwards	260	117	190	246	230	225	251	193	213

31. **Tuberculosis of the Respiratory System.**—As a result of the revision of the list of causes of death in 1920 this heading no longer includes acute miliary tuberculosis, the classification thus reverting to that followed in this country prior to 1911. The distinction between acute and chronic forms of the disease is also abandoned. The substitution of respiratory for pulmonary in the title has no practical effect upon the contents, for laryngeal tubercle was already included under this heading, and in the year 1912, for which the deaths have been published in full detail, there was but one, returned as due to tubercle of the posterior nares, which would be included under the new but excluded from the old heading.

The 32,097 deaths from respiratory tubercle form 79 per cent. of the total allocated to tuberculosis, and 7·2 per cent. of those from all causes. These deaths represent a crude mortality 6·0 per cent. lower than that of 1922, the fall from respiratory disease thus, contrary to the general experience of recent years, exceeding that from tuberculosis as a whole.

The distribution of this mortality by class of area as well as by sex and age is shown in Table XLI.

Table XLI.—Tuberculosis of the Respiratory System.—Mortality at Different Ages, 1923.

	Mortality per 100,000 Civilians Living at Various Age Groups.						Ratio per cent. of Mortality in England and Wales.				
	England and Wales.	London.	County Boroughs.	Other Urban Districts.	Rural Districts.	All Urban Districts.	London.	County Boroughs.	Other Urban Districts.	Rural Districts.	All Urban Districts.
MALES.											
All Ages—											
Crude	96	123	116	83	71	103	128	121	86	74	107
Standardized ..	91	113	109	79	70	97	124	120	87	77	107
0—	16	12	21	15	10	17	75	131	94	63	106
5—	10	7	13	8	9	10	70	130	80	90	100
15—	98	110	115	89	78	103	112	117	91	80	105
25—	142	157	151	131	135	143	111	106	92	95	101
35—	159	202	198	133	110	171	127	125	84	69	108
45—	156	226	196	128	99	171	145	126	82	63	110
55—	136	198	174	115	84	152	146	128	85	62	112
65—	90	151	113	74	59	101	168	126	82	66	112
75 & up ..	35	79	50	28	16	44	226	143	80	46	126
FEMALES.											
All Ages—											
Crude	72	75	82	67	63	75	104	114	93	88	104
Standardized ..	71	71	79	66	65	72	100	111	93	92	101
0—	12	15	15	11	7	13	125	125	92	58	108
5—	22	19	26	21	16	23	86	118	95	73	105
15—	119	115	130	113	113	121	97	109	95	95	102
25—	117	108	130	107	117	116	92	111	91	100	99
35—	92	94	104	82	85	93	102	113	89	92	101
45—	70	85	83	61	54	74	121	119	87	77	106
55—	55	63	60	52	48	57	115	109	95	87	104
65—	45	54	51	45	33	48	120	113	100	73	107
75 & up ..	20	29	23	22	12	23	145	115	110	60	115
PERSONS.											
All Ages—											
Crude	84	97	98	75	67	88	115	117	89	80	105
Standardized ..	80	91	93	72	67	84	114	116	90	84	105
0—	14	14	18	13	9	15	100	129	93	64	107
5—	16	13	19	15	13	16	81	119	94	81	100
15—	109	113	123	102	94	112	104	113	94	86	103
25—	128	129	139	117	126	128	101	109	91	98	100
35—	122	142	147	105	97	129	116	120	86	80	106
45—	111	151	137	93	76	120	136	123	84	68	108
55—	94	126	114	82	66	102	134	121	87	70	109
65—	65	96	78	58	45	72	148	120	89	69	111
75 & up ..	26	46	33	24	14	31	177	127	92	54	119

The features of this table, so far as England and Wales is concerned, generally resemble those of Table XL. At all ages mortality has fallen, though not at every age for each sex. The rate for males aged 0–5 is the same as in 1922, and for those of over 75 it is slightly higher than in that year. For females aged 5–15 and 25–35 there is no change, and at all other ages decline.

Although, as above noted, the fall in non-respiratory was less than that in respiratory tuberculosis, there are only two non-respiratory sites of the disease—the intestines and peritoneum, and the genito-urinary system—for which the 1923 death-rates are not shown by Table 5 to be the lowest yet recorded. Even these exceptions are of no importance, mortality ascribed to abdominal tubercle having fallen from 103 per million in 1917 to 49 in 1922 and 51 in 1923, and genito-urinary tubercle, newly distinguished, having risen from 6 in 1921 to 7 in 1923, very possibly as the result of increasing recognition. It thus appears that, contrary to certain pessimistic anticipations, the fall in mortality from tuberculosis of all varieties and sites, broadly speaking, is well maintained. It was pointed out in the Report for 1920 that the great fall in standardized mortality from tuberculosis then recorded (from 1924 deaths per million civilians of both sexes in 1918, to 1,128 per million total population in 1920) had not merely wiped out the rise which occurred during the war, but carried the reduction practically to the point to which continuance of the remarkably steady pre-war decline would have led. Although decline has been continued in each of the three succeeding years, it was insufficient in 1921 and 1922 to maintain the pre-war rate, and though this was resumed in 1923, its standardized rate of 1,049 is a little higher than that representing continuance of the rate of decline recorded for the years 1866–1914, which, on the assumption of the continuance of the same average annual decrements from 1914 onwards, would give a rate of 965 in 1923, and by extrapolation on the curve calculated in the 1921 Review, a rate of 994 per million persons instead of the 1,049 recorded in Table XL. The difference when charted is obviously small, and, broadly speaking, it may be said that reduction in mortality from tuberculosis has been maintained at much the same pace after as before the war.

The relation of phthisis mortality to urbanization is expressed by the decline of the standardized rate for persons from 91 per 100,000 in London and 93 in the County Boroughs to a minimum of 67 in the rural districts. That for males is at its maximum in London and that for females in the County Boroughs. At all ages from 35 up for males and from 45 up for females, the decline is regular from a maximum in London to a minimum in the rural districts. For both sexes alike the advantage of these districts is least in adolescence and early adult life—the ages of migration—and, thereafter, tends to increase with advancing age.

The bearing of these facts upon the relation of urban and rural mortality to migration, discussed on page 34, is obvious. The rural rates are comparatively high at the ages of migration because the healthy forsake the country for the town, while the phthisical remain at home to die. Later in life the position is reversed, because, movement being small, environment has free play.

38. **Syphilis.**—The crude mortality directly attributed to this disease, 36 per million persons living, 47 for males and 27 for females, is seen from Table 5 to be the lowest recorded for either sex since 1912; and reference to similar tables in earlier reports reveals no year in which the rate recorded, both for males and females, did not exceed that of 1923. It is evident, therefore, that not only has the temporary increase of mortality from this cause, associated with the onset of the war, which culminated in 1917, totally disappeared, but that there is strong *prima facie* evidence that the national scheme for dealing with venereal disease, which resulted from the labours of the Royal Commission of 1916, is already having a definite positive effect. As the majority of the deaths attributed to this disease, 57 per cent. in 1923, are of infants under one year of age, mortality from this cause has in the past been largely influenced by the birth-rate, tending to rise and fall with it. Hence it is of interest to note that the infantile mortality of 1·05 deaths per 1,000 births is much the lowest in Table 9, 1923 recording the last of six successive decreases from the rate of 2·03 in 1917. It is also the lowest for any year since, at least, 1905.

The more comprehensive death-rate obtained by including deaths from tabes dorsalis, general paralysis of the insane, and aneurysm, as well as those directly attributed to syphilis, stands at 125 per million as against 131, 132, 136 and 136 in the four preceeding years. In 1917 it was 176 per million, and from 1901, when the record is first available, till 1918 it only varied between that figure and 155 (in 1910), so the most recent returns represent a very definite decline. The decline has occurred mainly in mortality attributed directly to syphilis, for the rates for tabes and general paralysis were lower in 1920 and 1921 than in 1923, and that for aneurysm in 1918 and 1919 (Table 5). The national mortality from general paralysis thus presents as yet no indication of yielding to treatment by malarial infection, though this is stated to have given good results locally.

41 (1). **Vaccinia.**—Eight deaths have been classed to this cause as against four in 1922. Of these, two occurred in the first year of life, five at 5–20 years, and one at 50–55. In addition to these, two deaths, at one month and 14 years, were allocated to septicæmia, one at 5 months to cellulitis, and one at 6 months to convulsions, following vaccination in each case. In the first three cases the general rule was followed by which deaths

from wound infection are classed to the infection if the injury is slight, such as a vaccination wound, and in the fourth it did not appear, after correspondence with the certifying practitioner, that vaccinia was regarded by him as the cause of death.

43–49. **Cancer.**—The deaths ascribed to cancer during 1923 number 48,668—22,065 of males and 26,603 of females. For both sexes these numbers are the highest yet recorded.

Of these deaths 36,633 were referred to carcinoma, 2,636 to sarcoma, and 9,399 to "cancer" not otherwise defined. Both the carcinoma and the sarcoma figures are the highest hitherto recorded for each sex.

Table XLII shows, for England and Wales, and for different classes of its local areas distinguished by urbanization, the standardized death-rate from malignant disease for each sex, and

Table XLII.—Cancer.—Death-rates per 100,000 living, 1911-1914, 1922 and 1923.

Age.	England and Wales.			1923.				
	1911–1914	1922	1923	London.	County Boroughs.	Other Urban Districts.	Rural Districts.	All Urban Districts.
MALES.								
All Ages—								
Crude	93	118	121	138	121	115	122	121
Standardized	91	96	97	114	105	94	83	101
0–.. ..	2	3	3	4	3	2	3	3
15–.. ..	4	5	5	5	5	5	4	5
25–.. ..	11	12	12	16	12	11	11	12
35–.. ..	44	42	39	50	42	37	32	41
45–.. ..	173	163	166	183	197	153	127	176
55–.. ..	453	479	480	577	543	445	395	505
65–.. ..	803	868	898	1,008	932	917	790	937
75 and up ..	962	1,114	1,142	1,377	1,105	1,134	1,105	1,160
FEMALES.								
All Ages—								
Crude	113	129	133	140	127	133	137	132
Standardized	99	96	98	105	101	98	89	100
0–.. ..	2	2	2	2	2	2	2	2
15–.. ..	3	3	4	6	3	3	3	4
25–.. ..	16	16	16	18	19	15	11	17
35–.. ..	83	75	76	85	77	76	70	78
45–.. ..	234	215	221	229	233	220	199	227
55–.. ..	460	427	431	471	446	424	398	440
65–.. ..	728	746	752	785	770	767	691	771
75 and up ..	942	1,025	1,051	1,136	1,018	1,101	981	1,076
PERSONS.								
All Ages—								
Crude	104	123	127	139	124	125	130	127
Standardized	95	96	97	109	102	96	86	100
0–.. ..	2	2	2	3	2	2	2	2
15–.. ..	4	4	4	6	4	4	4	4
25–.. ..	13	14	14	17	16	13	11	15
35–.. ..	64	60	59	69	61	58	52	61
45–.. ..	205	190	195	207	216	188	164	203
55–.. ..	457	451	454	520	492	434	396	471
65–.. ..	761	800	817	881	841	833	738	844
75 and up ..	950	1,059	1,086	1,221	1,050	1,113	1,034	1,107

the group rates for persons of different ages from which these are derived, for 1923, and, as a basis of comparison for England and Wales only, similar rates for 1922 and for the four latest pre-war years jointly, 1911–14.

Table XLII shows the mortality of males as decreasing with decreasing urbanization, in 1923, from a maximum of 114 per 100,000 in London to a minimum of 83 in the rural districts. Variation with class of area is as usual much less for females.

As compared with the most recent pre-war experience the standardized rate for males has increased, from 91 to 97, but that for females has not. The rates for males have increased at all ages except 35–55, which show a slight decline, while for females a somewhat more definite decline is recorded at 35–65.

Mortality is again, as in 1921 and 1922, practically equal for males and females, the standardized rate of 96 deaths per million living for each sex in 1922 having increased to 97 for males, and 98 for females. That for males is, once again, the highest yet recorded. After some excess for males in early life those for females are in excess at 25–55, and those for males again from 55 onwards. As pointed out in last year's Review the rates for females aged 25 years and upwards were uniformly in excess throughout the nineteenth century, male excess first appearing at age 65–75 in 1901–10. Since then male excess in later life has developed so far as to counterbalance the excess for females under the age of 55, and so cause practical equality for the sexes. Of course it may be that this is a change of nomenclature rather than of fact. As the proportion of deaths from cancer of inaccessible sites is much higher in the male sex, increased recognition of the true nature of such deaths would necessarily increase the death-rate returned for males more than that for females.

It will be seen that the movement towards excess of male mortality has progressed much further in the great towns, especially London, than in the rural areas.

Stating the standardized mortality of females as 100 in each case, that of males was as follows in—

	London.	County Boroughs.	Other Urban Districts.	Rural Districts.
1911* ..	112	91	90	85
1923 ..	109	104	96	93

In 1911, male mortality was in excess only in London. It is now in excess in the county boroughs as well, and increasing relatively to that of females in the smaller towns and rural districts. These facts seem to suggest that the excess mortality of females which still persists in these areas, as in most foreign countries, is at least largely a fictitious consequence of failure to diagnose the disease in males, and that the formerly recorded

* See Report for 1913, Table XLIX.

excess for females in the English population at large was due to the same cause. In last year's Review it was pointed out that the excess of standardized mortality for females had continuously fallen from 113 per cent. in 1851–60 to 20 per cent. in 1901–10; and it has now, as noted above, practically disappeared. Surgery, also, by its more successful application to the more accessible cancers of females than to the more inaccessible growths of males, may have contributed to this change in sex incidence, and in this respect, of course, the more populous areas would probably be the first to benefit, and so to exhibit relative reduction of female mortality.

The parts of the body affected by fatal cancer in 1923 are shown in Table XLIII in greater detail than that provided by the international classification, six out of its seven headings (Nos. 43–49) relating to cancer being sub-divided according to a scheme approved by the Director of the Cancer Research Fund.

Table XLIII.—England and Wales, 1923—Sites of Fatal Cancer.

		All Ages.	0–	5–	15–	25–	35–	40–	45–	50–	55–	60–	65–	70–	75–	80–	85–
		MALES.															
	All Sites	22,035	56	80	160	301	303	676	1,374	2,261	3,107	3,891	3,743	3,138	1,893	799	280
43	Lip	246	—	—	—	1	—	2	4	14	25	38	40	49	34	23	16
	Tongue	1,102	—	—	—	3	6	24	64	167	210	225	169	132	69	26	7
	Mouth and Tonsil ..	644	1	2	2	5	3	14	37	79	116	135	112	78	38	18	4
	Jaw	556	2	4	3	2	6	8	33	63	98	123	83	66	37	23	5
	Total	2,548	3	6	5	11	15	48	138	323	449	521	404	325	178	90	32
44	Pharynx	271	—	2	4	3	—	9	23	33	35	55	48	34	14	7	4
	Œsophagus	1,492	—	—	—	4	3	24	81	196	287	322	246	192	97	26	14
	Stomach	4,871	—	1	7	55	73	195	371	525	689	883	837	689	364	144	38
	Liver and gall bladder..	1,701	5	4	1	17	18	46	82	153	200	281	323	289	177	76	29
	Total	8,335	5	7	12	79	94	274	557	907	1,211	1,541	1,454	1,204	652	253	85
45	Mesentery and peritoneum	115	4	3	1	8	5	9	10	16	14	11	19	7	6	2	—
	Intestines	2,545	—	2	12	28	42	64	132	211	315	420	471	421	283	114	30
	Rectum	2,350	—	—	9	31	36	44	119	216	316	405	434	384	233	95	28
	Total	5,010	4	5	22	67	83	117	261	443	645	836	924	812	522	211	58
47	Breast	34	—	—	—	—	—	2	1	1	5	5	5	7	4	2	2
48	Penis	126	—	—	—	1	1	4	8	15	19	19	16	22	14	3	4
	Scrotum	64	—	—	—	1	2	4	6	6	13	15	7	3	4	2	1
	Other skin	566	2	1	3	10	7	11	27	31	51	79	83	80	85	58	38
	Total	756	2	1	3	12	10	19	41	52	83	113	106	105	103	63	43
49	Larynx	706	—	—	—	2	3	19	51	93	123	134	142	81	37	15	6
	Lung and pleura ..	405	—	1	9	17	11	35	52	70	57	65	49	27	9	3	—
	Pancreas	547	—	—	2	5	10	20	48	49	89	111	91	57	44	15	6
	Kidneys and suprarenal glands .. .	247	26	7	3	7	6	15	20	30	39	41	22	19	7	3	2
	Bladder	647	—	—	1	—	6	14	31	51	79	119	128	103	67	36	12
	Prostate	975	—	—	2	3	2	3	7	43	71	152	216	211	168	72	25
	Testes	97	—	—	10	23	7	7	11	3	11	6	8	7	2	1	1
	Brain	77	—	9	7	9	4	16	11	6	4	5	4	1	1	—	—
	Bones (jaw excepted)..	354	3	23	52	18	16	19	31	25	36	46	35	26	16	4	1
	Other specified organs..	779	9	15	20	40	26	45	74	101	110	125	84	83	35	10	2
	Abdominal cavity, organ unspecified ..	99	1	1	2	1	—	3	7	7	10	10	16	22	14	2	3
	Other and undefined ..	449	3	5	10	10	10	20	30	57	85	61	55	48	34	19	2
	Total	5,382	42	61	118	135	101	216	376	535	714	875	850	685	434	180	60

Table XLIII.—England and Wales, 1923—Sites of Fatal Cancer—*cont.*

		All Ages.	0–	5–	15–	25–	35–	40–	45–	50–	55–	60–	65–	70–	75–	80–	85–
		FEMALES.															
	All Sites	26,603	51	48	123	504	740	1,459	2,331	2,925	3,405	3,535	3,636	3,505	2,454	1,293	594
43	Lip	22	—	—	—	—	—	—	2	1	3	—	3	4	7	2	—
	Tongue	107	—	—	—	1	5	2	10	11	11	11	24	15	8	6	3
	Mouth and Tonsil ..	95	—	1	3	1	—	4	5	10	10	10	18	12	10	9	2
	Jaw	190	2	—	2	2	5	11	16	15	26	24	29	27	10	18	3
	Total	414	2	1	5	4	10	17	33	37	50	45	74	58	35	35	8
44	Pharynx	78	—	1	—	—	4	12	4	15	11	11	6	11	3	—	—
	Œsophagus	489	—	1	—	7	15	35	45	72	66	59	55	69	38	19	8
	Stomach	4,155	—	—	4	40	85	135	225	369	524	603	728	694	456	209	83
	Liver and gall bladder..	2,348	1	3	3	12	19	60	118	167	274	375	399	430	290	145	52
	Total	7,070	1	5	7	59	123	242	392	623	875	1048	1188	1204	787	373	143
45	Mesentery and peritoneum	231	1	1	1	3	5	13	28	32	31	36	29	20	21	6	4
	Intestines	3,384	—	—	10	42	41	108	193	280	386	443	541	565	461	216	98
	Rectum	1,723	—	1	7	36	38	81	117	148	194	227	264	261	198	115	36
	Total	5,338	1	2	18	81	84	202	338	460	611	706	834	846	680	337	138
46	Ovary and Fallopian tube	843	—	7	17	42	34	68	121	129	128	113	79	58	29	14	4
	Uterus	4,363	1	—	9	127	246	371	564	669	641	548	453	369	228	95	42
	Vagina and vulva ..	366	—	—	2	6	3	8	23	22	49	46	53	65	50	30	9
	Total	5,572	1	7	28	175	283	447	708	820	818	707	585	492	307	139	55
47	Breast	4,996	—	—	3	77	161	387	634	687	652	607	548	502	372	224	142
48	Skin	427	1	1	1	7	9	13	13	24	41	32	47	70	60	57	51
	Larynx	159	—	—	—	2	4	14	19	34	26	22	14	14	4	3	3
	Lung and pleura ..	225	—	3	5	9	4	19	23	26	25	37	26	33	10	1	4
	Pancreas	503	—	—	1	8	15	13	36	56	82	79	80	61	34	27	11
	Kidneys and suprarenal glands	196	28	11	3	6	5	11	12	20	20	21	24	16	14	5	—
	Bladder	331	—	—	2	4	3	8	19	23	39	54	59	41	42	29	8
49	Brain	52	2	5	1	11	4	9	3	11	1	2	1	—	1	—	1
	Bones (jaw excepted) ..	311	9	9	24	29	13	17	19	22	37	25	36	37	22	8	4
	Other specified organs..	524	3	3	15	24	13	36	44	49	69	80	65	59	39	18	7
	Abdominal cavity, organ unspecified	255	1	—	2	1	2	8	17	16	28	37	38	43	31	22	9
	Other and undefined ..	230	2	1	8	7	7	16	21	17	31	33	17	29	16	15	10
	Total	2,786	45	32	61	101	70	151	213	274	358	390	360	333	213	128	57

The deaths during 1911–20 from cancer, distinguishing sex and age, and site of growth in greater detail than that observed in Table XLIII, were published in the Review for 1921, but at that time lack of estimates of the corresponding populations prevented the presentation of mortality rates. These estimates being now available, the detailed mortality statement for 1911–20 is presented in Tables XLIV and XLV.

These tables may be compared with the corresponding tables (XLVII and XLVIII) for 1901–10 in the Report for 1910, and with a diagram (No. XIV) in that for 1909, illustrating the sex and age distribution of cancer of the most important sites in the body. Generally speaking, the differences in age distribution of different cancers there brought out are maintained in the later returns. Thus cancers of the female breast, and of the face, lip, mouth and bladder are characterised by mortality increasing continuously with age; while in other cases, notably those of

Table XLIV.—England and Wales, 1911–20.—Death-Rates of Males, per million living, from Cancer of various Sites at different Ages.

		All Ages.	0–	10–	25–	30–	35–	40–	45–	50–	55–	60–	65–	70–	75–	80–	85–
39 (43)	Lip	13	—	0	—	0	1	2	7	16	32	53	91	165	295	420	676
	Tongue ..	57	0	0	0	2	7	35	86	178	260	335	416	431	413	449	245
	Mouth ..	17	0	0	0	1	3	9	23	48	73	100	122	133	144	177	162
	Jaw	28	1	1	2	4	6	15	37	74	109	158	216	221	246	225	257
	Tonsil	9	0	1	0	1	2	7	15	25	42	55	65	58	59	63	54
40 (44)	Pharynx ..	12	0	1	1	1	2	7	20	34	61	64	83	95	83	65	79
	Œsophagus ..	68	0	0	1	2	6	32	95	197	313	430	531	527	513	485	266
	Stomach ..	207	0	1	10	27	61	138	275	476	774	1,215	1,663	1,927	1,922	1,553	1,000
	Liver	96	1	1	5	10	22	48	105	200	340	554	785	982	1,089	1,020	672
	Gall Bladder ..	7	0	0	0	0	1	3	7	13	20	35	54	75	87	99	58
41 (45)	Mesentery ..	1	0	0	0	1	1	1	1	3	3	4	8	8	6	3	8
	Omentum ..	2	0	0	0	0	1	2	2	5	6	11	15	19	16	15	17
	Peritoneum ..	3	1	1	1	2	2	4	6	8	12	18	17	19	20	7	12
	Small Intestine	5	0	0	1	2	2	5	7	12	17	26	36	49	53	36	21
	Cæcum ..	7	0	0	1	1	4	5	9	13	22	35	53	60	65	73	58
	Hepatic Flexure	1	—	0	0	0	0	0	0	2	3	3	6	5	9	2	4
	Splenic Flexure	2	—	0	0	0	1	2	2	5	6	8	10	14	16	9	—
	Sigmoid Flexure	14	—	0	1	1	4	7	16	30	45	79	112	139	167	167	129
	Colon (part unstated) ..	38	0	0	2	5	12	24	42	70	128	214	314	407	460	432	324
	Intestine (part unstated) ..	40	0	1	2	5	9	18	38	69	123	219	341	447	535	483	340
	Rectum and Anus	103	0	2	8	13	25	52	101	201	363	583	841	1,089	1,226	1,108	863
43 (47)	Breast ..	2	0	0	0	—	1	1	2	5	6	7	13	12	21	41	29
44 (48)	Other Skin Cancer — Rodent ulcer ..	7	0	0	1	0	1	2	3	5	13	25	42	79	174	259	510
	Face ..	8	0	0	1	1	2	4	6	12	21	29	50	83	133	218	340
	Nose ..	1	0	0	—	0	0	0	0	1	2	2	4	7	13	29	54
	Scalp	0	0	0	—	0	0	0	0	1	1	2	2	8	8	10	8
	Ear ..	2	0	0	—	0	0	0	1	1	2	6	11	25	60	97	187
	Penis	7	—	—	1	1	2	5	7	13	24	39	44	72	110	108	166
	Scrotum	3	—	—	0	0	1	2	4	9	13	13	15	16	19	20	17
	Other parts	8	0	0	1	1	2	5	8	13	20	31	39	68	138	232	282
	Larynx ..	27	0	0	1	1	4	16	44	82	122	167	198	197	187	135	79
	Trachea ..	0	—	0	—	—	0	0	1	1	1	4	3	2	1	—	—
	Lung ..	14	0	2	3	8	11	15	26	41	56	68	80	65	48	32	17
	Pleura ..	1	—	0	0	0	1	1	1	2	2	5	4	4	4	—	4
	Heart and Pericardium ..	0	—	0	0	0	0	0	—	0	0	0	1	0	—	—	—
	Parotid ..	4	0	0	—	0	1	2	5	9	13	22	27	32	28	34	29
	Thyroid ..	2	0	0	0	1	1	2	3	6	8	10	12	12	15	7	12
	Pancreas ..	18	0	0	2	4	8	14	28	47	74	111	132	133	150	108	66
	Spleen ..	1	0	0	0	0	1	2	2	3	4	6	7	8	9	9	12
	Kidney, Suprarenal	10	7	1	2	2	5	8	15	25	30	46	46	51	53	32	29
	Bladder ..	31	0	0	1	1	6	12	25	51	91	177	279	369	412	403	373
	Urethra ..	0	—	—	—	—	—	—	0	1	0	2	1	2	—	2	—
	Prostate ..	28	0	0	0	1	1	3	9	26	64	154	293	431	572	514	361
	Testes	5	1	2	6	9	9	8	8	7	7	11	15	18	27	43	25
	Brain	4	1	2	4	4	4	5	7	8	8	7	6	5	4	3	—
	Spinal Cord ..	0	0	0	0	1	0	0	0	1	2	3	3	1	4	—	—
	Globe of Eye, Orbit ..	2	2	0	1	0	1	2	2	4	4	9	10	15	18	24	25
	Lymphatic Glands ..	13	2	4	5	5	8	14	22	35	49	53	55	49	55	34	37
45 (49)	*Bones other than jaw* ..	*17*	*3*	*9*	*9*	*8*	*10*	*15*	*22*	*32*	*48*	*63*	*85*	*80*	*97*	*101*	*58*
	Skull ..	1	1	0	1	1	1	1	2	3	6	5	6	4	9	7	4
	Spinal Column	2	0	1	1	1	1	2	4	7	9	9	10	13	6	10	4
	Rib, Sternum, Clavicle ..	2	0	1	1	1	2	2	3	5	7	11	17	13	18	14	12
	Pelvis ..	3	1	1	2	2	2	3	5	5	12	16	18	13	20	10	—
	Arm ..	2	0	1	1	1	1	1	2	3	4	4	7	8	15	14	12
	Leg	6	1	5	3	3	3	5	5	8	10	17	25	28	28	43	21
	Undefined ..	0	0	0	—	0	0	0	0	1	0	0	1	1	1	3	4
	Neck	15	0	0	1	1	2	8	23	46	66	84	108	119	112	113	116
	Throat	2	—	0	—	0	0	1	4	6	10	16	21	21	15	15	8
	Axilla	1	0	0	—	0	0	0	0	1	1	4	2	9	15	7	12
	Mediastinum ..	10	0	1	2	4	7	13	18	27	42	52	58	50	43	24	21
	Thorax ..	1	0	0	0	0	1	1	1	3	3	5	4	5	4	3	—
	Pelvic Cavity	1	0	0	0	0	1	1	1	1	5	5	5	7	9	5	4
	Abdomen ..	6	1	1	1	1	2	4	5	9	17	27	44	58	69	70	29
	Groin	1	—	0	—	1	0	1	1	4	4	5	6	8	13	9	8
	Other Localities	4	0	1	2	2	3	3	7	8	12	21	21	32	35	55	29
	Multiple ..	2	0	0	1	1	1	2	3	3	6	8	7	9	6	3	4
	Undefined ..	2	0	0	0	0	1	1	3	4	7	9	13	16	13	14	12
	All Sites	987	25	34	80	141	269	587	1,215	2,233	3,609	5,507	7,550	9,051	10,120	9,703	8,212

Table XLV.—England and Wales 1911–20.—Death-Rates of Females, per million living, from Cancer of various Sites at different Ages.

		All Ages.	0–	10–	25–	30–	35–	40–	45–	50–	55–	60–	65–	70–	75–	80–	85–
39 (43)	Lip	1	—	—	0	0	0	0	0	2	2	2	4	7	18	21	54
	Tongue	5	—	0	0	2	3	4	7	12	17	21	29	35	42	55	63
	Mouth	2	0	0	0	0	1	1	3	4	7	8	11	16	22	25	20
	Jaw	9	1	1	1	2	4	8	11	19	27	36	45	56	72	57	57
	Tonsil	2	0	0	0	1	1	1	3	3	7	4	6	10	14	16	15
40 (44)	Pharynx	4	0	0	1	1	3	5	8	10	12	17	9	14	18	16	17
	Œsophagus	20	—	0	1	4	14	24	38	50	62	84	98	121	137	166	143
	Stomach	171	0	1	7	22	54	99	194	339	544	844	1,182	1,483	1,617	1,374	1,128
	Liver	121	2	1	4	10	24	57	116	225	381	626	865	1,102	1,234	1,079	859
	Gall Bladder	14	—	0	0	1	2	5	13	28	49	74	116	121	143	135	113
41 (45)	Mesentery	2	0	0	0	0	1	2	4	4	6	7	11	16	12	19	17
	Omentum	5	—	0	0	1	2	3	7	10	19	24	33	34	46	45	39
	Peritoneum	8	0	1	1	2	4	8	13	20	27	34	42	35	48	35	26
	Small Intestine	5	0	0	0	1	1	3	6	9	14	20	33	41	44	42	39
	Cæcum	10	0	0	1	1	2	5	10	19	27	48	70	99	123	114	107
	Hepatic Flexure	1	—	—	—	0	0	0	1	1	3	5	6	9	11	7	7
	Splenic Flexure	2	—	—	0	0	1	1	2	3	4	9	9	10	14	12	9
	Sigmoid Flexure	15	—	0	2	3	4	10	19	30	47	70	98	134	144	149	113
	Colon (part unstated)	48	—	0	3	8	14	25	48	92	142	216	322	442	509	515	474
	Intestine (part unstated)	54	0	1	2	7	13	28	51	95	164	243	366	503	604	610	507
	Rectum and Anus	73	0	1	7	14	27	48	86	148	218	331	462	623	690	634	620
42 (46)	Ovary and Fallopian Tube	29	0	3	8	12	22	43	69	93	107	104	104	99	89	73	37
	Uterus	209	0	1	16	59	152	307	495	668	785	856	906	886	902	681	563
	Vagina, Vulva	15	0	0	1	3	4	9	17	24	40	62	92	118	162	208	180
43 (47)	Breast	207	—	0	7	39	125	257	445	574	696	793	906	1,166	1,423	1,675	2,165
44 (48)	Rodent Ulcer	6	0	0	—	0	0	1	3	4	8	15	25	52	100	190	313
	Other Skin Cancer: Face	5	0	0	0	1	1	2	4	5	8	15	22	47	79	126	154
	Other Skin Cancer: Nose	1	—	—	0	0	—	0	0	0	1	2	4	7	10	13	28
	Other Skin Cancer: Scalp	1	0	0	0	0	—	0	0	1	2	3	5	7	18	16	41
	Other Skin Cancer: Ear	1	0	0	—	0	—	0	1	1	2	2	2	4	10	9	2
	Other Skin Cancer: Other parts	7	0	0	1	1	2	3	6	9	16	22	33	56	86	140	200
45 (49)	Larynx	7	—	0	1	4	7	10	20	20	24	27	25	25	30	32	17
	Trachea	0	—	—	0	0	0	0	0	1	—	1	0	0	—	—	—
	Lung	8	0	1	1	3	6	9	16	23	30	35	38	42	31	22	15
	Pleura	1	—	0	—	0	0	1	1	2	2	2	2	4	3	2	—
	Heart and Pericardium	0	—	—	—	—	0	—	0	0	0	—	—	—	—	—	—
	Parotid	2	0	0	0	0	0	1	2	3	4	5	10	10	12	18	24
	Thyroid	5	0	0	1	1	2	4	7	11	17	26	32	41	41	26	15
	Pancreas	16	0	0	1	2	5	11	19	36	56	86	102	126	131	90	76
	Spleen	2	0	0	0	1	1	1	2	4	4	8	8	12	8	9	9
	Kidney, Suprarenal	8	6	1	1	2	4	7	11	16	21	38	36	42	47	33	28
	Bladder	12	0	0	0	1	3	5	11	20	34	57	80	116	141	136	133
	Urethra	0	0	—	—	0	0	0	0	0	0	2	2	1	2	—	4
	Brain	3	1	1	2	3	5	4	5	8	7	5	5	5	4	3	2
	Spinal Cord	0	0	0	0	0	0	1	1	1	1	1	2	1	3	—	—
	Globe of Eye, Orbit	2	2	0	0	1	0	1	2	3	3	5	8	10	16	17	28
	Lymphatic Glands	5	1	2	3	3	5	6	8	12	11	18	17	22	20	27	30
	Bones other than jaw	*14*	*2*	*7*	*5*	*6*	*7*	*11*	*18*	*28*	*38*	*45*	*52*	*71*	*87*	*81*	*80*
	Skull	1	1	0	0	0	1	1	2	2	3	4	4	7	11	7	2
	SpinalColumn	2	0	0	1	1	2	2	5	6	8	8	6	11	10	7	—
	Rib, Sternum, Clavicle	2	0	1	1	1	1	1	1	3	4	5	6	12	11	13	24
	Pelvis	3	1	1	2	2	1	2	4	5	8	11	10	9	12	16	4
	Arm	1	0	1	0	0	0	0	1	2	3	4	5	6	8	6	9
	Leg	5	1	4	1	2	2	4	4	9	13	13	20	25	34	29	41
	Undefined	0	0	0	—	0	0	0	0	—	1	—	1	0	1	2	—
	Neck	3	0	0	0	1	1	3	4	7	9	16	17	26	34	35	74
	Throat	1	0	—	—	0	1	1	1	2	1	2	2	2	6	5	4
	Axilla	1	—	0	0	0	0	1	1	2	1	4	7	7	8	11	22
	Mediastinum	5	0	1	1	2	3	7	8	16	18	26	28	26	26	18	15
	Thorax	1	0	0	—	—	0	1	1	2	3	2	3	4	4	3	—
	Pelvic Cavity	3	0	0	0	0	1	2	4	6	10	11	16	15	16	17	17
	Abdomen	10	0	0	1	1	3	7	11	20	32	46	65	91	108	99	113
	Groin	1	—	—	0	0	0	1	1	2	3	5	9	5	10	10	11
	Other Localities	3	0	1	1	1	2	3	4	7	9	11	11	23	30	32	39
	Multiple	2	0	0	1	1	2	3	4	5	6	7	8	8	9	6	2
	Undefined	2	0	0	0	1	1	2	4	5	6	11	11	11	15	13	17
	All Sites	1,167	21	27	86	229	543	1,063	1,848	2,760	3,796	5,101	6,514	8,100	9,284	9,008	8,889

the œsophagus, stomach, intestines, rectum, liver, pancreas, prostate and uterus, there is a decline in the proportion of deaths to population as old age advances (generally speaking, after 75–80). It will be observed that the first mentioned sites are generally of an accessible type, in which the occurrence of cancer even in extreme old age could scarcely be overlooked, while the second list is mainly composed of less accessible sites, where such oversight in the case of aged people is more likely to occur. This explanation of these differences between the curves of age mortality applies less obviously to the fall at 85 and upwards in mortality of males from cancer of the tongue in 1911–20, and to the continued increase with age in that from cancer of the bladder in both sexes in 1901–10. It may be noted however, that the small female mortality from lingual cancer does continue to increase up to extreme old age, and that its increase for males is interrupted only so late in life as 85 and over. It is only in 1901–10 that cancer of the bladder shows continued increase with age ; in 1911–20 the death-rates show increase over 1901–10 at all the higher ages, but more at 70–80 than at 80 and over, with the result that the rates for the latter ages are slightly below those for 70–80 (males) or 75–80 (females). It may be that the symptoms associated with vesical cancer draw attention to its existence in sufficient degree to account for the continued increase with age in 1901–10 but that in 1911–20 improvement in the means of diagnosis has led to the discovery of a larger proportion of cases with less urgent symptoms at ages 70–80, but not to the same extent in extreme old age. Cancer of the jaw, a fairly accessible site, shows decline of mortality in extreme old age for both sexes in 1901–10, but only for females, in whom it is much less common, in 1911–20. But a few apparent and doubtful exceptions do not alter the fact that on the whole mortality from cancer of the more accessible sites continues to increase up to extreme old age, while that from the less accessible does not, and that the senile decrease is greatest for the least accessible cancers, such as those of the stomach and intestine. The point is of some importance as suggesting that there may in reality be no interruption of the increase of mortality with age, a good deal of cancer in the very old being overlooked. This would explain the present tendency, often noted in this and other countries, for cancer mortality as returned to increase more in extreme old age than earlier in life. This explanation of these facts is supported by comparison of the age distribution of fatal cancers of all sites in males and females. For males, with their large proportion of inaccessible cancers, Table XLIV shows a large decline of mortality after 80, while for females (Table XLV), in whom cancer is on the whole so much more accessible, little decline is recorded either in 1901–10 or 1911–20.

Comparing Tables XLIV and XLV with their predecessors for 1901–10 from another point of view, we find conspicuous increase of mortality at all ages from cancer of the intestine and of the

prostate, and to a less extent from that of the œsophagus, stomach and rectum ; while the face and uterus show considerable decrease, and the mouth, lip, liver and breast little change. Here again it is the least accessible sites which record the greatest increase, probably owing to improvement of diagnosis, though other explanations may apply in one or two instances. The fall in uterine cancer mortality for instance is probably connected, in part at least, with the decline of the birth-rate, as parturition appears to contribute to its causation (Table XLVI). The absence of increase in liver cancer mortality probably arises from the fact that the site of primary growth tends to be stated for an increasing proportion of persons dying from secondary cancer of the liver.

Table XLVI.—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, 1911–20.

—		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 and Fallopian tube.	Single ..	1,500	47	51	48	68	87	162	229	209	203	158	97	83	44	12	2
	Married and Widowed..	3,956	—	16	72	123	226	396	532	646	609	473	395	254	139	60	15
Uterus.	Single ..	3,636	13	23	54	97	169	307	455	521	576	461	373	275	201	78	33
	Married and Widowed..	36,537	1	24	199	800	2,002	3,641	4,992	5,645	5,356	4,736	3,914	2,755	1,653	593	226
Vagina, Vulva	Single ..	455	3	3	5	13	21	28	32	38	44	61	70	56	42	28	11
	Married and Widowed..	2,341	1	3	11	26	42	86	160	182	262	313	367	347	292	177	72
Breast.	Single ..	8,111	4	11	41	148	387	688	1,040	1,150	1,090	963	845	758	497	303	186
	Married and Widowed..	31,818	—	3	73	452	1,396	2,615	3,858	4,151	4,170	3,847	3,439	3,227	2,428	1,349	810
		DEATH-RATES PER MILLION LIVING.															
Ovary and Fallopian tube	Single ..	58*	3	4	7	17	29	69	123	145	186	188	159	186	170	96	34
	Married and Widowed..	31*	—	4	8	11	20	38	58	83	94	90	96	85	77	70	37
Uterus.	Single ..	152*	1	2	8	24	56	131	245	362	527	548	611	617	778	625	562
	Married and Widowed..	280*	4	6	22	71	177	346	545	725	829	906	950	927	920	689	563
Vagina, Vulva.	Single ..	19*	0	0	1	3	7	12	17	26	40	73	115	126	162	224	187
	Married and Widowed..	17*	4	1	1	2	4	8	17	23	41	60	89	117	162	206	179
Breast	Single ..	343*	0	1	6	36	129	295	559	799	998	1,145	1,384	1,701	1,923	2,427	3,167
	Married and Widowed..	238*	—	1	8	40	124	248	421	533	645	736	835	1,086	1,351	1,567	2,019

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

It is even conceivable that the remarkable fall in mortality from cancer of the face may be due to diminished exposure of the faces of old people working on the land to the rays of the

sun. Cancer of the skin of the face and lip is relatively common in agricultural workers, and it has recently been suggested that this may be an effect of prolonged insolation, corresponding with X-ray cancer. It seems likely that old people, especially women, work less on the land now than they did formerly, and in any case the proportion of land workers to total population has largely declined. These facts may suffice to explain this large decrease in facial cancer, and in this way it may even be suggested that old age pensions may have had some influence tending towards the reduction of cancer mortality.

In the Report for 1913 a table was included showing, for single and married or widowed women respectively, the mortality recorded at various ages in the three years 1911–13 from cancer of the uterus, ovary and breast. This tabulation has now been repeated on the same lines for the ten years 1911–20 in Table XLVI, deaths from vaginal and vulval cancer being added to complete the list of sex organs.

The result shows an almost exact repetition, for the second period dealt with, of the features of the data for 1911–13, the standardized death-rates, per million living at ages 15 and over, comparing as follows :—

	Ovary and Fallopian Tube.		*Uterus.*		*Breast.*	
	Single.	*Married and Widowed.*	*Single.*	*Married and Widowed.*	*Single.*	*Married and Widowed.*
1911–13	60	31	169	293	346	238
1911–20	58	31	152	280	343	238

The feature, discussed in 1913, and again to some extent in 1921, of great excess of mortality amongst the single from cancer of the breast and ovary, and amongst the married and widowed from cancer of the uterus, is seen to apply in almost equal degree to both periods. Except in the case of the uterus, indeed, the constancy of the mortality for both married and unmarried is very remarkable. The fact that the decline in uterine cancer mortality is greater for the single than for the married may perhaps be held to throw doubt upon the suggestion advanced above as to the reason for its occurrence. For if it were due simply to decreased fertility, this should affect married women more than single. Cancer of the uterus arising independently of parturition must be assumed, in view of the mortality returned for the single, to be an important fraction of the whole, and it would seem that the causes, whatever they may be, which are diminishing this fraction may apply also to the remainder consisting of uterine cancer connected with parturition. It is unfortunate that the distinction between cancer of the cervix and of the body of the uterus cannot be taken into account, but in 1912, of 3,878 deaths from uterine cancer, only 548 were attributed to disease of the cervix and 9 to disease of the body. (Report for 1913, page 567.)

It is of some interest to observe that, in the single and the married alike, mortality from cancer of the sex organs appears to be definitely declining. Excluding the vagina and vulva, mortality of the single from these cancers has fallen from 575 per million in 1911–13 to 553 in 1911–20, and of the married and widowed from 562 to 549. This fall partly explains why, in Table XLII, female mortality is seen to have fallen from 99 per 100,000 in 1911–14 to 98 in 1923, whereas the mortality of males rose from 91 to 97. Cancer of the female sex organs is comparatively accessible, and it is in their case especially that surgery may be expected to diminish mortality.

The figures quoted suggest that this is occurring, and they probably also imply (since a rise in other cancer mortality of females has accompanied the fall in that from cancer of the female sex organs), that the mortality from cancer of other and less accessible sites is continuing to rise in the female as it is doing for the less accessible total cancer of the male.

The totals for mortality of the sex organs as a whole, derivable from Table XLVI, seem to indicate that the functioning of these organs as a whole affects the chance of cancer but little, the increased risk implied in the case of the ovary and breast by failure to put the organs to their natural use rather more than counterbalancing the risk entailed by pregnancy in the case of the uterus.

50. Tumours not returned as malignant.—As a result of the revision of the International List in 1920, this title now includes all non-malignant tumours except those of the brain, eye and of the female genital organs. It also includes a slightly larger number of growths of unstated nature, which cannot on the evidence given be classed either as benign or malignant. In order to secure a comprehensive presentation of all deaths attributed to tumours, all of these not returned as due to cancer are assembled in Table XLVII, including mortality of this nature affecting the brain, eye and female genital organs, but it is to be understood that, in accordance with international practice, the latter is excluded from the numbers shown under this head in Tables 4, 17 and 18.

Another exclusion from cause 50 which requires mention is that of adenomata of the prostate, which it has been decided to continue to class to disease of that organ. This is shown by Table XLVII to have been fatal only at ages 45 and upwards. From this and other circumstances it is believed that these deaths are essentially similar to those returned as due to hypertrophy of the organ. As the proportion of other deaths assigned to disease of the prostate occurring at ages over 55 is 98 per cent., and that from adenoma 97, there is not much room for doubt that in this case hypertrophy and adenoma are of the same nature, the term adenoma being applied to certain cases of localized glandular hypertrophy; but as the verbal form of

Table XLVII.—England and Wales, 1923 : 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.
Tumours classed with other disease of organ affected.																
84,2. **Cerebral tumour**	541	524	80	59	130	114	102	97	134	124	63	85	30	34	2	11
Cyst	12	6	2	2	6	1	3	—	—	2	1	1	—	—	—	—
Glioma	100	71	13	11	30	11	16	13	25	17	12	13	4	4	—	2
Fibroid	2	2	—	—	1	—	1	—	—	1	—	—	—	1	—	—
Other benign	3	—	1	—	2	—	—	—	—	—	—	—	—	—	—	—
Nature unstated	424	445	64	46	91	102	82	84	109	104	50	71	26	29	2	9
In 85. **Eye**	3	2	3	1	—	—	—	—	—	—	—	—	—	1	—	—
Glioma	3	1	3	1	—	—	—	—	—	—	—	—	—	—	—	—
Lymphangioma	—	1	—	—	—	—	—	—	—	—	—	—	—	1	—	—
In 135. **Prostate**	146	—	—	—	—	—	—	—	5	—	24	—	70	—	47	—
Adenoma'	136	—	—	—	—	—	—	—	4	—	21	—	68	—	43	—
Fibro-adenoma	7	—	—	—	—	—	—	—	1	—	2	—	2	—	2	—
Fibroma	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—
Myo-adenoma	2	—	—	—	—	—	—	—	—	—	1	—	—	—	1	—
137. **Ovarian tumour**	—	272	—	—	—	28	—	39	—	58	—	46	—	71	—	30
Cyst	—	227	—	—	—	22	—	34	—	43	—	41	—	59	—	28
Cyst-adenoma	—	7	—	—	—	—	—	—	—	4	—	—	—	2	—	1
Papilloma	—	6	—	—	—	1	—	3	—	2	—	—	—	—	—	—
Other benign	—	12	—	—	—	3	—	1	—	1	—	3	—	4	—	—
Nature unstated	—	20	—	—	—	2	—	1	—	8	—	2	—	6	—	1
139. **Uterine tumour**	—	358	—	—	—	17	—	95	—	139	—	48	—	42	—	17
Fibroid	—	271	—	—	—	10	—	80	—	103	—	36	—	29	—	13
Fibro-cystic	—	5	—	—	—	1	—	1	—	1	—	1	—	1	—	—
Fibro-myoma	—	41	—	—	—	3	—	10	—	21	—	2	—	3	—	2
Myoma	—	19	—	—	—	2	—	1	—	8	—	5	—	2	—	1
Polypus	—	12	—	—	—	1	—	2	—	5	—	2	—	2	—	—
Other benign	—	2	—	—	—	—	—	—	—	—	—	—	—	2	—	—
Nature unstated	—	8	—	—	—	—	—	1	—	1	—	2	—	3	—	1
In 141,2. **Other female genital organs** ..	—	5	—	—	—	1	—	—	—	3	—	—	—	1	—	—
Broad ligament, Cyst	—	3	—	—	—	1	—	—	—	1	—	—	—	1	—	—
Dermoid	—	1	—	—	—	—	—	—	—	1	—	—	—	—	—	—
Myxoma	—	1	—	—	—	—	—	—	—	1	—	—	—	—	—	—
50. *Tumours not classed with other disease of organ or part of body affected.*																
Pituitary gland .. Non-malignant	2	8	1	—	—	1	—	—	1	5	—	1	—	—	—	1
Nature unstated	10	9	—	—	5	3	1	2	2	2	2	1	—	1	—	—
Thyroid .. .. Adenoma ..	2	14	—	—	1	1	—	2	—	1	—	3	—	7	1	—
Other benign ..	—	4	—	—	—	—	—	—	—	1	—	1	—	1	—	1
Nature unstated	—	1	—	—	—	—	—	—	—	1	—	—	—	—	—	—
Spinal cord .. Glioma	3	—	—	—	1	—	1	—	1	—	—	—	—	—	—	—
Other benign ..	3	1	—	—	—	—	1	—	1	—	1	—	—	1	—	—
Nature unstated	10	6	—	—	2	2	2	1	1	1	3	1	1	1	1	—
Nose .. .. Polypus	10	1	—	—	2	1	4	—	1	—	1	—	2	—	—	—
Nature unstated	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Larynx .. .. Papilloma ..	9	5	5	4	—	—	—	—	1	—	2	—	1	1	—	—
Other benign ..	—	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—
Nature unstated	7	3	—	1	1	—	—	1	2	—	3	1	1	—	—	—

Table XLVII.—England and Wales, 1923: Tumours not returned as Malignant—*continued.*

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.
50. *Tumours not classed with other disease of organ or part of body affected*—contd.																		
Mediastinum	..	Non-malignant	3	1	—	—	—	—	—	1	1	—	2	—	—	—	—	—
		Nature unstated	66	41	1	—	5	3	4	3	18	7	20	9	17	13	1	6
Lung	.. ..	Nature unstated	24	10	1	—	—	—	3	—	4	4	12	2	3	3	1	1
Parotid	.. ..	Non-malignant	1	1	—	—	—	1	—	—	—	—	1	—	—	—	—	—
		Nature unstated	—	2	—	—	—	—	—	—	—	—	—	—	—	—	—	2
Œsophagus	..	Non-malignant	—	1	—	—	—	1	—	—	—	—	—	—	—	—	—	—
		Nature unstated	6	1	—	—	—	—	—	—	1	—	3	—	1	—	1	1
Intestine	.. ..	Polypus ..	1	3	—	1	—	—	—	—	1	—	—	—	—	1	—	1
		Other benign ..	4	5	1	—	—	1	—	1	1	—	2	—	—	1	—	2
		Nature unstated	12	25	—	—	—	—	—	1	2	2	2	4	5	8	3	10
Liver	.. ..	Cyst	1	3	—	—	—	—	—	—	1	—	—	1	—	1	—	1
		Other benign ..	—	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—
		Nature unstated	7	10	—	1	—	—	—	1	—	2	1	4	3	2	3	—
Pancreas	.. ..	Cyst	3	7	1	—	—	2	—	—	—	1	1	3	1	1	—	—
		Other benign ..	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—
		Nature unstated	2	3	—	—	—	—	—	—	—	—	2	2	—	—	—	1
Kidney	.. ..	Cyst	1	3	—	1	—	—	1	—	—	—	—	1	—	1	—	—
		Papilloma or villous ..	1	2	—	—	—	—	1	—	—	1	—	—	—	1	—	—
		Other benign ..	1	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—
		Nature unstated	4	8	—	—	—	1	—	—	2	—	1	1	1	2	—	4
Bladder	.. ..	Papilloma ..	97	36	1	—	1	—	2	3	11	1	20	7	36	13	26	12
		Polypus ..	3	—	—	—	—	—	—	—	—	—	—	—	1	—	2	—
		Other benign ..	1	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—
		Nature unstated	13	3	—	—	—	—	1	—	—	—	2	—	5	1	5	2
Prostate	.. ..	Non-malignant	2	—	—	—	—	—	—	—	—	—	1	—	—	—	1	—
		Nature unstated	8	—	—	—	—	—	—	—	—	—	1	—	5	—	2	—
Breast	.. ..	Non-malignant	—	3	—	—	—	—	—	—	—	—	—	1	—	2	—	—
		Nature unstated	—	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—
Jaw	.. ..	Non-malignant	—	1	—	—	—	—	—	—	—	—	—	—	—	1	—	—
		Nature unstated	2	1	—	—	—	—	—	—	—	—	1	1	—	—	1	—
Spine	.. ..	Non-malignant	4	3	1	—	2	—	—	—	—	2	1	1	—	—	—	—
		Nature unstated	7	3	—	—	1	—	—	1	3	—	2	2	1	—	—	—
Neck	.. ..	Cyst	2	1	—	—	—	—	—	—	—	—	1	—	1	1	—	—
		Other benign ..	1	3	1	1	—	—	—	—	—	1	—	—	—	1	—	—
Thorax	.. ..	Nature unstated	5	5	—	1	—	—	1	—	1	2	2	—	1	2	—	—
Abdomen	..	Non-malignant	5	2	—	—	—	—	—	1	1	—	3	—	1	—	—	1
		Nature unstated	25	41	—	—	—	1	2	1	3	4	3	7	11	11	6	17
Other sites	..	Non-malignant	22	27	5	3	5	5	1	1	2	2	1	5	4	5	4	6
		Nature unstated	4	10	—	—	—	1	—	1	1	2	—	—	—	3	3	3
Site not stated	..	Non-malignant	2	2	1	—	—	1	—	—	—	—	—	—	—	—	1	1
		Nature unstated	—	2	—	—	—	—	—	1	—	1	—	—	—	—	—	—
		Total (50) ..	397	325	19	15	26	25	25	22	63	43	98	60	104	86	62	74
Total, all tumours			1087	1486	102	75	156	185	127	253	202	367	185	239	204	235	111	132
,, benign tumours			151	827	36	26	51	70	31	154	53	226	75	128	123	150	82	73
,, nature unstated			636	659	66	49	105	115	96	99	149	141	110	111	81	85	29	59

Table XLVIII.—England and Wales, 1923 : 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.	M.	F.
66.	Deaths attributed solely to alcoholism	104	47	—	—	3	2	25	16	44	15	20	8	12	6	—	—
Deaths attributed to other causes in conjunction with alcoholism:—																	
6.	Smallpox	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—
11.	Influenza	5	—	—	—	—	—	—	—	2	—	2	—	1	—	—	—
21.	Erysipelas	1	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—
31.	Tuberculosis of the respiratory system	4	3	—	—	—	1	—	—	3	2	—	—	1	—	—	—
38.	Syphilis	1	2	—	—	—	—	—	—	1	—	—	2	—	—	—	—
43-49.	Cancer	1	1	—	—	—	—	—	1	—	—	—	—	1	—	—	—
57.	Diabetes	2	1	—	—	—	—	—	—	—	1	1	—	1	—	—	—
68.	Chronic poisonings by organic substances	—	1	—	—	—	—	—	—	—	—	—	—	—	1	—	—
71.	Meningitis	1	2	—	—	—	—	—	—	—	1	1	1	—	—	—	—
73.	Other diseases of the spinal cord	2	—	—	—	—	—	1	—	1	—	—	—	—	—	—	—
74.	Cerebral hæmorrhage, apoplexy, etc...	8	8	—	—	1	—	—	—	2	2	4	—	1	4	—	2
76.	General paralysis of the insane	—	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—
78.	Epilepsy	8	2	—	—	1	—	2	—	3	2	2	—	—	—	—	—
82.	Hysteria and neuritis ..	9	10	—	—	1	—	1	4	4	3	—	3	2	—	1	—
84(3).	Disseminated sclerosis ..	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—
	Other diseases of the nervous system	2	1	—	—	—	—	—	—	—	—	1	1	1	—	—	—
90(1-4).	Valvular disease of the heart	3	1	—	—	—	1	—	—	1	—	1	—	1	—	—	—
90(5).	Fatty heart	7	6	—	—	1	—	—	2	3	2	2	—	1	1	—	1
90(6).	Cardiac dilatation	1	1	—	—	—	—	—	1	—	—	1	—	—	—	—	—
90(7).	Other or unspecified myocardial disease	9	4	—	—	—	—	2	1	4	2	2	1	1	—	—	—
90(9).	Undefined heart disease ..	2	—	—	—	—	—	—	—	1	—	—	—	1	—	—	—
91(b).	Arterio-sclerosis	8	4	—	—	—	1	—	—	3	2	3	1	1	—	1	—
94.	Status lymphaticus	1	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—
99.	Bronchitis	8	—	—	—	—	—	2	—	2	—	2	—	2	—	—	—
100.	Broncho-pneumonia.. ..	1	1	—	—	—	—	—	1	1	—	—	—	—	—	—	—
101(a).	Lobar pneumonia	25	4	—	—	1	1	12	—	8	2	3	1	1	—	—	—
102.	Pleurisy	1	1	—	—	—	—	1	—	—	—	—	1	—	—	—	—
	Other diseases of the respiratory system	3	—	—	—	—	—	1	—	2	—	—	—	—	—	—	—
111.	Ulcer of stomach and duodenum	3	—	—	—	—	—	1	—	1	—	1	—	—	—	—	—
112(1).	Inflammation of the stomach	2	2	—	—	1	1	1	—	—	1	—	—	—	—	—	—
112(2).	Other diseases of the stomach	2	2	—	—	—	1	—	—	1	—	1	—	—	—	—	1
113-114.	Diarrhœa and enteritis ..	—	2	—	—	—	—	—	—	—	—	—	1	—	—	—	1
117.	Appendicitis and typhlitis ..	1	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—
118(a).	Hernia	—	1	—	—	—	—	—	—	—	—	—	—	—	1	—	—
122(a).	Cirrhosis of the liver ..	98	54	—	—	2	3	13	7	32	16	33	14	17	8	1	6
124.	Other diseases of the liver ..	—	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—
129.	Chronic nephritis	2	5	—	—	—	—	2	—	—	2	—	1	—	2	—	—
131.	Other diseases of the kidneys and their annexa ..	—	1	—	—	—	—	—	1	—	—	—	—	—	—	—	—
133.	Diseases of the bladder ..	1	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—
143(a).	Abortion	—	1	—	—	—	—	—	1	—	—	—	—	—	—	—	—
153(1).	Cellulitis	1	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—
154.	Other diseases of the skin and its annexa	1	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—
165-174.	Suicide	7	2	—	—	1	—	3	1	1	—	2	1	—	—	—	—
182.	Accidental drowning ..	7	1	—	—	4	—	—	—	1	1	2	—	—	—	—	—
185.	Injury by fall	20	9	—	—	1	1	1	3	7	4	7	—	4	1	—	—
188.	Injury by crushing (vehicles, railways, etc.)	4	—	—	—	—	—	—	—	4	—	—	—	—	—	—	—
	Other violence	8	4	—	—	—	—	1	2	5	—	—	—	2	2	—	—
	Total	376	186	—	—	19	12	71	41	138	58	93	38	52	26	3	11

return is suggestive of new growth, it has been thought best to continue inclusion of these deaths in Table XLVII. It may well be indeed that the other 10 deaths from tumour of the prostate included in cause 50, all of which occurred at ages 45 and upwards, are also of the same nature. Another reason for believing that adenoma is of the same nature as hypertrophy of the prostate is that the number of deaths so returned has suddenly increased to a great extent during the last five years. In 1911 it was 32, and in 1918, 45 only, so that the sudden increase to 115 in 1921, 102 in 1922, and 145 in 1923 cannot well represent anything other than a sudden change in mode of certification.

66. **Alcoholism.**—This heading in the International List of causes of death excludes organic disease attributed to alcoholism, so, in order to obtain as complete information as possible with regard to mortality from overindulgence in alcohol, all the deaths in certification of which any mention of alcohol appears are assembled in Table XLVIII. These deaths make up a total of 562 as against 151 classed to heading 66 as directly due to alcohol. The causes most frequently associated in death certification with mention of alcoholism, with the number of deaths in the case of each, were :—Cirrhosis of the liver, 152 ; violence, 62 ; heart disease, 34 ; lobar pneumonia, 29 ; and hysteria and neuritis, 19.

From alcoholism in both the wider and the narrower sense indicated above the abatement noted in the Reviews for 1921 and 1922 of the much increased mortality of 1920 has been continued in 1923. Table 5 shows how closely mortality from this cause (in the narrower sense) is associated with the price of beer and spirits, and the ability to pay it. From a yearly mortality of about 18 per million before the war, when the beer and spirit duties were comparatively low, the rate rapidly fell to 2 in 1918, after which it rose to 6 in 1920. The subsequent fall to 4 in 1922 and 1923 is presumably associated with lessened spending power in those years.

74. **Cerebral Hæmorrhage.**—This is one of the most important, numerically, of all the causes of death, the number of deaths allocated to it in 1923 being 26,546, corresponding to a death-rate of 691 per million persons living. But the International List title No. 74 does not include all deaths returned as of this nature. To obtain a comprehensive total we must add the deaths from No. 75, paralysis of unstated origin, 59 per million (the essentially similar nature of which may be inferred from the fact that 89 per cent. of them are returned as hemiplegia), and No. 91 (*b*) (1), arterio-sclerosis with record of cerebral vascular lesion. These latter deaths are of similar nature to those listed to cerebral hæmorrhage, but mention having been made on the certificate of arterio-sclerosis, a malady which may be assumed in the bulk of such cases to have been a primary cause of the

cerebral vascular lesion, generally of course hæmorrhage, the general rules of tabulation forbid assignment of the deaths to the secondary cause. By distinguishing such deaths from others assigned to arterio-sclerosis we are enabled to state the full total of deaths from cerebral hæmorrhage (including " apoplexy," cerebral embolism, and cerebral thrombosis) as 33,786, with a death-rate of 880 per million.

The validity of the assumption that practically the whole of these deaths are of essentially similar nature was tested in last year's Review by examining the sex and age distribution of the deaths falling under the various group headings. This proved to be very similar in all cases.

87–90. **Heart Diseases.**—The number of deaths attributed to this cause, 56,886—26,223 of males and 30,663 of females—was as usual larger than for any other item in the list of causes; cancer (48,668 deaths) and tuberculosis (40,788) coming next. The mortality of 1,480 per million persons living was substantially below that of the previous year (1,568), but remains high as compared with the general run of recent years. If comparison is restricted to females, in order to eliminate the effect of selective recruiting upon the male civilian population during the war, we find but two years, except 1922, from 1901, when comparable records commence, onwards, with higher mortalities than that of 1923. These are 1915 (1,620) and 1916 (1,563). And even in the case of females it seems very possible that the special circumstances of the war may have played a part in causing the exceptionally high mortality of 1915 and 1916. The rate for 1923 therefore remains high, though not so high as that for 1922. The yearly variation indeed is small, the comparatively high rate of 1,480 in 1923 comparing with a minimum for the present century, after allowance for the effect of changes of classification made in 1911, of 1,320 in 1910.

In last year's Review a special examination was made of the sex and age incidence of each of the forms of heart disease now distinguished. Examination of the death-rates derivable from Table 17 in this Review does not suggest that the features then established would prove to be materially different in any respect for 1923. Thus the excess of mortality for females at ages under 20 from heart disease in general is repeated, with uniform excess for males at all higher ages, notwithstanding which the crude mortality is seen in Table 5 to be higher (1,528 per million) for females than for males (1,429). The reason is that mortality from heart disease is much concentrated upon the later part of life, during which the number of female lives at risk is greatly in excess, so that their lower death-rates produce more deaths at all ages over 60 (Table 17). The standardized rate, on the other hand, which sums up the general effect of the various sectional rates for different age groups, is naturally higher for males.

In view of the close similarity which examination reveals between the experience of 1923 and that of 1922, as set forth in last year's Review, it seems wiser to await the accumulation of several years' experience before renewing the comparisons between the various forms of heart disease there made.

Table XLIX.—England and Wales, 1923. Proportions of total Deaths from Heart Diseases allocated to each form distinguished.

		Males.	Females.	Both Sexes.
87	Pericarditis	782	385	568
88 (1)	Infective endocarditis	2,109	1,562	1,814
88 (2)	Other acute endocarditis	1,045	933	984
88 (3)	Acute myocarditis	492	541	519
89	Angina pectoris	4,035	1,647	2,748
90 (1)	Aortic valve disease	7,493	3,167	5,161
90 (2)	Mitral valve disease	12,664	18,028	15,556
90 (3)	Aortic and mitral valve disease	1,720	1,314	1,501
90 (4)	Other or unspecified valve disease	20,425	21,665	21,094
90 (5)	Fatty heart	4,691	5,022	4,869
90 (6)	Cardiac dilatation	1,594	1,455	1,519
90 (7)	Other or unspecified myocardial disease	23,254	23,960	23,634
90 (8)	Disordered action of the heart	1,266	1,549	1,419
90 (9)	Heart disease (undefined)	18,430	18,772	18,614
87–90	Heart diseases	100,000	100,000	100,000

In Table XLIX the statement of the proportions of deaths attributed to the various forms of heart disease which was made in the Reviews for 1921 and 1922 is continued for 1923. It shows that 18·6 per cent. of the total deaths are simply ascribed to "heart disease," without any definition of its nature, and that for almost half, 45 per cent., the information afforded is little more explicit, only the fact of valvular or myocardial disease being recorded (record of the nature of myocardial disease other than fatty is rare). It appears from the table that definite information as to the type of disease concerned is afforded only for considerably under 40 per cent. of the deaths, and in studying the mortality recorded for such definite forms of heart disease this fact must always be borne in mind, as the deaths allocated to them are presumably understated in varying degree.

As in 1921 and 1922, fatal pericarditis, infective endocarditis, angina pectoris and aortic valve disease have been much commoner, as compared with other forms of heart disease, in males than in females; while mortality from mitral valve disease is much, and that from fatty heart, somewhat, commoner in females. The continued decline in 1923 of mortality from infective endocarditis from the exceptional level attained in 1921 was pointed out in last year's Review. In 1918 this mortality stood at 13 deaths per million persons living (Table 5), and in 1921 at 32. In 1923 it was 27. Males of military age during the war were chiefly affected by the increase.

91 (b). **Arterio-sclerosis.**—To this cause, first distinguished in our tabulation in 1911, there were allocated in 1923 the deaths of 8,622 males and of 6,397 females, the corresponding mortalities being 470 and 319 per million. It is, accordingly, now one of the chief causes of death as tested by numbers assigned to it.

Tables 4 and 5 cover the whole of the recorded history of this form of mortality, except for 1911 and 1912, in the former of which 2,389 deaths of males and 1,509 of females yielded death-rates of 136 per million for males, 81 for females, and 108 for persons. Since that date each year without exception has recorded an increase both in the number of deaths so returned and in the resultant mortality. This has been due to a constantly increasing tendency to ascribe to this form of disease deaths which would formerly have been assigned to other causes. In order to prevent this transfer from obscuring the records of one of the more important competing causes—cerebral hæmorrhage—it has been necessary to open a separate heading, already referred to, for arterio-sclerosis with record of cerebral vascular lesion, and further subdivisions of this description may be called for in the future. So many forms of local disease, as of the kidneys, brain, heart, etc., may be regarded as manifestations of arterio-sclerosis that the tendency to transfer must be expected to continue, and, in the absence of the special step taken in the case of cerebral hæmorrhage, to give to the mortalities recorded for such local diseases an increasingly favourable appearance, apart from any real changes affecting them.

In last year's Review it was shown that the proportion of total deaths ascribed to arterio-sclerosis had steadily increased from 0·74 per cent in 1911 to 3·38 in 1923. The increase since 1911 in deaths ascribed to this cause amounts to 261 per cent. for males, and 324 for females, but the deaths not only remain in considerable excess for males, but are recorded at an earlier period of life for that sex, the proportion at ages under 70 in 1923 being 40 per cent. for males and 28 for females. Deaths of males are in excess in Table 17 at every age except the highest, 80 and upwards. While the great change in the numbers returned in so short a period as thirteen years must evidently represent in the main merely a change in fashion of certification it may well be that the sex differences noted are of more significance, the greater longevity of females being due in part to better arteries, whether congenitally or as the result of less exposure to the various influences provocative of arterial disease.

99. **Bronchitis.**—The 32,707 deaths allocated to this cause, 8,245 to its acute and 10,623 to its chronic form, this distinction not being drawn for the remaining 13,839, correspond to a death-rate of 852 per million persons living—878 for males and 828 for females.

For both sexes these are the lowest rates recorded in Table 5, the record for the very warm and dry year 1921 coming next for each sex. The year 1923, on the other hand, possessed no such obvious meteorological advantages in regard to mortality from bronchitis, for Table 31 shows that as regards rainfall, atmospheric humidity, and air temperature, it conformed strictly to the average of the fifty years 1861–1910. But it should be stated that, although the meteorological conditions of 1923 as a whole conformed so closely to the average, the distribution of temperature throughout the year probably favoured a low bronchitis mortality. As may be seen from Table 18 these deaths occur chiefly in the winter half of the year, and especially in its first quarter. In the decennium 1911–20, 42 per cent. of all bronchitis deaths were registered in the first quarters of the various years, 21 per cent. in the second, 11 in the third, and 26 in the fourth. The weather conditions of the first quarter are therefore presumably of chief importance for bronchitis, and these were distinctly favourable in 1923, when the mean air temperature for the country was 42·8° F., or 2·9° above the normal. But the other three quarters, which were not so favoured, also returned favourable bronchitis mortality rates. Compared with the quarterly record for 1911–20 the bronchitis death-rate of 1923 shows declines in all four quarters of 39, 11, 22, and 13 per cent. respectively. So while much of the decline may have been due to the warmth of the first quarter, its maintenance throughout a year of average meteorological conditions suggests that it cannot be attributed entirely to favourable weather. It may be hoped, therefore, that independently of the fluctuating effects of varying weather conditions, progress is now being made in the reduction of our high bronchitis mortality. For each sex the rate in 1923 is the lowest from 1911 onwards. Before that date the records are not strictly comparable, but as the effect of the changes in classification then made was a slight but consistent increase in the mortality of each of the years 1911–20, for which the results of tabulation under both the old and the new classifications are available, the rates recorded for 1923 may be compared with those for years prior to 1911 in the knowledge that a just comparison would be slightly more favourable to 1923. When this is done we find that the rates of 1923 are the lowest recorded for either sex during the present century, the highest being those of 1915, 1,557 for males and 1,338 for females. In 1900 these rates were 1,713 and 1,673, or, allowing for slight understatement in comparison with rates based on the current classification, about double those of 1923.

Some share of the decrease of deaths in 1923 is due to a change in classification from 1921 onwards, as a result of the revision of the International List of Causes of Death in 1920. Until then capillary bronchitis had been assigned, by international agreement, to acute bronchitis, but from 1921 onwards this assignment has been changed to broncho-pneumonia. The numerical effect of the

decrease in bronchitis mortality and increase in that of broncho-pneumonia so brought about may be gauged from the fact that in 1916 the 43,412 deaths at all ages from bronchitis included 849, or 2 per cent., from capillary bronchitis, and the 8,367 at ages under five years 525, or 6·27 per cent., from the same cause. On this analogy the bronchitis deaths in 1923 would have been 652 more at all ages, and 318 more at ages under five years, but for the change of assignment. Such a change as this would leave the deaths at all ages in 1923 still the lowest in Table 4, and would also have comparatively little effect upon the great reduction of mortality in early childhood reported for 1923.

The recent reduction in bronchitis mortality generally applies far more to early childhood than to any other period of life. Mortality from this cause is heavy during the first few years of life, light at most ages, and again heavy in old age.

In conformity with these facts we may consider separately deaths at 0–5, 5–45, 45–70, and at ages over 70. At 0–5 the 4,760 deaths in 1923 are by far the fewest from 1911 onwards, comparing with 6,704 in 1922 and 9,098 no longer ago than 1920, the reduction applying to both sexes in more or less equal degree. At 5–45 and 45–70 the deaths of 1923 are also the fewest from 1911 onwards notwithstanding increase of population, but the decline is very much less than in early childhood. This statement applies without qualification to males and to persons of both sexes, but amongst females there were somewhat fewer deaths at 45–70 in 1921 than in 1923. At ages 70 and upwards the 7,241 deaths of males and 9,633 of females in 1923 exceed the corresponding numbers for six of the preceding twelve years, so that in old age mortality has changed but little, whilst in early childhood it has been reduced by almost one-half.

Table 18, with the corresponding table for 1924, shows that the monthly deaths varied from 5,059 in December to 1,020 in August, seasonal distribution thus corresponding closely with temperature.

100,101. **Pneumonia.**—The 33,413 deaths attributed to this disease correspond to a death-rate of 870 per million, this figure being exceeded only by those for heart disease, cancer, and tuberculosis. As in the case of bronchitis the death-rates of 1,051 for males and 705 for females show considerable decrease over those of the previous year. They are indeed the lowest recorded in Table 5, or for any year since the adoption of the present classification of diseases in 1911. In fact, Table 5, and similar tables in earlier reports, show that the annual changes in mortality from both diseases generally occur in the same direction. The proportions of deaths ascribed to broncho-, lobar, and undefined pneumonia were 49·7, 27·5, and 22·8 per cent. respectively, that for broncho-pneumonia, which was exceptionally high in 1922,

being lower than usual in 1923. Table 18, with the corresponding table for 1924, shows that the largest monthly number of deaths was 4,023 in December and the smallest 1,390 in August, the seasonal distribution thus being exactly the same as for bronchitis, and showing the same dependence upon temperature.

111. **Ulcer of the Stomach or Duodenum.**—The deaths allocated to this disease numbered 3,012, 2,106 of males and 906 of females. These numbers represent a great change in the sex incidence of the assignment of this mortality. So recently as 1911, when the figures can first be stated, duodenal ulceration having been first differentiated from other forms of intestinal ulceration in that year, deaths from gastric and duodenal ulcer were assigned equally to both sexes, 1,147 deaths of males and 1,120 of females in that year yielding mortalities of 66 and 60 per million respectively. Table 5 shows the gradual increase which has occurred for males to 115 per million, accompanied by a decrease for females to 45 per million. Excess of increase in the male sex over decrease in the female has resulted in increase of the total mortality so assigned from 63 per million persons living in 1911 to 79 in 1923.

During the same period the deaths of males from ulcer of the stomach have increased from 763, with a death-rate of 44 per million, in 1911, to 1,353, with a death-rate of 74, in 1923; while for females the 1,010 deaths, yielding a death-rate of 54 in 1911 compare with 752, yielding a death-rate of 37, in 1923. The records of fatal duodenal ulcer have moved differently, as they show an increase for both sexes, though this is much greater for males, whose mortality has been in much excess throughout. In 1911 384 deaths of males yielded a mortality of 22 per million, and 110 deaths of females a mortality of 6. In 1923 deaths of males have increased to 753, with a mortality of 41, but those of females only to 154, with a mortality of 8.

Although the record for duodenal ulcer only commences in 1911 that for gastric ulcer extends back to 1901, in which year 475 deaths of males from this cause yielded a mortality of 30, and 1,067 of females one of 63. The shifting in assignment of mortality from females to males has thus been in operation during the whole period covered by our records.

Such a change as this is much more likely to result from a modification of medical opinion than of the actual sex incidence of the disease. When abdominal surgery was less practised than it is now gastric ulcer was much more frequently diagnosed, on the symptoms met with, in females; but as the surgeon has replaced the physician in the treatment of these cases and diagnosis has therefore tended to become a matter of observation rather than of inference it has been found that, contrary to the earlier view regarding gastric ulcer, the male is the chief sufferer from this as well as from duodenal ulceration. As stated in Osler and McCrae's 'Principles and Practice of Medicine' (1920): "In two points

surgical experience has completely changed our medical standpoint, viz.: the incidence of ulcer in the male is greater than in the female, and the duodenal is more common than the gastric ulcer. . . . The surgical statistics have sent our medical figures to the scrap-heap." It will be seen that the national returns of deaths have now followed the lead given by the surgeons in the first, though not as yet in the second, particular. Table 5 shows that the considerable increase in 1923 of mortality from the duodenal variety of the disease followed a long period with little record of movement.

Another aspect of the returns appears to point to another change of medical opinion regarding this disease. When gastric ulcer was diagnosed chiefly in females it was found most in young adults, whereas now that it is chiefly returned for elderly males the ages of its male and female victims are found to be very similar. As may be seen from the following table this change took place during the first 20 years of the present century, i.e. simultaneously with the change in sex attribution.

Table L.—England and Wales.—Mortality of Males and Females at different Ages from Gastric Ulcer in each Quinquennium 1901–05 to 1916–20, and in 1921–23.

DEATH-RATES PER MILLION LIVING.

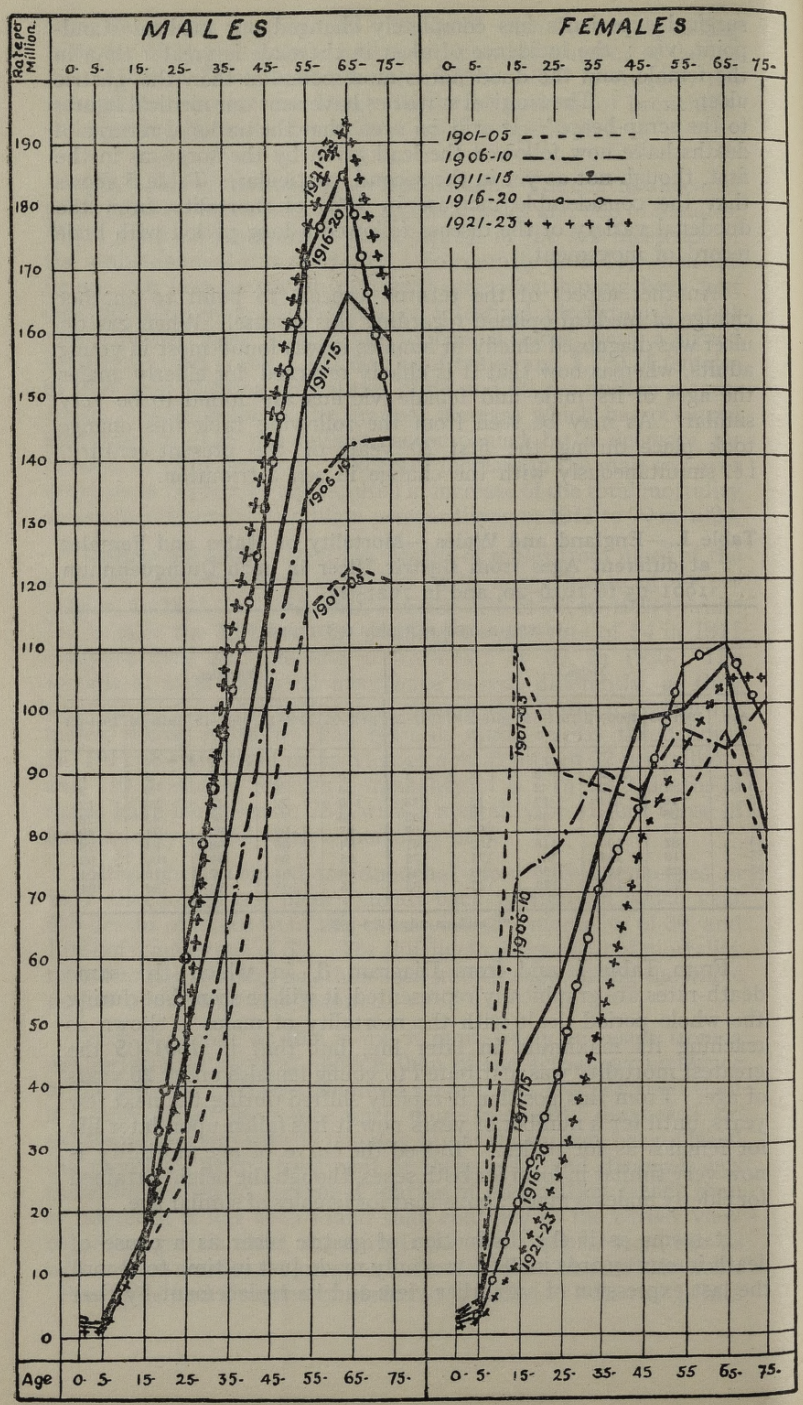
	Males.					Females.				
Age	1901–05	1906–10	1911–15*	1916–20*	1921–23	1901–05	1906–10	1911–15	1916–20	1921–23
0– ..	3	3	3	2	1	3	2	2	2	1
5 –..	2	2	2	1	1	6	5	4	3	2
15– ..	13	14	17	15	15	110	72	43	23	12
25 –..	26	33	48	59	42	90	77	56	43	26
35– ..	50	62	78	97	107	87	90	80	71	49
45– ..	82	100	118	132	141	84	86	98	84	78
55– ..	116	134	151	171	175	85	96	99	106	93
65– ..	122	141	166	186	194	96	93	107	110	104
75– ..	120	143	159	147	165	75	100	80	96	104

* Civilians only, 1915–1920.

From Table L and from Diagram 3, in which the same death-rates are graphically represented, it will be seen that during the whole period dealt with the mortality of males is shown as reaching its maximum in later life, but that in 1901–05 the greatest mortality was attributed to young females under 25 years of age. From this position it rapidly shifted during the next few years, until for a number of years now it has fallen upon later life for females as for males. Indeed the curve of age mortality is now very similar in form for both sexes, though the height attained for elderly males is much above that for females of similar age.

It seems as if the distinction of gastric ulcer as a cause of death in our records in 1901 was only made just in time to record the last expression of an earlier view and its replacement by that

Diagram 3.—Sex and Age Mortality from Gastric Ulcer in England and Wales, 1901–05, 1906–10, 1911–15, 1916–20 and 1921–23.



now prevailing. The double peak of the curve, representing female mortality during 1901–05, in Diagram 3 is characteristic of change from a type of age distribution with one maximum to that with another. In 1916 and 1917 movement of the maximum mortality of females from tuberculosis from its earlier position at 35–45 to its more recent one at 20–25 (Table XL) was accompanied by a similarly double-peaked curve, both old and new types of distribution leaving their impress upon the records during the transition period. (Annual Report for 1917, Table XLI.)

It can hardly be doubted that these changes represent modifications of medical opinion rather than of the facts of pathology. It should be remembered, however, that gastric ulcer, at the beginning of the century, was considered to be most common in chlorotic girls, so the causes, whatever they may be, of the great diminution in chlorosis of late years may have accounted for some portion at least of the change set forth in Table L.

143–150. **The Puerperal State.**—The number of deaths assigned to pregnancy or childbirth was 2,892 (Tables 4, 17 and LIII), corresponding to a rate of 3·81 per 1,000 live births. Inclusion of the 764 deaths in Table LVIII raises the proportion to 4·82 deaths stated to have been caused by or associated with pregnancy and childbirth for every 1,000 births.

For comparison of the deaths definitely assigned to pregnancy and childbirth with those so classed for years prior to 1911 deduction is required of 163 deaths from puerperal nephritis and albuminuria (Table LIII), which before that date were not distinguished as puerperal. The resultant rate of 3·60 deaths per 1,000 live births is compared in Table LI with similar rates for the preceding thirty-two years. The comparison can be extended back to 1876, but the records suggest that the figures from about 1890 onwards are more inclusive than those relating to earlier dates. It will be seen that the decline in 1921 from

Table LI.—Mortality of Women in Childbirth per Thousand Children Born Alive, distinguishing Septic and Other Causes, 1891–1923. (Classification as in use before 1911.)

Year.	Deaths per 1,000 Births.			Year.	Deaths per 1,000 Births.			Year.	Deaths per 1,000 Births.		
	Sepsis.	Other Causes.	Total Child-birth.		Sepsis.	Other Causes.	Total Child-birth.		Sepsis.	Other Causes.	Total Child-birth.
1891–95	2·60	2·89	5·49	1911	1·52	2·15	3·67	1918	1·35	2·20	3·55
1896–1900	2·12	2·57	4·69	1912	1·47	2·31	3·78	1919	1·76	2·36	4·12
1901–05	1·95	2·32	4·27	1913	1·34	2·37	3·71	1920	1·87	2·25	4·12
1906–10	1·56	2·18	3·74	1914	1·63	2·32	3·95	1921	1·46	2·25	3·71
1911–15	1·50	2·31	3·81	1915	1·56	2·38	3·94	1922	1·46	2·12	3·58
1916–20	1·59	2·29	3·88	1916	1·47	2·40	3·87	1923	1·38	2·22	3·60
1910	1·42	2·14	3·56	1917	1·39	2·27	3·66				

the high rates of the two preceding years has since been fully maintained, the puerperal mortality of 1923 being below the average for any of the six preceding quinquennia.

The distribution throughout the country of the mortality ascribed to childbirth is outlined in Table LII.

As regards the distinction between town and country, a general tendency may be noted for mortality from sepsis to increase, and for that from other causes to decrease, with urbanization.

The total rate for Wales greatly exceeds that for any part of England in each class of area, mainly because of high mortality in Wales from non-septic causes, the Welsh excess over England and Wales being 42 per cent. from all causes, but only 22 from sepsis, though the sepsis rates also are at their maximum in Wales in each class of area. Total mortality declines in the rural districts and smaller towns from the North to the South of England, and if London and the Southern county boroughs are taken jointly as representing the great towns of the South, the same rule applies to all three classes of area.

The non-septic rate is much the lowest in London, as in each of the four preceding years ; and, in fact, the general distribution is very similar for each of the years 1919–23, for which alone the table has been prepared. In the last three of these, for instance, mortality from non-septic causes has been highest in the rural districts of Wales.

Table LII.—Distribution throughout England and Wales of Mortality of Women in Childbirth, per Thousand Children Born Alive, distinguishing Septic and Other Causes, 1923.

——	North.	Mid-lands.	South.	Wales.	England and Wales.
Sepsis.					
London	—	—	1·37	—	1·37
County Boroughs ..	1·40	1·42	1·20	1·94	1·41
Other Urban Districts..	1·34	1·27	0·88	1·49	1·25
Rural Districts	1·30	1·04	1·02	1·51	1·15
All Areas	1·36	1·26	1·18	1·59	1·30

Table LII.—Distribution throughout England and Wales of Mortality of Women in Childbirth, per Thousand Children Born Alive, distinguishing Septic and Other Causes, 1923.—*contd.*

——	North.	Mid-lands.	South.	Wales.	England and Wales.
Other Causes.					
London	—	—	1·52	—	1·52
County Boroughs ..	2·85	2·11	2·68	2·67	2·60
Other Urban Districts..	2·96	2·33	1·95	3·92	2·67
Rural Districts	2·63	2·58	2·24	4·54	2·72
All Areas	2·86	2·32	1·89	3·83	2·51
All Causes.					
London	—	—	2·89	—	2·89
County Boroughs ..	4·25	3·53	3·88	4·61	4·01
Other Urban Districts..	4·30	3·60	2·83	5·41	3·92
Rural Districts	3·93	3·62	3·26	6·05	3·87
All Areas	4·22	3·58	3·07	5·42	3·81

Table LIII gives particulars of deaths ascribed to the puerperal state.

Table LIII.—England and Wales, 1923 : Deaths of Women Classed to Pregnancy and Childbearing.

Cause of Death.	All Ages.	Ages.						
		15–	20–	25–	30–	35–	40–	45 and upwards.
143. (*a*) Abortion	100	2	7	17	38	22	14	—
(*b*) Ectopic gestation.. ..	97	1	10	18	30	26	9	3
(*c*) Other accidents of pregnancy:—								
Accidental hæmorrhage..	11	—	—	—	4	4	3	—
Ante-partum hæmorrhage	77	2	4	7	16	21	24	3
Uncontrollable vomiting	44	—	8	10	7	12	6	1
Carneous mole	1	—	—	—	1	—	—	—
Hydatid mole	4	1	—	—	1	—	1	1
Vesicular mole	2	—	2	—	—	—	—	—

Table LIII.—England and Wales, 1923 : Deaths of Women Classed to Pregnancy and Childbearing—*continued.*

Cause of Death.	All Ages.	Ages. 15–	20–	25–	30–	35–	40–	45 and upwards.
Incarcerated gravid uterus	1	—	—	1	—	—	—	—
Retroversion of gravid uterus	1	—	—	—	—	—	1	—
Hydramnios	2	—	1	1	—	—	—	—
Pregnancy apart from above complications :—								
With secondary causes as follows :—								
Chorea	7	—	3	2	1	1	—	—
Mastitis	1	—	—	—	—	—	1	—
Without stated secondary cause	4	—	2	—	1	1	—	—
144. Puerperal hæmorrhage :—								
Placenta prævia	179	1	9	19	57	54	34	5
Adherent, retained, placenta	55	1	6	13	17	10	7	1
Accidental hæmorrhage ..	20	—	1	2	3	8	6	—
Post-partum hæmorrhage..	175	5	15	42	43	42	26	2
145. Other accidents or abnormalities of childbirth :—								
Contracted pelvis	32	—	3	12	3	6	8	—
Craniotomy	3	—	—	2	—	—	1	—
Cæsarean section (reason unstated)*	33	—	6	5	7	11	4	—
Version	1	—	—	—	—	1	—	—
Instrumental delivery ..	9	—	2	—	2	1	4	—
Rupture of uterus ..	29	—	2	5	9	8	5	—
Laceration of uterus ..	1	—	—	—	1	—	—	—
Laceration of perineum ..	2	—	—	—	—	—	2	—
Hæmatoma of vulva ..	1	—	—	—	—	—	—	1
Malpresentation	23	2	1	3	7	7	3	—
Inversion of uterus ..	10	—	3	4	1	2	—	—
Inertia of uterus	5	—	—	—	—	2	3	—
Diseased placenta	1	—	—	—	—	—	1	—
Locked twins	1	—	—	1	—	—	—	—
Abnormal fœtus	7	—	1	—	1	5	—	—
Precipitate labour.. ..	3	—	2	1	—	—	—	—
Difficult and prolonged labour	69	—	9	18	12	20	5	5
Childbirth apart from above complications :—								
With secondary causes as follows :—								
Anæmia	11	—	1	4	4	2	—	—
Meningitis	1	—	1	—	—	—	—	—
Acute myocarditis ..	1	—	—	1	—	—	—	—
Dilatation of heart ..	2	—	—	—	1	1	—	—
Bronchitis	3	—	1	—	—	2	—	—
Broncho-pneumonia	8	—	3	—	—	3	2	—
Pneumonia (type not stated)	13	—	3	3	2	4	1	—
Pleurisy	2	—	—	—	1	—	1	—
Gastritis	2	—	2	—	—	—	—	—
Other diseases of the stomach	2	—	—	1	1	—	—	—

*In addition Cæsarean section was stated to have been performed in the case of 52 deaths included under other headings in this table—Accidental hæmorrhage of pregnancy 4, vomiting of pregnancy 1, placenta prævia 1, placental separation 1, contracted pelvis 8, rupture of uterus 1, inertia of uterus 1, hydrocephalic child 1, difficult and prolonged labour 18, puerperal albuminuria and convulsions 8, puerperal sepsis 8,—and of 23 other deaths classed to causes specified in Table LVIII.

Table LIII.—England and Wales, 1923 : Deaths of Women Classed to Pregnancy and Childbearing—*continued.*

Cause of Death.	All Ages.	Ages. 15–	20–	25–	30–	35–	40–	45 and upwards.
Diarrhœa and enteritis	3	—	2	1	—	—	—	—
Jaundice	1	—	—	—	—	1	—	—
Intestinal obstruction	1	—	—	—	1	—	—	—
Paralysis of intestine	1	—	—	—	—	1	—	—
Suppression of urine	1	—	—	—	1	—	—	—
Cystitis	2	—	—	—	1	—	1	—
Retention of urine ..	1	—	—	1	—	—	—	—
Without stated secondary cause	19	—	2	1	6	5	5	—
146. Puerperal sepsis :—								
streptococcal infection ..	2	—	—	—	1	1	—	—
bacillus coli infection ..	3	—	1	—	—	—	1	1
septic phlegmasia alba dolens, phlebitis, thrombosis ..	19	—	1	3	2	7	5	1
septic pneumonia	11	—	1	4	3	—	3	—
septic endocarditis ..	1	—	—	—	1	—	—	—
septicæmia	547	16	98	132	146	97	52	6
sepsis	110	5	24	28	21	22	9	1
septic intoxication, sapræmia	48	1	5	13	13	12	4	—
pelvic peritonitis	15	—	4	4	5	1	1	—
peritonitis	56	3	10	15	15	9	3	1
salpingitis	6	—	2	2	2	—	—	—
metritis	3	—	—	—	1	1	1	—
endometritis	11	—	2	3	3	1	2	—
parametritis	6	—	1	1	2	2	—	—
perimetritis	3	—	—	1	2	—	—	—
erysipelas	6	1	1	—	1	2	1	—
pyæmia	20	—	—	5	7	6	2	—
pelvic cellulitis	21	—	1	8	4	6	2	—
cellulitis	1	—	—	—	1	—	—	—
pelvic abscess	5	—	—	2	1	1	1	—
other specified septic conditions	4	—	1	—	1	1	—	1
" puerperal fever " ..	87	1	15	17	24	17	12	1
147. (1) Phlegmasia alba dolens and phlebitis, not returned as septic	61	—	7	13	16	15	10	—
(2) Puerperal embolism and sudden death	216	—	28	42	69	47	25	5
148. Puerperal albuminuria and convulsions :—								
Puerperal nephritis, albuminuria, &c. ..	163	3	25	33	38	47	13	4
Puerperal convulsions ..	355	18	77	95	79	59	25	2
149. Puerperal insanity	23	—	2	5	8	6	1	1
150. Puerperal diseases of the breast	4	—	—	—	1	2	1	—
Total	2,892	63	418	621	747	645	352	46

From Table 18 it may be seen that mortality from puerperal sepsis was highest during the first quarter of 1923, when 286 deaths occurred, as against 262 and 204 in the two succeeding quarters, and 254 in the last quarter of 1922. (234 in the last quarter of 1923).

A winter maximum and summer minimum of mortality from this cause prove on examination to have been very constant features of the thirteen years 1911–23, for which the seasonal distribution of mortality from any cause in England and Wales can be stated. During these years births and deaths from puerperal sepsis were distributed as follows over the four quarters of the year (for 1911–20 deaths are stated by quarter of registration, and for 1921–23 by that of occurrence) :—

	Births.	*Deaths from Puerperal sepsis.*	*Deaths per million births.*
First Quarter ..	2,663,468	4,298	1,614
Second Quarter..	2,683,157	3,662	1,365
Third Quarter ..	2,625,916	3,155	1,201
Fourth Quarter..	2,510,750	3,963	1,578
Total	10,483,291	15,078	1,438

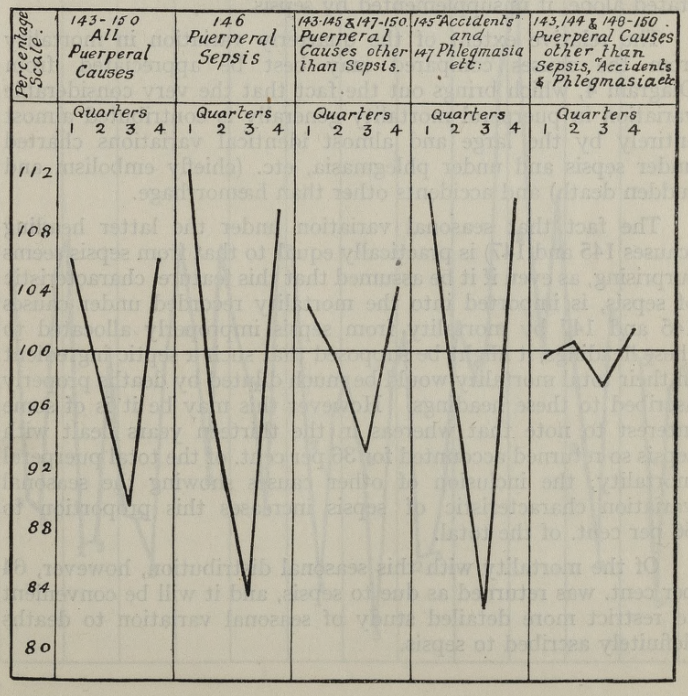
On comparison with the records for deaths from puerperal causes generally it proves that these also show similar seasonal variation, though less pronounced. Even when deaths from puerperal sepsis are deducted the remaining "non-septic" deaths show a distinct, if slight, tendency to a winter maximum and summer minimum. Examination of the seasonal mortality of the various causes grouped under this heading (Nos. 143–145 and 147–150) shows that this feature is clearly marked for two only—No. 145, "other accidents of childbirth" (i.e., other than puerperal hæmorrhage) and No. 147, puerperal phlegmasia alba dolens, embolism, or sudden death. The quarterly mortality from these two causes jointly during 1911–23 proves to have varied almost exactly as did that from puerperal sepsis, and when deaths ascribed to them as well as those ascribed to puerperal sepsis are deducted from the total puerperal mortality the remainder is found to exhibit very little seasonal variation indeed, though the rate for the third or summer quarter (July to September) is still the lowest. The facts may be stated in tabular form as follows :—

Table LIV.—England and Wales.—Seasonal Variation of Maternal Mortality in Childbirth, 1911–1923.

Maternal Deaths per Million Births from the following Causes.

	143–150 All Puerperal Causes.	146 Puerperal Sepsis.	143–145 and 147–150 Puerperal Causes other than Sepsis.	145 Accidents of Childbirth other than Hæmorrhage ; and 147 Puerperal phlegmasia alba dolens, Embolism or sudden death.	Puerperal Causes, other than 146, 145 and 147.
1st quarter	4,277	1,614	2,663	898	1,765
2nd ,, ...	3,936	1,365	2,571	782	1,789
3rd ,, ...	3,609	1,201	2,408	672	1,736
4th ,, ...	4,274	1,578	2,696	895	1,801
Whole year	4,022	1,438	2,584	811	1,773
Quarterly Rates per cent. of Yearly.					
1st quarter	106·3	112·2	103·1	110·7	99·6
2nd ,, ...	97·9	94·9	99·5	96·4	100·9
3rd ,, ...	89·7	83·5	93·2	82·9	97·9
4th ,, ...	106·3	109·7	104·3	110·4	101·6

Diagram 4. Seasonal Variation of Maternal Mortality in Childbirth, England and Wales, 1911–23.
Average Quarterly per cent. of Average Yearly Mortality.



The lower section of the table shows clearly that during the thirteen years dealt with seasonal variation has been practically the same for causes 145 and 147 as for puerperal sepsis, and that when these three groups of causes are deducted the remaining puerperal mortality is little affected by season.

The inference is almost inevitable that causes 145 and 147, as well as 146, include a large element of sepsis. Of course this is a familiar fact as regards puerperal phlegmasia alba dolens, or "white leg," itself. But none of the deaths classed to 147 are returned as of septic type. Where the thrombosis is stated to be of septic origin the death is classed to cause 146, as in the case of the 19 deaths from phelgmasia alba dolens so dealt with in Table LIII. It is only where no mention of sepsis is made on the certificate that the death is allocated to cause 147, as with the 61 phlegmasia deaths so dealt with in Table LIII. And the same table shows that the form of return of the great majority of the deaths classed to cause 147—216 out of 277 being classed to puerperal embolism and sudden death in 1923—gives no hint whatever of sepsis. This table shows also that the same statement applies to the deaths, 304 in 1923, classed to cause 145. Of these 304, 101 were ascribed to contracted pelvis or difficult labour, and 74 to childbirth, with or without some secondary cause of a non-puerperal nature. We may well suppose that a large proportion of these deaths would not have occurred from the cause stated alone, if unsupplemented by sepsis.

The relative extent of the quarterly variation in mortality from the causes compared may best be appreciated from Diagram 4, which brings out the fact that the very considerable variation in puerperal mortality generally is contributed almost entirely by the large and almost identical variations charted under sepsis and under phlegmasia, etc. (chiefly embolism and sudden death) and accidents other than hæmorrhage.

The fact that seasonal variation under the latter heading (causes 145 and 147) is practically equal to that from sepsis seems surprising, as even if it be assumed that this feature, characteristic of sepsis, is imported into the mortality recorded under causes 145 and 147 by mortality from sepsis improperly allocated to these headings, it might be supposed that such a septic ingredient in their total mortality would be much diluted by deaths properly ascribed to these headings. However this may be it is of some interest to note that whereas in the thirteen years dealt with sepsis so returned accounted for 36 per cent. of the total puerperal mortality, the inclusion of other causes showing the seasonal variation characteristic of sepsis increases this proportion to 56 per cent. of the total.

Of the mortality with this seasonal distribution, however, 64 per cent. was returned as due to sepsis, and it will be convenient to restrict more detailed study of seasonal variation to deaths definitely ascribed to sepsis.

The course of this mortality may be traced quarter by quarter during the thirteen years dealt with in Diagram 5. It will be seen that the annual fluctuation from a winter maximum to a summer minimum is a very constant one. In three only out of these thirteen years was the rate for the third or summer quarter (July–September) not the lowest for the year, and in two of these three, 1912 and 1918, it was very little above that of the second quarter (April–June) which is seen from Diagram 5 to furnish the next lowest mortality. The third instance is provided by 1919, but its case is exceptional, as the commencement of a remarkable outburst of mortality, which reached its maximum in the winter of 1919–20, evidently affected the third quarter of 1919.

Diagram 5. England and Wales.

Quarterly Mortality from Puerperal Sepsis, 1911–1923.

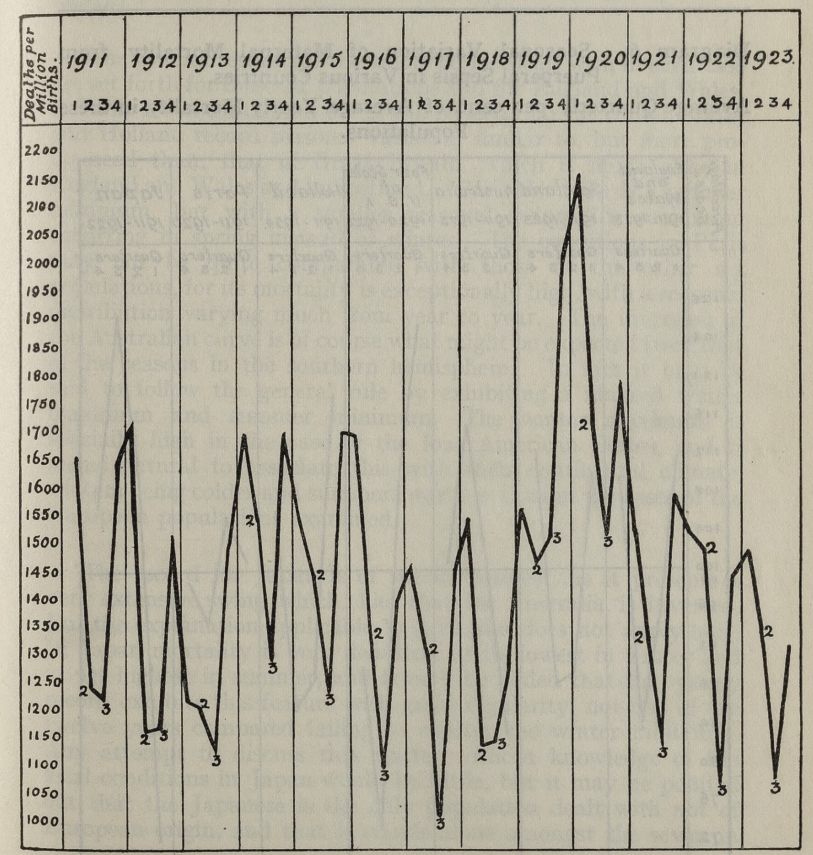


Table LV.—Seasonal Variation of Maternal Mortality from Puerperal Sepsis in various Countries.

Maternal Deaths per Million Births in each Population.

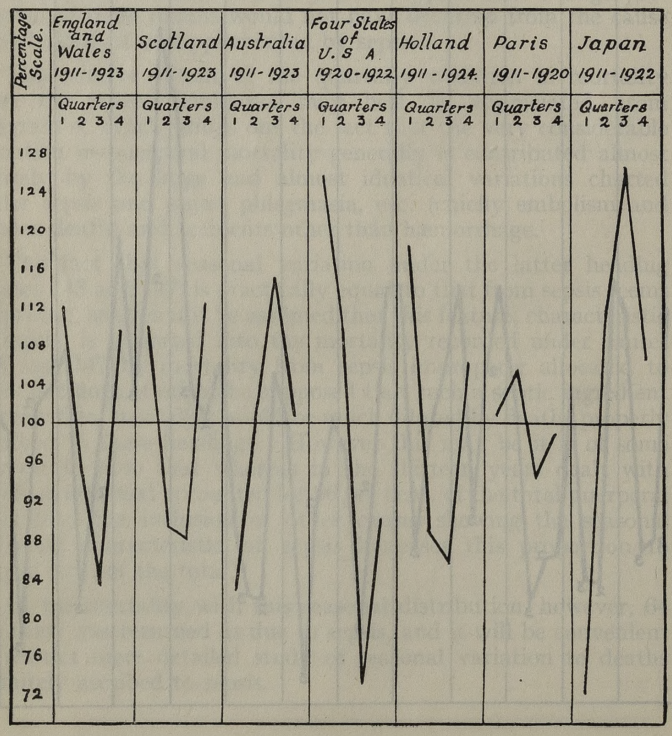
	England and Wales, 1911—23.	Scotland, 1911–23.	Australia, 1911–23.	Four States of U.S.A., 1920–22.	Holland, 1911–24.	Paris, 1911–20.	Japan, 1911–22.
1st quarter..	1,614	1,852	1,372	3,368	924	3,941	983
2nd ,, ..	1,365	1,505	1,656	2,946	693	4,114	1,523
3rd ,, ..	1,201	1,482	1,902	1,960	669	3,689	1,727
4th ,, ..	1,578	1,898	1,666	2,420	829	3,865	1,457
Whole year	1,438	1,682	1,653	2,677	780	3,905	1,364

Quarterly Rates per cent. of Yearly.

1st quarter..	112·2	110·1	83·0	125·8	118·5	100·9	72·1
2nd ,, ..	94·9	89·5	100·2	110·0	88·9	105·4	111·7
3rd ,, ..	83·5	88·1	115·1	73·2	85·8	94·5	126·6
4th ,, ..	109·7	112·8	100·8	90·4	106·3	99·0	106·8

Diagram 6. Seasonal Variation of Maternal Mortality from Puerperal Sepsis in Various Countries.

Average Quarterly per cent. of Average Yearly Mortality in these Populations.



In order to see how far this peculiarity of the English returns is shared by other populations the quarterly records of mortality (in proportion to births) from puerperal sepsis have been examined for Scotland, Holland, Paris, Japan, Australia, and the following four American States, with a yearly total of births not far short of that for England and Wales—New York, Pennsylvania, Michigan and Ohio. Speaking generally, the rule of winter prevalence obtains, but, as might be expected, the variations are much more regular for the larger populations examined, England and Wales, the four American States, and Japan, than for the smaller, Scotland, Paris and Holland. The movement in Australia is also regular notwithstanding its comparatively small population, but in conformity with the reversal of the seasons the highest mortality generally occurs in the third quarter, and the lowest in the first or fourth. In seven out of the thirteen years 1911–23 the highest rate occurred in the third quarter, and in twelve years the lowest was in the first or fourth (8 years the first and 4 the fourth).

The general results for the whole period dealt with in each case are set forth for these six populations and for England and Wales, in Table LV and Diagram 6. It will be seen that the United States and Holland record seasonal variation similar to, but more pronounced than, that of Great Britain, which is much alike in England and Wales and in Scotland. Paris also records a summer minimum, but with a smaller seasonal swing, the maximum occurring in spring instead of winter. The conditions in Paris may not be quite comparable with those of the other six populations, for its mortality is exceptionally high, with a seasonal distribution varying much from year to year. The inversion of the Australian curve is of course what might be expected from that of the seasons in the southern hemisphere. In fact it may be said to follow the general rule by exhibiting a marked winter maximum and summer minimum. The winter maximum is specially high in the case of the four American States, and it seems natural to associate this with their continental climate, winters being colder and summers warmer than in the cases of the European populations examined.

The record for Japan is of special interest, as it presents a very extensive swing which, like that for Australia, is inverted. But the explanation applicable to Australia does not apply here. In Japan mortality is very definitely at its lowest in winter and at its highest in summer, and it may be added that the yearly record exhibits this feature with great regularity, not one of the twelve years compared failing to exhibit the winter minimum. Any attempt to discuss this matter without knowledge of the local conditions in Japan would be futile, but it may be pointed out that the Japanese is the only population dealt with not of European origin, and that it stands alone amongst the seven in

the table in recording a very great seasonal variation in the birth-rate. The births returned for the four quarters of the twelve years dealt with compare as follows :—

1	3,477
2	1,933
3	2,181
4	2,409
	10,000

If this aggregation of births in the winter quarter represents the facts and not merely some peculiarity in their record it is very conceivable that it may have behind it some form of social or religious observance, non-compliance with which by those classes of the community most exposed to the risks of septic infection might well lead to the national mortality from these being at its maximum in the summer when the births would, in that case, occur chiefly in these classes. The mortality returned is not high (as compared with the other countries in the table) at any time of year, and it is decidedly low in the winter quarter.

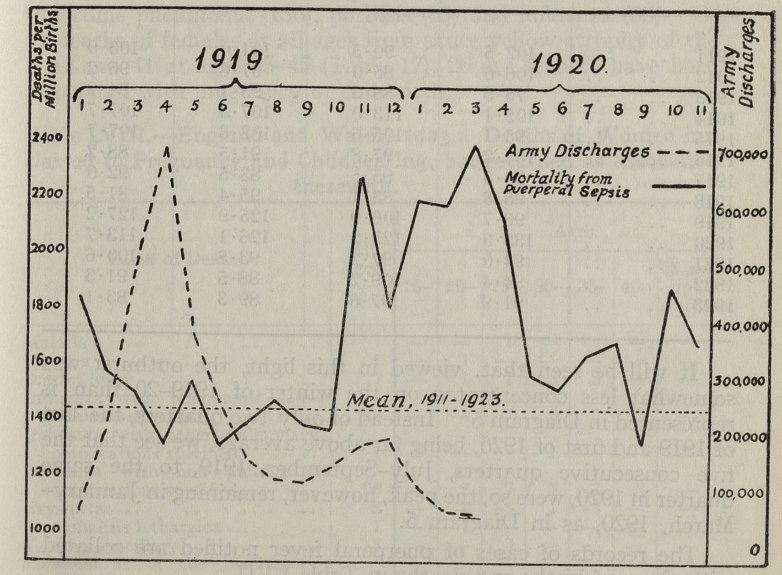
The extreme sharpness of the rise of mortality in England and Wales from puerperal sepsis in 1919–20 is only to be recognized when the rates are tabulated for portions of the year, as in Diagram 7, for the yearly form of statement employed in Table LI makes the excess much less striking by distributing it over the whole of the two years concerned. Consequently this outburst of mortality, following shortly after the re-establishment of peace, is now for the first time measured in such a form as to suggest its special interest.

When the circumstances of the time are considered, it has to be noted that this exceptional mortality followed shortly after the return to their homes of large numbers of men discharged from military service. In Diagram 7 the sequence of these events is represented in detail. The monthly discharges from the army on demobilisation are derived from the official publication "Statistics of the Military Effort of the British Empire." For the monthly record of mortality from puerperal sepsis per million births a monthly record of births was required, but no such record is kept in this country. The material available was the quarterly record of births in England and Wales, and the weekly record for London and 104 great towns in England and Wales, the latter containing about 50 per cent. of the total population. The monthly rates charted in Diagram 7 have been obtained by distributing the quarterly totals of births over the various months in the proportions applying to this sample of 50 per cent. As births are generally registered about one month after occurrence

(the law requiring registration within six weeks) and deaths are set forth in Table 18 by month of occurrence, the deaths for each month are related to the births registered in the succeeding month.

The monthly sepsis mortalities estimated in this way are plotted in Diagram 7 in association with a curve (broken line) representing monthly reductions of army strength. These reached a maximum in April, 1919, or about nine months earlier than the maximum of puerperal sepsis mortality. It will be seen that if this curve were made to represent, not the discharges of the months specified, but those of nine months earlier in each case (those charted under, e.g., January, 1920, being the discharges not of that month, but of April, 1919, etc.), which might be done by moving it nine months to the right in the diagram, so that its apex would come in January, 1920, instead of April, 1919, the rises in the two curves would be very closely synchronized.

Diagram 7. England and Wales, 1919 and 1920. Army Discharges and Maternal Mortality from Puerperal Sepsis in each Month.



It has been suggested that the explanation of this correspondence between demobilisation and puerperal sepsis resulting from conceptions of the same date may be provided by the liability of the sites of gonorrhœal infection to secondary streptococcal invasion. Such matters, however, cannot be discussed here, where it must serve to point out the facts, leaving the question of their significance to better qualified critics.

Before leaving this subject, however, it may be well to point out that the simple plotting of quarterly or of monthly rates, as in Diagrams 5 and 7, necessarily tends to exaggerate the concentration and sharpness of an outburst culminating in the first quarter of the year, when this form of mortality is normally at its maximum in any case. The peak in the first quarter of 1920 in Diagram 5 is made up of two components—the peak which would be there in a normal year, and the additional mortality of that period. This impression may be corrected by stating the mortality of each quarter of the years 1911–23 in proportion to the average mortality of the same quarter during the whole period, as in the following table.

Table LVI.—England and Wales, 1911–23.—Maternal Mortality from Puerperal Sepsis (per million Births) in each Quarter per cent. of the average Mortality for the same Quarter during the whole Period.

	January–March.	April–June.	July–September.	October–December.
1911	102·5	90·5	101·0	103·9
1912	106·6	85·0	97·6	96·2
1913	75·5	88·3	93·1	94·9
1914	105·1	113·0	107·3	107·7
1915	95·1	105·6	102·6	107·7
1916	105·2	97·8	91·5	88·2
1917	90·5	95·5	83·5	92·0
1918	95·8	83·1	95·4	81·5
1919	96·7	106·9	125·9	127·2
1920	133·3	125·2	126·1	113·7
1921	94·0	97·2	93·8	100·6
1922	94·4	109·2	88·5	91·3
1923	91·9	97·6	89·3	83·1

It will be seen that, viewed in this light, the outburst was somewhat less concentrated on the winter of 1919–20 than is represented in Diagram 5. Instead of only two quarters, the last of 1919 and first of 1920, being far above average, we see that the five consecutive quarters, July–September, 1919, to the same quarter in 1920, were so, the peak, however, remaining in January–March, 1920, as in Diagram 5.

The records of cases of puerperal fever notified are collated with those of births and deaths in Table LVII.

The proportion to births of cases notified has increased from 26 in 1921, and 27 in 1922, to 29 per 10,000, while the corresponding proportion to births of deaths from puerperal sepsis has fallen from 1·46 per 1,000 in 1921 and 1922, to 1·38 in 1923 (Table LI).

This is no doubt a movement in the right direction, since Table LVII and its predecessors for 1919–1922 give clear indication that notification of this form of disease is very incomplete. Thus

in each of these years the urban excess of notifications in proportion to births in Table LVII has been much greater than that of deaths in Table LII with a corresponding excess for the rural districts of deaths in proportion to cases. Notification is evidently much less incomplete in the towns than in the rural districts.

Table LVII.—Puerperal Fever, 1923 : Prevalence and Fatality.

	Cases notified per 10,000 Births.					Deaths per 1,000 Cases notified.				
	North.	Mid-lands.	South.	Wales.	England and Wales.	North.	Mid-lands.	South.	Wales.	England and Wales.
London	—	—	39	—	39	—	—	353	—	353
County Boroughs ..	39	45	17	48	39	360	316	698	444	363
Other Urban Districts ..	20	24	18	23	21	685	535	494	647	591
Rural Districts	18	19	18	18	18	712	555	554	862	624
All Areas	30	30	28	26	29	459	423	425	616	450

Table LVIII shows the causes of deaths stated to have been complicated by the existence of the puerperal state. The cause of death most largely represented in this table is heart disease (204 deaths, 119 of these being from valvular disease). Next to this come pneumonia (136), phthisis (69) and influenza (53). Of 51 deaths of females at all ages from acute yellow atrophy of the liver and 41 at ages 15–45 (Table 17), 26 are seen to have been associated with pregnancy or childbirth.

Table LVIII.—England and Wales, 1923 : Deaths of Women not classed to Pregnancy and Childbearing, but returned as associated therewith.

Cause of Death.	All Ages.	Ages.						
		15–	20–	25–	30–	35–	40–	45 and upwards.
Malaria	1	—	—	1	—	—	—	—
Measles	1	—	1	—	—	—	—	—
Scarlet fever	7	—	1	1	3	2	—	—
Influenza with pneumonic complications specified	26	—	4	7	6	7	2	—
Influenza with other pulmonary complications specified ..	1	—	—	—	1	—	—	—
Influenza with non-pulmonary complications specified ..	26	—	2	7	7	7	3	—
Erysipelas	2	—	1	—	1	—	—	—
Encephalitis lethargica	1	—	1	—	—	—	—	—
Tetanus (bacillary)	3	—	—	3	—	—	—	—
Tuberculosis of the respiratory system	69	3	13	17	18	8	10	—
Tuberculosis of the nervous system	3	1	1	—	—	1	—	—
Tuberculosis of the intestines and peritoneum	2	—	—	2	—	—	—	—
Tuberculosis of the vertebral column	1	—	—	1	—	—	—	—
Tuberculosis of other organs ..	1	—	1	—	—	—	—	—
Disseminated tuberculosis ..	5	1	3	—	—	—	1	—
Syphilis	3	—	1	—	1	1	—	—
Gonococcal infection	1	—	—	1	—	—	—	—
Cancer	11	—	—	1	2	4	3	1
Rheumatic fever	12	—	1	2	4	3	2	—
Diabetes	5	—	—	1	1	3	—	—

Table LVIII.—England and Wales, 1923 : Deaths of Women not classed to Pregnancy and Childbearing, but returned as associated therewith—*continued*.

Cause of Death.	All Ages.	Ages.						
		15–	20–	25–	30–	35–	40–	45 and upwards.
Pernicious anæmia	15	—	2	4	4	4	1	—
Exophthalmic goitre	7	—	—	2	—	2	3	—
Disease of the adrenals	1	1	—	—	—	—	—	—
Leukæmia	3	—	—	—	1	1	1	—
Purpura	2	—	—	—	1	1	—	—
Hæmophilia	1	—	—	—	1	—	—	—
Other general diseases	2	—	—	1	1	—	—	—
Meningitis	1	—	—	—	1	—	—	—
Disease of the spinal cord	1	—	—	—	—	1	—	—
Cerebral hæmorrhage, apoplexy	1	—	—	—	—	—	1	—
Epilepsy	13	1	2	3	1	4	2	—
Other diseases of the nervous system	3	—	1	—	2	—	—	—
Disease of the ears	1	—	1	—	—	—	—	—
Infective endocarditis	5	—	3	—	1	1	—	—
Other acute endocarditis	3	—	—	—	2	—	1	—
Acute myocarditis	11	1	—	2	3	2	3	—
Mitral valve disease (alone)	64	1	5	26	11	13	5	3
Other or unspecified valvular disease	55	—	5	14	18	12	5	1
Fatty heart	16	—	1	1	4	9	—	1
Other or unspecified myocardial disease	17	—	1	4	3	6	2	1
Other or undefined heart disease	33	—	6	6	6	10	5	—
Other diseases of the circulatory system	6	—	1	—	2	2	1	—
Bronchitis	20	1	1	5	4	8	1	—
Broncho-pneumonia	24	—	2	6	4	10	1	1
Lobar pneumonia	66	2	6	19	11	13	13	2
Pneumonia, (type not stated)	46	1	4	4	18	13	6	—
Pleurisy	4	—	1	—	1	2	—	—
Pulmonary congestion	1	—	—	—	—	1	—	—
Asthma	5	—	—	—	3	1	—	1
Oral sepsis	1	—	—	—	—	1	—	—
Tonsillitis	3	—	2	—	1	—	—	—
Ulcer of the stomach	11	—	1	3	2	4	1	—
Inflammation of the stomach	3	—	—	—	1	—	1	1
Diarrhœa and enteritis	6	1	—	2	1	2	—	—
Intestinal parasites	2	—	—	1	1	—	—	—
Appendicitis and typhlitis	10	—	1	4	1	3	1	—
Hernia	2	—	—	—	—	2	—	—
Intestinal obstruction	21	—	1	4	3	9	3	1
Other diseases of the intestines	2	—	—	—	1	—	1	—
Acute yellow atrophy of liver	26	—	5	7	6	5	3	—
Biliary calculi	2	—	—	—	—	2	—	—
Other diseases of the digestive system	2	—	—	—	2	—	—	—
Chronic nephritis	29	—	—	4	7	13	3	2
Calculi of the urinary passages	1	—	—	—	—	1	—	—
Cystitis	2	—	—	1	—	—	1	—
Cysts and other tumours of the ovary not returned as malignant	2	—	—	—	—	2	—	—
Tubo-ovarian abscess	1	—	—	1	—	—	—	—
Tumours of the uterus not returned as malignant	18	—	1	1	2	7	4	3
Boils	1	—	—	—	1	—	—	—
Congenital malformation of heart	1	—	1	—	—	—	—	—
Violence	10	—	3	2	2	3	—	—
Total	764	14	87	171	178	206	90	18

155 (1). **Infective Osteomyelitis and Periostitis.**—This cause of death, first distinguished in 1921, accounts for two-thirds of the total mortality attributed to diseases of the bones. Of the 424 deaths in 1923, 321, or 76 per cent., were at ages under twenty, and 301, or 71 per cent., were of males. Table 4 shows that this excess for males is fairly constant from year to year. Although neither observation has any claim to novelty, the sex and age distribution noted being familiar to clinicians, it may be of some interest to note the extent to which their teaching on these points is confirmed by the experience of the profession generally.

Anæsthetics.—The usual annual statement is continued of deaths during or connected with the administration of an anæsthetic. This is obtained by secondary tabulation of these deaths, since the primary tabulation, represented by Table 17, classifies all such deaths to the disease or injury on account of which the anæsthetic was administered.

These deaths are classified in Table LIX according to sex and age and to the nature of anæsthetic, while the list appended to the table shows the condition for which the anæsthetic was administered and the sex and age of the patient, but not the kind of anæsthetic. Causes of death in this list 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 LIX.—England and Wales, 1923 : Deaths under or connected with the Administration of various Anæsthetics.

Anæsthetic.		Age.														
		All Ages.	0–	1–	5–	10–	15–	20–	25–	30–	35–	40–	45–	50–	55–	65–
Chloroform	M.	52	5	7	1	5	3	1	2	3	3	2	4	3	8	5
	F.	*27*	–	*5*	*2*	*1*	*1*	–	*3*	–	*4*	*2*	*4*	–	*5*	–
Chloroform, delayed poisoning	M.	2	–	–	1	–	–	–	–	–	–	1	–	–	–	–
	F.	*6*	–	*1*	*1*	–	–	*2*	*1*	–	–	*1*	–	–	–	–
Chloroform and ethanesal	F.	*1*	–	–	–	–	–	–	–	–	–	*1*	–	–	–	–
Chloroform and ether	M.	72	4	9	1	6	5	8	4	2	3	3	5	5	8	9
	F.	*53*	*1*	*6*	*2*	*1*	*1*	*3*	*3*	*4*	*3*	*6*	*6*	*7*	*5*	*5*
Chloroform and ether; delayed poisoning	M.	1	–	–	–	–	–	–	–	–	–	1	–	–	–	–
Chloroform, ethyl chloride and ether	F.	*1*	–	–	–	–	–	–	–	*1*	–	–	–	–	–	–
Chloroform, ether and stovaine	M.	2	–	–	–	–	–	–	–	–	–	–	–	–	1	1
Ether	M.	72	5	8	7	9	2	6	2	1	7	7	6	3	6	3
	F.	*50*	–	*2*	*8*	*4*	*2*	*2*	*1*	*4*	*6*	*3*	*4*	*5*	*7*	*2*
Ether, delayed poisoning	M.	1	1	–	–	–	–	–	–	–	–	–	–	–	–	–
Ether and stovaine	M.	2	–	–	–	–	–	–	–	–	–	–	–	–	1	1
	F.	*1*	–	–	–	–	–	–	–	–	–	–	–	*1*	–	–
Ether and novocaine	F.	*1*	–	–	–	–	–	–	–	–	–	–	–	–	–	*1*

Table LIX.—England and Wales, 1923: Deaths under or connected with the Administration of various Anæsthetics—*contd.*

Anæsthetic.		Age.														
		All Ages.	0–	1–	5–	10–	15–	20–	25–	30–	35–	40–	45–	50–	55–	65–
Ether and ethyl chloride	M.	1	–	–	–	–	–	–	–	–	–	–	–	–	1	–
A.C.E. mixture	M.	10	1	–	1	–	–	–	–	1	–	1	1	1	3	1
	F.	*6*	–	–	–	–	–	–	*3*	*1*	–	*1*	–	–	*1*	–
A.C.E. mixture and stovaine ..	M.	1	–	–	–	–	–	–	–	–	–	–	–	–	–	1
A.C.E. mixture and ethyl chloride	F.	*1*	*1*	–	–	–	–	–	–	–	–	–	–	–	–	–
Ethanesal	M.	1	–	–	–	–	1	–	–	–	–	–	–	–	–	–
Ethyl chloride	M.	3	–	1	1	1	–	–	–	–	–	–	–	–	–	–
	F.	*2*	–	*1*	–	–	*1*	–	–	–	–	–	–	–	–	–
Ethyl chloride, delayed poisoning	F.	*1*	–	*1*	–	–	–	–	–	–	–	–	–	–	–	–
Nitrous oxide	M.	8	–	–	–	–	–	2	1	–	–	1	1	1	1	1
	F.	*6*	–	–	*1*	*1*	*1*	–	–	–	–	*1*	–	–	*1*	*1*
Hyoscine	F.	*1*	–	–	–	–	–	–	–	–	*1*	–	–	–	–	–
Stovaine	M.	6	–	–	–	–	–	–	–	–	–	1	–	1	2	2
Novocaine	F.	*1*	–	–	–	–	–	–	–	–	–	–	–	–	*1*	–
Kind not stated*	M.	28	1	3	2	2	1	–	–	1	3	5	3	1	3	3
	F.	*26*	*3*	*1*	*1*	*1*	*1*	–	–	*2*	*1*	*2*	*2*	*3*	*3*	*6*
Total	M.	262	17	28	14	23	12	17	9	8	16	22	20	15	34	27
	F.	*184*	*5*	*17*	*15*	*8*	*7*	*7*	*11*	*12*	*15*	*17*	*16*	*16*	*23*	*15*

* The deaths under anæsthetics of kind not stated include those of 1 male from acetonæmia, of 2 males and 4 females from acidosis, and of 1 male from delayed poisoning.

Conditions for which Anæsthetics were administered in the above cases.

5. Ruptured malarial spleen (37). 10. Diphtheria, tracheotomy (*4*); laryngeal obstruction (2, *2*). 11. Hæmorrhagic influenza, hæmatoma of left kidney (17). 16. Dysentery, peritonitis (39). 21. Erysipelas, abscesses (39). 24. Meningococcal meningitis, lumbar puncture (*22*). 29. Tetanus (*29*). 30. Actinomycosis, right iliac fossa (13). 33. Tuberculous—peritonitis (17, *32*); mesentery (*29*). 34. Lumbar abscess (45). 35. Tuberculous—knee, ankle and tarsus (23); elbow (*1*); both hips and left shoulder (*8*). 36. Tuberculous—glands (49); glands of neck (19, 5, *9*, *13*); adenitis (*2*). 41. Poisoned hand (50). 43–49. Cancer of—lip and glands of neck (60); tongue (51, 53, 57, 59, 78); tongue and glands of neck (45); mouth (47); floor of mouth (61); jaw (42, 58, 62, 65, *55*); tonsil (58, 65); œsophagus (*55*); post pharyngeal connective tissue (51); left fauces and tonsil (51); stomach (43, 53, 55, 64); liver (25); colon (41, 53); hepatic flexure (66); intestine—undescribed (66, *53*, *57*, *75*); rectum (54, 57, 72, *67*); body of uterus (*44*); chorion epithelioma,

dilation and curetting of uterus (*40*); uterus (*49*, *51*, *58*, *60*, *61*); uterus and bladder (*60*); vagina (*49*); breast (*37*, *48*, *54*, *64*); right breast (*65*); penis (59); skin of hand (65); abdominal wall (*70*); skin of leg (*51*); larynx (62, 65, *50*); lung (53); pancreas (*48*); kidney (56); bladder (38, 67); prostate (52); brain (5, 14, *41*); glands of neck (47, 59, *48*); spine (*27*); thyroid (60). 50. Cyst of—spine (32); pituitary body (4); lymphangioma (*2*); polypus of nose (42, 53); adenoma of thyroid (*66*); tumour of bladder (70). 60. Exophthalmic goitre (23, *24*, *33*); goitre (*37*); enlarged thyroid (*42*); inflammation of thyroid (*56*). 65. Lymphadenoma, operation on neck glands (*6*). 70. Cerebral abscess (*12*). 71. Meningitis (25) 75. Paralysis of face (*9*). 84. Brain tumour (37, 46). 85. Squint eye (*7*); dacryocystitis (*62*). 86. Mastoid disease (6, 9, 14, *1*); otitis media (2, *0*). 88. Infective endocarditis (*22*). 90. Endocarditis and general œdema (45). 91. Aneurysm of carotid artery, ligature of innominate artery (*67*). 93. Hæmorrhoids (32, 42). 94. Operation on lymphatic gland (11). 97. Deviation of nasal septum (11, *25*); empyema of antrum (11); suppuration of frontal sinuses (*77*). 102. Empyema (1, 2, 3, 4, 8, 12, 13, 18, 19, 20, 21, 29, 39, 39, 43, *19*). 108. Extraction of teeth (29, 42, 44, 45, *24*, *44*, *50*); dental operation (*16*); decayed tooth, gingivitis (59); abscess of parotid (23, *42*, *54*). 109. Enlarged tonsils (3, 10, 13, 20, *3*, *3*, *4*, *9*, *42*); enlarged tonsils and adenoids (2, 2, 5, 7, 9, 10, 11, *2*, *6*, *6*, *11*, *12*); enlarged tonsils and glands of neck (0); cellulitis of throat (27); septic tonsils (35); Ludwig's angina (15, 23). 111. Gastric ulcer (31, 33, 38, 40, 44, 56); duodenal ulcer (25, 38, 41, 42, 43, 69). 112. Perforation of stomach (22); dilated stomach (*61*). 113 and 114. Colitis, laparotomy (*19*). 117. Appendicitis (1, 3, 5, 5, 9, 9, 9, 11, 11, 13, 15, 16, 20, 21, 21, 24, 28, 41, 42, 44, 45, 64, *4*, *5*, *6*, *9*, *12*, *12*, *13*, *16*, *23*, *28*, *40*, *47*, *48*, *49*, *57*). 118. Hernia 0, 0,0, 0, 0, 1, 1, 1, 2, 3, 21, 38, 39, 58, 58, 59, 62, 63, 68, 87, *0*, *1*, *1*, *3*, *57*, *59*, *59*, *61*, *61*, *62*, *66*, *73*, *78*); strangulated hernia, drainage of abdominal abscess (*48*); intestinal obstruction (12, 21, 34, 38, 45, 49, 63, 64, 72, 72, *36*, *48*, *50*, *51*, *56*, *66*, *81*); intussusception (0, 0, 1, 48, *1*); strangulated intestine (*58*); volvulus (*46*). 119. Fistula (32, *55*); fistula in ano (44, 46); gangrene of Meckel's diverticulum (42); ischio-rectal abscess (34). 123. Gallstones (45, 56, *53*, *73*). 124. Cholecystitis (45, 68, *65*); empyema of gall bladder (*62*); gangrene of gall bladder (67); abscess of liver (41, *9*). 125. Pancreatitis (37, *49*). 126. Peritonitis (69, 62, *8*, *9*, *10*). 129. Decapsulation of kidneys (53). 131. Pyonephrosis, removal of kidney (0); abscesses in kidneys (69). 132. Calculus of bladder (8, 10, 72). 133. Cystitis (39); atony of bladder (1); examination for disease of bladder (58). 134. Stricture of urethra (40, 52, 60, 67). 135. Enlarged prostate (53, 64, 67, 69, 70, 76). 136. Circumcision (0, 0, 0, 0, 0, 1, 3, 4). 137. Cyst of ovary (*32*, *66*); tumour of ovary (*58*). 138. Pyosalpinx (*28*); salpingitis and peritonitis (*40*); pelvic peritonitis (*20*). 139. Fibroid tumour of uterus (*36*, *39*, *43*, *46*, *49*, *50*, *50*, *52*); fibroid tumour and salpingitis

(*43*) ; tumour of uterus (*46*). **140.** Curetting of womb for persistent hæmorrhage (*35*) ; chronic hæmorrhage, removal of uterus (*53*). **141.** Prolapse of uterus (*50*) ; metritis (*50*) ; operation to dilate os uteri (*34*). **143.** Abortion (*29, 30*) ; incomplete abortion, operation to clear uterus (*35*) ; removal of decomposed monstrosity (*25*) ; removal of dead fœtus (*33*) ; emptying uterus (*44*) ; ectopic gestation (*33, 33*). **144.** Retained placenta (*19, 28, 30*). **145.** Childbirth (*21, 35, 36*) ; prolonged labour (*28*) ; contracted pelvis (*31*) ; Cæsarean section (*28*) ; instrumental delivery (*31, 41*) ; malpresentation (*37, 40*) ; obstructed labour (*36*) ; difficult labour (*41*). **146.** Puerperal septicæmia (*33*) ; septic incomplete abortion (*38*) ; removal of placenta (*19*) ; washing out uterus (*38*). **148.** Eclampsia (*36*). **152.** Carbuncle (55). **153.** Cellulitis of leg (63) ; abscess of thigh (12, 23) ; in cheek (*18*) ; multiple abscesses (10). **155.** Osteomyelitis of left femur (3) ; septic bone of thigh (13) ; epiphysitis (18) ; draining abscess of thigh and thigh bone (*9*) ; malunited fracture of radius (11). **158.** Talipes equino-varus-cavus (12); talipes equino-varus (3). **159.** Cleft palate (0, 1, 1, *0, 4, 4*) ; hydrocephalus (*0*) ; congenital talipes equino-varus (0). **165–203.** Various forms of violence (0, 4, 10, 13, 15, 16, 21, 24, 27, 27, 30, 39, 44, 44, 45, 46, 47, 49, 54, 57, 60, 70, 72, *0, 39, 43, 48*). **205.** Ascites, paracentesis (4); operation—lumbar puncture (*44*) ; for suspected sub-phrenic abscess (16).

For the fourth time in succession the total number of deaths in Table LIX (446) is considerably higher than in any of the earlier years since 1910, for which alone the complete figures are available. For the years before 1911 the record is contained in the tables of accidental deaths, but certain causes—strangulated hernia and cancer—were at this time preferred in tabulation to the anæsthetic used.

But while this mortality has never, since 1920, returned to the level maintained before that date, Table LX shows that the present year records a further increase on an even greater scale. Taking the number of deaths in 1911 as 100 for purposes of comparison, the subsequent records may be summarised as follows :—

1912–1919	95–111
1920–1922	122–133
1923	162

The increase of 33 per cent. in deaths over 1922 is very unequally shared by different parts of the country. In localising these deaths it is of more interest to tabulate the area of occurrence than that of residence, which forms our usual basis of locality. The deaths in question have therefore been tabulated by the registration county of occurrence. The most important increases

are those for London (which returns 28 per cent. of these deaths as against 12 per cent. of deaths in general)—43 per cent. increase ; the West Riding 104 per cent., and Warwickshire (including Birmingham) 86 per cent. The increase seems to be largely concentrated upon the great towns, as these three counties returned 202 out of the 446 deaths in 1923. Whether, or to what extent, it is due to increased resort to the towns for treatment, or to increased administration of anæsthetics, there is, unfortunately, no means of deciding. Although the London deaths increased from 89 to 127 those in Surrey remained unchanged at 16, and those in Essex at 7, those in Middlesex showed a slight fall from 11 to 10, while in Kent the number fell from 12 to 8.

The increase in number of these deaths chiefly affects the male sex and the later periods of life. For males the deaths at all ages have increased since the commencement of the record in 1911 by 79 per cent., and for females by 42 per cent. Every succeeding year has exceeded the record of 1911 for males, but this was not exceeded for females till 1920, since when it has been exceeded each year. As pointed out in the Review for 1922, deaths in that year were fewer than in 1911 at all ages under 25, and more at all later ages. In 1923, however, the 1911 standard is exceeded at every age, except 30–35, by amounts varying from 20 per cent. at 20–25 to 133 per cent. at 65 and upwards, the increase being greatest at 40–55 for males and at 55–65 for females.

The deaths, as might be expected, occur mainly in the voluntary hospitals, where most anæsthetics are administered. During 1923 only 26 per cent. occurred elsewhere (private houses, poor law institutions, lunatic asylums, and nursing homes).

If we inquire what changes of practice in regard to the choice of anæsthetic have accompanied this great increase in the mortality reported we find that the proportion of deaths associated with the administration of chloroform has fallen steadily since 1911, while that associated with ether, whether given alone or in association with chloroform, has risen. Of the total deaths about four-fifths (79 per cent. in 1923) are associated with the administration of chloroform, chloroform and ether, ether without chloroform, or A.C.E. mixture. The balance in 1923 was made up as follows :—unstated 12 per cent., nitrous oxide 3 per cent., and miscellaneous, including the newer anæsthetics, stovaine, novocaine, ethanesal, and so on, 6 per cent. The four first mentioned, accordingly, account for 90 per cent. of the total mortality from stated anæsthetics. Dealing only with these four we find that in 1911 chloroform given alone claimed 69 per cent. of their total mortality, a proportion which has gradually fallen to 25 per cent. in 1923. During the same time the ratio for ether has risen from 9 to 35 and from chloroform and ether from 16 to 36 per cent. Deaths under A.C.E. mixture have remained few throughout, 5 per cent.

in 1911 and 4 in 1923. In 1911 over half the total deaths connected with anæsthetics were returned as associated with chloroform, but in 1923 only about 20 per cent. Sex and age appear to have less influence in this matter than might have been expected. The proportion of chloroform deaths has throughout the 13 years been little greater for children under five than for older victims, although chloroform is so popular as an anæsthetic for young children. On the whole there are many more deaths of male than of female infants returned, probably in part because males require operation under anæsthetics more frequently, as for phimosis, hernia, etc., but the proportion of the fatalities in early childhood ascribed to chloroform is much the same for both sexes. This statement applies also to the proportions for the sexes at all ages, the proportion of chloroform to other anæsthetic deaths having been much the same for both sexes throughout the whole period of the fall in this proportion. Some interruption of this decline occurred for males but not for females in 1915 and 1916, presumably as a result of greater use of chloroform in military hospitals.

Unfortunately there are no records available to show the proportion of fatalities to administrations for the various anæsthetics, but the decline in the share of chloroform is probably greater than decreased use would account for, since even in 1911 ether was much more used. It would seem as if for some reason the risk of chloroform has decreased and that of ether increased during 1911–23. During this period the "open method" of ether administration has grown much in favour.

All inferences as to increase of the mortality associated with anæsthesia, however, must be qualified by two considerations, first that we are unable from the returns to distinguish deaths due to an anæsthetic from those due to some other cause during its administration, and second that the whole of the increase in these deaths may be apparent rather than real. Certification of the cause of death is happily becoming steadily more detailed and elaborate, and it may well be that mention of the administration of an anæsthetic is made on many certificates now where it would have been omitted even a few years ago. In fact, it is conceivable that the decreased proportion of chloroform cases may be explained in this way. If it be assumed that most deaths from anæsthetics are caused by chloroform and that a few years ago the anæsthetic was returned only where it had caused death, but is now often mentioned when death was really due to some other cause, it is evident that the proportion of chloroform deaths must have fallen as the deaths not caused by any anæsthetic have increased. This explanation would account for the large increase in deaths under ether (from 19 in 1911 to 123 in 1923) while the decrease in deaths under chloroform from 142 in 1911 to 87 in 1923 may represent decreased risk or frequency of its administration. Almost all deaths under anæsthesia, however,

are investigated by inquest, and it would be dangerous to assume that increase of elaboration in inquest verdicts corresponds with that in ordinary medical certificates. Changes in the practice of framing these verdicts however, probably occur, as suggested by the great decrease of mortality attributed to overlying, so the possibility of the explanation suggested above of the changes in mortality under anæsthetics cannot be excluded.

The yearly records of deaths under anæsthetics from 1911 onwards are summarised in the following table.

Table LX.—England and Wales. Deaths under or connected with the Administration of Anæsthetics.

	Number of Deaths.						Anæsthetic stated, per cent. of total.	Chloroform (alone), per cent. of total stated.	Chloroform in combination, per cent. of total stated.	Chloroform not used, per cent. of total stated.
	Total.	Nature of Anæsthetic.		Chloroform.		No Chloroform.				
		Stated.	Unstated.	Alone.	In combination.					
1911..	276	214	62	142	46	26	78	66	22	12
1912..	283	181	102	117	31	33	64	65	17	18
1913..	296	185	111	110	33	42	63	59	18	23
1914..	300	193	107	110	36	47	64	57	19	24
1915..	261	171	90	102	39	30	66	60	23	17
1916..	306	200	106	112	52	36	65	56	26	18
1917..	280	196	84	106	59	31	70	54	30	16
1918..	279	188	91	81	61	46	67	43	32	25
1919..	302	232	70	96	74	62	77	41	32	27
1920..	366	282	84	96	95	91	77	34	34	32
1921..	337	264	73	82	87	95	78	31	33	36
1922..	336	260	76	63	93	104	77	24	36	40
1923..	446	392	54	87	148	157	88	22	38	40

Status Lymphaticus and Anæsthetics.—In addition to the 158 deaths from status lymphaticus primarily classified to diseases of the thymus in Table 17, there were 42 deaths under anæsthetics in the case of which record was made of the presence of this condition, but which were referred to the condition occasioning the administration of the anæsthetic.

The sex and age distribution of these was as follows :—

	All Ages.	0–	5–	10–	15–	20–	25–	35–
Males	29	12	4	7	1	3	–	2
Females	13	3	5	3	–	1	–	1

165–174. **Suicide.**—Deaths from this cause numbered 3,949, 2,887 of males and 1,062 of females. These numbers include only the deaths definitely attributed to suicide. In addition to

them, 1,113 others, 824 of males and 289 of females, were returned under " open verdicts," signifying that it could not be determined whether the violence which caused death resulted from accident, homicide or suicide (*see* Part I, page 421). These deaths have all been classed as due to accident, but it is to be remembered that a number of them must have been due to suicide. The great bulk of them, 626 of males and 184 of females, are cases of drowning returned by coroners' juries as " found drowned."

Mortality from suicide fell suddenly during the war for both sexes, but particularly for males, to a rate below any recorded for many years past. The lowest point was reached for each sex in 1917, but increase since then in the rates for both sexes restored the pre-war level in 1921, with further slight increase in 1922. Owing, however, to the increasing age of the population, the crude rates compared in Table 5 are now subject to considerable decrease on standardization, suicide mortality being at a maximum in later life for both sexes, at 55–75 for males and 45–65 for females (Report for 1918, Table LXXI). These deaths were at a maximum in June and July (Table 18), this mortality usually reaching its highest point in the second quarter of the year and its lowest in the fourth (Report for 1918).

204, 205. **Ill-defined Causes of Death.**—This heading in the International List of Causes of Death, to which 1,713 deaths have been allocated, excludes the ill-defined diseases of infancy and old age, 160 (1) and 164 (2). In the more comprehensive sense resulting from their inclusion, the deaths from ill-defined causes in 1923 numbered 29,947, or 6·73 per cent. of the total, as against 51,041, or 9·67 per cent., in 1911, all the items included contributing to the decline of 41 per cent. in these deaths as a whole in the following degrees—No. 204. Sudden death, 29 per cent., No. 205. Cause unstated or ill-defined, 60, No. 160 (1). Congenital debility and sclerema, 67, and No. 164 (2). Senile decay, other than dementia, 29 per cent. Deaths of males from causes in this group other than " old age " considerably exceed those of females, but an excess for females of 41 per cent. from old age results in a total excess for the whole group for females of 23 per cent.

Inquiries sent to medical practitioners and coroners requesting further information as to indefinitely certified deaths amounted to 6,394, and to these 5,836 replies were received, with results to classification, some of the most important of which are set out in Table LXI

Reference to this table will demonstrate the ambiguity of certain forms of return which to the minds of the practitioners using them may be perfectly definite, because always used by them in a certain definite sense. This meaning, however, may be quite different from that associated with the same term in the minds of other practitioners.

Table LXI.—England and Wales, 1923: 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	28	27	Diphtheria 5, Laryngismus stridulus 4, Laryngitis 10.
Membranous laryngitis	4	4	Diphtheria 2.
Pyæmia, septicæmia, etc.	201	148	Syphilis 3, Diseases of the ear, etc., 4, Diseases of the teeth and gums 12, Appendicitis 4, Puerperal sepsis 11. Diseases of the skin 34.
Tuberculosis ..	214	212	Tuberculosis of respiratory system 141, Tuberculosis of intestines and peritoneum 13, Tuberculosis of vertebral column 5, Disseminated tuberculosis 36, Other forms of tubercle 14.
Cancer (part or organ not stated) ..	985	924	Part or organ stated in 919 cases.
Tumour, growth, etc.	622	483	Syphilis 3, Cancer 363.
Rheumatism ..	56	56	Rheumatic fever 22, Chronic rheumatism 7, Osteo-arthritis 4.
Encephalitis ..	104	84	Influenza 4, Encephalitis lethargica 8, Meningococcal meningitis 2, Tuberculosis of nervous system 4, Syphilis 5, Other forms of encephalitis 42, Meningitis 1.
Basal or basic meningitis	76	63	Meningococcal meningitis 17, Tuberculosis of nervous system 25, Syphilis 2, Meningitis—other forms 9, Diseases of the ear, and mastoid sinus 4.
Posterior or post, basal or basic meningitis	78	74	Meningococcal meningitis 39, Tuberculosis of nervous system 16, Meningitis—other forms 14.
Cerebro-spinal meningitis	128	120	Meningococcal meningitis 94, Tuberculosis of nervous system 9, Meningitis—other forms 10.
Spinal sclerosis ..	54	50	Syphilis 3, Tabes dorsalis 4, Other diseases of spinal cord 6, Disseminated sclerosis 33.
Cerebral sclerosis ..	22	17	Disseminated sclerosis 11.
Paraplegia	89	64	Syphilis 9, Diseases of the spinal cord 24 Cerebral hæmorrhage, apoplexy 6.
General paralysis (outside asylums) ..	71	65	Other diseases of the spinal cord 5, Cerebral hæmorrhage, apoplexy 5, General paralysis of the insane 47, Disseminated sclerosis 2.
Paralysis	49	38	Syphilis 1, Tabes dorsalis 1, Cerebral hæmorrhage, apoplexy 16, Arterio-sclerosis 5.
Fibroid phthisis ..	136	125	Tuberculosis of respiratory system 89, Chronic interstitial pneumonia 26.
Hæmoptysis ..	58	43	Tuberculosis of respiratory system 29.
Stomatitis	33	29	Thrush, aphthous stomatitis 14.
Stricture of œsophagus	48	36	Syphilis 2, Cancer 25.
Hæmatemesis ..	31	24	Cancer 3, Gastric ulcer 9, Cirrhosis of liver 4.

Table LXI.—England and Wales, 1923 : Replies to Inquiries respecting Indefinitely Certified Causes of Death—*continued.*

Subject of Inquiry.	Replies received.	Replies amplifying previous information.	Deaths allocated as the result of inquiry to various important headings.
Pyloric obstruction, stenosis, etc. ..	42	35	Cancer 15, Gastric ulcer 13.
Jaundice	70	53	Cancer 28, Cirrhosis of liver 2, Biliary calculi 9.
Peritonitis	181	125	Tuberculosis of peritoneum, etc., 12, Cancer 9, Gastric ulcer 10, Appendicitis 39, Intestinal obstruction 7, Diseases of female genital organs 3, Puerperal sepsis 6.
Pemphigus (of infants)	134	111	Syphilis 36.
Hydrocephalus ..	104	90	Tuberculosis of nervous system 9, Syphilis 6, Congenital hydrocephalus 54.
Violence	257	249	Precise form of suicide 54, Injury by drowning 9, Injury by fall 44, Injury in mines and quarries 34, Injury by machines 9, Injury by crushing 35.
Ascites, dropsy ..	26	20	Diseases of the heart 11, Cirrhosis of liver 2, Chronic nephritis 1.
Syncope, heart failure (ages 1–70) ..	129	93	Influenza 2, Tuberculosis of respiratory system 2, Alcoholism 4, Diseases of the heart 59, Arterio-sclerosis 7, Bronchitis 4.
Operation	266	255	Cancer 31, Tonsillitis 13, Gastric ulcer 12, Appendicitis 10, Hernia, intestinal obstruction 23, Biliary calculi 13, Uterine tumour 18, Violence 6.
Other indefinite forms of certificate ..	1,540	1,272	———
Total ..	5,836	4,989	———

The total additions to certain definite headings resulting from these inquiries were as follows :—To meningococcal meningitis 156 ; to tuberculosis of the respiratory system 301 ; to tuberculosis of the nervous system 72 ; to other forms of tuberculosis 148 ; to venereal diseases 162 ; to cancer 554 ; to general paralysis of the insane 49 ; to disseminated sclerosis 51 ; to arterio-sclerosis 76 ; to ulcer of the stomach or duodenum 79 ; to appendicitis and typhlitis 71 ; to biliary calculi 48 ; to puerperal sepsis 50 ; and to congenital malformations 90.

POPULATION.

The total population of England and Wales as at the 30th June, 1923, has been estimated at 38,403,000 persons, 18,342,000 being males and 20,061,000 females.

The method adopted in arriving at these figures is that which was used with apparent success in the decennium 1911–20, and consists of taking the 1921 Census population as a starting point, adding the births and immigrants and deducting the deaths and emigrants between the date of the Census and the 30th June, 1923. If exact records of the several movements contributing to the change during the two years were available the resulting population would be known precisely and the accuracy of the estimate depends entirely upon the completeness and correctness of the records of movement. Of these only the portion relating to the natural increase, that is the excess of births over deaths, can be accepted unreservedly ; the system of registration in this country is regarded as providing a very complete record of births and deaths, and errors in the registered numbers must be of an insignificant order in relation to population figures. But the same cannot be said of the migration element of the movement. Information regarding permanent migrants (*i.e.*, persons changing their permanent residence) between this country and places outside Europe, and also statistics of passenger traffic to and from the United Kingdom are collected by the Board of Trade. The movement of aliens is separately dealt with by the Home Office, and from the various War Departments changes in the disposition of non-civilians are available. On the other hand, there is no record of the movement between England and Wales and the other countries of the United Kingdom, and allowance has to be made for this in computing an estimate on the data gathered from the records which are available.

Such error as there may be in the population estimate is practically wholly attributable to migration, and it is one which will grow in degree as the preceding Census becomes more remote. If the success which attended the estimation of the national populations of the last intercensal period as judged by the 1921 Census is repeated the error will be of a negligible order.

Age Distribution.—The analysis of the sex population totals into their respective age components which is shown in Table LXII, has been derived from the corresponding 1922 distribution by the survivorship method used in recent years ; this, briefly, consists of (1) obtaining the year's deaths arising from the population at each age in 1922, and treating the survivors as the population at the next higher age in 1923, (2) completing the table by the addition of the population aged 0–1, represented by the survivors at the middle of 1923 of the births occurring between the middle of 1922 and the middle of 1923, and (3) adjusting the results of these two operations in respect of migrants in accordance with such age statistics as are available in respect of them.

The average ages of the 1923 population according to the estimated age distribution are 30·2 and 31·5 for males and females respectively, representing increases of 0·2 for each sex over the corresponding averages for 1922. Between 1911 and 1921 the average ages increased by 1·9 and 2·1 respectively.

Table LXII.—England and Wales.—Estimates of Age Distribution of the Population in June, 1923.

Age Group.	Persons.	Males.	Females.
All ages	38,403,000	18,342,000	20,061,000
0—	721,493	366,283	355,210
1—	750,827	380,204	370,623
2—	751,072	380,562	370,510
3—	806,387	409,289	397,098
4—	543,797	275,077	268,720
0—	3,573,576	1,811,415	1,762,161
5—	3,209,201	1,613,112	1,596,089
10—	3,599,161	1,807,935	1,791,226
15—	3,570,567	1,778,826	1,791,741
20—	3,253,478	1,540,949	1,712,529
25—	2,968,085	1,333,231	1,634,854
30—	2,835,309	1,290,569	1,544,740
35—	2,694,986	1,241,854	1,453,132
40—	2,672,480	1,247,112	1,425,368
45—	2,420,036	1,157,306	1,262,730
50—	2,147,971	1,034,855	1,113,116
55—	1,702,663	815,944	886,719
60—	1,366,049	642,330	723,719
65—	1,006,818	459,170	547,648
70—	709,175	307,176	401,999
75—	407,811	163,796	244,015
80—	185,831	70,051	115,780
85 & upwards	79,803	26,369	53,434

Local Populations.—As for the country as a whole, so for individual boroughs, urban districts and rural districts the mid-year estimate of population is obtained by estimating the movement which has taken place since the date of the Census (19th–20th June, 1921) and modifying the 1921 figure in respect of such estimate. It will be remembered from the 1921 Statistical Review that the populations as enumerated at the Census were not always appropriate for use with vital statistics owing to the presence in seaside and holiday resorts of large numbers of temporary visitors; special steps were taken to measure the amount of temporary inflation in each area and to disperse it so as to correspond more nearly to a residence distribution. For a fuller account of the processes involved, reference may be made to the Statistical Review for 1921, in which will also be found the basic populations of each area on which the succeeding years' estimates have been founded.

In framing a basis for the estimation of the local changes in population two primary conditions have to be satisfied.

(*a*) The net aggregate of the local increases and decreases must correspond to the more reliably calculated change in the total national population.

(*b*) The method must be capable of impartial application to all areas alike.

So far as the natural movement by births and deaths is concerned, details are known precisely in respect of each area, and the use of the local registration returns automatically ensures compliance with both conditions. With regard to the balance of the movement summed up in the term migration, there is, however, a complete absence of direct record. With an exception perhaps in the case of certain aliens, changes of residence are not subject to official notification here, as they are in some foreign countries, and all knowledge of the movement is limited to such inference as can be drawn from other records, like housing, rating returns, registers of electors, etc., in which the effect of migration may be expected to be reflected. Of these the electoral register is the only one regularly available in respect of every urban and rural area of the country and, therefore, satisfying condition (*b*), and the increases or decreases in the numbers of local government electors have been adopted as the criteria in assessing the incidence of local migration.

But it has to be borne in mind that changes in the electoral register are not all attributable to migration; the mere attainment of franchise age of the existing population, so far as this is not counterbalanced by the deaths of persons already on the register, affects the electorate and falls with varying weight in areas of different age constitution. The incidence of this natural growth factor can be and has been estimated approximately by means of the Census age classifications of local populations which are now available, and some allowance for it has been incorporated in the estimation formula. Again, persons admitted to the franchise are restricted to certain classes above the ages of 21 and 30 in the case of males and females respectively, numbering only about 40 per cent. of the total population, and the assumption has to be made that movements within the franchise qualifications correspond to similar movements in the whole population. Finally, electoral registration can only take place after six months' residence in an area, and such migration change as is reflected is that of a period at least six months prior to the period to which the records relate. Notwithstanding these defects it is reasonable on the whole to suppose that any marked migration in either direction will sooner or later make its impression on the electoral record, though on account of the indirectness of the evidence, the factor cannot be accorded the same weight in the estimation formula as that given to the direct records of births and deaths.

The 1923 mid-year populations actually adopted were obtained by assuming that the net rate of population increase in each area was

$$A + x\,(B - C) - y$$

where A = local rate of natural increase mid 1921–mid 1923, B = local rate of electoral increase Autumn Register 1921–Autumn Register 1923, C = expected rate of natural growth of the electorate in the same period, and x and y are constants

Table LXIII.—England and Wales, and Geographical Areas.—Estimated Civilian Population by Sex and Age in the middle of the Year 1923.

(Figures given to the nearest hundred.)

		All Ages.	0—	5—	15—	25—	35—	45—	55—	65—	75 and upwards.
All areas :—											
England and Wales	M	18,171,0	1,811,4	3,421,0	3,227,8	2,575,0	2,463,9	2,187,1	1,458,3	766,3	260,2
	F	20,061,0	1,762,2	3,387,3	3,504,3	3,179,6	2,878,5	2,375,9	1,610,4	949,6	413,2
North ..	M	6,207,4	625,7	1,167,1	1,134,6	904,2	855,5	747,0	475,6	233,0	64,7
	F	6,714,0	612,7	1,160,4	1,201,5	1,079,7	973,7	788,1	514,6	281,6	101,7
Midlands..	M	5,797,2	575,9	1,102,9	1,036,5	803,2	777,9	687,2	465,5	254,4	93,7
	F	6,326,7	558,0	1,090,4	1,102,5	982,1	895,1	738,1	506,0	310,4	144,1
South ..	M	4,814,9	469,5	889,3	807,0	668,5	652,0	597,3	417,6	228,4	85,4
	F	5,671,8	455,4	877,2	957,8	908,0	829,0	703,4	494,0	303,1	143,9
Wales ..	M	1,351,5	140,3	261,7	249,7	199,0	178,6	155,7	99,6	50,5	16,4
	F	1,348,5	136,1	259,3	242,5	209,8	180,7	146,3	95,8	54,5	23,5
London ..	M	2,097,6	213,5	384,0	363,4	310,4	287,6	257,9	169,5	84,7	26,5
	F	2,457,1	207,9	384,6	445,1	413,8	357,0	293,2	194,3	112,1	49,1
County Boroughs	M	6,085,8	622,2	1,151,8	1,084,6	890,0	843,3	737,5	464,4	226,4	65,5
	F	6,779,6	607,8	1,152,1	1,226,6	1,095,9	982,1	793,3	517,8	289,3	114,7
North ..	M	3,270,9	333,9	615,2	593,3	482,8	456,5	399,7	245,8	114,4	29,3
	F	3,597,9	327,8	615,4	654,1	586,0	526,5	422,1	270,1	144,8	51,1
Midlands..	M	1,926,0	199,5	369,2	345,3	279,4	263,8	228,6	145,0	73,1	22,1
	F	2,142,4	194,0	370,0	393,9	344,7	304,7	244,9	160,2	91,8	38,2
South ..	M	607,2	60,4	114,5	93,8	82,7	84,5	77,0	53,3	29,5	11,4
	F	756,2	58,5	113,9	124,1	118,4	112,6	96,2	68,4	42,7	21,4
Wales ..	M	281,7	28,4	52,9	52,2	45,1	38,5	32,2	20,3	9,4	2,7
	F	283,1	27,5	52,8	54,5	46,8	38,3	30,1	19,1	10,0	4,0
Other Urban Districts	M	6,151,0	605,7	1,169,7	1,088,5	871,5	845,6	744,7	487,3	253,0	85,0
	F	6,854,0	588,3	1,159,0	1,199,1	1,084,8	992,5	817,2	548,9	323,6	140,6
North ..	M	2,079,7	205,3	388,1	378,0	303,8	288,9	251,8	161,6	80,2	22,0
	F	2,251,6	201,1	386,9	397,7	361,7	327,7	268,0	176,7	97,2	34,6
Midlands..	M	2,247,5	220,4	432,2	399,8	314,4	308,9	270,0	175,9	92,8	33,1
	F	2,514,7	213,0	427,3	447,1	396,1	363,5	296,2	197,1	119,2	55,2
South ..	M	1,162,6	108,8	217,6	188,5	155,9	159,7	146,9	103,6	58,2	23,4
	F	1,429,1	105,0	213,7	234,4	224,1	213,1	182,9	131,4	83,4	41,1
Wales ..	M	661,3	71,2	131,8	122,2	97,4	88,1	76,0	46,2	21,8	6,5
	F	658,6	69,2	131,1	119,9	102,9	88,2	70,1	43,7	23,8	9,7
Rural Districts	M	3,836,6	370,0	715,5	691,3	503,0	487,4	446,9	337,1	202,2	83,2
	F	3,970,3	358,2	691,6	633,5	585,1	546,9	472,2	349,4	224,6	108,8
North ..	M	856,8	86,5	163,8	163,3	117,5	110,2	95,5	68,2	38,4	13,4
	F	864,5	83,8	158,1	149,7	132,0	119,5	98,0	67,8	39,6	16,0
Midlands	M	1,623,7	156,0	301,5	291,5	209,5	205,1	188,5	144,6	88,5	38,5
	F	1,669,6	151,0	293,1	261,5	241,3	226,9	197,0	148,7	99,4	50,7
South ..	M	947,6	86,8	173,2	161,2	119,5	120,1	115,4	91,2	56,0	24,1
	F	1,029,4	84,0	165,0	154,2	151,7	146,3	131,1	99,9	64,9	32,3
Wales ..	M	408,5	40,7	77,0	75,3	56,5	52,0	47,5	33,1	19,3	7,2
	F	406,8	39,4	75,4	68,1	60,1	54,2	46,1	33,0	20,7	9,8

applicable to all areas, their determination being governed by the considerations (*a*) that the increases and decreases produced by the formula should aggregate to the increase estimated for the country as a whole, and (*b*) that the range of variations should, in the absence of any evidence to the contrary, be roughly similar in extent to the range of variations in previous periods. The factors A and B were ascertained for each urban and rural district, but C was calculated only for County Boroughs individually, and for the urban and rural aggregates of each County, the value of C for an aggregate being adopted for each of the areas comprised in the aggregate. Full weight was thus given to the local natural increase while for migration the most suitable value of x appeared to be about $\frac{1}{3}$, y being the complementary adjustment required to ensure compliance with condition (*a*) just referred to.

An exception to the basis thus described was, however, made in the case of the Administrative County of London and its constituent Boroughs, in respect of which population estimates had been made earlier in the year for the purposes of the Equalization of Rates Act, 1894. For the whole County the estimate was not very different from that which would have resulted from the use of the above formula, but, in the distribution of the county population among the Metropolitan Boroughs, use was also made of certain housing returns provided by the Local Authorities under the said Act, and these estimates have been retained unaltered in the present Review.

Housing statistics are not taken into account in the preparation of the general estimates because they are not available for all areas, and it is not possible, therefore, to ascertain whether the relation of the increase in dwellings in a particular district to that of the whole country supports or opposes the inferences drawn from other sources. But, apart from this insuperability, the experience of the Department is that housing statistics in present circumstances may be a misleading guide to population movement. Where overcrowding exists, as is urged in respect of many areas, new dwellings will be fiercely competed for by the overcrowded population, and so far as the latter are successful in obtaining possession—and it must be borne in mind that most official housing schemes have been directed primarily to the relief of overcrowding—the new dwellings so occupied will not represent an addition to the local population.

Non-Civilian Population:—It will be observed in the tables in which the estimated local populations are given (Table 14 of Part I. and Table E of Part II.) that the local deaths and death-rates refer to civilians only and in conjunction with these a civilian population should preferably be used instead of a total population containing a number of non-civilians. In the majority of areas, however, the two populations may be regarded as sufficiently identical, and no special measures have been regarded as necessary in respect of them, but in a few areas in which the non-civilians were proportionally numerous estimates

of civilian populations have been provided in addition to total populations and are shown in footnotes appended to the tables.

Institutions:—The populations of Hospitals, Infirmaries, Asylums, etc., remain credited to the areas of enumeration, notwithstanding that some persons so included may, on a strict residence classification, more properly be assigned elsewhere.

Local Age Distributions, 1923.—Sex and age distributions have been prepared for the large aggregates shown in Table LXIII. The populations at ages under five were obtained by the survivorship method (*see* page 111), and for later ages the total populations estimated by the formula given in the preceding section were distributed in accordance with the Census age and sex distribution of the unit, the resulting figures being thereafter modified to allow for the change between 1921 and 1923 of the age distribution of the total population of the country.

United Kingdom and Irish Free State.—The populations for each year from 1874 are shown in Table A on page 2 (Part II), and the 1923 estimates of the resident populations of each of the Local Government divisions of England and Wales, together with County aggregates, in Table 14 on page 62 (Part I), and Table E on page 7 (Part II).

MARRIAGES.

The marriages registered in England and Wales during the year 1923 numbered 292,408, corresponding to a rate of 15·2 persons married per 1,000 of the population of all ages and conditions. The number so registered is 7,116, or 2·4 per cent. less than the number registered in 1922, and represents a drop of 0·5 in the proportion married per 1,000 population. This decrease may be regarded as within the range of the yearly fluctuations experienced in years prior to the war, and as it has been followed by an even smaller variation in 1924 it may reasonably be inferred that the phenomenal wave associated with the years immediately preceding and following the termination of the war, during which the proportion married rose from the record minimum of 13·8 per 1,000 population in 1917 to the unprecedentedly high figure of 20·2 in 1920, has subsided and given place once more to the more stable conditions of normal peace years.

The preference for the third quarter of the year noticeable in the records since the beginning of the present century was maintained in 1923, the marriages in this period being nearly 30 per cent. of the total. The rate for the first quarter, representing little more than 18 per cent. of the year's marriages, similarly retained its customary place in being lower than that of either of the later quarters.

The annual marriage-rate expressed in terms of total population, on the face of which it would appear that the marriages of to-day occur with about the same frequency as they did in the period preceding the war, can, however, only be accepted as

a comparative measure of conditions over short periods of time during which the proportions and age incidence of the marriageable portion of the community are approximately constant. For long range comparisons or during periods of disturbance such as that of the past decade, regard must be had to the character of the several populations providing the marriages. This more extended examination is only possible immediately after a Census and in the Annual Review for 1922 the post-war population was, with the aid of the analysed 1921 Census figures, which had then become available, compared in this respect with earlier Censal populations, and the recent fluctuations in the marriage-rates more accurately contrasted with the rates of earlier periods.

It was then pointed out that, whereas the marriageable population (*i.e.*, the single and widowed aged 15 and over) had declined from 330 per 1,000 of the total population in 1911 to 325 in 1921, the marriageability of the population had declined much more ; owing to the fact that the unmarried and widowed of the two sexes are not equal, the total possible marriages is limited by the number of marriageable males in the country and the comparatively heavy losses of men during the decennium has had the effect of reducing the effective marriageability of the population, when estimated on the male proportion alone, from 301 per 1,000 of the whole population in 1911, to 280 in 1921, a drop of nearly 7 per cent. instead of the 1½ per cent. fall in the marriageable population of both sexes taken together.

So sudden a fall in the male proportion could only be occasioned by a disturbance of the magnitude of the war and many years of normal conditions must elapse before the present disparity in the numbers of the sexes can begin to be redressed ; comparisons of post-war and pre-war marriages, based upon the crude proportions of persons married per 1,000 total population without adjustment for these changes will in consequence tend to make the current rates appear unduly low, and it will be preferable to base the rates on the unmarried, or better still, for the reasons already stated, upon the numbers of unmarried males alone, as shown in the second column of Table LXIV.

From that table it will be seen that the marriage-rates of men and women after falling steadily from 1871 to 1911 showed in 1921 an increase from 50·8 to 60·4 per 1,000 in the case of men, a jump of 19 per cent., as compared with one from 42·5 to 45·8 or a rise of about 8 per cent. in the case of women. These exceptionally high rates have not, of course, been maintained, and are down in 1923 to 53·9 and 41·1 per 1,000 unmarried men and women respectively. But if, as at present seems likely, the violent fluctuations of the past few years have ceased and the present forms the commencement of a more stable period, it appears to be one in which the frequency of marriage in relation to the opportunities for marriage will be found to be higher than in any of the previous years of the present century

Table LXIV.—England and Wales. Annual Number of Marriages of Men and Women per 1,000 Marriageable Population of each Sex aged 15 and over, 1871–1923.

NOTE.—The annual numbers of marriages have been taken as the average of the three years about each Census prior to 1921. During the 1921 period the marriage-rates have been changing rapidly and it has been deemed preferable to show the rates for this period by individual years.

Year.	Bachelors, Widowers, Spinsters and Widows.	Bachelors and Widowers.	Spinsters and Widows.
1871	57·2	62·3	52·9
1881	51·5	56·0	47·6
1891	49·8	54·6	45·7
1901	48·7	53·5	44·7
1911	46·3	50·8	42·5
1920	61·7	71·5	54·2
1921	52·1	60·4	45·8
1922	48·2	55·8	42·5
1923	46·6	53·9	41·1

Marriage-rates by ages which should provide an even more exact statement of the incidence and intensity of marriage are shown in Table LXV. In connection with this table, however, it is necessary to state that the ascertainment of age rates, in years other than those in which the distribution of the population by sex, marital condition and age is definitely known by means of a Census enumeration, involves a degree of estimation of population detail in which the margin of error may be not insignificant, owing to the absence of a complete record of the movements between the single, married and widowed sections of the population ; for example, the death of a married woman involves a transfer from the married to the widowed male population, and as the age of the surviving husband is not recorded at the death of the married woman, the age distribution of the males who are being continually so transferred has to be based upon more or less empirical assumptions ; in respect of male deaths the position is even more doubtful, for there the death record does not even state whether the subject was single, married or widowed, and still larger assumptions have to be made in allocating the decrement to the several ages and conditions of the male population, in addition to its consequent effect upon the married and widowed female population. Nevertheless, no study of the marriage tendencies in a population can proceed without reference to these factors, and the persistence with which the crude rates are made the basis of misleading or erroneous inferences justifies the

inclusion of the following series of age rates, though the ones relating to the current inter-censal period must be regarded as provisional approximations to be confirmed or amended in accordance with changes shown by the next Census analysis.

Table LXV.—England and Wales. Annual Marriage-rate per 1,000 Bachelors, Widowers, Spinsters, and Widows respectively at each of several Age Periods, 1871–1923.

NOTE.—The annual numbers of marriages have been taken as the average of the three years about each Census prior to 1921. During the 1921 period, the marriage-rates have been changing rapidly and it has been deemed preferable to show the rates for this period by individual years.

Year.	Annual marriage-rate per 1,000 in each age group.						Marriage rate per 1,000 population over 15 in each class.	Ratio to corresponding rate for 1921	Marriage rate which would have resulted had the 1921 age rates been in operation.	Ratio of actual marriage rate (Col. 8) to rate in previous column (10).
	15—	20—	25—	35—	45—	55 and over.				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
					BACHELORS.					
1871	6·0	122·4	119·3	43·3	15·3	3·2	61·7	987	62·3	990
1881	4·6	106·8	112·4	40·5	14·3	3·0	55·7	891	62·4	893
1891	3·1	94·7	122·4	43·4	15·2	3·5	54·8	877	63·8	859
1901	2·5	85·9	123·7	44·2	14·6	3·3	54·7	875	66·6	821
1911	2·2	74·8	120·6	44·4	14·9	3·9	52·6	842	69·2	760
1920	4·0	110·2	191·4	73·6	22·9	5·8	73·8	1,181	—	—
1921	3·4	94·4	161·1	61·6	19·7	5·5	62·5	1,000	62·5	1,000
1922	2·9	85·5	156·5	58·7	18·7	5·3	58·1	930	61·7	942
1923	2·6	82·7	155·8	57·1	17·2	4·7	56·3	901	61·1	921
					WIDOWERS.					
1871	11·5	229·0	288·5	181·5	88·3	15·9	65·8	1,475	56·0	1,175
1881	30·6	192·9	246·5	157·8	76·9	16·0	58·2	1,305	56·0	1,039
1891	14·1	153·4	231·7	151·1	74·7	15·5	53·4	1,197	53·7	994
1901	—	132·6	201·7	134·1	65·3	13·5	44·4	996	51·0	871
1911	—	121·6	171·2	117·9	59·4	12·7	36·9	827	47·4	778
1920	—	231·8	314·1	195·4	88·7	17·8	55·0	1,233	—	—
1921	14·3	163·7	229·3	155·2	73·5	15·8	44·6	1,000	44·6	1,000
1922	—	136·0	204·7	140·5	65·7	14·3	39·3	881	43·7	899
1923	27·8	139·5	199·9	135·1	63·3	14·1	37·3	834	42·7	874
					SPINSTERS.					
1871	26·8	133·7	85·9	30·4	11·9	1·7	63·1	1,164	55·8	1,131
1881	21·5	121·9	80·6	26·3	10·4	1·6	56·9	1,050	55·8	1,020
1891	16·2	112·4	85·7	26·4	10·3	1·7	54·4	1,004	57·1	953
1901	12·9	104·9	88·6	25·3	9·1	1·5	53·0	978	58·6	904
1911	11·2	97·7	91·1	24·4	8·5	1·8	50·6	934	58·0	872
1920	16·0	134·1	117·3	30·3	10·2	2·1	63·1	1,164	—	—
1921	14·8	114·4	100·0	25·6	8·9	2·0	54·2	1,000	54·2	1,000
1922	13·2	108·2	96·6	24·0	8·1	1·8	56·9	939	53·8	946
1923	12·5	108·2	93·6	23·1	7·8	2·0	49·8	919	53·5	931
					WIDOWS.					
1871	55·4	170·5	125·5	55·7	20·8	2·6	21·1	1,172	19·6	1,077
1881	56·6	155·3	114·5	50·2	18·6	2·6	18·2	1,011	18·5	984
1891	49·3	150·4	114·3	50·3	17·8	2·4	16·3	906	16·8	970
1901	54·9	140·7	115·9	48·9	15·6	2·1	14·4	800	15·6	923
1911	30·0	151·2	114·1	48·9	15·6	2·1	12·5	694	13·6	919
1920	62·9	322·6	159·7	59·1	20·7	2·9	24·3	1,350	—	—
1921	36·1	191·4	120·3	50·6	17·6	2·5	18·0	1,000	18·0	1,000
1922	38·8	145·1	98·9	43·3	15·7	2·3	14·5	806	17·0	853
1923	13·0	143·4	86·2	37·7	14·9	2·2	12·5	694	16·3	767

It will be observed from the last column of Table LXV, which compares the actual marriages of each year with the number expected according to the age-rates of 1921—adopted as a standard for the purpose—and which makes allowance, therefore, for the changing age constitution of the unmarried population, that for each of the four sections distinguished, viz., bachelors, widowers, spinsters and widows, the frequency of marriage has decreased during the year; for each sex the fall in respect of the single has been less than that of the widowed, but while the reduction of the widower rate is only slightly greater than that of bachelors, the reduction for bachelors, widowers and spinsters all being within a range of 1½ to 3 per cent., the fall in the case of widows has been very much larger, viz., 10 per cent., and has reduced their rate to a point very much lower than it has been during the past 50 years.

The maintenance of the marriage-rate of spinsters at a point well in excess of those for the pre-war years 1901–1914, in spite of their diminished opportunities for marriage through the loss of eligible partners during the war, continues to be a feature of present conditions; in fact, at the age period 20–25 their rate is the same as it was a year ago, the only other age period showing a similar or improved position being that of 55 and over, where the marriages are proportionately very few.

With bachelors also the decrease in the marriage-rate during the past year is at a minimum during the early ages 25–35. It will be seen, however, from Table LXVIII that the bachelors married at these ages in 1923 formed 492 per 1,000 at all ages, and that in the period 1901–1910 the corresponding average was 493, so that the greatly increased frequency of marriage at this and also the next age group 35–45, as compared with pre-war rates is due not to an increase in the relative proportions married at these ages, but to the diminution of the numbers exposed to the chance of marriage between 25 and 45, where the effect of war losses is at present most strongly felt. But whichever function be the variable one, the change of attitude towards marriage, indicated by the present high frequency as compared with pre-war rates, has been observable since the termination of the war and probably originated in the conditions of that period; its continuance in spite of the opposing influences of bad trade and inadequate housing has no doubt been aided by the increasing social measures designed to ameliorate the hardships of sickness and unemployment, and is probably not unaffected by the extended opportunity of limiting the reponsibilities of marriage through an increasing knowledge and practice of birth restriction.

Remarriages continue to be much more frequent than first marriages in either the male or female population. At every age period where the data are sufficient to provide reliable comparisons, the 1923 rates for widowers and widows are, with one

exception, higher than those for the single, but much more so in the case of males. The exception is to be seen in the female age group 25–35, where the widow rate is 86·2 per 1,000, as compared with the spinster rate of 93·6, and is noteworthy as representing the first occasion during the 50 years' experience shown in Table LXV, in which the rate of remarriage of either sex at any age group has been lower than the corresponding rate of first marriage. It is interesting to compare the relations of the age-rates with those suggested by the aggregate rates per 1,000 of each marital condition of ages 15 and over shown in column 8, Table LXV ; owing to the concentration of the single population at the younger ages where marriages are numerous, and the widowed population at the later ages where they are few, the aggregate rate for the single is about 50 per cent. above that of the widowed in the case of males, and in the case of females it is 300 per cent. in excess.

Table LXVI.—England and Wales, 1918–1923: Proportions of First Marriages and Remarriages in 1,000 Marriages.

Year	Men.		Women.		Bachelors who married.		Widowers who married.	
	Bachelors.	Widowers.	Spinsters.	Widows.	Spinsters.	Widows.	Spinsters.	Widows.
1918 ..	901	99	894	106	837	64	57	42
1919 ..	897	103	875	125	816	81	59	44
1920 ..	907	93	894	106	839	68	55	38
1921 ..	911	89	909	91	855	56	54	35
1922 ..	913	87	920	80	866	47	54	33
1923 ..	915	85	929	71	875	40	54	31

The following tables continue the series shown in previous issues of the Review classifying the marriages of the year by age, Table LXVII, showing the mean ages of the persons married in each of the possible combinations and Table LXVIII extending the analysis into a number of age groups.

Table LXVII.—England and Wales: Mean Ages at Marriage, 1896–1923.

Males.

Year.	All Bridegrooms.	All Bachelor Bridegrooms.	All Widower Bridegrooms.	Bachelors with Spinsters.	Bachelors with Widows.	Widowers with Spinsters.	Widowers with Widows.
1896–1900 ..	28·38	26·63	44·73	26·35	34·12	41·74	49·72
1901–05 ..	28·52	26·90	45·08	26·62	34·09	42·28	49·88
1906–10 ..	28·76	27·19	45·71	26·93	34·70	42·95	50·64
1911–15 ..	29·01	27·49	46·62	27·18	35·73	43·80	51·37
1916–20 ..	29·77	27·92	46·84	27·42	34·78	44·42	50·25
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
1914 ..	28·94	27·40	46·66	27·05	35·90	43·79	51·39
1915 ..	28·87	27·49	46·61	27·12	36·15	43·86	50·98
1916 ..	29·70	27·93	47·32	27·47	36·20	44·79	51·07
1917 ..	30·04	28·04	47·71	27·52	35·63	45·22	51·23
1918 ..	30·08	28·14	47·74	27·59	35·43	45·38	50·88
1919 ..	29·81	27·99	45·72	27·46	33·36	43·40	48·85
1920 ..	29·20	27·51	45·73	27·04	33·28	43·31	49·24
1921 ..	29·19	27·48	46·60	27·03	34·35	44·06	50·57
1922 ..	29·21	27·54	46·91	27·12	35·24	44·31	51·20
1923 ..	29·15	27·46	47·34	27·09	35·64	44·60	51·98

Females.

Year.	All Brides.	All Spinster Brides.	All Widow Brides.	Spinsters with Bachelors.	Spinsters with Widowers.	Widows with Bachelors.	Widows with Widowers.
1896–1900	26·21	25·14	40·70	24·62	32·64	35·96	44·99
1901–05	26·36	25·37	40·37	24·88	32·99	35·76	45·09
1906–10	26·59	25·63	41·06	25·14	33·63	36·51	45·82
1911–15	26·77	25·75	41·65	25·27	34·23	37·40	46·57
1916–20	27·14	25·81	38·66	25·24	34·30	34·73	44·74
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
1914 ..	26·68	25·61	41·64	25·12	34·28	37·53	46·57
1915 ..	26·75	25·71	41·42	25·28	34·28	37·78	46·39
1916 ..	27·17	25·91	40·73	25·36	34·58	36·79	45·85
1917 ..	27·27	25·89	39·66	25·28	34·54	35·40	45·48
1918 ..	27·29	25·92	38·84	25·33	34·59	34·82	44·86
1919 ..	27·16	25·81	36·69	25·24	33·77	33·07	43·36
1920 ..	26·79	25·54	37·36	24·99	34·02	33·56	44·14
1921 ..	26·73	25·52	38·83	24·95	34·40	34·83	45·26
1922 ..	26·71	25·57	39·93	25·02	34·53	35·81	45·87
1923 ..	26·66	25·57	40·94	25·01	34·74	36·35	46·66

Table LXVIII.—England and Wales, 1886–1923 : Marriages of per 1,000 Marriages

Period.	All Ages.	Under 18 Years.	18–	19–	20–	Under 21 Years.	21–	25–	30–	35–	40–	45–	50–	55 and up.	Age not Stated.
						Bachelors.									
1886–90..	1,000	0	4	20	47	71	424	309	96	33	13	6	3	2	43
1891–95..	1,000	0	3	17	43	63	415	333	108	37	14	6	3	2	19
1896–1900	1,000	0	3	15	39	57	411	346	110	39	15	6	3	2	11
1901–05..	1,000	0	3	13	35	51	390	360	122	41	16	7	3	2	8
1906–10..	1,000	0	3	11	30	44	370	372	132	46	17	8	3	2	6
1911–15..	1,000	0	3	12	28	43	350	373	139	53	21	9	4	3	5
1916–20..	1,000	1	6	13	27	47	332	354	144	62	30	15	6	4	6
1921 ..	1,000	1	4	15	33	53	350	356	136	55	24	12	5	4	5
1922 ..	1,000	1	4	14	30	49	349	361	136	54	24	12	5	5	5
1923 ..	1,000	1	4	13	29	47	358	359	133	53	24	12	5	4	5
						Spinsters.									
1886–90..	1,000	9	37	72	97	215	417	219	62	23	10	5	2	1	46
1891–95..	1,000	7	31	66	94	198	425	241	70	25	11	5	2	1	22
1896–1900	1,000	6	27	59	89	181	434	253	74	26	11	5	2	1	13
1901–05..	1,000	5	23	53	82	163	428	272	79	28	12	5	2	1	10
1906–10..	1,000	5	21	48	75	149	420	284	87	30	12	6	2	2	8
1911–15..	1,000	6	23	47	70	146	402	292	94	34	14	7	3	2	6
1916–20..	1,000	6	23	48	72	149	402	275	94	39	17	9	4	3	8
1921 ..	1,000	7	27	54	76	164	406	274	86	33	15	8	4	3	7
1922 ..	1,000	7	26	51	73	157	404	282	88	33	15	8	3	3	7
1923 ..	1,000	7	25	49	72	153	412	279	87	33	14	8	4	3	7

Marriages of Minors.—Of the males married during the year 12,413, or 4·25 per cent., were under the age of 21, and of the females 41,780, or 14·29 per cent., as compared with 4·44 per cent., and 14·44 per cent. last year respectively. Females who have always greatly outnumbered the males in this class—in a ratio of about 3 to 1—naturally show the highest rates and the greatest changes in the rate ; they formed 18·8 per 1,000 of the unmarried females aged 15–21 in 1911, were 26·6 in 1920, and are now 20·0, while the corresponding rates for males were 5·5, 8·8 and 5·9 per 1,000 respectively ; both the rapid post-war rise and the subsequent heavy decline in the rate thus follows the experience of adults, the decline being rather greater in the case of minors.

Comparative figures are shown in Table LXX for the period back to 1901, before which the age group 15–21 was not identified in the population returns ; an indication of the trend of youthful marriage-rates in earlier periods may be gained from the general age analyses in Table LXV.

The number of males and females marrying under age and also at six other groups of ages, with distinction of the marital condition of the parties, is shown for each registration county in Table N, on page 73 of Part II. From these figures and those of

Bachelors, Spinsters, Widowers and Widows at Various Ages at All Ages.

Period.	All Ages.	Under 21 Years.	21–	25–	30–	35–	40–	45–	50–	55–	60–	65–	70 and up.	Age not Stated.
						Widowers.								
1886–90..	1,000	0	13	81	133	151	139	120	94	70	53	27	15	104
1891–95..	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
1901–05..	1,000	0	10	68	130	155	152	136	116	83	62	32	20	36
1906–10..	1,000	0	8	61	123	153	152	141	119	90	62	37	24	30
1911–15..	1,000	0	7	53	109	151	150	146	125	97	68	41	30	23
1916–20..	1,000	0	7	54	105	138	151	155	130	101	70	39	26	24
1921 ..	1,000	0	8	61	116	142	143	138	120	99	73	46	31	23
1922 ..	1,000	0	8	55	115	142	138	139	121	102	74	48	34	24
1923 ..	1,000	0	8	55	110	140	133	136	124	102	80	51	37	24
						Widows.								
1886–90..	1,000	1	30	119	164	173	145	117	73	46	26	10	3	93
1891–95..	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
1901–05..	1,000	1	28	122	182	190	158	118	78	47	29	11	4	32
1906–10..	1,000	1	23	106	177	192	160	129	82	52	30	14	6	28
1911–15..	1,000	1	21	98	167	193	171	135	85	51	32	16	11	19
1916–20..	1,000	3	67	189	191	162	126	98	64	41	24	13	6	16
1921 ..	1,000	1	37	179	222	178	122	93	62	42	25	15	8	16
1922 ..	1,000	1	25	148	212	185	135	102	72	49	29	16	8	18
1923 ..	1,000	1	23	125	200	182	140	113	79	53	34	19	12	19

Table LXIX.—England and Wales, 1876–1923 : Minors Married per 1,000 Marriages at all Ages.

	Husbands.	Wives.		Husbands.	Wives.
1876–80 ..	77·8	217·0	1913 ..	42·1	143·8
1881–85 ..	73·0	215·0	1914 ..	41·6	142·5
1886–90 ..	63·2	200·2	1915 ..	34·8	129·8
1891–95 ..	56·2	182·6	1916 ..	36·2	129·1
1896–1900..	51·2	168·0	1917 ..	41·7	134·2
1901–05 ..	46·3	153·1	1918 ..	42·6	129·0
1906–10 ..	40·3	139·4	1919 ..	43·7	129·4
1911–15 ..	39·2	136·6	1920 ..	46·8	142·9
1916–20 ..	42·6	133·3	1921 ..	48·2	149·2
1912 ..	39·2	135·4	1922 ..	44·4	144·4
			1923 ..	42·5	142·9

Table LXX.—England and Wales : Annual Marriage-rate per 1,000 Unmarried and Widowed Persons in the age group 15–21 at each period 1901 to 1923.

Year.	Males.		Females.	
	Rate.	Ratio to 1921.	Rate.	Ratio to 1921.
1901	6·7	87	21·6	92
1911	5·5	71	18·8	80
1920	8·8	114	26·6	114
1921	7·7	100	23·4	100
1922	6·4	83	20·9	89
1923	5·9	77	20·0	85

Tables LXXI and LXXIV below, it may be observed that local customs with regard to early marriage are little changed from those of pre-war years. Each of the four geographical sections* into which the country has been divided for the purpose of this Report occupies the same relative position in 1923 as it did in 1921, which was itself similar in this respect to 1911 ; for both males and females the rates are highest in the North and lowest in the South, with the exception of the females of Wales, whose rates are higher and show less relative diminution during the year than those in respect of either of the other sections ; Welsh males, on the other hand, occupy a position very little above that of the males in the South, the lowest shown in the table. In individual counties the highest proportions of persons marrying under age are found, generally speaking, in mining and industrial areas.

Table LXXI.—England and Wales. Marriage-rate of Minors per 1,000 Marriageable Population aged 15–21 in Geographical Sections of the Country, 1921 and 1923.

	Males.				Females.			
	Rate per 1,000 Marriageable Population 15–21.		Ratio of local rate to England and Wales rate.		Rate per 1,000 Marriageable Population 15–21.		Ratio of local rate to England and Wales rate.	
	1921.	1923.	1921.	1923.	1921.	1923.	1921.	1923.
England and Wales.	7·7	5·9	1,000	1,000	23·4	20·0	1,000	1,000
North	9·3	6·9	1,208	1,169	26·1	22·0	1,115	1,100
Midlands ..	7·5	5·8	974	983	22·1	18·8	944	940
South (including London)	6·1	5·0	792	847	20·8	17·9	889	895
Wales ..	6·7	5·2	870	881	26·7	24·4	1,141	1,220
London ..	7·8	6·0	1,013	1,017	22·2	18·0	949	900

* The composition of the four sections is shown on page 8.

The 1923 ratio per 1,000 marriageable population between 15 and 21 is greatest in Durham, where it is 58 per cent. in excess of that for the whole country, followed by Nottingham, Northumberland, Glamorgan, and the somewhat exceptional agricultural county of Lincoln. On the other hand, in residential and agricultural counties, the figures are normally well below the mean, the lowest generally being those recorded for the southern counties of England and the northern counties in Wales.

Table LXXII.—England and Wales : Marriage-rate per 1,000 Marriageable Population aged 15 and over in Geographical Sections of the Country, 1921 and 1923.

	Males.				Females.			
	Rate per 1,000 Marriageable Population 15 and over.		Ratio of local rate to England and Wales rate.		Rate per 1,000 Marriageable Population 15 and over.		Ratio of local rate to England and Wales rate	
	1921.	1923.	1921.	1923.	1921.	1923.	1921.	1923.
England and Wales.	60·4	53·9	1,000	1,000	45·8	41·1	1,000	1,000
North ..	61·6	54·0	1,020	1,002	48·7	42·8	1,063	1,041
Midlands ..	60·1	53·9	995	1,000	46·1	41·6	1,007	1,012
South (including London)	62·2	56·1	1,030	1,041	41·8	37·8	913	920
Wales ..	49·5	46·3	820	859	49·5	46·5	1,081	1,131
London ..	71·7	62·9	1,187	1,167	46·5	40·9	1,015	995

Fluctuations of the general Marriage-rate in different Sections of the Country.—Comparison of the general marriage-rates in the four geographical sections of the country referred to on the previous page is made in Table LXXII, and an analysis of recent rates in Registration Counties is shown in Table LXXIV. The determination of marriage-rates for localities is not wholly satisfactory for several reasons. In a large proportion of cases the district of registration is the district of residence of only one of the parties and in some cases of neither. This difficulty, however, is probably of less moment in comparisons between large sections of the country than between smaller adjacent localities. Again, it has only been possible till now to tabulate marriages by registration areas, while the available estimates of population for years other than Census years refer to administrative areas. The populations upon which the rates for such years are based have, therefore, to be derived from the estimated populations of the corresponding aggregates of administrative counties and county boroughs on the assumption of a ratio between the population of the registration and administrative areas. Any error so introduced is, however, probably small and not likely to have any appreciable effect upon the rates quoted.

As with the marriages under full age the incidence of the general marriage-rate of 1923 in the several geographical sections is little different from that of previous years, though the variations from the mean for the Country as a whole are not quite so great as they were in 1921, the year with which comparison is made in Tables LXXII and LXXIV. The contrast between the position of males and females of Wales continues to be a feature of this analysis, for, though their rates are very similar in themselves, the female rate is much higher, and the male rate considerably lower than either of the corresponding sex rates in any of the English sections.

Table LXXIII.—England and Wales, 1914–1923 : Marriages of each year in Geographical Sections of the Country.

	North.	Midlands.	South.	Wales.	England and Wales.
1914 ..	100,926	87,695	85,728	20,052	294,401
1915 ..	115,694	109,844	113,868	21,479	360,885
1916 ..	90,287	84,895	87,322	17,342	279,846
1917 ..	83,151	78,761	80,356	16,587	258,855
1918 ..	92,381	87,798	89,928	17,056	287,163
1919 ..	125,863	111,180	107,971	24,397	369,411
1920 ..	136,443	114,942	102,930	25,667	379,982
1921 ..	110,864	97,218	91,831	20,939	320,852
1922 ..	101,335	91,657	86,610	19,922	299,524
1923 ..	99,640	89,483	83,152	20,133	292,408

Table LXXIV gives the marriage-rate per 1,000 marriageable population in each registration county in 1921 and 1923, and the ratio in each case of the local rate to that of the whole country ; the distribution generally corresponds to that shewn by the similar comparison in respect of marriages under 21 and referred to on a previous page, the rates being normally above the average in mining and industrial areas and below it in the rural counties.

Buildings in which Marriages may be Solemnized.—At the end of the year 1923 the numbers of churches or chapels of the Established Church and of the Church in Wales and of registered buildings in which marriages could be legally solemnized were as follows :—

Established Church and Church in Wales	16,225
All other religious denominations ..	18,519
Total	34,744

Table LXXIV.—England and Wales. Marriage-rate per 1,000 marriageable Population—all marriages and marriages of minors separately—in Registration Counties, 1921 and 1923.

Area.	All Marriages.				Minors.			
	Persons married per 1,000 marriageable population of the age of 15 and over.		Ratio to England and Wales rate.		Persons married per 1,000 marriageable population 15–21.		Ratio to England and Wales rate.	
	1921	1923	1921	1923	1921	1923	1921	1923
England and Wales ..	**52·1**	**46·6**	**1,000**	**1,000**	**15·6**	**12·9**	**1,000**	**1,000**
North	**54·4**	**47·8**	**1,044**	**1,026**	**17·7**	**14·4**	**1,135**	**1,116**
Cheshire	48·3	43·3	927	929	13·2	10·4	846	806
Lancashire	54·1	46·5	1,038	998	15·0	11·6	962	899
Yorkshire, West Riding	56·3	50·5	1,081	1,084	19·1	16·3	1,224	1,264
,, East Riding	56·1	46·6	1,077	1,000	19·7	14·3	1,263	1,109
,, North Riding	47·3	44·8	908	961	18·5	15·4	1,186	1,194
Durham	60·7	53·0	1,165	1,137	25·1	20·4	1,609	1,581
Northumberland ..	52·7	46·9	1,012	1,006	19·3	16·9	1,237	1,310
Cumberland	46·9	43·0	900	923	17·3	14·7	1,109	1,140
Westmorland	43·4	43·3	833	929	10·7	12·5	686	969
Midlands	**52·2**	**46·9**	**1,002**	**1,006**	**14·8**	**12·2**	**949**	**946**
Middlesex	50·2	45·1	964	968	11·8	10·5	756	814
Hertfordshire	44·7	39·1	858	839	12·2	9·7	782	752
Buckinghamshire ..	45·2	40·8	868	876	10·5	11·0	673	853
Oxfordshire	44·8	42·6	860	914	10·8	11·4	692	884
Northamptonshire ..	53·7	48·5	1,031	1,041	14·2	10·8	910	837
Huntingdonshire ..	54·9	37·7	1,054	809	18·0	12·0	1,154	930
Bedfordshire	50·7	45·6	973	979	14·2	11·6	910	899
Cambridgeshire ..	49·6	42·1	952	903	15·6	14·3	1,000	1,109
Essex	53·5	47·9	1,027	1,028	12·3	10·8	788	837
Suffolk	48·7	42·1	935	903	14·7	10·5	942	814
Norfolk	49·6	44·4	952	953	14·3	12·8	917	992
Gloucestershire ..	49·8	44·2	956	948	11·0	8·9	705	690
Herefordshire	42·7	37·5	820	805	8·5	9·3	545	721
Shropshire	45·7	40·4	877	867	10·7	9·6	686	744
Staffordshire	57·0	49·3	1,094	1,058	17·9	12·9	1,147	1,000
Worcestershire	49·2	46·5	944	998	13·6	12·3	872	953
Warwickshire	50·7	50·1	973	1,075	14·0	11·7	897	907
Leicestershire	58·9	51·1	1,131	1,097	17·5	13·8	1,122	1,070
Rutlandshire	39·4	37·0	756	794	6·2	7·0	397	543
Lincolnshire	54·3	47·9	1,042	1,028	19·4	16·4	1,244	1,271
Nottinghamshire ..	58·0	51·1	1,113	1,097	22·4	17·9	1,436	1,388
Derbyshire	56·9	51·1	1,092	1,097	18·2	15·1	1,167	1,171
South (including London)	**50·0**	**45·1**	**960**	**968**	**13·6**	**11·5**	**872**	**891**
London	56·4	49·6	1,083	1,064	15·5	12·4	994	961
Surrey	43·9	39·5	843	848	10·4	9·5	667	736
Kent	45·9	42·8	881	918	13·5	11·9	865	922
Sussex	39·4	37·2	756	798	11·5	10·7	737	829
Hampshire	48·5	44·8	931	961	13·7	12·6	878	977
Berkshire	46·1	41·1	885	882	11·8	9·7	756	752
Wiltshire	50·8	44·7	975	959	12·2	9·4	782	729
Dorsetshire	46·0	43·2	883	927	11·8	11·5	756	891
Devonshire	46·7	44·4	896	953	13·1	11·9	840	922
Cornwall	41·5	41·4	797	888	11·9	10·7	763	829
Somersetshire	46·0	40·5	883	869	11·0	8·1	705	628
Wales	**49·5**	**46·4**	**950**	**996**	**16·4**	**14·3**	**1,051**	**1,109**
Monmouthshire ..	53·8	51·3	1,033	1,101	18·5	16·2	1,186	1,256
Glamorganshire ..	56·6	52·0	1,086	1,116	19·8	16·7	1,269	1,295
Carmarthenshire ..	46·5	41·7	893	895	15·8	14·1	1,013	1,093
Pembrokeshire	43·3	38·5	831	826	12·2	10·1	782	783
Cardiganshire	29·6	28·5	568	612	5·7	5·9	365	457
Brecknockshire ..	46·0	41·3	883	886	11·8	10·0	756	775
Radnorshire	36·0	39·1	691	839	8·7	12·2	558	946
Montgomeryshire ..	38·9	37·7	747	809	8·7	8·9	558	690
Flintshire	40·8	39·7	783	852	8·5	7·1	545	550
Denbighshire	43·1	42·1	827	903	11·2	9·2	718	713
Merionethshire	34·4	32·1	660	689	6·9	6·9	442	535
Carnarvonshire ..	36·9	36·8	708	790	8·2	8·4	526	651
Anglesey	33·4	32·3	641	693	7·4	7·9	474	612

The increase upon the numbers at the end of the previous year was :—Established Church and Church in Wales 33, other religious denominations 194. The number of these buildings belonging to the various denominations is shown for each registration county in Table Q.

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, 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, 1923, and the number of buildings registered for the solemnization of marriages are shown in the following table :—

Table LXXV.

Denomination.	Buildings certified to the Registrar-General as meeting-places for Religious Worship.	Buildings registered for the Solemnization of Marriages.*
Roman Catholics	1,600	1,519
Wesleyan Methodists	7,673	4,403
Congregationalists	3,398	3,088
Baptists	3,220	2,854
Primitive Methodists	4,377	2,046
United Methodist Church	1,991	1,286
Calvinistic Methodists	1,317	1,028
Presbyterians	444	447
Unitarians	186	198
New Church	55	60
Catholic Apostolic Church	70	48
Countess of Huntingdon's Connexion	47	42
Salvation Army	1,177	216
Society of Friends	432	†
Jews	264	†
Other Denominations	3,512	1,284
All Denominations	29,763	18,519

* 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.

† 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 1923, the number of such buildings which had been brought under the operation of the Act, and so remained, was 5,101 out of the total of 18,519. The numbers of these buildings, and the denominations to which they belonged, were as follows :—

2,117 Wesleyan Methodists.
745 Congregationalists.
796 Primitive Methodists.
519 Baptists.
452 United Methodist Church.
125 Calvinistic Methodists.
347 Other Denominations and Unsectarian.

5,101 All Denominations.

Divorces and Remarriages of Divorced Persons. — The annual numbers of marriages dissolved or annulled are shown in Table O of Part II and again in the table below in terms of the persons involved, for each of the past ten years and the preceding quinquennia back to 1876–80.

During the year 1923, 2,586 divorces and 81 annulments were obtained, the number of persons involved being twice these figures, or a total of 2,667 of each sex. The total is 3·1 per cent. in excess of the 1922 figure, and more than four times the average of any years prior to 1915, though somewhat below the record figure of 3,522, involving 7,044 persons, established in 1921 as the result of a greatly stimulated increase in the divorce proceedings which followed the termination of the War.

From Table LXXVI it will be seen that for the first time the records show a decrease in the number of persons who on remarriage described themselves as divorced. The tendency for these remarriages to lag behind the divorces which enabled them to take place has been remarked before, and is to be expected

Table LXXVI.—England and Wales: Annual Number of Persons Divorced, and of Divorced Persons who Remarried, 1876–1923.

Period.	Number of Persons Divorced.	Annual Number of Divorced Persons who remarried.							
		Total.	Men.	Women.	Divorced men marrying spinsters.	Divorced men marrying widows.	Divorced men and women intermarrying.	Divorced women marrying bachelors.	Divorced women marrying widowers.
1876–80 .. (Average)	554	104	56	48	42	12	4	31	15
1881–85 .. (Average)	671	128	68	60	53	12	6	42	15
1886–90 .. (Average)	707	169	80	89	65	11	8	65	20
1891–95 .. (Average)	744	214	110	104	89	15	12	75	23
1896–1900 .. (Average)	980	345	172	173	138	24	20	126	37
1901–05 .. (Average)	1,126	509	262	247	205	38	38	181	47
1906–10 .. (Average)	1,247	693	356	337	276	53	54	253	57
1911–15 .. (Average)	1,312	820	411	409	330	50	62	309	69
1916–20 .. (Average)	3,115	1,264	683	581	525	127	62	439	111
1914..	1,712	911	439	472	356	49	68	352	86
1915..	1,360	852	434	418	352	59	46	311	84
1916..	1,908	920	466	454	364	76	52	336	92
1917..	1,956	791	429	362	350	62	34	268	77
1918..	2,222	885	495	390	390	81	48	288	78
1919..	3,308	1,352	708	644	538	142	56	510	106
1920..	6,180	2,370	1,314	1,056	981	272	122	795	200
1921..	7,044	2,878	1,592	1,286	1,182	330	160	939	267
1922..	5,176	3,374	1,913	1,461	1,457	360	192	1,062	**303**
1923..	5,334	3,008	1,679	1,329	1,307	279	186	1,002	234

having regard to the time interval which must elapse between divorce and subsequent remarriage. The latest figures afford a particular illustration of this tendency, for though the divorces rose rapidly to a maximum in 1921 and dropped at an even greater rate to 1922, the remarriages continued to increase to 1922, the first fall being shown a year later. And whereas a few years ago the numbers of divorced males and females remarrying were about equal, there is now considerable male excess. But it must be borne in mind that these numbers may understate the facts, owing to misdescription of status in the registers.

In Table P are given certain particulars concerning the marriages in respect of which suits for dissolution or annulment were commenced during the year. These figures published in the Statistical Review for the first time in 1921 are in continuation of similar statistics which, up to that year, appeared in the Civil Judicial Statistics, issued by the Home Office.

It will be seen from this Table that of the 2,834 suits commenced in the current year the most frequent duration of marriage at the date of commencement of the proceedings is from 5–10 years with an average of 188 for each of those years of duration, but the maximum is not of particular significance, for this period only accounts for 33 per cent. of the cases, there being 16 per cent. of shorter duration, while in 51 per cent. the marriages have subsisted for 10 years or more. More than 41 per cent. of the marriages in question were childless, and in a further 32 per cent. there was one child only.

BIRTHS.

The births registered during 1923 numbered 758,131, corresponding to a birth-rate of 19·7 per 1,000 of the population living.

The number of births quoted is 21,993 less than those of 1922, a diminution of 2·8 per cent., while the rate for the year is, as was that of last year in its turn, the lowest on record, with the exception of the worst of the years directly affected by the war, viz., 1917, 1918 and 1919, during which it was unusually depressed. The decline since 1920, in which a rate of 25·5 per 1,000 was recorded and which, it will be remembered, marked the climax of the temporary spurt in the birth-rate which immediately followed demobilization, has thus been uninterrupted and, in so far as the variations have followed a normal wave movement, in that the greatest fall occurred in the year following the attainment of the peak value and has been succeeded by increasingly smaller decrements to the present year, it might have been regarded as showing signs of exhausting itself but for the fact that an acceleration of the fall is reported for the period 1923–24, thus distorting the simple wave form and making it more than ordinarily difficult to discern when and where the trough of the present depression is likely to be reached.

The birth-rate in this country attained its highest values during the period 1865–1880, when it exceeded 35 per 1,000 population, and from that time it diminished by gradual and practically continuous stages to 23·8 in 1914; it is now well below the 20 mark, and without an improvement in the circumstances to which children are born, dominated as they must be by the present economic and industrial conditions of the country, is likely to remain for some time unprecedentedly low in relation to earlier periods for which we have reliable records.

The crude birth-rate, or ratio of births to population of all ages, is the appropriate form of statement when the object in view is to record the net result of the various factors governing reproduction—proportionate number of potential mothers, the number of those who are married, their age and fertility in relation to age, etc. It sums up the effects of all the influences governing the rate at which the community is reproducing itself and is, therefore, in conjunction with corresponding form of mortality statement, the crude death-rate, the appropriate means of measuring natural increase. The number of births in the country, however, depends mainly upon the number of married women at the reproductive ages, and as they form less than one-eighth of the total population the variation of their numbers and ages over a period of time may be different from that of the whole population in which case the crude birth-rates would form a very imperfect measure of the changes in fertility, *i.e.*, of the rate of reproduction in proportion to the opportunity of reproduction. In the absence of any knowledge of the constitution of the general population the crude rate is often used as an index of fertility, but always on the implied assumption of a fixed proportion of potential mothers, an assumption which may only reasonably be made in respect of short periods of adjacent years.

In order to exclude the effect of varying population constitution and so obtain a truer statement of fertility change, the method used last year in conjunction with the Census figures of 1921, which had then become available, has been continued to cover the experience of 1923. It consisted in (1) adopting the fertility curve or fertility ratios shown in Table LXXVIII as a standard,

Table LXXVII.—England and Wales.—Distribution of Female Population of Reproductive Age, 1871–1921.

Census Year.	Women 15–45 per 1,000 total population of all ages.	Married women in 1,000 female population 15–45.	Married women 15–45 in 1,000 total population of all ages.	Age distribution of 1,000 married women between 15–45.				Age distribution of 1,000 unmarried (i.e. Single and widowed) women 15–45.			
				15–	20–	25–	35–45	15–	20–	25–	35–45
1871 ..	231	496	115	13	139	455	393	402	262	215	121
1881 ..	231	491	113	11	137	456	396	410	267	206	117
1891 ..	238	471	112	9	128	460	403	399	270	218	113
1901 ..	250	468	117	7	118	468	407	374	278	229	119
1911 ..	249	477	119	5	94	460	441	353	270	245	132
1921 ..	250	485	121	7	100	431	462	358	255	238	149

(2) applying them age by age to the appropriate women in the general population—for 1922 and 1923 estimates of such women have been made for the purpose—and so obtaining a standard number of births, the numbers which would have occurred had the standard birth-rates been operating, and (3) calculating the ratio of the actual births recorded to the standard or expected number which can then be used as an index, comparing in an integral form the actual experience of each period or year with a common standard and, therefore, with one another.

The sources from which the standard fertility rates have been obtained were described in the Annual Review for 1922, and occasion no further reference here. Two features of interest may, however, be noted in connection with the standard rates: the first is that when they are applied to the 1921 Census population they produce the number of births registered in 1921 the experience of that year thus forming the basis of the comparison with other years; the second relates to the considerable variation in the incidence of fertility at the several age groups shown in the table. Below age 20 the chance of a married woman having a child within a year is shown to be nearly $\frac{1}{2}$, between ages 25 and 29 the chance has diminished by 50 per cent. to approximately $\frac{1}{4}$, ten years later it is little more than one-eighth, while in the oldest group shown, viz., 40–45, it is but 3 per cent., or about one-fourteenth of that shown for the youngest age group. When a change in the proportion of married women in one group may thus have an effect upon ensuing fertility fourteen times as great as an identical change in another group, the importance of age distribution of the potential mothers is at once manifest, and it must clearly be taken into consideration in a comparative analysis extending over several decades.

Table LXXVIII.—England and Wales.—Legitimate and Illegitimate Natality by Age of Mother, 1921.

Age Last Birthday.	Legitimate Births per 1,000 Married Women.	Illegitimate Births per 1,000 Spinsters and Widows.
15–	447	7·65
20–	359	15·14
25–	268	8·71
30–	197	0·78
35–	131	—
40–45	32	—

Similar fertility curves are not available for earlier census years, but a comparison with 1921 is shown in Table LXXIX for each Census year back to 1871 by applying the standard fertility rates to the Census populations of those years as already described,

and this is contrasted in that table with the more familiar and more approximate comparisons given by the cruder birth-rates, whether calculated per 1,000 total population or per 1,000 married women between ages 15 and 45. Thus, in 1871, 1,504 legitimate births were recorded for every 1,000 that would have occurred under the standard fertility rates, the 1921 experience being in the aggregate only two-thirds of that of 50 years ago. From that time the rates diminished steadily and progressively as shown by the comparative figures, which are 1,481, 1,382, 1,250, and 1,102 at successive ten-year intervals between 1881 and 1911. Since 1921 the even more rapid drop, commented upon in dealing

Table LXXIX.—England and Wales.—Birth-rates and Fertility, 1871–1923.

Legitimate Births.	Births per 1,000 Total Population.	Ratio to 1921.	Births per 1,000 Married Women, 15-45.	Ratio to 1921.	Ratio of Actual Births to those which would have occurred had the Standard* age rates been operating.
1871 (1870–72) ..	33·3	1,556	292·5	1,659	1,504
1881 (1880–82) ..	32·3	1,509	286·0	1,622	1,481
1891 (1890–92) ..	29·4	1,374	263·8	1,496	1,382
1901 (1900–02) ..	27·5	1,285	235·5	1,336	1,250
1911 (1910–12) ..	23·4	1,093	197·4	1,120	1,102
1921	**21·4**	**1,000**	**176·3**	**1,000**	**1,000**
1922	19·5	911	160·7	912	909
1923	18·9	883	155·3	881	877
Illegitimate Births.	**Births per 1,000 Total Population.**	**Ratio to 1921.**	**Births per 1,000 unmarried Women, 15-45.**	**Ratio to 1921.**	**Ratio of Actual Births to those which would have occurred had the Standard* age rates been operating.**
1871 (1870–72) ..	1·96	1,922	17·0	2,152	2,051
1881 (1880–82) ..	1·65	1,618	14·1	1,785	1,688
1891 (1890–92) ..	1·31	1,284	10·5	1,329	1,247
1901 (1900–02) ..	1·12	1,098	8·5	1,076	1,008
1911 (1910–12) ..	1·03	1,010	7·9	1,000	968
1921	**1·02**	**1,000**	**7·9**	**1,000**	**1,000**
1922	0·89	873	7·0	886	937
1923	0·82	804	6·5	823	863
All Births.	**Births per 1,000 Total Population.**	**Ratio to 1921.**			**Ratio of Actual Births to those which would have occurred had the Standard* age rates been operating.**
1871 (1870–72) ..	35·3	1,576	—	—	1,527
1881 (1880–82) ..	34·0	1,518	—	—	1,490
1891 (1890–92) ..	30·7	1,371	—	—	1,376
1901 (1900–02) ..	28·6	1,277	—	—	1,238
1911 (1910–12) ..	24·4	1,089	—	—	1,095
1921	**22·4**	**1,000**	—	—	**1,000**
1922	20·4	911	—	—	910
1923	19·7	879	—	—	876

* For Standard age rates *see* Table LXXVIII.

with the crude rates is shown by decreases in the comparative figures to 909 in 1922 and further to 877 in 1923. A noteworthy and somewhat unexpected feature brought out in Table LXXIX is that both for the legitimate and illegitimate birth comparisons, the crude birth-rates based upon the total population have in the period prior to 1921 generally provided a better index to the changes in fertility than what has always been assumed to be a better method of comparison, that which relates the births to the married or single women of child-bearing ages alone. The effect of the changes in the proportion of these women in the total population has been partially neutralized by their increase in age and the elimination of one of the variables only has worsened rather than improved the comparisons.

Illegitimate Births.—The births registered during 1923 include 31,522 of illegitimate children, a fall of 2,616 from the number in 1922, coincident with the decrease of 21,993 in total births. Illegitimate births have thus decreased by 7·7 per cent., while legitimate births have decreased by 2·8 per cent. As a result of these changes, the proportion of illegitimate to total births, which had risen from a minimum of 3·95 per cent. in 1901–1905 to 6·26 per cent. in 1918, in consequence of the great reduction in legitimate without any corresponding reduction in illegitimate births before 1918, and a definite increase in their number in that year (Table B), has now declined to 4·16 per cent.

In addition to the crude rate comparison an attempt has been made to allow for the age incidence of the potential mothers in respect of illegitimate as well as legitimate births. The standard age factors employed are, as described in last year's Report, of less authority than those in respect of legitimate fertility, and serve mainly to complete the tables on the lines followed and already described for married women.

Birth-rates of Different Parts of the Country.—The birth-rates, total and illegitimate, of individual administrative areas tabulated in Table E are summarized in Table LXXX.

The method employed in earlier paragraphs for comparing the fertility of England and Wales in different years by the use of a standard fertility curve applies equally well of course to the comparison of fertility in different sections of the population of which the sex, age and marital condition constitution is known, and the table dealing with local birth-rates, formerly limited of necessity to the cruder forms of comparison, is now amplified by the addition of a series of figures in which variations in birth-rates due solely to differences in the age and marital condition proportions of the several populations have been, as far as possible, eliminated.

The first three columns of Table LXXX show for each of the specified divisions of the Country the crude birth-rate of 1921, the ratio of the crude rate to that of the Country as a whole,

Table LXXX.—England and Wales and Sections* of the Country.—Birth-rates, 1921 and 1923.

	1921.			1923.		
	Birth-rate per 1,000 Total Population.	Ratio to Rate for England and Wales. (Crude Rates).	Ratio of Actual Births to those which would have occurred had the Standard† age rates been operating.	Birth-rate per 1,000 Total Population.	Ratio to Rate for England and Wales. (Crude Rates).	Ratio Corrected to Exclude Variations due to Differing Age and Marital Condition Incidence.‡
	(1)	(2)	(3)	(4)	(5)	(6)
All Births—						
England and Wales	**22·4**	**1,000**	**1,000**	**19·7**	**1,000**	**1,000**
London	22·1	987	957	20·1	1,020	989
County Boroughs	23·5	1,049	1,004	20·4	1,036	992
Other Urban Districts ..	22·1	987	978	19·2	975	966
Rural Districts	21·4	955	1,060	19·3	980	1,088
Northern Counties	23·7	1,058	1,025	20·5	1,041	1,009
County Boroughs	24·0	1,071	1,026	20·8	1,056	1,012
Other Urban Districts ..	23·1	1,031	996	19·9	1,010	976
Rural Districts	23·7	1,058	1,099	21·0	1,066	1,107
Midland Counties	22·2	991	999	19·6	995	1,003
County Boroughs	23·6	1,054	1,000	20·4	1,036	983
Other Urban Districts ..	21·6	964	964	19·0	964	964
Rural Districts	21·2	946	1,054	19·2	975	1,086
Southern Counties (including London).	20·4	911	941	18·5	939	970
County Boroughs	19·8	884	887	17·9	909	912
Other Urban Districts ..	18·9	844	898	16·9	858	913
Rural Districts	19·1	853	994	17·6	893	1,040
Wales	25·0	1,116	1,099	21·6	1,096	1,079
County Boroughs	24·9	1,112	1,035	21·8	1,107	1,030
Other Urban Districts ..	26·7	1,192	1,101	22·4	1,137	1,050
Rural Districts	22·6	1,009	1,143	20·3	1,030	1,167
Illegitimate Births—						
England and Wales	**1·02**	**1,000**	**1,000**	**0·82**	**1,000**	**1,000**
London	0·89	873	788	0·81	988	892
County Boroughs	1·09	1,069	1,034	0·84	1,024	991
Other Urban Districts ..	0·96	941	944	0·76	927	930
Rural Districts	1·07	1,049	1,197	0·90	1,098	1,253
Northern Counties	1·12	1,098	1,091	0·87	1,061	1,054
County Boroughs	1·15	1,127	1,091	0·89	1,085	1,050
Other Urban Districts ..	1·04	1,020	1,030	0·80	976	986
Rural Districts	1·17	1,147	1,257	0·96	1,171	1,283
Midland Counties	1·00	980	992	0·78	951	963
County Boroughs	1·04	1,020	975	0·76	927	886
Other Urban Districts ..	0·91	892	869	0·73	890	867
Rural Districts	1·07	1,049	1,234	0·89	1,085	1,276
Southern Counties (including London).	0·92	902	877	0·80	976	949
County Boroughs	1·04	1,020	1,030	0·88	1,073	1,084
Other Urban Districts ..	0·91	892	864	0·76	927	898
Rural Districts	0·92	902	1,029	0·80	976	1,113
Wales	1·03	1,010	1,108	0·83	1,012	1,110
County Boroughs	0·77	755	751	0·66	805	801
Other Urban Districts ..	1·02	1,000	1,134	0·78	951	1,078
Rural Districts	1·22	1,196	1,320	1·02	1,244	1,373

* For constitution of Geographical Sections of the Country *see* page 8.
† For Standard age rates *see* Table LXXVIII.
‡ Col. (6) has been obtained by multiplying col. (5) by the correcting factor referred to in the text, **viz.**, col. 3 ÷ col. 2.

and the corresponding ratio obtained by the use of the standard fertility rates of Table LXXVIII, in conjunction with the Census populations of that year. For later years local populations analysed by age and marital condition are not available, and an approximate correction to the crude rate comparison of 1923 shown in col. 5 has been made as follows :—The difference between cols. 2 and 3 has been regarded as a measure of the variation due to the constitution of the population and in the form of a factor, viz., col. 3÷col. 2, has been applied to the crude 1923 birth ratio to obtain the corrected ratio shown in col. 6. The implied assumption that the constitutions of the local populations remain in constant relation to one another could not be maintained over a long period of time, but for the years of an inter-censal period corrected ratios obtained in this way will undoubtedly provide a truer picture of the incidence of fertility than that shown by the unadjusted crude rates.

For 1923 the diminution in births has been common throughout all of the areas and sections shown in the table, with the exception of the County Boroughs of Wales, which show a slight improvement as compared with 1922. Otherwise the fall has been least in the remainder of Wales and the rural districts of England and greatest in the County Boroughs of the North. Variations in the amount of the fall have not, however, disturbed the order of the several geographical divisions ; this has been maintained with great constancy year after year, as shown in the following table, which states the birth-rate of each section as a percentage of that of the whole country for each year from 1914 onwards.

Table LXXXI.—Birth-rate of Different Sections of the Country per cent. of that of England and Wales, 1914–23.

——	1914.	1915.	1916.	1917.	1918.	1919.	1920.	1921.	1922.	1923.
North ..	107	104	102	104	106	105	103	106	104	104
Midlands..	98	98	100	98	98	97	100	99	100	99
South ..	90	93	96	94	90	93	96	91	94	94
Wales ..	113	114	111	115	122	112	105	112	107	110

But the chief interest in Table LXXX must lie in the contrast it brings out between comparisons based on the crude rates and those shown by the more accurate method attempted in col. 6. Taking each of the four geographical units as a whole, it will be seen that while they retain the same relative position in respect of total births, by the completer comparison

now introduced, the fluctuations are not nearly so great as would appear from the crude rates. Thus in the North and Wales where the crude rates show excesses of 4·1 and 9·6 per cent. over the mean the later method reduces them to 0·9 and 7·9 per cent. respectively, while in the Midlands the small deficiency of 0·5 per cent. is converted to an excess of 0·3 per cent. On the other hand, in the South, which is below normal, the deficiency is cut down by the new method from 6·1 to 3·0 per cent. If, however, the areas be examined from the point of view of urbanization, the change is a more remarkable one. By the crude rates the births in rural districts were not only below normal but were nearly as low as the lowest of the urban areas, whereas from the more accurate point of view of fertility they are now shown to be the most productive of all areas not only for the country as a whole, but for each of the geographical sections. London, and the County Boroughs on the other hand, which are above average by the crude rates are transferred to a subnormal position. In the South of England and in Wales, fertility apparently decreases progressively with urbanization, but in the North and Midland areas while the rural districts have the highest rates, the positions of the large and small towns are reversed, the latter showing the rather more unfavourable positions.

The extent of illegitimacy in different classes of area and parts of the country may be gathered from the lower half of Table LXXX. The distribution is much the same as that of all births, though the fluctuations are considerably wider throughout ; the highest rates occur in the rural districts, but whereas for all births the rural aggregate rate is 8·8 per cent. above the mean, for illegitimate only it is 25·3 per cent. above ; London, on the other hand, is 10·8 per cent. below the mean in regard to illegitimacy as compared with 1·1 per cent. for all births. The table confirms generally the view expressed in earlier reports, when only crude rate comparisons were available, that such rates understated the position in rural districts and overstated it in the South.

Sex Proportions at Birth.—Births of males in England and Wales in 1923 numbered 387,296, and those of females 370,835 ; the proportion of male to female births was 1,044, 1,053, and 1,044 to 1,000 for legitimate, illegitimate and total births respectively. The corresponding proportions for total births in each year from 1883 onwards and in groups of years since the commencement of registration are shown in Table C ; the extreme range during the preceding 50 years was from 1,032 per 1,000 in 1898 to 1,060 in 1919. During this period the highest ratio recorded prior to the war was 1,043 in 1875. Since 1919 the male excess has fallen continuously to the present figure, though it still remains rather above its pre-war level.

The extent to which different classes of area or portions of the country contribute to the preponderance of male births is shown in Table LXXXII.

Table LXXXII.—Male Births per 1,000 Female Births, 1923.

———	England and Wales.	North.	Midlands.	South.	Wales.
All Areas	1,044	1,043	1,045	1,044	1,049
London	1,045	—	—	1,045	—
County Boroughs ..	1,037	1,037	1,037	1,029	1,065
Other Urban Districts	1,051	1,051	1,052	1,052	1,047
Rural Districts ..	1,045	1,044	1,047	1,042	1,040

The proportion for Wales is higher than that of the three English sections but whereas Wales follows the more common tendency of this country in past years and of other countries in experiencing a decreasing degree of masculinity with decreasing urbanization, in the English sections, the Rural Districts occupy a position between the smaller towns and the County Boroughs, the lowest proportions being shown for the largest towns other than London; there is however much variability in the relative experience in this matter and the figures of a single year afford no reliable guide to the ascertainment of any characteristic differences.

NATURAL INCREASE.

In 1923 the excess of births over deaths registered in England and Wales was 313,346, as compared with 293,344 in 1922, 390,185 in 1921, and 491,652 in 1920.

The increase of 20,002 over last year's figures is due to the fact that the decrease in the number of deaths was in excess of the corresponding decrease in births and for a single year is not of any significance in itself for while the birth rate since 1920 has decreased continuously with a steadily lessening tendency the movement in the death-rate has been more erratic particularly as regards the record for 1923. The fall in the birth-rate between 1923 and 1924 is even greater than that of the past year and the rate of natural increase for 1923, shewn as 8·1 per 1000 population, low as it is in comparison with pre-war years is higher than appears to be likely, from present indications, for the immediate years of the future.

Table LXXXIII.—Natural Increase of Population per 1,000 living, 1876-1923.

———	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
1911—1915 ..	23·6*	14·3	9·3
1916—1920 ..	20·1*	14·4	5·7
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..	24·3	14·6	9·7
1912..	23·9	13·3	10·6
1913..	24·1	13·8	10·3
1914..	23·8	14·0	9·8
1915..	21·9*	15·7	6·2
1916..	20·9*	14·4	6·5
1917..	17·8*	14·4	3·4
1918..	17·7*	17·6	0·1
1919..	18·5*	13·7	4·8
1920..	25·5	12·4	13·1
1921..	22·4	12·1	10·3
1922..	20·4	12·8	7·6
1923..	19·7	11·6	8·1

*The rates for the years 1915–1919 are based upon populations specially estimated for this purpose.

Table LXXXIV similarly shows for 1923 the rate of natural increase in various sections of the country, and is the resultant effect of the several sectional birth and death-rates already discussed.

Table LXXXIV.—Natural Increase per 1,000 living, 1923.

——	England and Wales.	North.	Midlands.	South.	Wales.
All Areas	8·1	8·0	8·7	7·2	9·9
London	8·7	—	—	8·7	—
County Boroughs ..	8·1	7·8	9·2	6·1	10·0
Other Urban Districts	8·0	7·6	8·6	5·9	11·2
Rural Districts ..	8·0	9·7	8·0	6·6	7·9

UNITED KINGDOM AND IRISH FREE STATE.

Population.—The first complete census of the United Kingdom was taken in 1821, when the population numbered 20,893,584 persons; during the 100 years 1821–1921 this number has increased by about 126 per cent., the sum of the final census figures for Great Britain and of the estimated population of Ireland in June, 1921, amounting to 47,263,196. The estimated populations by sex of the several divisions in each of the years 1874–1923 are shown in Table A.

Table LXXXV.—United Kingdom and Irish Free State. Vital Statistics 1913–1922 and 1923.

	United Kingdom and Irish Free State.	England and Wales.	Scotland.	Northern Ireland.	Irish Free State.
Estimated Population in the middle of the year 1923 (*in thousands*).					
Males	22,915	18,342	2,357	619	1,597
Females	24,832	20,061	2,544	659	1,568
Persons	47,747	38,403	4,901	1,278	3,165
Marriages.					
1923	351,230	292,408	35,216	7,974	15,632
Persons married per 1,000 living :—					
1913–1922 ..	16·0	16·8	15·2	12·9	9·9
1923	14·7	15·2	14·4	12·5	9·9
Births.					
1923	961,820	758,131	111,902	30,097	61,690
Per 1,000 living :—					
1913–1922 ..	21·5	21·3	23·8	22·9	20·3
1923	20·1	19·7	22·8	23·5	19·5
Deaths.					
1923	569,075	444,785	63,283	18,790	42,217
Per 1,000 living :—					
1913–1922 ..	14·4	14·1	15·2	17·4	15·9
1923	11·9	11·6	12·9	14·7	13·3
Deaths of Infants under 1 *year.*					
1923	67,807	52,582	8,825	2,302	4,098
Per 1,000 births :—					
1913–1922 ..	94	94	104	95	81
1923	70	69	79	76	66

Marriages.—The marriages during the year 1923 numbered 351,230, corresponding to a rate of 14·7 persons married per 1,000 of the total population. This rate was 0·3 per 1,000 below the corresponding rate in 1922, and 1·3 per 1,000 below the average rate in the ten years 1913–1922.

Births.—The births registered in the year 1923, numbered 961,820, and were in the proportion of 20·1 per 1,000 of the total population. This rate was 0·6 per 1,000 below the corresponding rate in 1922, and 1·4 per 1,000 below the average in the 10 years 1913–1922.

Deaths.—The deaths registered in the year 1923 numbered 569,075, and were in the proportion of 11·9 per 1,000 of the total population. This rate was 1·2 per 1,000 below the corresponding rate in 1922, and 2·5 per 1,000 below the average in the 10 years 1913–1922.

Infant Mortality.—The deaths of infants under one year of age during the year 1923 numbered 67,807 and were equivalent to a rate of 70 per 1,000 registered births against 79 in 1922 and an average rate of 94 in the ten preceding years.

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 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 1923 this register was increased by the addition of 134 entries of birth and 2,260 entries of death.

REGISTRATION OF BIRTHS, DEATHS AND MARRIAGES.

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 1923 by 1,787,732, this addition raising the total of names in the indexes, which at the end of 1923 embraced a period of 86½ years, to 145,650,166 (Table S).

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.

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

Table LXXXVI.

Years.	Total Searches.	Gratuitous Searches.	Searches paid for by Fees.	Certificates Issued.	Amount Received.		
					£	s.	d.
1866 (52 weeks)	12,135	—	12,135	10,017	1,860	15	6
1875 (52 weeks)	26,356	—	26,356	20,282	3,879	15	6
1885 (52 weeks)	36,450	—	36,450	27,682	5,317	13	6
1895 (52 weeks)	53,289	—	53,289	35,727	7,200	12	6
1905 (52 weeks)	65,142	—	65,142	50,310	9,611	9	0
1906 (52 weeks)	64,340	—	64,340	49,429	9,458	6	0
1907 (52 weeks)	69,249	—	69,249	53,058	10,194	9	0
1908 (53 weeks)	72,370	—	72,370	54,870	10,550	8	0
1909 (52 weeks)	132,169	58,626*	73,543	54,674	10,568	8	0
1910 (52 weeks)	126,716	51,347	75,369	57,019	10,939	5	6
1911 (52 weeks)	140,496	65,491	75,005	56,347	10,875	6	0
1912 (52 weeks)	149,752	69,151	80,601	61,143	11,752	6	0
1913 (52 weeks)	150,540	71,225†	79,315	60,356	11,613	19	0
1914 (53 weeks)	188,040	104,593	83,447	65,817	12,482	11	6
1915 (52 weeks)	202,939	118,788	84,151	69,746	13,007	10	0
1916 (52 weeks)	303,334	197,669	105,665	88,265	16,379	17	0
1917 (52 weeks)	272,199	177,403	94,796	80,374	14,859	14	0
1918 (52 weeks)	255,462	146,504	108,958	90,898	16,889	0	0
1919 (52 weeks)	301,913	170,670	131,243	107,067	20,017	14	6
1920 (53 weeks)	284,194	149,447	134,747	108,684	20,415	0	0
1921 (52 weeks)	258,461	131,167	127,294	99,911	18,949	10	6
1922 (52 weeks)	263,047	143,088	119,959	90,400	19,028	12	6
1923 (52 weeks)	269,822	144,118	125,704	93,701	20,875	16	0

* Including some searches made in 1908.

† In addition, there were 91,917 gratuitous searches for National Insurance Audit purposes.

The 144,118 gratuitous searches during 1923 include 72,396 searches made in the Birth Records for the purpose of verifying the ages of persons claiming old-age pensions, 12,585 searches in the Census Records of 1861 etc. for the same purpose, 49,775 made to assist dependents of men serving with H.M. Forces to produce evidence of marriage and of the births of children in connection with claims to Naval and Military Pensions, Separation Allowances, etc., and to verify the ages of certain classes of youths and men in connection with service in the Army, Navy, and Air Force, and 9,362 made for other public purposes.

Offences against the Registration Acts.—In 1923 four persons, on prosecution by order of the Registrar-General, were convicted of offences in connection with registration. The offences for which convictions were obtained were as under :—

(*a*) Giving false information when registering the birth of a child 1

(*b*) For using as true a falsified Certificate of birth or death 3

In addition to the above cases proceedings were taken and convictions obtained by the Director of Public Prosecutions in cases reported through the Registrar-General, the offences being those of false registration and making false declarations when giving notice of marriage.

PARLIAMENTARY AND LOCAL GOVERNMENT ELECTORS.

In Tables T and U of Part II of the Statistical Review, 1923, are shown the numbers of males and females on the Register of Electors compiled under the Representation of the People Act, 1918, in respect of the qualifying period of six months ending on the 15th June, 1923.

The first returns of electors on the Registers prepared after the passing of that Act were issued in 1919 and 1920 by the Home Office. In both returns statistics were given of the Parliamentary and Local Government electors in respect of each Parliamentary constituency in the United Kingdom. From and including the year 1921 the publication has been embodied in the Registrar-General's Annual Review.

In addition to these periodical returns, the numbers of Parliamentary electors, male and female, in 1921 were published for each constituency in the Reports of the 1921 Census for England and Wales and compared with the respective population of these areas by the addition of columns showing the ratio of electors of each sex to the population in the several age periods (21 and over in the case of males and 30 and over in the case of females), governing the franchise under the Act, the electorate used for these more detailed comparisons being that of the Autumn Register for 1921.

The particulars issued in Part II of the present Statistical Review, in respect of the Autumn Register for 1923, have been taken from statements furnished to the Registrar-General by the Registration Officers of the several areas, or in the case of a University forming the whole or part of a University constituency, by the Chancellor, Registrar or other officer dealing with Parliamentary registration.

The expressions " Parliamentary electors," " Local Government electors," and " persons on absent voters list," have in the tables the same meaning as in the Act. The expression " men registered for business premises qualification," means men who are qualified to be registered as occupiers of business premises and are not resident in the qualifying premises.

The Registration Officers were instructed to enter in the statements from which the Return has been compiled the total number of names on the Register without any deduction in respect of persons who are registered in more than one Parliamentary or Local Government constituency, and further, to take care to secure that the names of " out voters " (that is, persons whose names appear twice in the Register, by reason of a claim under Rule 24 of the First Schedule to the 1918 Act) should be counted once only.

Table T refers to Parliamentary electors, and shows for each Parliamentary constituency in England and Wales, including the University constituencies, the number of males and females on the Register, and also the numbers registered in respect of business premises qualifications and the numbers on the absent voters list.

Table U refers to Local Government electors, and shows the numbers of each sex registered in respect of every sanitary area, i.e., County Borough, Metropolitan Borough, Municipal Borough, Urban District and Rural District in England and Wales.

The totals of the Autumn 1923 Registers are shown in the following summary in conjunction with the figures of previous Autumn Registers made since the passing of the 1918 Act.

England and Wales.

Register	Parliamentary Register (including University Constituencies).					Local Government Register.		
	Persons.	Males.	Females.	Men registered for business premises qualification (included in Cols. *b and c*).	Persons on Absent Voters List (included in Cols. *b–d*).	Persons.	Males.	Females.
a	*b*	*c*	*d*	*e*	*f*	*g*	*h*	*k*
Autmn 1918	17,222,983	10,281,054	6,941,929	159,013	3,362,028	13,930,130	6,998,665	6,931,465
1919	17,465,638	10,234,887	7,230,751	205,461	1,152,061	14,361,123	7,176,019	7,185,104
1920	17,584,552	10,176,750	7,407,802	203,471	254,866	14,712,453	7,364,912	7,347,541
1921	17,795,784	10,237,344	7,558,440	194,737	185,227	15,019,348	7,527,861	7,491,487
1922	18,001,692	10,312,248	7,689,444	199,904	162,901	15,322,625	7,700,108	7,622,517
1923	18,388,833	10,498,179	7,890,654	208,694	151,953	15,691,962	7,873,461	7,818,501

It will be observed that the total female electorate on the Parliamentary Register and both male and female on the Local Government Register have steadily increased with the increase in population since the passing of the 1918 Act. The male Parliamentary electorate has increased since 1920, but for earlier years a decrease is shown, due, as explained at greater length in the 1921 report, to a special provision of the 1918 Act under which members of the fighting forces were exceptionally placed upon the register at the age of 19 instead of the normal age of 21. The consequence of this was that in the two years after demobilisation, the normal number of new entrants was diminished by the earlier registrations at a younger age and the residue was less than the lapses by death, etc.

The increases in the electorates shown for the past year are rather larger than usual particularly in the Parliamentary section. The spurt in growth coincides with the holding of a general election on the 15th November, 1922, after an interval of four years, and is probably to be associated with the increased activities of registration officers and party agents in connection therewith, the election test no doubt disclosing discrepancies and omissions undetected by the routine registration procedure.

Including a certain amount of plural representation in the case of those persons registered in more than one constituency by reason of their possessing the necessary residence or business qualification, or being entitled to be registered in respect of a University constituency, the total Parliamentary electorate of 18,388,833 represents 47·9 per cent. of the estimated total population, or 57·2 per cent. of the male and 39·3 per cent. of the female population ; in the case of the rather more restricted Local Government franchise, the numbers are somewhat less and the proportions correspondingly lower, the total electorate being 40·9 per cent. of the whole population, or 42·9 per cent., and 39·0 per cent. in the case of males and females separately.

Of the total of the Parliamentary Registers, the bulk, viz., 18,345,264, represents the aggregate voting strength in the 509 geographical constituencies into which England and Wales is divided, the balance of 43,569 representing the five University constituencies. Eleven of the Boroughs, and three University constituencies, however, each return two members, so that the total representation in Parliament is by 528 members, 520 in respect of the geographical divisions, with an average electorate of 35,279 per member and eight in respect of the Universities, with an average electorate of 5,446.

MISCELLANEOUS.

Other tables appearing in Part II. of the Statistical Review which have not formed the subject of special comment in the foregoing pages are as follows :—

Table R, showing the balance inward or outward of passenger movement into and out of the United Kingdom for each of the years from 1904–1923.

Table W, showing the Area, Population, Births and Deaths in British Islands other than Great Britain and Ireland from 1902–1923.

Table X, showing the Population, Births, Deaths, Infant Mortality, Marriages and corresponding rates for the year 1923 in the several portions of the British Dominions :—

The Commonwealth of Australia.

Canada.

New Zealand.

South Africa.

Table Y, showing the 1921 Census Populations, and the intercensal rate of increase or decrease of the several Dominions, Colonies and Protectorates (including mandated territories) in the British Empire.

Table Z, showing the latest Census Populations and intercensal rates of increase or decrease in various Foreign Countries.

Table AA, showing the changes which have taken place in the boundaries of Administrative and Poor Law Areas in England and Wales during 1923.

Table BB, showing the changes which have taken place in the boundaries of Administrative Areas in England and Wales from 20th June 1921 to 31st December 1923, with enumerated population by sex and age 1921 of the transferred areas.

METEOROLOGY OF THE YEAR 1923.*

Rather Wet: Temperature Normal; Sunshine Slightly Deficient.

The year 1923 was characterised by the hot spell in July and the low temperatures of May and November.

The weather of *January* was mild and sunny. A few cold days were experienced. Rainfall was deficient in most parts of the country. Occasional gales were reported on the northern coasts. *February* was also very mild and was extremely wet, being the wettest February for at least twenty years. In some places it was the wettest February ever known to have occurred, e.g., at Ross-on-Wye, where the records cover 105 years. The weather of the first week of *March* was mild and unsettled, with south-westerly winds. Two weeks of easterly winds and rather low temperatures followed. The last week was unusually warm, with southerly breezes. Comparatively warm weather was experienced during the first half of *April*, but the remainder of the month was cool. Rainfall was variable and sunshine rather low. Apart from a few very warm days at the beginning of the month, the weather of *May* was decidedly cool and dull, almost wintry. In many places the month was the coldest May since 1902. Precipitation was about four-fifths of the normal. The greater part of *June* was also cool, dull and showery, with alternations of bright periods, but the last week, while still cool, was mainly fine and dry. The month as a whole was remarkably dry, the general rainfall being only 51 per cent. of the normal; some areas had only 20–30 per cent. of the normal. The middle of *July* was fine and sunny, with high day temperatures and warm nights. Maximum temperatures of 90° F. and over were recorded locally. On the night of the 9th to 10th, London and

* Furnished by the Director of the Meteorological Office.

the neighbouring counties were visited by a memorable thunderstorm, associated with very heavy rains; over 6,900 lightning flashes were recorded at Chelsea in a period of six hours. Towards the end of the month the weather was cooler with more cloud and rain. For the first fortnight of *August* fine warm weather prevailed in the south-east, but in the north and west conditions were unsettled. Subsequently the weather was generally cool and wet, with severe gales on the 29th–30th. During the early part of *September*, fair, warm and sunny weather prevailed in the south and an improvement on the rough and unsettled conditions of the end of August also took place in the north. Towards the end of the second week the weather again became unsettled and cool over the whole country. *October* was characterised mainly by unsettled boisterous weather with south-westerly winds, often of gale force, frequent squalls and heavy rainfall. There were considerable bright periods. The temperature was slightly above normal, but ground frosts were experienced at many inland places during the quiet weather of the middle of the month. After a few mild days at the beginning of *November* the weather was cold with much frost at night, but many sunny days. There was an excess of rain, sun, cold and fog. Gales and heavy rain from the 12th to 18th gave rise to extensive floods in the north-west. Some snow fell. *December* was a little warmer than November. There was a considerable amount of fog in the first week, after which the weather was warmer for a few days, with an absence of night frosts. During the remainder of the month the weather was alternately cool and mild and snow fell to a considerable extent in the north and generally, except in the south-west.

Further information.—Tables relating to meteorological elements are given in Part I. (Tables 29–31). A description of the weather of each month appears in the Quarterly Return of the Registrar-General and a summary of the observations at Greenwich for each month of the year appears in Table XIV of the Return for the fourth quarter

Charts showing the distribution of pressure, temperature, sunshine and rainfall for the year, together with summaries of the observations at numerous stations will be found in the Annual Summary of the Monthly Weather Report issued by the Meteorological Office.

A list of the publications of the Meteorological Office will be found in "List M" issued by H.M. Stationery Office.

Printed by H.M.S.O. Press, Harrow.

REGISTRAR-GENERAL FOR ENGLAND AND WALES.

Official List.

Part I.—1925. Register and Records; Lists of Registration Officers and Districts, Indexes, &c. Price 2*s*. (2*s*. 6*d*.)

Part III.—1921. Places of Meeting for Religious Worship, showing those Registered for the Solemnization of Marriages. Price 6*s*. 6*d*. (7*s*. 6*d*.)

Addenda to Part III., corrected to December 31, 1924. List of Buildings registered for Marriages, or of which the Registration has been cancelled; Buildings Certified for Worship by the Jews or by the Society of Friends, or of which the Certification for Worship has been cancelled; and Buildings in which the Marriage Act, 1898, has been adopted or abandoned. Price 2*d*. (2½*d*.)

Births, Deaths, and Marriages.

Abstract of Arrangements respecting Registration of Births, Deaths, and Marriages in Great Britain, Ireland, and the British Dominions beyond the Seas. (1916.) Price 6*d*. (8*d*.)

Marriage Act, 1918. Rules and Regulations for the guidance of Authorized Persons and of the Trustees or other Governing Bodies of Registered Buildings in which Marriages may be Solemnized without the presence of a Registrar. (1919.) Price 6*d*. (8*d*.)

MINISTRY OF HEALTH.

Sixth Annual Report for 1924-25. [Cmd. 2450.] Price 3*s*. 6*d*. (3*s*. 8½*d*.)

The Report deals with Public Health, Local Government and Finance, Poor Law and National Health Insurance Administration.

"On the State of the Public Health." By Sir George Newman, K.C.B., M.D., D.C.L., F.R.C.P. This is the Annual Report for 1920 of the Chief Medical Officer of the Ministry of Health. (1921.) Price 1*s*. 6*d*. (1*s*. 8*d*.)

Do.	do.	for 1922	..	2*s*. 6*d*. (2*s*. 8½*d*.)
Do.	do.	for 1923	..	3*s*. (3*s*. 3*d*.)
Do.	do.	for 1924	..	3*s*. 6*d*. (3*s*. 9½*d*.)

GUIDE TO CURRENT OFFICAL STATISTICS.

(*Prepared by the Permanent Consultative Committee on Official Statistics.*)

First Issue (1922)	..	1*s*. (1*s*. 2½*d*.)
Volume Two (1923)	..	1*s*. (1*s*. 4*d*.)

These two issues of the Guide provide a systematic survey of the statistics contained in official publications issued since the beginning of 1922. The Guide consists of a List of Publications (grouped under the Departments severally responsible), and an alphabetical Subject Index, which not only refers the enquirer to the appropriate volumes in the List, but also supplies details as to the mode and degree of analysis of the statistics contained therein.

The second volume includes an appendix dealing broadly with selected publications of permanent statistical interest issued mainly since 1900.

Whilst the Guide is based upon official publications containing statistics, it constitutes, in effect, a general work of reference to most of the activities of Government Departments.

HIS MAJESTY'S STATIONERY OFFICE,

LONDON, MANCHESTER, EDINBURGH, CARDIFF.

SCOTTISH BOARD OF HEALTH.

SIXTH ANNUAL REPORT FOR 1924. [Cmd. 2416.] Price 4*s.* 6*d.* (4*s.* 9½*d.*)

REGISTRAR-GENERAL FOR SCOTLAND.

Seventieth Annual Report for 1924. Price 10*s.* 6*d.* (10*s.* 10*d.*)

CENSUS OF SCOTLAND, 1921.

REPORT ON THE THIRTEENTH DECENNIAL CENSUS :—

VOL. I.

Part.

City of

1. Edinburgh. Price 4*s.* (4*s.* 2*d.*)
2. Glasgow. Price 5*s.* (5*s.* 2*d.*)
3. Dundee. Price 3*s.* 6*d.* (3*s.* 7½*d.*)
4. Aberdeen. Price 4*s.* (4*s.* 2*d.*)

County of

5. Aberdeen. Price 9*s.* (9*s.* 2½*d.*)
6. Argyll. Price 7*s.* (7*s.* 2½*d.*)
7. Ayr. Price 10*s.* (10*s.* 2½*d.*)
8. Banff. Price 6*s.* (6*s.* 2*d.*)
9. Berwick. Price 4*s.* 6*d.* (4*s.* 8*d.*)
10. Bute. Price 4*s.* (4*s.* 1½*d.*)
11. Caithness. Price 4*s.* 6*d.* (4*s.* 8*d.*)
12. Clackmannan. Price 5*s.* (5*s.* 2*d.*)
13. Dumbarton. Price 7*s.* (7*s.* 2*d.*)
14. Dumfries. Price 7*s.* (7*s.* 2½*d.*)
15. East Lothian. Price 5*s.* (5*s.* 2*d.*)
16. Fife. Price 14*s.* (14*s.* 3*d.*)
17. Forfar. Price 8*s.* (8*s.* 2½*d.*)
18. Inverness. Price 7*s.* (7*s.* 2½*d.*)
19. Kincardine. Price 4*s.* 6*s.* (4*s.* 8*d.*)

VOL. I.

Part

County of

20. Kinross. Price 3*s.* 6*d.* (3*s.* 7½*d.*)
21. Kirkcudbright. Price 5*s.* (5*s.* 2*d.*)
22. Lanark. Price 13*s.* 6*d.* (13*s.* 9*d.*)
23. Midlothian. Price 7*s.* (7*s.* 2*d.*)
24. Moray. Price 5*s.* (5*s.* 2*d.*)
25. Nairn. Price 3*s.* (3*s.* 1½*d.*)
26. Orkney. Price 4*s.* (4*s.* 2*d.*)
27. Peebles. Price 3*s.* 6*d.* (3*s.* 7½*d*).
28. Perth. Price 9*s.* (9*s.* 2½*d.*)
29. Renfrew. Price 10*s.* (10*s.* 2½*d.*)
30. Ross and Cromarty. Price 6*s.* 6*d.* (6*s.* 8*d.*)
31. Roxburgh. Price 5*s.* (5*s.* 2*d.*)
32. Selkirk. Price 3*s.* 6*d.* (3*s.* 8*d.*)
33. Shetland. Price 4*s.* (4*s.* 2*d.*)
34. Stirling. Price 7*s.* (7*s.* 2½*d.*)
35. Sutherland. Price 3*s.* 6*d.* (3*s.* 8*d.*)
36. West Lothian. Price 5*s.* 6*d.* (5*s.* 7½*d.*)
37. Wigtown. Price 4*s.* (4*s.* 1½*d.*)

VOL. II.—Ages of the Population; with Charts. Conjugal Condition of Persons aged 15 and over. Orphanhood (children under 15), Birthplaces, Gaelic Speaking Population and Housing Conditions, 1924. Price 20*s.* (20*s.* 3½*d.*)

VOL. III.—Occupations and Industries of Persons of Twelve Years of Age and Upwards, 1924. Price 30*s.* (30*s.* 9*d.*)

VOL. IV.—Dependent Children, 1924. Price 4*s.* (4*s.* 1½*d.*)

May be purchased through any Bookseller or directly from the Sale Offices of H.M. STATIONERY OFFICE *at the Addresses shown on the front cover. (All prices are net and those in parentheses include postage.)*