REPORTS

FROM

COMMISSIONERS, INSPECTORS,

AND OTHERS:

EIGHTEEN VOLUMES.

— (3.) —

BIRTHS, DEATHS, AND MARRIAGES—*continued.*

Session

10 *February* 1920 —— 23 *December* 1920.

VOL. XI.

1920.

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1920.

EIGHTEEN VOLUMES—CONTENTS OF THE

THIRD VOLUME.

N.B.—*THE* Figures *at the* beginning of the line *correspond with the* No. *at the foot of each* Report; *and the* Figures *at the* end of the line *refer to the* Paging *of the Volumes arranged for the House of Commons.*

VOL. XI.—1920.

EIGHTY-SECOND

ANNUAL REPORT

OF THE

REGISTRAR-GENERAL

OF

BIRTHS, DEATHS, AND MARRIAGES

IN ENGLAND AND WALES.

(1919.)

Presented to Parliament by Command of His Majesty.

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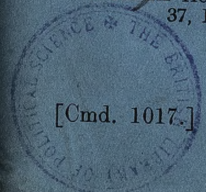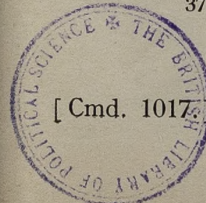
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OF THE

REGISTRAR-GENERAL'S ANNUAL REPORT FOR 1919.

REPORT

TO

THE RIGHT HONOURABLE CHRISTOPHER ADDISON, M.D., M.P.,

THE MINISTER OF HEALTH, &c.

(1919.)

SIR,

I have the honour to submit to you my Report on the estimated population, and on the marriages, births, and deaths registered in England and Wales during the year 1919.

The provisional numbers of marriages, births, and deaths during 1919 in the registration counties of England and Wales, and of births and deaths in towns with a census population of 20,000 or more, were published in March, 1920, in the "Annual Summary," which was incorporated with the Return for the Fourth Quarter of the year, the numbers being derived from returns furnished by the registrars acting throughout the country.

The present Report also relates to the year 1919, but the statistics have been compiled from the registers deposited in this Office, and they have been analysed in much greater detail than was possible in the Annual Summary.

The salient features of the vital statistics of 1919 are as follows :—The marriage-rate was 19·7 per 1,000, being 4·4 above the rate in the preceding year (15·3), and 4·3 above the average in the last ten years—1905-1914—which were unaffected by war conditions (15·4). It is the highest rate on record. The provisional figures for the first six months of 1920 indicate a further rise.

The birth-rate in 1919 was 18·5 per 1,000, being 0·8 per 1,000 above that recorded for 1918, but 5·3 below that for 1914 (23·8), which, particularly so far as the birth-rate is concerned, may be regarded as the last year unaffected by war conditions. The provisional figures for the first three quarters of 1920 point to a return for this year to a rate at least equal to that of 1914, but also suggest that this recovery may not be long maintained in full.

The death-rate in 1919 was 13·7 per 1,000, being the lowest on record with the exception of the rates for 1910 and 1912, notwithstanding the heavy mortality from influenza in the early part of the year. The provisional figures for the first three quarters of 1920 indicate a further fall.

Infant mortality was 89 per 1,000 births, being 8 per 1,000 below the rate in the preceding year, and 16 per 1,000 below the average in the ten years 1909-1918. It is the lowest rate hitherto recorded, the next lowest being that for the year 1916. The comparison with recent years is, however, affected by the fact that the birth-rate was falling then but rising in 1919 ; and when the necessary allowance has been made for the effects of these movements the rates for 1916 and 1919 appear to be about equal. The provisional figures for the first three quarters of 1920 indicate a further fall. As in other recent Reports the mortality of infancy and early childhood has been examined in special detail.

Compared with 1918 the mortality from whooping cough, measles, diphtheria, enteric fever, and diarrhœal diseases showed a decrease, while that from scarlet fever showed a slight increase. The death-rates from measles, whooping cough, and enteric fever were by far the lowest on record. Deaths from small-pox were more numerous than in any year since 1905.

Notwithstanding the influenza epidemic, mortality from tuberculosis was the lowest on record and that from pneumonia normal. Mortality from circulatory diseases also showed little variation from the experience of recent years, judging by the death-rate of females.

Cancer mortality, as stated in the form of an ordinary crude death-rate, was lower than in 1918 among males and slightly higher among females. The decrease in mortality of males thus shown is, however, fictitious, being due to the fact that large numbers of men furnishing very few deaths from cancer were absent during

1918 on military service, and so were excluded from the population upon which the death-rate was based. During 1919, however, the majority of these men had, of course, returned to civil life. Allowance being made for this and other differences in the age constitution of the populations, the mortality of males showed an increase upon that of the previous year, while the mortality of females remained practically stationary. This is in accordance with the general movement of cancer mortality in recent years, which has increased much faster amongst males than females, though for several years prior to 1919 this increase had been apparently arrested for both sexes.

Cancer forms, however, the one great exception to the general tendency for mortality at most ages to decline. This tendency is particularly noteworthy in childhood ; and it is indeed remarkable that one single year should record by far the lowest death-rates ever attained from such important causes of child mortality as measles and whooping cough, and at the same time one from diarrhœa which has only once been bettered.

The difficulty of estimating local populations, which always increases as the last Census becomes more distant, is still greatly accentuated by the unprecedented movement which the war caused in our population ; and, as was the case in the four preceding years, populations used in the calculation of the death-rates of the various areas are civilian populations only. For England and Wales as a whole, however, it has been possible to revert to the practice of stating the mortality in terms of the total population in the country. No analysis of the estimated populations by sex and age has been attempted except for the country as a whole. As in the three previous Reports, an additional population suitable for the calculation of marriage-rates and birth-rates is given for the reasons stated on page xii. This, however, must not be regarded as equivalent to the total population actually present in this country, for it includes an estimate of the armed forces serving abroad but belonging to England and Wales. Both the "birth-rate" population and the civilian population are shown for every administrative area on pages 89-121. As before, the limitation of the population estimates to persons, without distinction of age or sex, has necessitated the modification or omission of several tables of mortality rates.

I have to convey my thanks to the Registrars-General of Scotland and Ireland for the information from which the tables of vital statistics of the United Kingdom have been compiled, to medical officers of health throughout the country, especially county medical officers of health, for their valuable assistance in securing accurate transfer of deaths from the district of occurrence to that of residence, and to Sir Napier Shaw, F.R.S., for the Meteorological Report upon the year 1919.

<div style="text-align:center">

I have the honour to be,

Sir,

Your obedient Servant,

BERNARD MALLET,

Registrar-General.

</div>

General Register Office,
   Somerset House,
      London, W.C.2,
         November, 1920.

REVIEW OF THE VITAL STATISTICS OF THE YEAR 1919.

POPULATION.

The difficulty of framing reasonably accurate estimates of population towards the close of an intercensal period has always been found very great—so great, in fact, that each new census when taken has revealed very serious errors in the Registrar-General's estimates of local populations. The difficulty is greatly increased at the present time by the disturbing effects of the war; and until the results of the 1921 census are available all that can be claimed for the estimates shown in this Report is that they are the best which the means at his disposal has enabled the Registrar-General to prepare.

At the same time, while the war has rendered the methods relied upon for estimating local populations in normal times quite useless for this purpose now, it has fortunately brought in its train new sources of information, in the shape of the National Register and rationing statistics, which have greatly mitigated the difficulty. The mid 1919 estimates of local populations have been mainly based upon the returns of the distribution of rationing cards in November, 1919. Where the results so arrived at appeared specially anomalous criticism was sought from the local authorities concerned, and so far as what appeared to be valid grounds for modifying such results were adduced these changes have been embodied in the estimates presented. It may be mentioned that the general tendency is for local estimates to rule higher than those prepared in this office. In fact the impression is left that if the sum of local estimates could be ascertained it would be found much in excess of any reasonable estimate of the population of the country as a whole.

The local estimates are very largely based upon comparison of the numbers of occupied houses in 1919 and in 1911, and upon the fact that the margin of unoccupied houses then existing has since disappeared. This method of estimation generally assumes that the number of persons per house has remained at least as large as at the last Census. But the acuteness of the housing problem at the present time, and the frequency of cases in which two families now occupy one house because of the failure to obtain a second, invites the assumption that an increase has taken place in the average number of persons per house. Were this the case the method of estimation would understate the increase of population. But in a comparison between conditions in 1911 and 1919, other factors must be set off against the more recent effects of the housing shortage, which are so much under public notice. Many households in the middle of 1919 were without one or more members, either killed in the War, or still serving in the armed forces. Many were also without young children who would have been added to their number under peace conditions. And, lastly, the fall in the birth-rate, even apart from the War, has to be taken into consideration. Probably this was a main factor in causing the decrease in average numbers per house recorded up to 1911; and the decline in the birth-rate has, of course, continued since. There is no doubt that the size of the average family has been on the decline for many years; and so far as the rule of one family one house prevails—as it still must largely do—the fall in the birth-rate would, other things being equal, have reduced the average number of persons per house.

As the estimated population for 1919 is 700,000 in excess of that at the last census, it would only require (apart for replacement of defective houses) a net addition of 140,000 houses for the whole period 1911–1919 to maintain the 1911 average—that is, if the new census shows the present population estimate to be fairly correct.

If we assume, as appears to be justified, that the estimate for the country as a whole, based on the records of births, deaths, and migration, is more reliable than any to be obtained by aggregating local estimates, there is one other possibility than that these are generally in excess, which should be referred to. The protests have come from the towns, and generally the large towns, and if one effect of the war has been to bring about a great increase in the flow of population from country to town it is conceivable that both the local estimates of town populations and the estimate for the country as a whole may be substantially correct. This is merely mentioned as a theoretical possibility, and not as a likely explanation of the difficulty. Local estimates from the rationing returns accord much better with the general estimate than do those based upon numbers per house, and it seems likely that the latter are misleading.

The estimate of total population in England and Wales has been carried out as follows. Starting with the census population of 1911, the total population of each sex in mid 1919 has been estimated by addition to this of the armed forces abroad in 1911 and the births and immigrations from that time to 30th June 1919; and by deduction of all deaths at home or among the armed forces abroad, the "missing presumed dead," and emigrations, during the same period, and also the estimated strength of the armed forces abroad in mid 1919. In this way the totals of 17,180,655 males and 19,619,345 females were arrived at. Of these males it was further estimated that 807,000 were non-civilians, making the total civilian population 35,993,000.

The totals at all ages having been fixed in this manner, their age distribution was estimated by the method followed in the three preceding years, and described in the Reports for those years. The results are shown in the following table:—

TABLE I.—ENGLAND AND WALES: ESTIMATED POPULATION (INCLUDING ARMED FORCES AT HOME) BY SEX AND AGE IN THE MIDDLE OF 1919.

Age group.					Males.	Females.	Persons.
All Ages	..	..	..	..	17,180,655	19,619,345	36,800,000
0—	..	..	..	..	293,539	284,751	578,290
1—	..	..	..	..	290,894	285,323	576,217
2—	..	..	..	..	320,565	315,216	635,781
3—	..	..	..	..	339,115	332,981	672,096
4—	..	..	..	..	369,855	367,285	737,140
0—	..	..	..	..	1,613,968	1,585,556	3,199,524
5—	..	..	..	..	1,905,521	1,900,577	3,806,098
10—	..	..	..	..	1,878,637	1,886,684	3,765,321
15—	..	..	..	..		1,780,814	
20—	..	..	..	..		1,716,898	
25—	..	..	..	..	7,730,811	1,706,734	17,353,141
30—	..	..	..	..		1,612,675	
35—	..	..	..	..		1,493,505	
40—	..	..	..	..		1,311,704	
45—	..	..	..	..	973,700	1,122,120	2,095,820
50—	..	..	..	..	879,065	953,201	1,832,266
55—	..	..	..	..	724,760	768,352	1,493,112
60—	..	..	..	..	566,460	603,270	1,169,730
65—	..	..	..	..	410,325	474,371	884,696
70—	..	..	..	..	272,955	355,901	628,856
75—	..	..	..	..	141,593	209,719	351,312
80—	..	..	..	..	59,128	95,076	154,204
85 and upwards	..	..	..	..	23,732	42,188	65,920

It should be added that for the ages 0-5 in the above table no enumeration returns have been employed in fixing the estimate, which is based entirely upon the records of births and deaths during the five years ending in the middle of 1919, by the method described in the Report for 1916, pages xxii and xxiii. This method, which takes into account the heavy fall in the birth-rate during recent years, was used for the first time in 1917. It yields a total for age 0-5 much lower than those shown in previous Reports for the same age, which were based upon the proportion at the Census of 1911.

Throughout this Report the death-rates in 1919, so far as they relate to the country at large, are, unless otherwise stated, based upon the estimated total population in the country. Local death-rates, on the other hand, are based, as during the war, on the civilian population only, as it has been found impossible to refer military deaths to localities in any satisfactory manner. (In certain tables comparing local death-rates, that shown for England and Wales is based, like the

others, on civilian population only, in order that all the collated figures may be comparable. This is indicated in the headings to these tables.)

This method of statement is clearly inapplicable to the birth-rate, as even if the births of all infants born to non-civilian fathers were excluded it would be impossible to determine the corresponding reduction of population involved. For this reason the plan followed throughout the war has been adhered to for 1919. The armed forces stationed abroad and derived from the population of England and Wales, whose number at the middle of the year is estimated at about 700,000, have been added to the population actually in the country for birth-rate and marriage-rate purposes, bringing it up to 37,494,000. At that date the bulk were no doubt still serving on stations from which frequent home leave could be granted.

The method by which estimates of local populations have been derived from the food rationing returns is similar to that followed in previous years except that for 1919 no account was taken of the National Register figures, which had already been getting much out of date, and which ceased to be maintained in any form after July, 1919. The results so obtained are certainly much superior to any which could have been prepared in this office by dependence upon the methods formerly employed in the absence of any such exceptional source of information, for the changes due to the war have been so great that these methods, unreliable even in times of peace, would have been largely useless. The aggregate of the local civilian populations estimated in this way was 36,474,978, exclusive of about 400,000 persons returned from institutions as defined by the Ministry of Food. The total, 36,875,000, is 882,000 in excess of the total estimated civilian population of the country on 1st July. But the food count refers to 29th November, so the two figures are not quite comparable. Not only has five months natural increase of population to be taken into account, but, more important, the demobilizations of the same period. It is not possible, in the absence of a return of the strength of the army at home on 29th November, to compare the two totals exactly, but there can be little doubt that, as in former years, the food returns provide the larger figure. Fortunately, precise comparison is not required, for the food returns have been used merely for the purpose of distributing the 35,993,000 civilians estimated by other means over the various local areas dealt with. In doing this, the 400,000 institutional population has been left out of account, as in 1918, for the reasons stated in the Report for that year.

The local populations used for marriage-rate and birth-rate purposes have been obtained by increasing the local civilian population estimate to the extent by which the birth-rate population of the whole country exceeds the civilian population, i.e., by including the total strength of the armed forces at home and abroad, estimated to be derived from the population of England and Wales, 1,501,000 in all, and assigning them to all areas in proportion to population. This method, which has been in use from 1916 onwards, is no doubt open to serious objection, but no practical alternative has suggested itself which would not be even more so. Both the civilian populations estimated for death-rates and the total populations for marriage-rates and birth-rates have been furnished to the medical officer of health concerned in each case, and are stated on pages 89–121.

The food rationing returns of local populations unfortunately afford no information on which estimates sub-dividing these populations into sex and age groups can be based ; and as the methods upon which such estimates have depended in the past have been rendered useless by the migration occasioned by the war, they cannot be prepared until the census of 1921 is available for the purpose. Their absence has again necessitated the omission, or substantial modification, of many of the tables usually appearing in these Reports. For instance, the tables showing mortality by sex and age in England and Wales and in groups of administrative areas, which for the years 1911–14 were incorporated in this Review of Vital Statistics, have now to be restricted to the country as a whole. Among the main tables of the report, Tables 2–4 (1914 numbering), showing the estimated sex and age population in administrative counties and county boroughs and in certain groups of these, cannot be given. The absence of requisite populations also accounts for the suspension of Tables 16–18, dealing with sex and age mortality in administrative counties and county boroughs, and of Tables 24–28, dealing with mortality by sex, age, and cause in administrative groups, while for the same reason the mortality from measles, whooping-cough, scarlet fever, and diphtheria and croup in Table 13 (23 in 1914) could no longer be based upon those ages on which the mortality from these causes more particularly falls, but is stated in terms of population at all ages.

MARRIAGES.

The marriages in England and Wales during the year 1919 numbered 369,411, corresponding to a rate of 19·7 persons married per 1,000 of the population at all ages. (See page xii as to population estimate used for this purpose.) This rate is the highest, as that for 1917 was the lowest, ever recorded in this country, the circumstances of the war affording an obvious explanation of both records.

The proportion of marriageable persons in the population at different dates is not, however, a fixed one, and a more accurate measure is given by a rate in terms of the marriageable population only. Marriage rates so calculated are shown for each of the last 50 years in Table 3. The rate on this basis for males, 65·1 per 1,000, is also the highest shown in the table, but that for females, 50·6, was exceeded in 1915 and in most years up to 1876. The explanation here again is obvious—the war has decreased the number of marriageable males and, by increasing the number of widows, has increased that of marriageable females.

Table 4 shows that the increase in marriages did not set in until the second quarter of the year, the rate for the first quarter being lower than in 1918. Throughout the last three quarters, however, the rate maintained a high level paralleled only by the records of the same quarters during the marriage boom of 1915. The reason once more is obvious, as demobilization did not make great progress until the second quarter of the year, but proceeded rapidly from then onwards. The relation of this circumstance to the course of the birth-rate in 1919 and 1920 is marked with equal plainness in the records, and will be referred to in the section dealing with that subject.

First Marriages and Re-marriages.—Table II gives a general view of the changes in the proportion of first marriages and re-marriages since the year 1876. Tabulation in this respect was left incomplete for 1915 as a measure of war economy, but for subsequent years it has been found possible by a change of method to provide, as formerly, tables showing marriages in all the possible combinations of bachelors, spinsters, widowers, and widows. These tables will be found on pages 76–84. In order to economise space full detail of age is given only for all marriages and for marriages of bachelors with spinsters, but the same detail is available, if required, for marriages of bachelors with widows and of widowers with spinsters and with widows. It is hoped at a later date to fill in the figures for 1915 where missing.

TABLE II.—ENGLAND AND WALES, 1876–1919.—PROPORTIONS OF FIRST MARRIAGES and RE-MARRIAGES in 1,000 MARRIAGES.

Period.	Men.		Women.		Bachelors who married		Widowers who married	
	Bachelors.	Widowers.	Spinsters.	Widows.	Spinsters.	Widows.	Spinsters.	Widows.
1876–80 ...	864	136	902	98	820	44	82	54
1881–85 ...	874	126	911	89	834	40	77	49
1886–90 ...	881	119	917	83	844	37	73	46
1891–95 ...	887	113	921	79	851	36	70	43
1896–1900 ...	904	96	931	69	871	33	60	36
1901–05 ...	911	89	933	67	877	34	56	33
1906–10 ...	916	84	938	62	884	32	54	30
1911 ...	918	82	939	61	887	31	52	30
1912 ...	918	82	938	62	886	32	52	30
1913 ...	919	81	936	64	885	34	51	30
1914 ...	920	80	934	66	884	36	50	30
1915 ...	?	?	?	?	890	?	?	?
1916 ...	908	92	915	85	860	48	55	37
1917 ...	899	101	900	100	841	58	59	42
1918 ...	901	99	894	106	837	64	57	42
1919 ...	897	103	875	125	816	81	59	44

It will be seen from this table that the proportion of bachelor-spinster marriages, which had been increasing throughout the whole of the period covered to a maximum in 1915, shows a sharp decline since that date. Conversely the proportion of widowers, and especially of widows, to the total persons marrying has increased ; but all the changes recorded in Table II are best studied in conjunction with Table III, which gives an indication of how the frequency of marriage of single and widowed men and women has varied at different ages throughout the current decennium.

TABLE III.—ENGLAND AND WALES.—PROPORTIONS OF PERSONS MARRYING AT DIFFERENT AGES IN SUBSEQUENT YEARS TO THOSE MARRYING IN 1911, TAKEN AS 100.

	AGES OF BACHELORS.									AGES OF WIDOWERS.									
	Under 20.	20 –	25 –	30 –	35 –	45 –	55 & up.	Un-stated.	All ages.	Under 25.	25 –	30 –	35 –	40 –	45 –	55 –	65 & up.	Un-stated.	All Ages.
1911	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
1912	102	103	103	105	108	111	122	94	103	108	99	95	97	100	98	105	107	98	101
1913	115	104	102	106	113	114	120	86	104	117	92	96	98	105	105	105	99	105	102
1914	121	107	104	108	120	126	122	99	107	106	96	97	99	108	107	107	99	102	103
1916	108	96	94	105	141	166	141	116	101	93	86	92	94	125	127	124	105	105	112
1917	138	86	85	95	132	182	159	119	92	94	88	86	93	120	136	133	109	121	115
1918	158	95	95	104	143	241	201	142	103	97	97	91	99	127	151	141	117	136	125
1919	193	121	122	144	181	224	206	176	131	200	184	176	164	172	168	161	134	168	166

	AGES OF SPINSTERS.									AGES OF WIDOWS.									
	Under 20.	20 –	25 –	30 –	35 –	45 –	55 & up.	Un-stated.	All ages.	Under 25.	25 –	30 –	35 –	40 –	45 –	55 –	65 & up.	Un-stated.	All ages.
1911	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
1912	105	103	102	105	108	106	96	96	103	91	96	104	105	103	104	105	96	97	103
1913	117	102	101	106	110	106	103	94	104	106	108	112	109	107	107	108	95	101	108
1914	121	106	102	109	115	110	98	101	107	107	105	120	118	123	115	111	98	106	115
1916	100	98	92	107	136	125	115	109	99	256	162	136	133	140	135	124	107	109	139
1917	96	90	83	93	119	127	118	114	90	449	221	152	132	133	134	134	107	124	151
1918	100	100	92	100	128	150	146	133	100	609	302	188	147	143	149	149	114	148	179
1919	132	125	117	129	153	164	152	163	125	1071	602	334	219	174	166	166	138	198	270

The effect of the enormous creation of young widows by the war is strikingly manifested by the very great increase in the numbers of young widows marrying. Under the age of 25 this was 10·7 times, and at 25–30 six times as great as in 1911 ; but the table clearly suggests that the increase in the total number of widows marrying is not entirely due to this cause. The increases recorded at ages over 45 seem too great to be explained in this way, for beyond that age the increase caused by the war in the pre-existing number of widows must be very small. Comparison with other sections of the table shows that the increase of these widow marriages is part of a general increase in marriage at this time of life common to both men and women, whether widowed or single. It is, in fact, manifested in its most extreme degree by bachelors, whose marriages at ages over 45 have, both in 1918 and 1919, been more than twice as numerous as in 1911. One possible explanation of this very remarkable phenomenon which suggests itself is that a number of elderly men, whose circumstances, financial or otherwise, did not conduce to matrimony before the war, have been enabled to marry by war prosperity or by the increased surplus of marriageable women. These considerations would not apply so strongly to widowers, whose first marriage supplies some evidence of their having long been in a position to maintain a wife, but increased means of maintaining and opportunities of selecting a wife would affect them also, though in lesser degree. Whatever the reason, the fact is clear that men over military age have married to a greatly increased and on the whole

steadily increasing extent throughout and since the war, and that the increase has affected bachelors more than widowers. This may well be the cause of the corresponding increase in the numbers of elderly women, both single and widowed, marrying throughout the same period. Men of any age tend, in the mass, to choose wives of age roughly corresponding to their own ; and so we find that amongst spinsters, whose number has not, like that of widows, been greatly increased in the younger groups as a result of the war, there is a close general correspondence with the movement at the same ages amongst men, single or widowed. So long as the marriages of the younger men were checked by military service, those of the younger single women were correspondingly few, and it seems likely that this would have applied also to widows but for the huge increase in their number.

The economic explanation will also apply to the very large increase in the marriages of boys under 20. The opportunity of earning large wages at an early age must have constituted an inducement to marriage. The complete absence before 1919 of any corresponding increase of spinsters marrying at the same age period is remarkable in view of the fact that when boys of under 20 marry, they for the most part select mates of corresponding age. It is not to be explained by the increase in number of young widows, for of the 6,998 boys under 20 years of age who married in 1919, only 104 married widows. This number, though proportionally very much larger than before the war (there were 7 such marriages in 1911, for instance), is too small to have any practical bearing on the matter. The fact is that a greater proportion of the boys of this age who marry spinsters have married brides of over 20. In 1911 it was 37 per cent., and in 1919 it had grown to 43 per cent. (45 per cent. in 1918), marriages to brides of over 20 having increased by 117 per cent. as against an increase of 74 per cent. only where the ages of both parties were similar. And in 1918, when the number of spinsters married at ages under 20 remained practically as in 1911, there was a considerable increase in the number married at this age to boys of the same age, which was offset by a corresponding decrease in the number married to older husbands. The same change is also observable in 1919.

The change in the age of brides selected by these youthful husbands is a large one for so short a period as eight years. Taken in conjunction with the great increase in number of such marriages, it seems to suggest that the proportion entered into deliberately may be greater now than before the relative earning capacity of these youths was increased. A certain number of heedless boy and girl marriages, entered into before the means of livelihood are secured, doubtless occur every year, but increase of income must promote marriages where the greater age of the wife makes utter heedlessness less probable.

It may seem at first sight surprising that it is just that class of men who have been most cut off from marriage by the war—young bachelors of 20–30—whose marriages have shown least increase. But, in the first place, the net deficit in their marriages at the end of the war cannot have been great. Although the exact number of their marriages in 1915 is not known, it must have been approximately 31 per cent. greater than in 1911, since that is the increase recorded for marriages of bachelors aged 20–30 to spinsters. This excess, together with the reduction caused by the war in numbers living at this age, would fully account for the deficits in 1916–1918. Further, the great bulk of single men normally marry between 20 and 30, so that it is impossible for the number of their marriages to be increased in the same proportion as can that of bachelors aged, say, 45–55, many of whom normally remain permanently unmarried. Most men of 20–30 are in normal times able and inclined to marry, whereas single males aged under 20 and over 35 are generally unable or disinclined to marry. Marriages of bachelors in 1911 formed 9·5 per cent. of the numbers enumerated at the census at 20–30, 4·4 per cent. at 35–45, and only 1·5 per cent. at 45–55. The exceptional circumstances, therefore, which were evidently at work in 1919 can evidently have more effect upon the number of marriages outside than on those inside the customary marriage age. For widowers, on the other hand, there is no similar customary marriage age. Their age at re-marriage is

determined mainly by that at which they happen to become widowers. And so we find that widowers of all ages married in greatly increased proportions in 1919, but chiefly those who had been cut off to some extent from marriage by military service in the preceding years. And an additional reason for the increased numbers of widowers as well as of widows marrying in 1919 is doubtless to be found in the exceptional number created by the great influenza epidemic of 1918.

The Divorced.—The annual numbers of persons divorced, and of divorced persons who remarried, are shown in Table IV. for each of the last nine years, and for the seven preceding quinquennia.

TABLE IV.—ENGLAND AND WALES.—ANNUAL NUMBER OF PERSONS DIVORCED, and of DIVORCED PERSONS who REMARRIED, 1876–1919.

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 inter-marrying.	Divorced women marrying bachelors.	Divorced women marrying widowers.
1876–80	554	104	56	48	42	12	4	31	15
1881–85	671	128	68	60	53	12	6	42	15
1886–90	707	169	80	89	65	11	8	65	20
1891–95	744	214	110	104	89	15	12	75	23
1896–1900	980	345	172	173	138	24	20	126	37
1901–05	1,126	509	262	247	205	38	38	181	47
1906–10	1,247	693	356	337	276	53	54	253	57
1911 ...	1,160	702	365	337	300	39	52	265	46
1912 ...	1,174	782	402	380	321	51	60	280	70
1913 ...	1,154	854	415	439	322	51	84	337	60
1914 ...	1,712	911	439	472	356	49	68	352	86
1915* ...	1,360	?	?	?	?	?	?	?	?
1916 ...	1,980	920	466	454	364	76	52	336	92
1917 ...	1,406	791	429	362	350	62	34	268	77
1918 ...	2,222	885	495	390	390	44	48	288	78
1919 ...	3,308	1,352	708	644	538	142	56	510	106

Average brace covers 1876–80 to 1906–10.

* Numbers married in the year 1915 are not available.

The number of divorces obtained in 1919 was almost 50 per cent. greater than in 1918, which was itself the highest up to that date, and with the increase in divorces there has been a corresponding increase in the number of persons who on remarriage described themselves as divorced. No doubt the interruption of family life caused by the war is largely responsible for the sudden increase of the last two years, but as the frequency of divorce as recorded in the table has been increasing for many years, it can hardly be expected that the pre-war level will be restored when the immediate effect of this disturbance has passed off.

The figures in Table IV. relating to the marriages of divorced persons in 1919 are supplemented by an analysis by age on page 75.

Age at Marriage.—The changes in regard to this matter during the past nine years have necessarily been discussed already in connection with Table III. The same changes, and those for earlier periods as well, are presented in another form in Table V., which is continued from previous Reports. The increased proportions of early marriages amongst widowers and still more amongst widows will be noted. In the case of the single, the changes recorded are much less striking.

TABLE V.—ENGLAND AND WALES, 1886–1919.*—MARRIAGES OF BACHELORS, SPINSTERS, WIDOWERS and WIDOWS at VARIOUS AGES per 1,000 MARRIAGES at ALL AGES.

Period.	All Ages.	Under 18 Years.	18—	19—	20—	21—	25—	30—	35—	40—	45—	50—	55 and upwards.	Age not Stated.
All Bachelor Bridegrooms.														
1886–1890	1,000	0	4	20	47	424	309	96	33	13	6	3	2	43
1891–1895	1,000	0	3	17	43	415	333	108	37	14	6	3	2	19
1896–1900	1,000	0	3	15	39	411	346	110	39	15	6	3	2	11
1901–1905	1,000	0	3	13	35	390	360	122	41	16	7	3	2	8
1906–1910	1,000	0	3	11	30	370	372	132	46	17	8	3	2	6
1911 ...	1,000	0	3	11	28	350	380	139	50	19	9	3	3	5
1912	1,000	0	3	11	28	347	378	140	52	20	9	4	3	5
1913	1,000	0	3	12	30	348	372	141	53	21	9	4	3	4
1914	1,000	0	3	13	29	350	367	139	54	23	10	4	3	5
1916	1,000	1	4	11	24	335	355	144	65	31	14	6	4	6
1917	1,000	2	7	13	25	329	350	143	64	33	17	7	4	6
1918	1,000	2	8	13	25	324	351	141	63	33	20	8	5	7
1919 ...	1,000	1	6	14	28	320	353	151	66	30	14	6	4	7
All Spinster Brides.														
1886–1890	1,000	9	37	72	97	417	219	62	23	10	5	2	1	46
1891–1895	1,000	7	31	66	94	425	241	70	25	11	5	2	1	22
1896–1900	1,000	6	27	59	89	434	253	74	26	11	5	2	1	13
1901–1905	1,000	5	23	53	82	428	272	79	28	12	5	2	1	10
1906–1910	1,000	5	21	48	75	420	284	87	30	12	6	2	2	8
1911 ...	1,000	5	21	46	70	404	298	93	32	13	7	3	2	6
1912	1,000	5	22	47	71	399	295	95	34	14	7	3	2	6
1913	1,000	5	25	50	72	397	290	95	34	14	7	3	2	6
1914	1,000	7	25	50	71	399	286	95	35	14	7	3	2	6
1916	1,000	5	21	46	68	402	278	100	41	18	9	3	2	7
1917	1,000	6	22	48	72	400	273	95	41	19	9	4	3	8
1918	1,000	5	22	45	72	404	274	93	40	19	10	4	3	9
1919 ...	1,000	5	22	49	71	403	277	95	38	17	9	4	2	8

Period.	All Ages.	Under 18 Years.	18—	19—	20—	21—	25—	30—	35—	40—	45—	50—	55 and upwards.	Age not Stated.
Bachelors with Spinsters.														
1896–1900	1,000	0	3	15	40	424	349	106	34	11	4	2	1	11
1901–1905	1,000	0	3	14	36	401	363	118	36	13	5	2	1	8
1906–1910	1,000	0	3	12	31	379	376	129	41	14	6	2	1	6
1911–1915	1,000	0	3	12	29	360	379	136	48	17	7	3	2	4
1911 ...	1,000	0	3	12	29	360	386	135	45	15	6	2	2	5
1912 ...	1,000	0	3	12	29	357	385	137	46	16	6	3	2	4
1913 ...	1,000	0	3	13	31	358	378	137	48	17	6	3	2	4
1914 ...	1,000	0	3	13	30	361	376	135	48	18	7	3	2	4
1915 ...	1,000	0	2	11	26	365	376	135	50	18	7	3	2	5
1916 ...	1,000	1	4	12	26	349	363	140	58	25	10	4	2	6
1917 ...	1,000	2	7	13	26	344	360	140	57	26	12	4	3	6
1918 ...	1,000	2	8	13	27	339	363	128	55	26	14	5	3	7
1919 ...	1,000	1	7	15	30	338	361	145	57	23	10	4	2	7
Spinsters with Bachelors.														
1896–1900	1,000	6	28	62	94	454	254	65	18	5	2	1	0	11
1901–1905	1,000	5	25	56	86	444	274	72	20	6	2	1	0	9
1906–1910	1,000	5	22	50	78	436	288	81	23	7	2	1	0	7
1911–1915	1,000	6	24	49	73	417	296	89	28	8	3	1	1	5
1911 ...	1,000	5	22	48	73	419	303	87	25	8	3	1	1	5
1912 ...	1,000	6	23	49	74	414	300	89	27	8	3	1	1	5
1913 ...	1,000	7	26	53	76	412	294	87	27	8	3	1	1	5
1914 ...	1,000	7	26	52	74	415	290	89	28	9	3	1	1	5
1915 ...	1,000	5	22	46	70	422	295	90	30	9	4	1	1	5
1916 ...	1,000	6	23	48	72	417	282	94	34	12	4	1	1	6
1917 ...	1,000	6	24	50	76	418	279	90	33	11	4	1	1	7
1918 ...	1,000	6	23	47	75	422	280	88	32	12	5	2	1	7
1919 ...	1,000	5	23	51	75	420	282	90	31	10	4	1	1	7

* For the year 1915 only figures relating to first marriages of both contracting parties are available.

TABLE V—*continued.*

All Widower Bridegrooms.

Period.	All Ages.	Minors.	21—	25—	30—	35—	40—	45—	50—	55—	60—	65—	70 and upwards.	Age not stated.
1886–1890	1,000	0	13	81	133	151	139	120	94	70	53	27	15	104
1891–1895	1,000	0	12	76	132	153	148	126	106	74	55	29	18	71
1896–1900	1,000	0	10	73	131	158	150	136	109	84	56	30	19	44
1901–1905	1,000	0	10	68	130	155	152	136	116	83	62	32	20	36
1906–1910	1,000	0	8	61	123	153	152	141	119	90	62	37	24	30
1911 ...	1,000	0	7	56	115	146	145	144	119	93	68	40	33	24
1912 ...	1,000	0	7	55	108	150	145	142	125	99	68	45	33	23
1913 ...	1,000	0	8	51	109	149	150	145	125	97	69	42	30	25
1914 ...	1,000	0	7	52	108	148	152	145	126	97	70	40	31	24
1916 ...	1,000	0	6	43	94	130	162	163	133	105	73	40	29	22
1917 ...	1,000	0	6	43	86	125	152	167	141	107	79	42	27	25
1918 ...	1,000	0	5	44	84	123	149	173	145	108	74	43	26	26
1919 ...	1,000	0	8	62	122	154	151	144	121	92	63	35	24	24

All Widow Brides.

Period.	All Ages.	Minors.	21—	25—	30—	35—	40—	45—	50—	55—	60—	65—	70 and upwards.	Age not stated.
1886–1890	1,000	1	30	119	164	173	145	117	73	46	26	10	3	93
1891–1895	1,000	1	27	115	170	177	157	119	78	47	29	10	4	66
1896–1900	1,000	1	26	113	175	188	157	127	81	50	28	11	3	40
1901–1905	1,000	1	28	122	182	190	158	118	78	47	29	11	4	32
1906–1910	1,000	1	23	106	177	192	160	129	82	52	30	14	6	28
1911 ...	1,000	0	22	102	164	192	166	135	82	54	32	17	13	21
1912 ...	1,000	1	19	95	166	195	166	134	87	54	34	17	12	20
1913 ...	1,000	1	21	102	170	195	164	133	82	53	32	16	11	20
1914 ...	1,000	1	20	93	170	196	176	133	84	51	31	15	11	19
1916 ...	1,000	3	41	119	161	183	166	127	84	50	26	16	8	16
1917 ...	1,000	3	64	149	164	167	145	116	76	50	27	15	7	17
1918 ...	1,000	3	74	173	172	158	132	108	72	44	27	13	7	17
1919 ...	1,000	4	86	228	204	156	106	81	52	34	19	10	5	15

Marriages of Minors.—The proportion of marriages under age was at its maximum in the year 1874 for both males and females, and afterwards declined continuously till 1906–1910, since when the decline has ceased so far as males are concerned. In 1919 the proportion was higher for males than it had been for some years previously but remained low for females. The increase amongst males, which during the latter part of the war was confined to boys under 19, is now more evenly distributed. No corresponding change has occurred in the age distribution of the marriages of female minors.

TABLE VI.—ENGLAND AND WALES, 1876–1919.—MINORS MARRIED PER 1,000 MARRIAGES AT ALL AGES.

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

The number of males and females marrying under age, and at six other groups of ages, with distinction of the marital condition of the parties, is shown for each registration county on pages 85–88 of the abstracts. From these figures Table VII. has been prepared, the corresponding ratios for 1914 being also shown, so as to afford a comparison with conditions previous to the disturbance caused by the war.

From this table it appears that local customs with regard to early marriage have not been very materially altered by the war. The industrial counties, notably Nottingham, Durham, Stafford, Derby, and the West Riding, return a high proportion, about 6 per cent., of males marrying under age in 1919 as in 1914, while the lowest ratios are reported from the residential and agricultural counties, as in North Wales,

Westmorland, Wiltshire, Shropshire, Oxford, Hereford, Sussex, and Dorset, which returned low ratios also in 1914. For women, the highest ratios are returned by the mining counties, Durham, Monmouth, Glamorgan, Northumberland, and Nottingham heading the list. All these counties, however, show a decline from the proportions returned in 1914, whereas the residential and rural counties of the South generally record an increase. Lancashire and Cheshire contrast with other industrial counties in returning low ratios for both men and women.

TABLE VII.—REGISTRATION COUNTIES.—MARRIAGES OF MINORS PER 1,000 TOTAL MARRIAGES in 1914 and 1919.

Registration Counties.	Males. Ratio per 1,000 Marriages, 1914.	Ratio per 1,000 Marriages, 1919.	1919 Ratio per cent. of 1914 Ratio.	Females. Ratio per 1,000 Marriages, 1914.	Ratio per 1,000 Marriages, 1919.	1919 Ratio per cent. of 1914 Ratio.
England and Wales	42	44	105	142	129	91
London	34	41	121	115	123	107
Surrey	22	31	141	99	115	116
Kent	28	32	114	122	128	105
Sussex	28	28	100	93	110	118
Hampshire	21	29	138	113	125	111
Berkshire	19	33	174	96	111	116
Middlesex	30	39	130	102	114	112
Hertfordshire	33	33	100	96	111	116
Buckinghamshire	35	31	89	114	112	98
Oxfordshire	32	26	81	85	93	109
Northamptonshire	42	41	98	125	108	86
Huntingdonshire	17	39	229	83	122	147
Bedfordshire	51	36	71	127	118	93
Cambridgeshire	47	49	104	129	130	101
Essex	29	38	131	121	120	99
Suffolk	40	39	98	132	117	89
Norfolk	40	37	93	124	119	96
Wiltshire	24	25	104	105	110	105
Dorsetshire	25	28	112	97	107	110
Devonshire	23	31	135	104	107	103
Cornwall	36	37	103	129	112	87
Somersetshire	27	30	111	87	96	110
Gloucestershire	30	30	100	83	90	108
Herefordshire	24	28	117	103	82	80
Shropshire	23	26	113	91	90	99
Staffordshire	60	61	102	184	147	80
Worcestershire	51	45	88	140	123	88
Warwickshire	47	48	102	145	130	90
Leicestershire	60	46	77	141	114	81
Rutlandshire	30	35	117	129	113	88
Lincolnshire	42	48	114	179	152	85
Nottinghamshire	71	68	96	202	169	84
Derbyshire	50	61	122	184	154	84
Cheshire	33	34	103	117	102	87
Lancashire	46	42	91	136	105	77
Yorkshire—West Riding	60	57	95	184	146	79
East Riding (with York)...	48	47	98	187	145	78
North Riding ...	46	49	107	182	158	87
Durham	61	63	103	243	203	84
Northumberland	43	52	121	184	173	94
Cumberland	45	51	113	151	136	90
Westmorland	24	20	83	82	68	83
Monmouthshire	43	50	116	205	200	98
Glamorganshire	46	49	107	192	176	92
Carmarthenshire	39	52	133	166	137	83
Pembrokeshire	43	44	102	116	122	105
Cardiganshire	24	31	129	76	74	97
Brecknockshire	38	39	103	131	153	117
Radnorshire	45	31	69	89	122	137
Montgomeryshire	16	17	106	89	79	89
Flintshire	12	22	183	76	78	103
Denbighshire	26	24	92	99	97	98
Merionethshire ... :.. ...	20	12	60	67	72	107
Carnarvonshire	10	18	180	63	97	113
Anglesey	12	32	267	51	71	131

Mean Age at Marriage.—The great reduction which has taken place of recent years in the proportion of marriages without statement of the ages of the contracting parties has rendered it possible to measure the mean age at marriage with approximate accuracy from the returns in which age is recorded. The degree of accuracy obtained has been appreciably increased from 1914 onwards as a result of the tabulation by single years of age at all periods of life, first carried out in that year. These mean ages are shown in Table VIII for the years 1896 onwards.

The mean age at marriage gradually increased from 1896 to 1914 for bachelors and spinsters, and also, with some fluctuations, for widowers. (The apparent reduction in 1914 of the mean ages of bachelors and spinsters was entirely due to the more

TABLE VIII.—ENGLAND AND WALES.—MEAN AGE AT MARRIAGE, 1896-1919.

MALES.

Year.	All Bridegrooms.	All Bachelor Bridegrooms.	All Widower Bridegrooms.	Bachelors with Spinsters.	Bachelors with Widows.	Widowers with Spinsters.	Widowers with Widows.
1896 ...	28·43	26·59	44·49	26·30	33·93	41·38	49·60
1897 ...	28·38	26·63	44·53	26·35	34·10	41·43	49·73
1898 ...	28·34	26·62	44·70	26·34	33·94	41·82	49·69
1899 ...	28·34	26·65	44·90	26·37	34·29	41·87	49·81
1900 ...	28·41	26·68	45·02	26·39	34·35	42·19	49·75
1901 ...	28·55	26·76	45·18	26·48	33·94	42·43	49·69
1902 ...	28·53	26·88	44·96	26·60	33·94	42·11	49·81
1903 ...	28·49	26·91	44·94	26·63	34·24	42·16	49·72
1904 ...	28·46	26·93	45·03	26·66	34·06	42·47	49·98
1905 ...	28·56	27·01	45·27	26·74	34·26	42·47	50·18
1906 ...	28·56	27·03	45·37	26·76	34·39	42·59	50·25
1907 ...	28·66	27·10	45·62	26·84	34·58	42·85	50·56
1908 ...	28·78	27·19	45·69	26·92	34·57	42·92	50·66
1909 ...	28·88	27·29	45·93	27·02	35·00	43·23	50·85
1910 ...	28·92	27·36	45·93	27·09	34·96	43·14	50·89
1911 ...	29·03	27·46	46·42	27·19	35·19	43·49	51·46
1912 ...	29·12	27·56	46·77	27·27	35·75	43·96	51·67
1913 ...	29·11	27·56	46·65	27·25	35·68	43·91	51·35
1914 ...	28·94	27·40	46·66	27·05	35·90	43·79	51·39
1915 ...	?	?	?	27·12	?	?	?
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

FEMALES.

Year.	All Brides.	All Spinster Brides.	All Widow Brides.	Spinsters with Bachelors.	Spinsters with Widowers.	Widows with Bachelors.	Widows with Widowers.
1896 ...	26·21	25·08	40·58	24·54	32·43	35·69	44·81
1897 ...	26·18	25·10	40·74	24·59	32·31	35·95	45·00
1898 ...	26·18	25·14	40·59	24·62	32·68	35·85	45·04
1899 ...	26·21	25·16	40·83	24·65	32·83	36·12	45·16
1900 ...	26·29	25·23	40·74	24·71	32·97	36·19	44·95
1901 ...	26·39	25·31	40·43	24·77	33·04	35·65	44·96
1902 ...	26·37	25·36	40·25	24·86	32·86	35·62	44·95
1903 ...	26·35	25·37	40·27	24·89	32·93	35·69	45·01
1904 ...	26·32	25·37	40·35	24·90	33·03	35·82	45·22
1905 ...	26·38	25·43	40·53	24·96	33·08	36·02	45·29
1906 ...	26·41	25·46	40·79	24·99	33·30	36·27	45·53
1907 ...	26·49	25·54	40·91	25·06	33·43	36·32	45·68
1908 ...	26·61	25·63	41·02	25·13	33·71	36·43	45·86
1909 ...	26·69	25·73	41·27	25·22	33·85	36·71	45·98
1910 ...	26·75	25·79	41·33	25·30	33·85	36·83	46·07
1911 ...	26·80	25·81	41·74	25·32	34·13	37·01	46·63
1912 ...	26·84	25·85	41·89	25·36	34·25	37·44	46·49
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 ...	?	?	?	25·28	?	?	?
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

precise method of calculation then introduced, which reduced them by about ·18 of a year, but scarcely affected the calculation for the widowed.) In the case of widows the increase did not set in till 1903. It continued, for males and for unmarried women, up to 1918, but for all classes of men and women the age has fallen in 1919. In the case of the unmarried this fall is not great, but it amounts to over two years for both widowers and widows. In the case of widowers the age was high during the war, and its sudden reduction may be due to demobilization; in that of widows the age had already fallen greatly during the war, and in 1919 was about five years less than before its onset. This reduction is of course due to the enormous creation of young war widows, and naturally therefore cannot be expected to continue.

Fluctuations of the Marriage-rate in different Sections of the Country.—The movements of the marriage-rate during the war have been traced in Table IX for the four geographical sections into which the country has been divided for a number of purposes in these Reports. The limits of the four sections are indicated in a footnote.* 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 adjacent localities. Again, it has only been possible till now to tabulate marriages by registration areas, and the available estimates of population refer to administrative areas. The populations upon which the rates in the table are based have, therefore, been derived from the estimated populations of the corresponding aggregates of administrative counties and county boroughs on the assumption of the maintenance of a constant ratio between the population of the registration and administrative areas. This is not absolutely correct, but the resultant error is too small to have any appreciable effect upon the rates quoted.

It will be seen that in 1914, which for this purpose may be regarded as the last year before the war, insomuch as the marriage-rate remained undisturbed in its third and fourth quarters, this rate varied only between 15·25 in the Midlands and 16·30 in the North. The rush into matrimony of the following year was very much greater in the South of England than elsewhere, the increase over the rate of the previous year being 35 per cent. in the South as against 23 in the Midlands, 12 in the North, and only 6 per cent. in Wales; and from that date onwards until the end of the war the marriage-rate remained much higher in the South, and lower in Wales, than in the country generally.

The restoration of peace was accompanied by a return to a more normal distribution of marriages throughout the country in 1919, though they remained most frequent in the South, and least frequent in Wales. The rate in 1919 exceeded the previous high-water mark of 1915 in all parts of the country except the South, where the 1915 increase was greatest.

*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 IX.—ENGLAND AND WALES, 1914–19.—MARRIAGES AND MARRIAGE-RATES OF each YEAR in GEOGRAPHICAL SECTIONS OF THE COUNTRY.

—	North.	Midlands.	South.	Wales.	England and Wales.
	Numbers of Marriages Registered.				
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

Persons Married per 1,000 Population.

—	Marriage-rate.					Rate per cent. of that in England and Wales.			
	North.	Midlands.	South.	Wales.	England and Wales.	North.	Midlands.	South.	Wales.
1914	16·30	15·25	16·29	15·76	15·93	102·3	95·7	102·3	98·9
1915	18·33	18·79	21·95	16·66	19·37	94·6	97·0	113·3	86·0
1916	14·19	14·45	16·69	13·36	14·87	95·4	97·2	112·2	89·8
1917	13·02	13·30	15·62	12·39	13·78	94·5	96·5	113·4	89·9
1918	14·55	14·84	17·39	12·96	15·31	95·0	96·9	113·6	84·7
1919	19·85	18·91	20·80	18·25	19·71	100·7	95·9	105·5	92·6

The significance of these fluctuations was discussed in last year's Report, and as the movement recorded in 1919 is one of return towards normal, little more need be said. Evidently the changes noted were consequent in some way upon the war, whether the southern excess arose from an excess of troops being quartered in the South, or from a greater movement of young women to the centres of commerce and production, or in any other way ; and with the return of peace the distribution of marriages has become more normal, the excess of their numbers being general. As compared with 1914 the excess of the rate in 1919 was 22 per cent. in the North, 24 in the Midlands, 28 in the South, 16 in Wales, and 24 per cent. in England and Wales.

Table X gives the marriage-rate of each registration county in 1919, and its percentage increase over the rate for 1914. There is not a single case in which increase has not occurred. Attention was drawn in last year's Report to the fact that increased rates were then almost confined to the rural and residential counties, and an explanation of the fact was suggested. The present table shows that, notwithstanding the general levelling up of rates which has occurred in 1919, the greatest increases are still recorded by these counties. Thus, the counties returning an increase of 40 per cent. or over are, in order :—Sussex (55), Berks (52), Wilts (47), Dorset, Devon, Oxford, and Denbigh (43), Carnarvon, Kent, and Norfolk (42), Suffolk (41), and Bucks (40).

Buildings in which Marriages may be Solemnized.—At the end of the year 1919 the numbers of churches or chapels of the Established Church and of registered buildings in which marriages could be legally solemnized were as follows :—

Established Church	16,114
All other Religious Denominations	17,568
Total	33,682

TABLE X.—REGISTRATION COUNTIES : PERSONS MARRIED PER 1,000 POPULATION, 1901–10, 1914, and 1919.

Registration County.	Mean-rate 1901–10.	1914.	1919.	Rate in 1919 per cent. of 1914.
England and Wales	15·5	15·9	19·7	124
London	17·5	19·2	22·1	115
Surrey	13·4	13·6	17·8	131
Kent	14·0	14·6	20·7	142
Sussex	13·5	12·7	19·7	155
Hampshire	15·1	14·9	20·7	139
Berkshire	14·3	13·8	21·0	152
Middlesex	13·4	14·2	17·1	120
Hertfordshire	12·9	13·6	16·8	124
Buckinghamshire	13·5	13·0	18·2	140
Oxfordshire	14·1	13·1	18·7	143
Northamptonshire	14·4	15·1	19·4	128
Huntingdonshire...	14·0	11·9	16·5	139
Bedfordshire	14·1	15·1	18·6	123
Cambridgeshire	14·1	14·2	18·7	132
Essex	13·8	14·6	18·4	126
Suffolk	13·8	14·0	19·7	141
Norfolk	13·9	13·7	19·5	142
Wiltshire	14·4	14·4	21·2	147
Dorsetshire	13·9	14·0	20·0	143
Devonshire	15·3	14·7	21·0	143
Cornwall	14·0	14·3	17·8	124
Somersetshire	13·7	13·5	18·3	136
Gloucestershire	15·2	16·0	19·8	124
Herefordshire	13·0	12·5	17·0	136
Shropshire	13·3	13·3	18·4	138
Staffordshire	15·6	16·5	19·7	119
Worcestershire	14·5	15·0	18·1	121
Warwickshire	16·4	17·1	19·2	112
Leicestershire	15·5	16·2	18·6	115
Rutlandshire	12·6	12·4	15·5	125
Lincolnshire	15·5	15·4	19·5	127
Nottinghamshire	16·4	16·4	20·3	124
Derbyshire	15·6	15·5	19·7	127
Cheshire	14·5	15·4	17·6	114
Lancashire	16·4	16·2	19·7	122
Yorkshire, West Riding	15·9	16·1	19·6	122
" East Riding (with York)	15·5	16·5	21·1	128
" North Riding	15·2	15·6	19·1	122
Durham	16·2	17·7	22·3	126
Northumberland	15·7	17·3	19·8	114
Cumberland	14·7	15·3	19·9	130
Westmorland	13·6	13·4	18·5	138
Monmouthshire	15·6	16·4	19·1	116
Glamorganshire	16·3	17·2	18·6	108
Carmarthenshire	14·8	16·1	16·8	104
Pembrokeshire	14·8	16·0	18·2	114
Cardiganshire	12·1	11·5	15·5	135
Brecknockshire	15·9	14·7	19·1	130
Radnorshire	12·8	13·3	16·1	121
Montgomeryshire	13·1	12·4	16·3	131
Flintshire	11·8	11·7	15·7	137
Denbighshire	14·0	13·6	19·5	143
Merionethshire	12·1	11·5	15·2	132
Carnarvonshire	13·5	12·2	17·3	142
Anglesey	12·4	14·4	16·5	115

The increase upon the numbers at the end of the previous year was :—Established Church, 20 ; other religious denominations, 288. The number of these buildings belonging to the various denominations is shown for each registration county in Table 5 (page 6).

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, 1919, and the number of buildings registered for the solemnization of marriages, are shown in the following table.

TABLE XI.

Denomination.	Buildings certified to the Registrar-General as Meeting-places for Religious Worship.	Buildings registered for the Solemnization of Marriages.*	Denomination.	Buildings certified to the Registrar-General as Meeting-places for Religious Worship.	Buildings registered for the Solemnization of Marriages.*
Roman Catholics.	1,526	1,458	New Church	53	59
Wesleyan Methodists ...	7,598	4,136	Catholic Apostolic Church	69	48
Congregationalists ...	3,335	3,028	Countess of Huntingdon's Connexion.	47	42
Baptists	3,145	2,756			
Primitive Methodists ...	4,342	1,903	Salvation Army	1,156	133
United Methodist Church	1,976	1,239	Society of Friends ...	429	—†
Calvinistic Methodists ...	1,263	974	Jews	252	—†
Presbyterians	446	450	Other Denominations ...	3,184	1,144
Unitarians	184	198			
			All Denominations ...	29,005	17,568

* 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 1919 the number of such buildings which had been brought under the operation of the Act, and so remained, was 4,547 out of the total of 17,568. The numbers of these buildings, and the denominations to which they belonged, were as follows :—

            1,887 Wesleyan Methodists.
              678 Congregationalists.
              688 Primitive Methodists.
              468 Baptists.
              404 United Methodist Church.
              113 Calvinistic Methodists.
              309 other Denominations, and Unsectarian.

            4,547 All Denominations.

Manner of Solemnization.—Tabulation of marriages by method of solemnization has been carried out for 1919 for the first time since 1914, with results stated on pages 70–73 and in Tables XII and XIII.

Table XII shows that the increase in civil at the expense of religious marriages has continued since 1913, the last comparable year. As the records for 1914, although the marriage-rate remained stable, show a sudden disturbance in the manner of solemnization, evidently due to the outbreak of war, it is preferable to compare the returns of 1919 with those of 1913 and earlier years. This comparison shows that the decrease since 1913 in the proportion of religious marriages applies in common to Church of England, Nonconformist, and Jewish marriages, but less to Church of England than the others. Roman Catholic marriages have maintained the considerable increase in proportion to the total shown from 1911 onwards. The great increase in marriages by licence, which had fallen to a very small proportion of the total, is the most notable feature of the Church of England marriages. They have increased from 4·2 per cent. of these in 1913 to 20·8 in 1919. Of the Nonconformist marriages, 28·9 per cent. were Wesleyan Methodist, 20·3 Congregationalist, 16·9 Baptist, 11·9 Primitive Methodist, 8·1 United Methodist, 3·9 Calvinistic Methodist, and 10·0 of other denominations.

TABLE XII.—ENGLAND AND WALES AND LONDON.—MARRIAGES.—MANNER OF SOLEMNIZATION, 1870–1919.

Of 1,000 Marriages.

Year.	Total.	England and Wales — According to the rites of the Established Church — Special Licence.	Licence.	Banns.	Superintendent Registrar's Certificate.	Not stated.	Total in Established Church.	Not according to the rites — Roman Catholics.	In Registered Places — Other Christian Denominations — Before Registrar.	Before Authorised Person.	Society of Friends.	Jews.	Civil Marriages.	London — According to the rites of the Established Church.	Not according to the rites — Roman Catholics.	Other Christian Denominations, including Society of Friends.	Jews.	Civil Marriages.
1870	902	0·1	94	634	22	10	760	41	99		0·3	2·0	98	882	35	33·2	7·8	42
1871	903	0·1	89	642	22	8	761	40	100		0·3	2·1	97	881	35	33·1	8·4	42
1872	901	0·1	85	645	21	6	757	40	100		0·2	2·1	99	880	33	35·1	8·4	43
1873	897	0·1	85	642	20	5	752	40	102		0·4	2·4	103	873	34	36·3	10·0	47
1874	895	0·1	87	637	19	4	747	40	105		0·2	2·3	105	870	33	39·1	9·2	49
1875	896	0·1	87	635	18	4	744	42	107		0·3	2·4	104	871	32	39·1	.9·4	48
1876	893	0·2	87	630	18	3	738	42	110		0·3	2·3	107	867	34	39·1	8·4	51
1877	891	0·1	84	627	18	4	733	43	112		0·4	2·2	109	859	35	40·2	8·6	57
1878	884	0·1	82	623	18	3	726	42	113		0·3	2·7	116	852	36	38·3	11·2	62
1879	880	0·2	78	624	18	3	723	41	113		0·3	2·5	120	845	36	39·2	9·9	70
1880	874	0·2	73	623	18	3	717	43	111		0·3	2·4	126	841	37	39·1	9·9	73
1881	874	0·3	68	626	18	3	715	45	111		0·3	2·5	126	837	37	40·3	10·5	75
1882	874	0·4	65	631	17	2	715	45	111		0·3	2·5	126	834	39	40·2	10·5	76
1883	872	0·3	63	629	18	2	712	44	113		0·3	2·6	128	827	36	41·1	10·4	85
1884	869	0·3	60	628	17	2	707	43	116		0·3	2·9	131	816	38	39·1	12·1	95
1885	870	0·3	58	630	17	3	708	41	118		0·2	3·2	130	816	37	41·1	13·3	93
1886	870	0·2	56	632	17	2	707	42	117		0·2	3·4	130	815	37	39·2	13·6	95
1887	864	0·1	53	629	17	2	701	43	116		0·3	3·2	136	801	38	42·2	13·5	105
1888	863	0·1	51	632	16	2	701	42	116		0·3	3·9	137	797	38	42·2	16·4	106
1889	860	0·1	48	632	16	2	698	42	116		0·3	4·1	140	788	38	44·3	16·7	113
1890	863	0·1	47	637	15	2	701	43	115		0·3	4·0	137	790	38	44·2	17·0	111
1891	864	0·1	46	637	14	2	699	42	118		0·3	4·6	136	781	37	43·3	19·3	119
1892	861	0·1	45	637	14	2	698	40	118		0·3	4·6	139	778	36	42·4	19·8	124
1893	857	0·1	44	634	13	1	692	41	118		0·4	5·1	143	768	38	41·2	21·2	131
1894	852	0·1	41	630	13	2	686	42	119		0·3	5·0	148	759	37	42·4	21·5	140
1895	853	0·1	39	633	13	1	686	41	120		0·3	5·3	147	754	36	44·3	21·5	144
1896	854	0·1	38	637	11	1	687	41	120		0·4	5·2	146	754	35	44·5	22·2	144
1897	854	0·1	35	640	10	1	686	40	121		0·4	5·7	148	745	36	42·4	24·3	152
1898	852	0·1	34	641	9	1	685	40	121		0·4	5·7	148	739	35	44·4	25·1	156
1899	850	0·1	34	634	9	1	678	41	113	11	0·3	6·4	150	730	35	46·2	28·5	160
1900	847	0·1	34	629	8·0	0·9	672	40	106	22	0·3	6·5	153	720	37	46·2	29·3	167
1901	842	0·1	33	624	7·7	1·0	666	41	104	24	0·3	7·0	158	710	37	45·2	32·2	176
1902	837	0·1	33	620	7·2	0·7	661	41	101	26	0·3	7·4	163	699	39	46·3	34·7	181
1903	830	0·1	31	612	6·8	0·8	651	41	102	28	0·4	7·3	170	686	40	47·3	34·4	192
1904	821	0·2	30	604	7·0	0·7	642	41	101	30	0·3	7·0	179	676	39	46·3	35·5	203
1905	817	0·1	29	600	6·7	0·6	636	41	100	32	0·3	7·6	183	664	39	48·2	38·4	210
1906	812	0·1	28	596	6·6	0·6	631	42	97	33	0·3	8·3	188	653	39	46·3	39·5	222
1907	805	0·1	27	590	6·4	0·6	624	42	96	35	0·4	7·2	195	641	39	45·3	36·3	238
1908	796	0·1	27	582	5·9	0·6	616	41	95	37	0·4	6·6	204	628	38	47·4	32·6	254
1909	795	0·1	28	579	6·0	0·9	614	42	92	40	0·4	6·8	205	624	40	43·4	34·0	254
1910	795	0·1	27	582	5·8	0·7	616	42	86	44	0·4	6·8	205	619	41	46·3	33·4	260
1911	791	0·1	26	578	5·3	0·8	610	44	83	47	0·4	6·6	209	613	40	46·4	33·6	267
1912	794	0·1	27	581	5·0	0·8	614	45	80	48	0·3	6·7	206	610	41	45·3	34·5	269
1913	783	0·1	25	571	4·8	0·9	602	47	77	50	0·3	6·7	217	587	45	46·2	34·3	287
1914	759	0·2	42	536	4·4	0·8	583	47*	72	50	0·3	6·7	241	559	43	41·4	34·3	322
1919	769	0·2	124	469	2·0	1·8	597	52*	63	52	0·4	5·0	231	565	55	36·3	26·5	317

* Including 1 per 1,000 before an Authorised Person.

Table XIII.—England and Wales—Marriages—Manner of Solemnization in Registration Counties, 1919.

Of 1,000 Marriages. With Religious Ceremonial.

Reg. Div.	Registration County.	Total.	Special Licence.	Licence.	Banns.	Sup. Registrar's Cert.	Not Stated.	Total in Established Church.	Before Registrar.	Before Authorised Person.	Roman Catholics.	Wesleyan Methodists.	Congregationalists.	Baptists.	Primitive Methodists.	United Methodists.	Calvinistic Methodists.	Other Denominations.	Society of Friends.	Jews.	Civil Marriages.
	England and Wales	769	0·2	124	469	2·0	1·8	597	114	53	52	33	23	19	14	9	4	13	0·4	5·0	231
I.	London	683	0·8	108	455	0·0	1·2	565	78	13	55	8	9	9	1	1	0	8	0·3	26·5	317
II.	Surrey	760	0·2	162	500	0·1	2·7	665	77	17	36	16	18	14	2	1	—	7	0·6	0·1	240
	Kent	784	0·2	150	531	0·4	2·3	684	74	26	28	18	21	20	3	2	—	8	—	0·2	216
	Sussex	794	0·5	165	521	—	3·1	690	85	17	28	15	32	12	3	2	1	9	0·2	1·4	206
	Hampshire	754	0·1	178	455	0·4	0·9	634	94	25	31	23	26	14	9	9	—	7	—	0·5	246
	Berkshire	792	—	162	539	—	2·4	703	65	23	23	19	13	15	15	—	—	3	0·6	0·3	208
III.	Middlesex	718	0·1	132	483	—	1·2	616	71	28	34	19	18	13	3	1	0	11	0·2	2·3	282
	Hertfordshire	800	—	144	548	—	3·6	696	79	23	16	15	31	32	4	—	—	4	2·0	—	200
	Buckinghamshire	848	—	169	540	0·5	4·9	714	102	32	14	20	22	41	21	5	—	11	—	—	152
	Oxfordshire	836	—	180	548	—	8·3	736	79	20	23	41	12	13	7	1	—	2	0·6	—	164
	Northamptonshire	813	—	152	487	0·3	7·2	647	61	104	13	36	43	50	13	1	—	9	0·6	—	187
	Huntingdonshire	839	—	161	556	—	—	717	95	27	3	38	13	39	8	—	—	21	—	—	161
	Bedfordshire	810	—	148	511	—	3·1	662	95	53	5	52	25	34	19	—	1	4	—	—	190
	Cambridgeshire	806	—	131	547	—	2·4	680	90	36	8	25	22	46	21	2	—	2	—	—	194
IV.	Essex	767	—	111	546	—	2·2	659	74	32	27	20	27	15	3	7	0	7	0·5	1·8	233
	Suffolk	812	—	131	587	—	2·9	721	73	18	11	17	29	21	7	2	—	4	—	—	188
	Norfolk	778	—	149	535	—	3·9	688	53	37	13	16	17	10	24	5	—	5	—	—	222
V.	Wiltshire	812	—	173	489	0·3	2·1	664	113	35	17	39	19	33	29	3	0	8	—	—	188
	Dorsetshire	839	0·9	174	530	1·4	1·9	708	108	23	20	45	39	13	12	1	—	1	—	—	161
	Devonshire	757	—	182	411	0·4	4·2	598	114	44	21	50	25	19	2	29	—	12	0·3	0·4	243
	Cornwall	839	—	192	321	0·7	2·8	517	216	106	7	160	12	10	12	118	—	3	0·4	—	161
	Somersetshire	858	0·5	178	505	0·5	4·4	688	125	45	12	50	35	49	7	9	0	8	—	—	142
VI.	Gloucestershire	753	0·1	153	471	0·1	1·6	626	88	38	21	23	24	33	4	10	1	10	1·0	0·4	247
	Herefordshire	805	—	172	537	—	11·8	721	67	17	18	16	4	27	15	—	—	4	—	—	195
	Shropshire	799	0·4	150	529	0·4	5·9	686	84	29	18	30	23	4	26	2	4	6	—	—	201
	Staffordshire	825	0·1	74	610	0·7	2·2	687	75	63	42	34	14	8	22	13	0	5	0·1	0·1	175
	Worcestershire	807	—	94	611	0·3	2·3	708	47	51	17	23	13	13	14	5	—	13	1·0	—	193
	Warwickshire	717	0·1	72	538	0·2	1·7	612	53	48	35	21	14	19	4	2	0	6	1·0	2·5	283
VII.	Leicestershire	763	—	126	475	0·4	2·5	604	75	84	24	41	19	39	26	1	0	9	—	0·2	237
	Rutlandshire	901	—	57	710	—	21·3	788	106	7	28	7	7	43	28	—	—	—	—	—	99
	Lincolnshire	824	—	143	537	0·5	4·2	685	67	71	12	55	11	10	39	9	0	2	0·5	0·3	176
	Nottinghamshire	744	—	107	526	0·1	0·9	634	55	54	14	28	12	20	18	12	—	5	0·3	0·8	256
	Derbyshire	808	—	125	506	0·7	2·7	634	96	78	23	49	23	14	38	20	—	7	—	0·2	192
VIII.	Cheshire	839	—	138	476	2·1	0·9	617	134	88	66	54	34	10	20	13	4	21	—	0·2	161
	Lancashire	831	0·0	126	416	7·3	0·8	550	186	90	116	51	32	15	17	17	1	27	0·4	4·9	169
IX.	West Riding	805	0·0	93	507	3·2	1·2	604	101	96	51	54	28	16	19	19	—	10	0·8	3·0	195
	East Riding (with York)	805	—	147	498	0·2	1·6	647	88	67	53	47	8	5	30	6	—	6	1·1	2·2	195
	North Riding	840	—	162	465	—	1·5	629	152	58	92	58	12	7	32	3	—	6	—	0·7	160
X.	Durham	770	—	100	446	9·1	1·2	556	144	69	99	35	7	5	40	13	—	14	0·1	0·7	230
	Northumberland	750	—	126	414	0·8	1·4	542	159	46	92	30	8	3	24	11	—	37	0·5	2·6	250
	Cumberland	864	—	224	421	8·9	1·1	655	147	61	89	45	16	3	24	5	—	26	0·7	—	136
	Westmorland	919	—	243	545	—	3·6	792	93	29	4	47	29	4	25	2	—	11	5·4	—	81
XI.	Monmouthshire	758	—	110	372	1·1	1·3	484	232	41	46	30	36	120	19	3	18	1	—	1·1	242
	Glamorganshire	571	—	91	218	1·5	0·2	311	206	52	46	22	61	74	4	5	40	6	0·2	1·7	429
	Carmarthenshire	592	—	94	138	3·6	2·1	238	264	89	11	9	156	102	—	—	70	5	—	0·7	408
	Pembrokeshire	663	—	198	202	2·6	—	403	211	49	23	31	76	111	—	—	19	—	—	—	337
	Cardiganshire	648	—	135	99	6·6	0·2	241	330	77	2	26	108	92	—	—	159	20	—	—	352
	Brecknockshire	862	—	132	236	—	—	368	490	4	29	14	128	233	16	—	74	—	—	—	138
	Radnorshire	824	—	130	381	—	—	511	252	61	—	23	15	267	—	—	8	—	—	—	176
	Montgomeryshire	783	—	110	298	10·3	2·1	420	349	14	2	74	85	52	6	—	144	—	—	—	217
	Flintshire	854	—	162	341	1·7	—	505	335	14	31	48	54	10	39	29	109	29	—	—	146
	Denbighshire	703	—	125	258	—	0·7	384	288	31	24	62	46	38	7	1	131	10	—	—	297
	Merionethshire	685	—	43	140	2·4	—	185	464	36	2	43	113	41	—	—	299	2	—	—	315
	Carnarvonshire	679	—	129	163	1·7	1·7	295	350	34	24	71	82	29	—	—	166	12	—	—	321
	Anglesey	712	—	147	88	3·5	—	239	431	42	39	25	106	95	—	—	204	4	—	—	288

Of the 1,861 Jewish marriages contracted in the year 1919, 1,333, or 72 per cent., were registered in London, 152, or 8 per cent., in Manchester, and 83, or 4 per cent., in Leeds. Of the Jewish marriages in London no fewer than 890, or 67 per cent., were registered in a group of three registration districts—London City, Whitechapel, and Mile End Old Town.

Table XIII gives particulars as to the forms under which marriages have been contracted in the various registration counties during 1919. This table is of interest from the light thrown upon the distribution of the various religious bodies throughout the country. Thus, London is shown to be the stronghold of the Jews; the northern industrial counties, especially Lancashire, of Roman Catholics; Cornwall and Wales, of Nonconformists. Church of England marriages are relatively most frequent in the English rural counties. There was no English county (reckoning Monmouth Welsh) where Church of England marriages formed less than half of the total, and no Welsh county, except Radnor and Flint, where they formed more than half. Civil marriage was much commoner in Glamorgan and Carmarthen than in any other county. It was also relatively frequent in London.

BIRTHS.

The births registered during 1919 numbered 692,438, corresponding to a birth-rate of 18·5 per 1,000 of the population used for this purpose (*see* page xii). This number is 29,777 in excess of that registered in the previous year, but 186,658 fewer than in 1914, the last year which, so far as births are concerned, was unaffected by the war. The fall since 1914 thus amounts to 21·2 per cent. of the total registered in that year.

The birth-rate conditions in 1919, however, were so exceptional that a mere statement of the rate for the whole year cannot convey any adequate idea of the events which it summarises. Table 4 shows that during the first two quarters of the year the rate fell to the lowest level reached during the past ten years—and therefore to the lowest yet recorded—but that it began to rise in the third quarter and in the fourth amounted to 23·7, the highest level reached since the first quarter of 1915, which was the last unaffected by the war.

If these movements are plotted week by week from the numbers of births in the great towns as stated in the Weekly Return, their association with public events becomes very evident. These births remained fairly constant, averaging a little over 6,000 per week, throughout 1918, but early in 1919 (about the fifth week) a lower level was reached, and from then to the middle of the year the average was under 6,000 per week. Allowing 9-10 months for pregnancy and delay in registration it is evident that conceptions suddenly declined about April 1918 from the fairly uniform level maintained during the previous twelve months, and maintained this lower level until about October, after which an increase set in, gradual at first, but rapidly accelerating to a maximum about April 1919. It will be seen that the five months of lowest natality correspond with the crisis of the war which set in on 21st March 1918, and that the increased severity of conscription which resulted had its natural effect. It was not till the war was nearly over, and all anxiety as to its ultimate issue was at an end, that the position began to alter, but after the Armistice conceptions rapidly increased, reaching their maximum in the spring of 1919, when demobilisation was most rapid. Since then the rate, though remaining high, has gradually declined. The provisional birth-rate in the first quarter of 1920 was 28·9, the highest rate for any quarter since 1903, and for any first quarter since 1900. In the second quarter of 1920 it fell to 26·5, and in the third to 24·3.

Although the birth-rate of February to June 1919, was lower than in any part of 1918, the last few weeks of 1917 recorded a very similar rate. The corresponding period for conception would be about February and March 1917, or just before and at the time of the spring offensive of that year. Stoppage of leave from the front in France may accordingly be the explanation. These two periods stand out clearly on the chart as of lower birth-rate than any others during the war.

Another item of interest and perhaps significance is noticeable on the chart of weekly births. The shortage in the numbers registered during the Christmas week, which is a constant feature of the returns, was exaggerated beyond all precedent. In the week ending 27th December 1919, 5,589 births were registered in the 96 great towns, and in the following week 12,078, an excess of 116 per cent. No Christmas intermission of registration on a scale at all approaching this had occurred during the preceding forty years, which have been examined from this point of view. Indeed, as the tendency has been for the Christmas defect to increase rather than diminish it may be assumed with some confidence that no such intermission has ever occurred before. For the whole of the forty years (excluding those when the decennial increase of the population dealt with, by extension of the list of "great towns," interferes with the comparison) the excess of births registered in the week after that in which Christmas fell, or, when the holiday was divided between two weeks by Christmas falling on a Saturday, of those registered in the week next but one after the Christmas week, over those registered in the week including Christmas day, was 46 per cent. This excess is found to vary a good deal, however, according to the position of Christmas day, being greatest when it falls towards the middle of the week. With Christmas on Thursday, as in 1919, the average excess for the forty years has been 61 per cent., varying only from 55 per cent. in 1902 to 72 in 1913, and it is with these figures that the excess of 116 per cent. in 1919 has to be compared.

Evidently so great and sudden a change must possess some significance, and the date of its occurrence suggests an explanation. The exaggeration of the Christmas interruption of the ordinary routine of life does not appear to have extended to the whole population. Otherwise it would presumably be met with at its maximum development during the period of national exaltation which included Christmas, 1918. But the excess that year, 63 per cent., was just about the average for a Wednesday Christmas. It was the return of husbands from military to civil life which brought about the heavy registration in the winter of 1919, and it is to this return that the sudden change under discussion must presumably be attributed. This must have been the first Christmas for several years on which many families were united, and it may well therefore have been celebrated with exceptional determination. If such is the sole explanation, future years should bring a reversion to former experience, but if this does not occur we shall have an interesting statistical expression of an alteration of the national frame of mind on the holiday question; and it will be open to opponents of universal military service to point out that its application, instead of being accompanied in this instance by evidence of the increase of discipline and promptitude in the discharge of duties promised by its advocates, appears to have had the opposite effect.

It is natural to inquire in this connexion whether the same factors have led to similar results in other registration work. Marriages, being registered simultaneously with the event, cannot be affected. And the registration of deaths is less open to the holiday influence, both because of the shorter period sanctioned by law and because of the financial considerations which render early registration desirable in so many cases. In the case of deaths the Christmas week defect in registrations is no doubt due mainly to the reduction of opportunity for registration. It is accordingly found to be greatest when Christmas falls on Friday, and it is therefore not possible to register the deaths of more than the first four or five days during the week. But the experience of 1919 regarding death registration is somewhat similar, on a reduced scale, to that concerning births. The excess of registrations in the following week was 34 per cent., whereas in the three previous Thursday Christmas years it had varied from 3 to 26 per cent.

The time is hardly ripe yet to attempt an estimate of the total loss of births attributable to the war. The births registered during 1910-14 numbered 4,411,823 as against 3,623,579 in 1915-19, a difference of 788,244. But the numbers born annually were already decreasing before the war, notwithstanding increase of population, so the whole of the defect should not be assumed to have resulted from this cause. Moreover the recent rebound of fertility must be taken into consideration as a partial offset, and it has not yet come to an end. Possibly the number of

births lost may be somewhat over half a million, or very similar to that of deaths on active service.

Birth-rates of different parts of the Country.—The birth-rates of individual administrative areas, tabulated on pages 89-121, are summarised in Table XIV. (*see* footnote on page xxi).

TABLE XIV.— BIRTHS IN 1919 PER THOUSAND POPULATION.

	North.	Midlands.	South.	Wales.	England and Wales.
London	—	19·1	18·2	—	18·2
County Boroughs	19·5	19·1	17·3	19·5	19·2
Other Urban Districts	18·9	17·5	16·3	21·8	18·1
Rural Districts	20·3	17·5	16·2	19·8	18·1
All areas	19·4	18·0	17·2	20·7	18·5

The highest sectional birth-rate recorded in Table XIV is that of Wales, and next to it that of the North of England, while that of the South is lowest. Highest of all is, as usual, that of the smaller towns of Wales, and lowest that of the rural districts of the South.

The constancy with which this order is maintained year after year is shown by the following table, which states the birth-rate of each section of the country as a percentage of that of the whole for each year from 1911 onwards.

TABLE XV.—BIRTH-RATE OF DIFFERENT SECTIONS OF THE COUNTRY PER CENT. OF THAT OF ENGLAND AND WALES, 1911–19.

	1911.	1912.	1913.	1914.	1915.	1916.	1917.	1918.	1919.
North	105	106	105	107	104	102	104	106	105
Midlands	99	99	99	98	98	100	98	98	97
South	92	92	91	90	93	96	94	90	93
Wales	114	113	113	113·	114	111	115	122	112

All classes of area in Wales record a decreased birth-rate in 1919, following an equally general increase in the previous year—a curious divergence from the experience of England, and from what might have been expected. The English increase was especially great in London, where the fall in 1918 was also exceptional. (Table XVI).

TABLE XVI.—COMPARISON OF THE BIRTH-RATE OF DIFFERENT SECTIONS OF THE POPULATION IN 1919 WITH THAT OF THE PREVIOUS YEAR AND OF THE LAST YEAR BEFORE THE WAR, THE DIFFERENCES BEING EXPRESSED AS PERCENTAGE INCREASES OR DECREASES.

	Increase (+) or Decline (−) since 1918 per cent. of rate in 1918.					Decline (−) since 1914 per cent. of rate in 1914.				
	North.	Mid.	South.	Wales.	E. & W.	North.	Mid.	South.	Wales.	E. & W.
London	—	—	+13·8	—	+13·8	—	—	−25·1	—	−25·1
County Boroughs	+4·8	+7·9	+3·6	−3·5	+5·5	−25·3	−24·8	−16·0	−26·7	−24·1
Other Urban Districts	+2·7	+3·6	+4·5	−4·0	+2·3	−23·2	−24·9	−16·0	−25·1	−23·0
Rural Districts	+2·0	+1·2	+5·2	−3·9	+1·7	−18·5	−17·1	−13·8	−17·5	−16·2
All areas	+3·7	+4·0	+8·2	−4·2	+4·5	−23·6	−23·1	−20·0	−23·3	−22·3

Sex Proportions at Birth.—Births of males in England and Wales numbered 356,241 and those of females 336,197; the proportion of male to female births was 1,060, 1,052, and 1,060 to 1,000 for legitimate, illegitimate, and total births respectively. The corresponding proportions for total births in each year from 1870 onwards and in groups of years since the commencement of registration are shown in Table 3, page 5; the extreme range during the preceding 50 years was from 1,032 per 1,000 in 1898 to 1,049 in 1916. During this period the highest ratio recorded prior to 1916 was 1,043 in 1875. It will be seen that the exceptional preponderance of male births noted in the three previous years was greatly increased in 1919, when the excess of male births was considerably greater than in any previous year since the commencement of registration in 1838.

The highest proportion previously recorded was 1,054, in 1843 and 1844, and from that period the ratio gradually fell, till in the last five years of the nineteenth century it averaged only 1,035. A slight and irregular increase of the ratio set in with the present century, but it had not gone far at the outbreak of war, 1914 recording the low proportion of 1,035. The next year showed a definite increase, which has been continued since, though with some irregularity, and reached its highest point in 1919.

The parallelism of this movement with that in prices during the last fifty years is striking, even though examination of the two year by year reveals minor divergences. Prices, of course, have such bearing upon the physical conditions of the population that it is quite conceivable that their fluctuations have entailed corresponding changes in some of the factors influencing sex ratio, whatever these may be. Presumably the coincidence of the great increases during 1916-19, both in prices and in the proportion of male births, is more than accidental, as we know that the war accounts for the former and must suspect it of being in some way responsible for the latter. Diagram I, however, shows that this parallelism is no new feature of the returns, but that it has been, on the contrary, very close for the past half century. The curves of prices shown can be carried further back—to the early part of the century indeed if the "Sauerbeck" are substituted for the "Economist" index numbers—but before the period to which the diagram relates correspondence between the variations in price level and in sex ratio, which has been so clearly marked for the past fifty years, is wholly absent. The conditions of the first sixty years of the nineteenth century, when England was still largely an agricultural and self-supporting country, obviously differ so much from those now existing that it is perhaps not surprising that the striking correspondence brought out in the diagram for the later data does not apply to the earlier. At any rate the fact remains that during the past half century or more there has been close parallelism between the major movements of sex ratio at birth and of prices, and it is to illustrate this that the diagram has been prepared.

The method of "smoothing" the curves is that adopted for prices by Mr. Sauerbeck in his paper in the *Journal of the Royal Statistical Society*, 1886. The figure plotted against each year represents the average for the decennium which it closes. Thus the ratios for 1919 represent the average ratios for 1910-19, and might perhaps from this point of view, be more appropriately referred to the year 1914 or 1915. This, however, would have the effect of apparently cutting out the war period; and so long as it is remembered that the ratios plotted against each year are those for the decennium then terminating, there seems little objection to adhering to Mr. Sauerbeck's method. This has, of course, the effect of greatly understating the change since 1915 in both prices and sex ratio; but the unsmoothed curves fluctuate so violently that it becomes difficult to realise their general trend. The possible explanations of this relationship between the alterations in prices and in sex ratio at birth during the last half century, and the degree of significance to be attached to it, cannot be discussed here. Interesting though this subject may be it is one extending far beyond the purview of this Report, which can only call attention to the facts, and leave the discussion of their interpretation to critics in a position to assess the possible bearing of prices upon biological conditions.

DIAGRAM I.—SEX RATIOS AT BIRTH AND "ECONOMIST" INDEX NUMBERS OF WHOLESALE PRICES. (Smoothed Curves.)
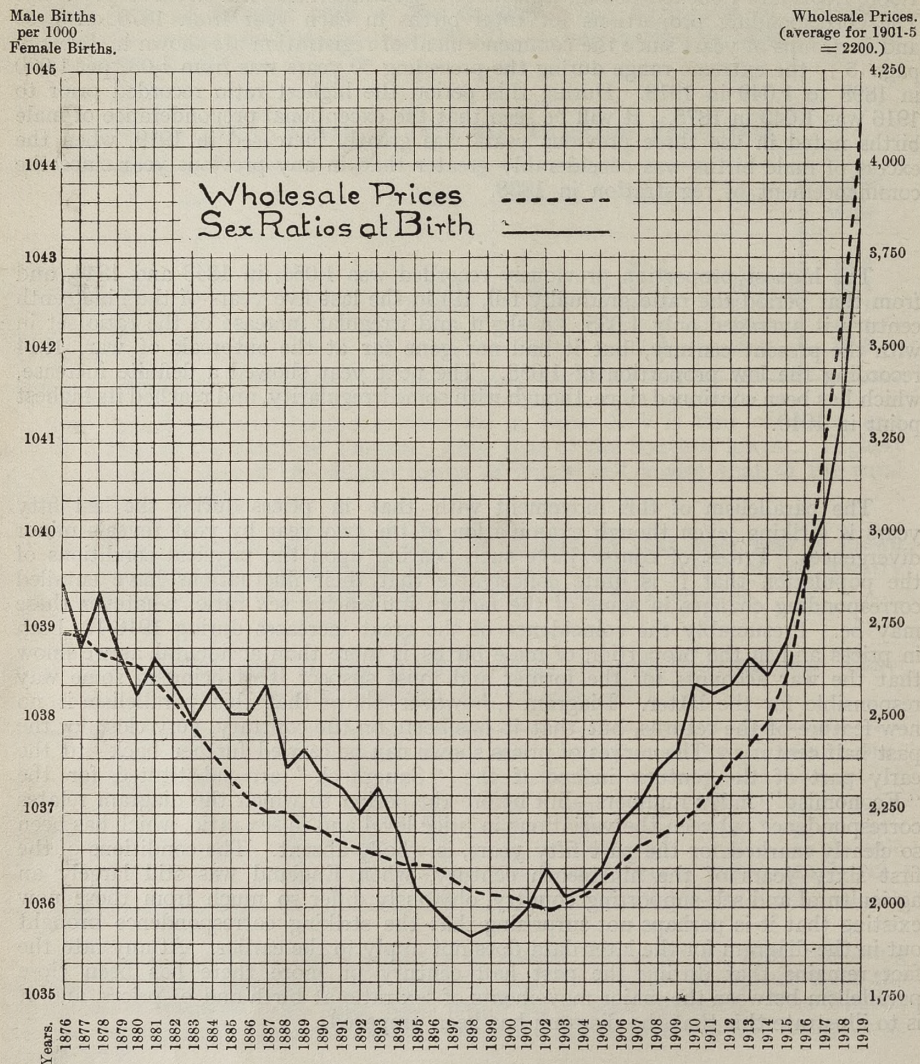
If the sex ratio figures are taken out quarter by quarter it is found that an abnormally high ratio was first attained in the first quarter of 1916. That ratio was not materially exceeded until the fourth quarter of 1918, but since the Armistice the proportion of males has been higher than ever. It is highest of all for children conceived since the close of the war. The quarterly ratios for the past six years are as follows:—

—	1st quarter.	2nd quarter.	3rd quarter.	4th quarter.
1914	1,031	1,037	1,031	1,043
1915	1,031	1,042	1,044	1,043
1916	1,050	1,051	1,045	1,050
1917	1,042	1,042	1,043	1,049
1918	1,043	1,046	1,048	1,056
1919	1,059	1,052	1,057	1,067
1920 (Provisional)	1,054	1,048	1,050	

The extent to which different classes of area and portions of the country have contributed to the increased preponderance of male births is shown in Table XVII.

TABLE XVII.—MALE BIRTHS PER 1,000 FEMALE BIRTHS, 1919.

	North.	Midlands.	South.	Wales.	England and Wales.
London	—	—	1,057	—	1,057
County Boroughs..	1,061	1,057	1,066	1,064	1,060
Other Urban Districts ..	1,051	1,067	1,044	1,054	1,056
Rural Districts	1,071	1,061	1,068	1,075	1,067
All areas	1,059	1,062	1,057	1,062	1,060

The great increase in excess of male births is common to the four sections of the country distinguished, and can be measured for each by comparison with the ratios for 1911-14 given in Table XVIII. The fact that the excess is at its maximum in the rural districts is in accordance with the general experience of this country in other years, and of other countries. There is, however, no corresponding gradation of excess to be traced as between towns of differing sizes in 1919, as has been noted elsewhere, and even as between urban and rural districts the rule is qualified by many exceptions. Thus the small towns of the Midlands record a higher ratio in Table XVII than the rural districts, and in 1916 the ratio for the rural districts was only 1,046 as against 1,049 for the country at large.

There is, in fact, so much variability in the relative experience in this matter of different sections of the population that in comparing them with a view to ascertaining any characteristic differences it is necessary to use longer periods than one year. This was noted in the Report for 1913, where it was pointed out that the variations for the three years then available, 1911-1913, were so great as to call for the postponement of any attempt to ascertain such characteristic differences.

As the records of nine years can now be used, and as these include all births resulting from conceptions during the period of actual warfare, they have been assembled in Table XVIII.

In this they are dealt with both as a whole and with distinction of the years 1911-14, for the sex ratio during which the war can bear no share of responsibility, from the five succeeding years of births all or (in 1915 and 1919) most of which represent conceptions within the war period.

TABLE XVIII.—MALE BIRTHS PER 1,000 FEMALE BIRTHS 1911–14, 1915–19, & 1911–19.

		North.	Midlands.	South.	Wales.	England and Wales.		
						Legitimate.	Illegitimate.	Total.
London	1911–14	—	—	1,040	—	1,040	1,062	1,040
	1915–19	—	—	1,046	—	1,046	1,057	1,046
	1911–19	—	—	1,043	—	1,043	1,059	1,043
County Boroughs ..	1911–14	1,039	1,034	1,036	1,026	1,037	1,029	1,037
	1915–19	1,047	1,044	1,046	1,050	1,046	1,050	1,046
	1911–19	1,043	1,040	1,042	1,038	1,042	1,041	1,042
Other Urban Districts ..	1911–14	1,036	1,036	1,037	1,037	1,036	1,037	1,036
	1915–19	1,046	1,050	1,050	1,044	1,049	1,032	1,048
	1911–19	1,041	1,043	1,044	1,040	1,042	1,034	1,042
Rural Districts ..	1911–14	1,045	1,045	1,041	1,047	1,041	1,057	1,042
	1915–19	1,058	1,047	1,050	1,059	1,051	1,055	1,052
	1911–19	1,052	1,043	1,045	1,053	1,046	1,056	1,047
All Areas	1911–14	1,039	1,036	1,039	1,038	1,038	1,041	1,038
	1915–19	1,048	1,047	1,048	1,050	1,048	1,046	1,048
	1911–19	1,044	1,042	1,044	1,044	1,043	1,044	1,043

It will be seen from the portion of this table dealing with the whole nine years that no geographical differences of any significance are to be traced, while variation with urbanization is limited to the distinction between the rural districts and the rest of the population, and even in this case is of significant extent only for the North and Wales, the rural ratio in the South and Midlands exceeding that of the general population only by one male per thousand female births in each case. As between urban areas of varying size London records a slightly higher ratio than the massed county boroughs and small towns over the whole period. For the four years of peace the relationship of urbanization to excess of male births was direct, so far as towns of varying size are concerned, though for the five years of war conceptions a very slight tendency to follow the usually accepted rule of inverse relationship may be claimed.

As between legitimate and illegitimate births it is difficult to trace any consistent rule. London shows a much higher ratio for illegitimates throughout, but the record of the county boroughs is inconsistent, legitimate yielding much the higher ratio in the first of the two periods, while in the second the excess is on the side of the illegitimate. The experience of the smaller towns has been similarly inconsistent, but with the positions of the two periods reversed, for while the illegitimate ratio was very slightly the higher in the first period it was very much the lower in the second. The rural districts resemble London in showing a considerable illegitimate excess, which extends over both periods. From such facts as these it appears impossible to come to any definite conclusion as to the bearing of legitimacy upon sex ratio. In the past the ratio has generally been higher in this country (contrary to the general continental experience) for illegitimates ; but in 1901-10 the difference was only as between 1,038 and 1,041, while in 1911-19 the excess for illegitimates has almost disappeared, and for 1915-19 the continental rule of higher legitimate ratio is followed.

The increase in masculinity which has accompanied the war is common to all the populations dealt with so far as the ratios shown for total and for legitimate births are concerned, and is in all cases considerable, varying from 6 for London and 7 for the smaller towns of Wales to 13 for the rural districts of the North, 14 for the smaller towns of the Midlands, and 24 for the county boroughs of Wales. For the whole population the increase is 10. But while the factors causing the change, whatever they may be, have applied with great constancy to legitimate births all over the country their effects upon illegitimate births have been inconsistent. London, the smaller towns, and the rural districts all return somewhat lower illegitimate ratios for the years of war than for those of peace, but the movement of the county boroughs in the opposite direction has been so great as to neutralize these changes and bring about an increase by five per thousand of the ratio for illegitimate births as a whole. Such divergent experiences seem difficult to reconcile with any rational explanation which can be suggested for the change which has occurred ; but it is well that they should be noted, for no etiological theory can be accepted which is irreconcilable with them. The smallest numbers of illegitimate births compared are those for London in 1911-14—8,404 of females and 8,925 of males. For the whole nine years the total number of illegitimate births was 344,818.

Illegitimate Births.—The births registered during 1919 include 41,876 of illegitimate children, an increase of 424 upon the number in 1918, coincident with the increase of 29,777 in total births. Illegitimate births have thus increased by 1·0 per cent., while legitimate births have increased by 4·7 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 1901-05 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 2), has now declined to 6·05 per cent. The yearly figure, however, wholly fails in this case to show what has occurred, and for this reason Table XIX has been prepared, in which the history of illegitimacy is followed by quarters from 1914, the last year unaffected by the war, onwards.

TABLE XIX.—ENGLAND AND WALES, ILLEGITIMATE BIRTHS BY QUARTERS, 1914–1919.

| | In proportion to total Births. | | | | In proportion to the Unmarried and Widowed Female Population aged 15–45 years. | | | |
| | Rate per 1,000. | | | | Rate per 1,000. | | | |
	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.
1914	42	44	41	42	7·8	8·3	7·7	7·2
1915	46	46	43	42	8·5	8·0	6·9	6·3
1916	48	48	49	47	7·6	8·1	7·7	7·0
1917	54	55	57	57	7·8	7·7	7·4	6·9
1918	60	62	64	64	7·8	8·4	8·5	8·2
1919	70	68	65	46	8·2	8·1	9·0	8·1
1920 (Provisional)	44	49	—	—	9·6	9·7	—	—

It will be seen that the proportion of illegitimate to total births maintained a level throughout the greater part of 1919 higher than had been reached for many years previously, but that in the last quarter, when the legitimate birth-rate increased as already described, it suddenly fell from 65 to 46 per thousand total births.

The main factor in the fluctuations of this proportion has been the changes in legitimate fertility, and therefore illegitimacy can be better studied in the second section of the table, where these births are related to the numbers of possible mothers. It will be seen that the fourth quarter displays no corresponding decline in this rate, the higher level reached in 1918 having been maintained throughout 1919. It is interesting to note that it was not until the second quarter of 1918 that the recent pre-war standard (see Table 3) of illegitimate fertility began to be exceeded. Throughout the greater part of the war, from the second quarter of 1915, the first seriously affected by war conditions, to the first quarter of 1918 inclusive, the rates ruled low, notwithstanding the apprehensions expressed of an alarming number of "war babies." But with the second quarter of 1918 a period of increased illegitimate fertility appears to have set in, which as yet shows no sign of closing, the provisional rate for the first quarter of 1920 being 9·6, and for the second 9·7. The first of these rates corresponds in point of time with the period of most rapid demobilisation, which also had the effect of greatly increasing legitimate fertility at this time.

The history of illegitimacy during the past 44 years is shown for annual and quinquennial periods in Table XX, which is continued from previous reports. See also Tables 2 and 3.

TABLE XX.—ENGLAND AND WALES, ILLEGITIMATE BIRTHS, 1876–1919.

| Period. | In proportion to total Births. | | In proportion to total Population. | | In proportion to the Unmarried and Widowed Female Population aged 15–45 years. | |
	Rate per 1,000.	Compared with rate in 1876-80 taken as 100.	Rate per 1,000.	Compared with rate in 1876-80 taken as 100.	Rate per 1,000.	Compared with rate in 1876-80 taken as 100.
1876–1880	47·5	100·0	1·7	100·0	14·4	100·0
1881–1885	48·0	101·1	1·6	94·1	13·5	93·8
1886–1890	46·3	97·5	1·5	88·2	11·8	81·9
1891–1895	42·4	89·3	1·3	76·5	10·1	70·1
1896–1900	41·0	86·3	1·2	70·6	9·2	63·9
1901–1905	39·5	83·2	1·1	64·7	8·4	58·3
1906–1910	40·2	84·6	1·1	64·7	8·1	56·3
1911–1915	43·1	90·7	1·0	58·8	7·8	54·2
1915	44·5	93·7	1·0	58·8	7·4	51·4
1916	48·0	101·1	1·0	58·8	7·6	52·8
1917	55·6	117·1	1·0	58·8	7·4	51·4
1918	62·6	131·8	1·1	64·7	8·2	56·9
1919	60·5	127·4	1·1	64·7	8·3	57·6

Some idea of the extent of illegitimacy in different classes of area and parts of the country may be gathered from Table XXI, but it must be borne in mind that statement in proportion to total population, to which we are restricted for 1919 (*see* page xii), reduces the excess of illegitimacy in the rural districts which is found to exist when statement can be made in terms of the single and widowed female population of fertile ages. The excess of illegitimacy shown for the South, which was noted also in the three preceding years, would probably disappear if the rates could be stated in proportion to numbers of unmarried women of fertile age, for in the corresponding tables up to 1914 it was found that when this was done the rate for the South was reduced relatively to those of other portions of the country, falling short of the average by about 16 per cent. as against about 8 per cent. when calculated on total population. But it is only from 1916 on that the illegitimacy of the South has been in excess, even stated in proportion to total population. During the previous five years the South always yielded the lowest rate of the four areas, an advantage which was much increased by the more accurate form of statement.

TABLE XXI.—ILLEGITIMATE BIRTHS IN 1919 PER THOUSAND POPULATION.

—	North.	Midlands.	South.	Wales.	England and Wales.
London	—	—	1·01	—	1·01
County Boroughs.. ..	1·15	1·05	1·36	0·85	1·13
Other Urban Districts	1·07	1·05	1·31	1·00	1·10
Rural Districts	1·16	1·18	1·20	1·17	1·18
All areas	1·13	1·09	1·17	1·02	1·12

It will be seen that but for a low rate in London the Southern excess in the table would be much greater than it is, and it seems doubtful whether statement in the other form would completely wipe out the large excess now recorded by the Southern towns outside London. Before the war illegitimacy was considerably higher in Wales than in England, whereas Table XXI would give the opposite impression. But Welsh illegitimacy may be somewhat in excess even now, as it was always much increased relatively by the more accurate form of statement. Probably these changes since 1914, so far as they do not result merely from the form of tabulation to which we are now restricted, are largely connected with the distribution of troops and to that extent may be expected to be temporary. In this connexion the rates may be quoted for a few of the large Southern towns likely to be affected by this con- sideration. These rates of illegitimate births per thousand total population, derived from the data given on pages 89 and 90, are as follows :—Canterbury, 1·51 ; Exeter, 1·40 ; Oxford, 1·40 ; Plymouth, 1·35 ; Portsmouth, 1·29 ; Reading, 1·32 ; and Southampton, 1·63. In all cases these rates are considerably above the average for the whole country, and in four of the seven they are above the average for the county boroughs of the South.

NATURAL INCREASE.

In 1919 the excess of births over deaths registered in England and Wales was 188,235, as compared with 50,800 in 1918, and 362,354 in 1914, the last year subject in this matter to peace conditions.

The very low excess in 1918, which took into account no war casualties, except 3,827 deaths from wounds in this country, was due to the great mortality from influenza in conjunction with the unprecedentedly low birth-rate. In 1919 both factors were still operative in keeping down the natural increase, though births had increased slightly and influenza mortality, while still formidable, was much less so than in the previous year. And in 1919 there is not, as in the immediately preceding years, a large mortality from warfare abroad to be deducted from the balance shown by the registration figures.

DEATHS.

The deaths of 504,203 persons were registered in England and Wales during 1919, 258,089 (viz., 249,364 civilians and 8,725 non-civilians) of these being males and 246,114 females.

The 504,203 deaths correspond to a rate of 13·7 per 1,000 of the estimated population. This is the first year since 1914 for which it has been possible to show the total death-rate, as during the four years of war no estimates of the average non-civilian population in the country were obtained. When standardized* to correct for the deviation of the sex and age distribution of the population as shown on page xi from that of the standard population of 1901 this death-rate is reduced to 13·3 (Table 3). The extent of the reduction has been increased somewhat as compared with the years immediately preceding the war by the larger number of males absent on foreign service (page xii), mortality at military age being below the average for all ages. But this effect of foreign service has been masked to some extent during 1919 by the high influenza mortality of the first four months of the year, which had a special incidence on the military ages, and thus lessened their normal advantage in regard to total mortality.

The publication of the first number of the " International Statistical Annual " by the International Statistical Institute (Vol. II, Movement of Population, Europe) has provided an international standard population derived from the census populations of Great Britain, France, Germany, Austria, and a number of smaller European countries in 1900 or 1901, by means of which standardized death-rates for the various European countries have been calculated. The standard provided by this population is a much more typical one than that generally used in these Reports, viz., the population of England and Wales in 1901, which happened to be exceptionally favourable to low mortality, and the use of which therefore results in a general low level of the standardized rates derived from it. In order to correct any wrong impression which may arise from this fact, and to provide standardized rates for England and Wales comparable with those for other countries using the inter- national standard, rates calculated upon the latter are now shown in Table XXIII, as well as those based on the 1901 English standard, which is that always used elsewhere unless indication to the contrary is given. It will be seen that use of the less favourable standard increased the rate from 13·3 to 14·9 per thousand.

Notwithstanding the heavy mortality from influenza during the early months of the year only two previous years, 1910 and 1912, record a lower total mortality, crude or standardized (Table 3). It is evident, therefore, that mortality in 1919, apart from the influenza epidemic, must have been unprecedentedly low. This matter can be examined in two ways—by deducting the deaths due to the epidemic, or by comparing the mortality with that of other years quarter by quarter, since the first quarter alone was seriously affected by the epidemic.

Material for the first method of comparison is afforded by the estimate of mortality due to the epidemic in the influenza supplement to the Report for 1918.† The deaths of civilians attributable to the epidemic during 1919 were there estimated at 51,500 (page 7) and to these about 4,000 deaths of non-civilians have to be added, making 55,500 in all. Deducting these from the deaths registered during the year we are left with about 448,700 deaths not due to the epidemic. Table 2 shows that no other total nearly so low as this is on record during the past half century ; and in fact we have to go back to 1862, when the estimated population was little more than half (55 per cent.) of that of 1919, to find so low a total. On this estimate the crude non-epidemic death-rate of the year was but 12·2 per thousand, comparing with the previous lowest record of 13·3 in 1912.

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* 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 (pp. xxvii–xxxi). Standardized death-rates for the sexes separately quoted in this report 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, p. xx.)

† Supplement to the Eighty-first Annual Report. (Cmd. 700 of 1920.)

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The advantage of 1919 implied by these figures is fully confirmed by Table 4, which states the death-rate of each quarter separately. This table, in conjunction with its predecessors in earlier reports, shows that while the mortality of the first quarter was the highest during the present century—it was last exceeded in 1900—that of each one of the three later quarters was considerably lower than any previously recorded. Thus that of the second quarter, 11·8, compares with a previous best of 12·8 in 1912; that of the third quarter, 9·6, with 10·8 in 1917; and that of the fourth quarter, 12·4, with 13·0, also in 1917. To complete the statement, the estimated non-epidemic death-rate of the first quarter was 15·6, comparing with a previous lowest of 15·5 in 1910.

These results may be compared with those demonstrated in last year's Report for the non-epidemic mortality of 1918, which in the case of females, for whom alone valid comparison could be made in war time, was shown to have been much lower than the rate for any previous year. It was there estimated at 11·4, as against 11·2 in 1919. We have thus now a remarkable sequence of no less than four consecutive years, 1916–1919, in each of which, when the mortality of the great influenza epidemic is eliminated, the death-rate of females was lower than ever before. The figures are—1916, 12·4; 1917, 12·1; 1918, 11·4; 1919, 11·2. These are crude rates, but standardization would not appreciably affect the comparison.

Mortality of each Sex.—The standardized mortality of males regularly exceeds that of females. Up to 1860 or so the excess was only about nine per cent., but for the 15 years ending with 1914 it averaged about 20 per cent. During the war this excess gradually rose to a maximum of 39 per cent. in 1917 because the comparison for the four war years is necessarily between females and civilian males, and the quality of the civilian male population was much deteriorated during these years by selection of the healthiest males of military age for military service. In 1919, when it is possible once more to include all the males in the country, civilian or not, in the comparison, the excess has fallen again to 25 per cent., because the majority of the good lives amongst males which were formerly excluded from the comparison are now included in it. The minority still excluded, and consisting partly of the excess of men serving abroad in mid 1919 over those in 1911–14 and partly of the dead—so largely representative of the country's best—will serve to explain the growth in male excess from 21 per cent. before the war to 25 per cent. It will be seen on scanning the age columns that the only significant increase is at military age, 15–45, at which the 1919 excess for males is 34 per cent. as against 21 before the war. For this increase, which in the main no doubt is to be explained on the lines suggested above, two minor causes share responsibility—the aftermath of war in the shape of deaths during the year which would not have occurred but for wounds received or hardships undergone previously, and the influenza epidemic. The mortality, attributed to influenza, of males aged 15–45 exceeded that of females by 36·5 per cent., whereas from other causes the excess was only 33·8 per cent. So the male excess at this age is slightly higher than it would have been but for the epidemic.

TABLE XXII.—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—	45—	55—	65—	75—	85 and up-wards.
1911–14...	...	...	121	120	102	95	121	130	132	125	117	111
1915	...	...	125	122	101	100	149	126	126	125	119	108
1916	...	...	131	123	106	99	168	130	128	129	118	107
1917	...	...	139	121	104	97	203	136	132	134	124	102
1918	...	...	135	114	95	88	179	134	130	129	124	101
1919	...	...	125	124	100	98	134	135	126	124	120	100
All causes exclud- ⎰1917			137	120	103	97	195	129	129	133	125	107
ing influenza and ⎱1918			136	117	100	96	197	127	128	131	124	101
pneumonia ⎰1919			123	124	102	99	128	131	125	124	120	100

The comparison of chief importance afforded by the above table is that of 1919 with 1911–14, as the ratios at 15–45 during the intervening years are affected by the exclusion

of all non-civilians. The last three lines have been added to the table to show how the comparison for 1918 and 1919 was affected by the influenza epidemic. But it is to be noted that when calculated in this way the non-epidemic male excess at all ages from 15 to 65 is understated—as may be seen in the case of 1917, which was not affected by the epidemic—because of the elimination of the heavy normal excess mortality of males from pneumonia at these ages. At ages other than 15–45 there is little to remark in 1919 except that at 65–75 the male excess, especially heavy during the three preceding years, has returned to a more normal figure (in the 15 years 1901–15 it varied from 18 to 26 per cent.); and that in extreme old age the mortality of males was practically the same as that of females. Comparison of Tables 6 and 7 brings to light no previous instance where the death-rate of males was not in excess at this period of life.

Mortality at different Ages.—In the absence of estimates of the ages of the population in the various sections of the country (see page xii) the tables in the reports for the years 1911–14 showing mortality at different ages and standardized mortality at all ages by sex for the different classes of areas, urban and rural, cannot be included for 1919. Table XXIII, however, gives the crude and standardized rates for sexes and persons for the whole country, as well as the mortality per million living at different ages, for 1918 (civilian population) and 1919, and, in order to provide means of comparison with the most recent pre-war experience, for 1911–14. Males aged 15–45 have had again to be dealt with as forming a single large age group in preparing the figures for 1918 and 1919.

TABLE XXIII.—ENGLAND AND WALES: MORTALITY from ALL CAUSES per MILLION POPULATION, 1911–1914, 1918, and 1919.

			Males.			Females.			Persons.		
			1911–14.	1918 (Civilians only).	1919.	1911–14.	1918.	1919.	1911–14.	1918 (Civilians only).	1919.
All Ages	Crude ...	...	14,870	21,098	15,022	13,041	15,086	12,544	13,926	17,560	13,701
	Standardized ⎰A		14,962	19,814	14,825	12,335	14,642	11,862	13,571	17,095	13,262
	⎱B		16,080	20,982	16,159	13,892	16,264	13,658	14,949	18,050	14,866
0—	...	...	40,228	38,523	32,360	33,647	33,847	26,118	36,957	36,201	29,267
5—	...	...	3,276	5,271	3,381	3,221	5,554	3,385	3,248	5,412	3,383
10—	...	...	1,953	3,413	2,218	2,051	3,880	2,274	2,002	3,647	2,246
15—	...	...	2,910	?	?	2,662	5,964	3,382	2,785	?	?
20—	...	...	3,681	?	?	3,091	7,691	4,185	3,370	?	?
25—	...	...	4,822	?	?	3,976	9,291	5,119	4,378	?	?
35—	...	...	8,167	?	?	6,556	8,646	6,196	7,333	?	?
15–45	...	...	*5,175*	*14,663*	*6,643*	*4,286*	*8,201*	*4,945*	*4,713*	*10,176*	*5,701*
45—	...	...	15,023	16,754	14,465	11,522	12,904	10,693	13,203	14,731	12,472
55—	...	...	30,500	29,554	27,843	23,162	22,893	22,021	26,627	26,127	24,845
65—	...	...	64,597	64,652	63,432	51,584	49,625	51,215	57,350	56,363	56,730
75—	...	...	139,355	139,540	153,756	119,280	112,628	119,319	127,412	123,319	138,484
85 and upwards	...	...	271,185	246,705	292,516	244,078	242,691	292,382	253,709	244,122	292,430

A. English Standard (Population of England and Wales, 1901).   B. International Standard.

In studying this table it is necessary to bear in mind that about 11 per cent. of the deaths in 1919 and 24 per cent. of those in 1918 were due to the influenza epidemic (page xxxvii). The distribution by age of this epidemic mortality is not available, for though the greater part of it was attributed in the returns to influenza, and can therefore be split up by age, that part of it assigned to other causes cannot be similarly dealt with. Consequently the full deduction to be made on account of the epidemic from the mortality of any particular age in order to compare it with that of previous years cannot be stated. A very fair indication, however, of the trend of non-epidemic mortality at various ages may be obtained by deducting from the total death-rate at each age in 1918 and 1919 its excess of mortality from influenza and pneumonia over the corresponding record for 1917. The estimates of total mortality ascribable to the epidemic indicate that about 90 per cent. of it was returned as either influenza or pneumonia of some form. Table XXIV has accordingly been prepared, in which the mortality of each sex at various ages in 1918 and

1919, less the excess of mortality from influenza and pneumonia over that of 1917, is compared with the corresponding figure for 1917 ; the comparison can be extended back to the commencement of registration by means of Tables 6 and 7.

TABLE XXIV.—ENGLAND AND WALES.—MORTALITY per 1,000 of each Sex at different ages in 1918 and 1919, less EXCESS of MORTALITY from INFLUENZA and PNEUMONIA over 1917, compared with the Mortality for the same Sex and Age in 1917.

		0–	5–	10–	15–	20–	25–	35–	15–45	45–	55–	65–	75–	85 and up.
Males ...	1917	31·7	3·2	2·1	?	?	?	?	8·5	14·4	29·4	67·1	157·5	302·1
	1918	32·9	3·4	2·2	?	?	?	?	9·0	14·0	27·3	61·8	137·9	247·7
	1919	30·6	3·0	2·0	?	?	?	?	5·5	13·4	26·9	62·3	153·4	295·3
Females ...	1917	26·2	3·0	2·2	3·1	3·3	3·7	6·0	4·2	10·6	22·2	50·2	126·8	280·6
	1918	27·7	3·3	2·3	3·3	3·7	4·1	5·9	4·4	10·4	20·7	46·9	111·8	242·9
	1919	24·5	2·9	2·0	2·8	3·1	3·6	5·4	3·9	9·7	20·9	49·8	127·8	292·4

As in this table the mortality of the three years from influenza and pneumonia has been taken at the same figure, differences between them must be due to causes other than these. The table shows that at all periods of life up to 65 in males and to 55 in females mortality from these other causes was lower than in either 1917 or 1918, but that at higher ages it exceeded that of 1918, and, in the case of females above 75 years of age, that of 1917 also. The highest age groups, which had escaped so lightly in 1918, did not, in fact, share the generally favourable experience of the year, and Tables 6–8 show that their death-rate was above the average of recent years. For females of extreme age, 85 and upwards, it was the highest recorded since 1891. The great reduction in the death-rate of males aged 15–45 in 1919 is, of course, due to re-inclusion in the population of large numbers of healthy men previously excluded on account of military service.

At 0–5, as pointed out in the Report for 1917, it is now necessary, owing to the reduction in the proportion of young infants due to the great fall in the birth-rate, to use standardized rates in comparing the mortality of different years.

TABLE XXV.—ENGLAND AND WALES, 1911–1919 : COMPARISON of CRUDE and STANDARDIZED DEATH-RATES at AGE 0–5.

	Males.		Females.		Both Sexes.	
	Crude.	Standardized.	Crude.	Standardized.	Crude.	Standardized.
1911	46·2	46·7	39·3	39·9	42·8	43·3
1912	35·5	36·5	29·6	30·5	32·6	33·5
1913	39·9	40·3	32·9	33·3	36·5	36·8
1914	39·1	39·2	32·7	32·8	35·9	36·0
1915	41·9	42·0	34·3	34·4	38·1	38·2
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 Total ...	38·5	42·5	33·8	37·1	36·2	39·8
„ Non-epidemic*	32·9	36·6	27·7	30·8	30·3	33·7
1919 Total ...	32·4	36·4	26·1	29·3	29·3	32·9
„ Non-epidemic*	30·6	34·2	24·5	27·5	27·6	30·9

* *i.e.*, less excess (over 1917) of mortality from influenza and pneumonia.

When this is done the rate for males in 1919 is increased from 32·4 to 36·4 and that for females from 26·1 to 29·3. Even these rates, which include the mortality due to the epidemic of influenza, are lower than those of any year previous to 1916 for both males and females. Deducting excess mortality from influenza and pneumonia the crude rates are the lowest yet recorded for either sex, but standardization shows slightly lower rates

for males in 1916 and 1917. For females, however, the rate remains the lowest yet recorded. Such increase, moreover, as has occurred according to these figures may well be due to influenza, since the plan followed fails to exclude an appreciable proportion of the epidemic deaths. It is very conceivable, moreover, that deaths from this cause may have been returned under other headings in larger proportion at this than at later ages.

The mortality during 1919 at 5–10 shown in Table XXIV is lower than any previously recorded for females, and has only once been equalled, in 1910, for males (Tables 6 and 7). At 10–15 the comparison is not quite so favourable to 1919, for a lower rate for males than 2·0 has been reached in three previous years, while the same rate for females has been attained in four previous years. The rate for males aged 15–45, 5·5, has been bettered in several previous years, notably 1910, 1912 and 1913, but as already pointed out in connexion with the comparison of sex mortalities, the male population now of this age is still, and indeed for many years must remain, to some extent deteriorated as a result of the war. The incidence of mortality upon this part of life is therefore best revealed by the figures for females, and these are very favourable, the rates in Table XXIV being very, but not unprecedentedly, low at 15–25, and lower than any previously recorded at 25–45. The decrease at 35–45 is especially remarkable, 5·4 comparing with previous low records of 6·0 in 1917 and 6·3 in 1916. The lowest mortality returned for females of this age during the nineteenth century was 8·9, so progress in their case has been exceptionally rapid of late years. Mortality at 45–65 was also exceptionally low in 1919, the rates for both sexes in Table XXIV being below all previous records. At 55–65, indeed, the rates in Tables 6 and 7, which make no allowance for influenza, are lower than those of any previous year. The rates at 65–75 are also low, but not unprecedentedly so. The increase at ages over 75, which is little affected by influenza, has been already dealt with.

Infant Mortality.—Of the 504,203 deaths registered during the year, 61,715, or 12·2 per cent., were of infants under one year of age. This proportion has fallen very rapidly of late years because of reduction both in infant mortality and in the birth-rate. The percentage so recently as 1901–10 was no less than 22·6.

The rate of infant mortality resulting from these deaths, 89 per thousand births, is 15·2 per cent. below the average for the ten preceding years, which was 105. It is the lowest rate yet recorded in this country, comparing with 91 in 1916, 95 in 1912, and 96 and 97 in 1917 and 1918. If, however, the method of statement be followed which was suggested in the Report for 1917 as affording a truer measure of infant mortality than the ratio of deaths to births registered during the year, the position is modified. As the birth-rate increased in 1919 the births are too many to represent accurately the population aged less than one year amongst which these deaths occur. Substitution of the births roughly corresponding to the infant deaths of the year, *i.e.*, 70 per cent. of those in 1919 and 30 per cent. of those in 1918,* for those registered during the year as the basis of the mortality rate, raises this from 89 to 90. The same method of statement reduces the rate for 1916 from 91 to 90 and that for 1917 from 96 to 92, so the 1919 rate is not, perhaps, so unprecedentedly low as would at first sight appear. It is at all events, however, as low as any previously recorded, and but for the influenza epidemic would have been actually the lowest by either method of statement. If as in Tables XXIV and XXV we take excess over 1917 in mortality from influenza and pneumonia as a rough measure of mortality due to the epidemic, the figure for 1919 is reduced to 88 on the conventional basis, or 89 by the modified method of statement, and a slight advantage over the previous low record of 1916 is thus restored.

Trend of Mortality.—The following table traces the movement of infant mortality during the last 37 years, distinguishing the very fluctuating element in it due to diarrhœa.

* As the increase in births was practically confined to the last quarter of 1919 these proportions cannot be wholly applicable to this very exceptional year.

Table XXVI.—England and Wales : Infant Mortality, 1883–1919.

Year.	Deaths under one year of age per 1,000 Births.			Year.	Deaths under one year of age per 1,000 Births.		
	Total.	Diarrhœal Diseases.	Total less Diarrhœal Diseases.		Total.	Diarrhœal Diseases.	Total less Diarrhœal Diseases.
1883	137	12	125	1901	151	32	119
1884	147	21	126	1902	133	15	118
1885	138	11	127	1903	132	18	114
1886	149	20	129	1904	145	30	115
1887	145	18	127	1905	128	21	107
1888	136	11	125	1906	132	31	101
1889	144	16	128	1907	118	13	105
1890	151	16	135	1908	120	20	100
1891	149	13	136	1909	109	13	96
1892	148	15	133	1910	105	13	92
1893	159	28	131	1911	130	36	94
1894	137	12	125	1912	95	8	87
1895	161	28	133	1913	108	19	89
1896	148	21	127	1914	105	17	88
1897	156	31	125	1915	110	15	95
1898	160	37	123	1916	91	11	80
1899	163	40	123	1917	96	10	86
1900	154	28	126	1918	97	10	87
				1919	89	9	80

The table shows that during the last eighteen years of the nineteenth century infant mortality increased a little as the result of a wave of heavy diarrhœal mortality towards the close of the century, and that there was little or no tendency for the mortality from other causes to fall. During the present century a remarkable fall has occurred in the mortality both from diarrhœa and from other causes, and the lowness of the rates now prevalent is due only in a minor degree to the low level of diarrhœal mortality during the last few years. Still, the fact that diarrhœa was less fatal in the last three years than in any other of the thirty-seven except 1912 has had an important share in maintaining the low level of the total rate.

The rapidity of the progress made has been very different in different portions of the first year of life. Records are now available for thirty-nine years of the numbers of deaths under three months of age and at 3–6 and 6–12 months respectively. The deaths at each of these ages per 1,000 births registered and the proportions of the total infant mortality occurring at each age during these years are shown in Table XXVII.

Table XXVII.—England and Wales : Age Distribution of Infant Mortality, 1881–1919.

—	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
1886–1891 ...	—	—	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	20	59	20	31	110	356	185	541	180	279	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	25	65	26	39	130	313	190	503	201	296	1,000
1912 ...	38	18	56	15	24	95	405	186	591	156	253	1,000
1913 ...	39	20	59	20	29	108	364	188	552	182	266	1,000
1914 ...	39	19	58	19	28	105	368	185	553	179	268	1,000
1915 ...	38	19	57	19	34	110	346	173	519	174	307	1,000
1916 ...	37	17	54	15	22	91	404	185	589	166	245	1,000
1917 ...	37	17	54	16	26	96	388	181	569	167	264	1,000
1918 ...	36	17	53	16	28	97	376	175	551	163	286	1,000
1919 ...	40	15	55	13	21	89	446	174	620	148	232	1,000

The outstanding feature of the year's record, revealed by this table, is that the mortality of the first four weeks of life is comparatively high, the highest in fact since the very unhealthy season of 1911, while at all higher ages it is unprecedentedly low, notwithstanding deaths from influenza. But although the mortality of the first four weeks is the highest since 1911 for all infants it was slightly higher in 1913 for both legitimate and illegitimate infants, considered separately. Illegitimate births in that year formed only 4·3 per cent. of the total, as against 6·0 in 1919 ; and the increased influence upon the total of the heavy illegitimate mortality in 1919 has sufficed to raise its total rate above that of 1913, though for each section separately the 1919 rates are lower. As a result of this increase, and the decrease at later ages, the deaths during the first four weeks, which up till quite recently formed about one-third of the whole, have now increased to about 45 per cent. ; and those under three months, which till the end of last century amounted to less than half the total, now form 62 per cent. The deaths above the age of one month have long been recognized as the most preventable, and progress in reduction of infant mortality has almost entirely consisted in their prevention, but until the set-back in 1919 the rates recorded in this table afforded grounds for hope that the first weeks of life were beginning to participate in the improvement, as a result of the increase of administrative effort aimed at this result during the last few years. The causes to which the increased mortality of 1919 is ascribed are dealt with on pages liv and lv. Premature birth accounts for more than half the total excess over 1918, but the increase is very general, so that even obsolescent forms of return, such as convulsions and atrophy debility etc., furnish a higher mortality than in 1918.

The decline in mortality at ages over four weeks is equally widespread, extending to nearly all causes of any importance, but in this case the most remarkable feature of the year's record is the unprecedentedly low mortality from infectious disease. This cause of mortality steadily increases in importance with increase of age throughout the twelve months, and at 6–12 months the advantage of 1919 over 1916, itself a year of exceptionally low mortality from these diseases, practically disappears if infectious disease is omitted from the comparison. Table 15 shows up very clearly this remarkable feature in the year's mortality, and reveals the fact that the advantage of 1919 over 1916 in total infant mortality, which has been shown to be apparent rather than real, does not even appear to exist if infectious disease is omitted from the comparison. The only two infectious diseases of any great importance so far as infant mortality is concerned are measles and whooping cough, and the death-rate of infants from both happened to be exceptionally low in 1919. It seems unlikely that both should happen to be at their lowest in the same year for a long time to come, and there is the less assurance of permanence for the progress recorded in 1919 in so far as it is dependent on causes so liable to fluctuation. It may be hoped, however, that some of the ground gained will be made good permanently, as almost seems to be occurring with diarrhœa, mortality from which used to fluctuate greatly in accordance with summer weather conditions, but has now remained exceptionally low for four years of varying meteorology.

Distribution of Mortality.—Table XXVIII shows how infant mortality was distributed in 1919 between the sexes and throughout the country.

Table XXVIII.—Distribution of the Mortality of Infancy throughout England and Wales, 1919.

	Deaths under 1 year of age per 1,000 Births.														
	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	—	—	97	—	97	—	—	73	—	73	—	—	85	—	85
County Boroughs	121	100	84	105	110	94	80	65	84	86	108	90	75	94	99
Other Urban Districts	114	87	77	104	97	87	68	58	80	74	101	78	68	93	86
Rural Districts	109	86	73	97	90	85	67	55	79	70	97	77	64	88	80
All Areas	117	91	86	102	100	90	72	66	80	78	104	82	76	92	89

These rates are subject to a certain amount of modification to allow for the effects of varying movements of the birth-rate. It has been seen that correction to allow for the increase of the birth-rate by ·8 per thousand from 1918 to 1919 in England and Wales raises infant mortality from 89 to 90, and similarly the mortality of the different subdivisions of the country is understated in the above table in proportion to the extent of the increase in their birth-rates. The greatest increase of birth-rate affecting the table was in London, where it amounted to 2·2 per 1,000, and the resultant correction raises infant mortality from 85 to 89, while the other extreme is represented by Wales, where the birth-rate fell by ·9, correction for which brings its infant mortality to 91. The prevalent change in birth-rate was a slight rise, much as in England and Wales, so that generally speaking the rates in the table for England are subject to a correction upwards of about one point each.

Compared with 1918, the table shows a fall of mortality in the urban areas of all sections of the country, but except in the North the rural rates have risen slightly. The fall is especially marked in London, where the rate for both sexes jointly has moved from 108 in 1918 to 85 in 1919; but correction for the exceptional fluctuations in the London birth-rate, downwards in 1918 and upwards in 1919, alters these rates in its case to 104 and 89 respectively.

Comparison of Table XXVIII with those of the eight preceding years shows that the rates for London and the county boroughs are much lower than any previously recorded, but that the rate for the smaller towns was almost as low in 1916, while that for the rural districts was only 76 in 1916. So the chief gain has been in the cities. The lowest previous rate in the county boroughs was 106 in 1916, so 1919 is the first year to record a rate of less than 100 in each class of area.

For infants of both sexes jointly, the mortality varied from 108 deaths per 1,000 births in the county boroughs of the North to 64 in the rural districts of the South. This maximum and minimum form one of the most constant features of the yearly records. From 1911 onwards there has been no year in which the infant mortality of the southern rural districts was not the lowest recorded in the corresponding table for each sex, and with two trifling exceptions in 1912 and 1914 the converse statement applies to the northern county boroughs.

Table 17 compares classes of administrative areas in respect of infant mortality with distinction of cause and legitimacy. The total mortality in the urban areas as a whole exceeded that in the rural by 13 per cent. only, as against excesses of 22 to 32 per cent. during the preceding eight years (Table XXIX). This decrease in the advantage of the rural districts has resulted from the fact just noted, that they did not share in the fall in mortality experienced by the urban areas, but that indeed, except in the North, the rural rates were slightly higher than in 1918. Such dissimilarity in experience between the two classes of area appears to be unusual and its cause is not very obvious. Tables 17 and 18 provide the means for ascertaining the causes of death chiefly responsible for this diversity of urban and rural experience, and this point will be dealt with later. Both town and country record considerable increases in the mortality of the first four weeks, but after that the urban decrease is shared either not at all or in very minor degree by the country areas, so that the usual advantage of the latter at 3–12 months of about 50 per cent. is approximately halved.

TABLE XXIX.—INFANT MORTALITY in URBAN DISTRICTS per cent. of that in RURAL DISTRICTS, 1911–19.

			Under 4 weeks.	4 weeks— 3 months.	3–6 months.	6–9 months.	9–12 months.	Total under 1 year.
1911	...	...	106	136	145	155	164	132
1912	...	...	103	123	141	145	157	122
1913	...	...	105	141	144	149	157	129
1914	...	...	106	138	150	143	149	128
1915	...	...	103	128	148	153	154	128
1916	...	...	102	133	150	151	156	125
1917	...	...	99	124	146	148	166	122
1918	...	...	104	134	152	147	158	128
1919	...	...	102	118	130	124	129	113

The excess of London infant mortality over the average for the country, which was noted as an exceptional feature of the returns of 1917 and 1918, has disappeared, owing mainly to a remarkable fall in the London mortality at 6–12 months. At 6–9 months this amounted to 40, and at 9–12 months to 52 per cent. London shared in the general increase applying to the first four weeks, and its normal advantage at this period has been somewhat reduced. As in each of the five preceding years it compares worse with the remainder of the country at 3–6 months than at any other part of the first year.

TABLE XXX.—INFANT MORTALITY, 1919.—PROPORTION to that of ENGLAND and WALES (taken as 100) in various portions of the FIRST YEAR OF LIFE.

		Under 4 Weeks.	4 Weeks to 3 Months.	3–6 Months.	6–9 Months.	9–12 Months.	Total under 1 Year.	0–3 Months.	0–6 Months.	0–9 Months.	4 Weeks to 1 Year.	3 Months to 1 Year.	6 Months to 1 Year.
All Areas...	North	111	112	118	127	133	117	112	113	115	121	125	130
	Midlands ...	96	93	86	86	87	92	95	94	93	88	86	87
	South	89	88	89	76	71	85	89	89	87	82	80	74
	Wales	99	111	107	106	98	103	102	103	103	108	104	102
	England and Wales	100	100	100	100	100	100	100	100	100	100	100	100
London ...		92	101	110	95	85	96	94	97	97	99	98	91
County Boroughs.	North	112	117	128	132	144	121	113	116	118	129	134	138
	Midlands ...	100	104	98	103	101	101	102	101	101	102	101	102
	South	89	94	80	68	71	84	90	88	85	80	74	70
	Wales	94	121	128	102	104	106	102	107	106	115	113	103
	England and Wales	105	111	114	116	122	111	107	108	109	115	117	119
Other Urban Districts.	North	110	108	109	126	123	113	110	110	112	115	119	124
	Midlands ...	92	88	86	77	81	87	91	90	88	83	81	79
	South	87	75	72	58	56	76	84	82	78	67	63	57
	Wales	98	112	103	114	103	104	102	102	104	108	106	108
	England and Wales	98	95	93	95	94	96	98	97	96	94	94	94
Rural Districts.	North	112	102	104	112	111	109	109	108	109	106	109	112
	Midlands ...	97	85	70	78	76	86	93	89	87	78	74	77
	South	86	68	61	55	53	72	81	77	74	61	57	54
	Wales	101	102	102	96	87	99	101	102	101	98	96	92
	England and Wales	99	87	80	84	81	90	96	93	91	83	82	82

This and similar comparisons are brought out by Table XXX, which compares the mortality at various portions of the first year of life of areas of corresponding class in each section of the country. Like its two predecessors it shows that infant mortality in this country varies quite as much with geographical position as with degree of urbanization. The excess in the North over the South is seen to be much greater than the diminished excess of the county boroughs over the rural districts. The former in fact may be seen from Table 18 to amount to 37 per cent. as against only 23 per cent. for the latter. It is moreover much more common to all portions of the first year than the rural advantage, which is very slight during the first four weeks, whereas even at that age the mortality of the North was almost 25 per cent. in excess of that of the South. The importance of this fact as suggesting the extent of the possibility of reduction even at this age is obvious. It appears to be a stable feature of the returns, as in 1917 and 1918, the only other years for which this tabulation has been made, the excess of the North in the first four weeks was 25 and 32 per cent. respectively.

The table brings out the fact that the conditions of 1919 were little less favourable to infant life in the smaller towns than in the rural districts. In the Midlands especially, the normal advantage of the rural districts almost disappeared, and at 6–9 months as well as in the first four weeks the urban mortality was the lower. This is a common occurrence in the first month of life, before environmental conditions, other than those

accompanying birth itself, have had time to tell, but is very unusual after that age. It did, indeed, occur at 1–3 months in Wales in 1917, but in no previous year from 1911 onwards has the approximation of small town to rural mortality been nearly so close as in 1919.

The constancy of the decrease in mortality from the North to the South of England is very great. When the comparison is made between districts of similar class in each case Table XXX affords no exception to this rule in any section of the first year, and the same statement applies to 1917 and 1918, for which similar tables have been published. Before 1917 the comparison can only be made for the first year of life as a whole for the six years 1911–1916, but these again afford no exception to the rule. The excess of the South as a whole over the Midlands at 3–6 months is due to the inclusion of London with the former and its unfavourable experience at this age.

Mortality of Separate Weeks and Months.—Tables showing deaths in each year from 1911 to 1916 in each of the first twelve months of life and in various portions of the first month were published in the Report for the latter year for the country at large and for the four classes of administrative areas distinguished in these reports. These tables were in continuation of the series published from 1905 to 1910, distinguishing two groups of registration counties, one mainly urban and the other mainly rural. In 1917 these tables were enlarged so as to distinguish the geographical sections of the country, as well as, and in combination with, the classes of administrative areas; and Tables XXXI and XXXII provide the same information for 1919. 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 on page 122.

TABLE XXXI.—Deaths under One Year by Week and Month of Age, 1919.

		Under 1 Day	1–7 Days	Weeks 1–2	2–3	3–4	Total under 4 Weeks	4 Weeks to 2 Months	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	4,809	5,381	2,308	1,939	1,414	15,851	3,891	2,501	2,003	1,644	1,625	1,556	1,416	1,413	1,303	1,258	1,164	35,62
	F	3,574	4,007	1,800	1,350	973	11,704	2,546	1,786	1,511	1,256	1,102	1,082	1,043	1,055	999	1,042	964	26,0
	P	8,383	9,384	4,108	3,289	2,387	27,555	6,437	4,287	3,514	2,900	2,727	2,638	2,459	2,468	2,302	2,300	2,128	61,7
	Legitimate M	4,289	4,918	2,084	1,731	1,236	14,258	3,355	2,109	1,691	1,410	1,401	1,383	1,275	1,291	1,194	1,150	1,067	31,5
	F	3,096	3,635	1,611	1,199	373	10,414	2,207	1,478	1,238	1,051	960	952	924	957	902	948	867	22,8
	P	7,385	8,553	3,695	2,930	2,109	24,672	5,562	3,587	2,929	2,461	2,361	2,335	2,199	2,248	2,097	2,098	1,929	54,2
	Illegitimate M	520	463	208	178		1,593	536	392	234	224	173	141	122	109	108	97		4,0
	F	478	372	189	151	100	1,290	339	308	273	205	142	130	119	98	96	94	102	3,1
	P	998	835	413	359	278	2,883	875	700	585	439	366	303	260	220	205	202	199	7,2
All Areas	North	3,355	3,601	1,636	1,338	969	10,899	2,637	1,650	1,469	1,205	1,173	1,158	1,115	1,156	1,072	1,110	994	25,6
	Midlands	2,404	2,865	1,233	997	686	8,185	1,881	1,188	940	749	739	680	658	650	626	591	583	17,2
	South	2,023	2,122	938	707	528	6,318	1,353	1,070	833	682	573	580	447	452	421	435	374	15,0
	Wales	601	800	301	247	204	2,153	566	379	272	264	242	220	209	210	183	164	177	5,0
London		947	1,000	466	353	243	3,009	681	604	474	404	323	325	261	271	225	240	216	7,0
County Boroughs	North	1,804	1,951	886	709	532	5,882	1,472	937	856	720	653	622	616	675	657	563		14,2
	Midlands	892	1,064	431	389	246	2,022	720	502	392	300	290	293	271	289	250	252	244	6,
	South	267	249	127	88	83	814	208	127	100	74	70	76	49	47	58	53	49	1,7
	Wales	115	142	63	42	37	399	117	83	68	55	56	47	39	33	35	36	36	1,
	England and Wales	3,078	3,406	1,507	1,228	898	10,117	2,517	1,649	1,416	1,149	1,069	1,038	975	1,044	978	908	892	23,8
Other Urban Districts	North	1,059	1,158	507	446	324	3,494	831	508	431	333	388	403	394	347	294	334	324	8,0
	Midlands	904	1,052	440	353	277	3,026	704	414	343	303	285	231	255	206	234	209	203	6,4
	South	469	512	206	148	116	1,451	279	203	167	124	106	111	76	76	78	84	67	2,
	Wales	302	432	141	128	104	1,107	291	201	132	131	120	117	117	108	81	93		
	England and Wales	2,734	3,154	1,294	1,075	821	9,078	2,105	1,326	1,073	891	899	862	797	746	714	708	687	19,8
Rural Districts	North	492	492	243	183	113	1,523	334	205	182	152	132	133	150	134	143	119	107	4,2
	Midlands	608	749	362	255	163	2,137	457	272	205	160	164	156	162	155	142	130	136	4,
	South	340	361	139	118	86	1,044	185	136	92	80	74	68	61	54	58	58	42	1,
	Wales	184	226	97	77	63	647	158	95	72	78	78	66	56	53	60	40	47	1,
	England and Wales	1,624	1,828	841	633	425	5,351	1,134	708	551	456	436	413	426	403	383	354	333	10,9

TABLE XXXII.—Infant Mortality by Week and Month of Age, 1919.

Proportion of Deaths to 1,000 Births.

		Under 1 Day	1–7 Days	Weeks 1–2	2–3	3–4	Total under 4 Weeks	4 Weeks to 2 Months	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	13.50	15.10	6.48	5.44	3.97	44.49	10.92	7.02	5.63	4.61	4.56	4.37	3.97	3.97	3.66	3.53	3.27	100.00
	F	10.63	11.91	5.35	4.02	2.89	34.80	7.58	5.31	4.49	3.74	3.28	3.22	3.10	3.14	2.97	3.10	2.87	77.60
	P	12.11	13.55	5.93	4.75	3.45	39.79	9.30	6.19	5.07	4.19	3.94	3.82	3.55	3.56	3.32	3.33	3.07	89.13
	Legitimate M	12.81	14.68	6.23	5.17	3.69	42.58	10.02	6.30	5.06	4.21	4.18	4.13	3.81	3.86	3.56	3.56	3.44	94.34
	F	9.80	11.52	5.10	3.80	2.76	32.98	6.99	4.68	3.92	3.33	3.04	3.01	2.93	3.03	2.86	3.00	2.73	72.50
	P	11.36	13.16	5.68	4.50	3.24	37.94	8.55	5.51	4.50	3.78	3.63	3.58	3.38	3.46	3.22	3.22	2.97	83.74
	Illegitimate M	24.21	21.57	10.43	9.69	8.29	74.19	24.96	18.26	14.54	10.90	10.43	8.06	6.57	5.68	5.08	5.03	4.52	188.22
	F	23.48	18.23	9.26	7.40	4.90	63.22	16.61	15.09	13.37	10.05	6.96	6.37	5.83	4.80	4.70	4.61	5.00	156.61
	P	23.83	19.95	9.86	8.57	6.64	68.85	20.89	16.72	13.97	10.48	8.74	7.24	6.21	5.25	4.90	4.82	4.75	172.82
All Areas	North	13.62	14.63	6.64	5.43	3.93	44.25	10.71	6.70	5.96	4.89	4.76	4.70	4.53	4.69	4.51	4.51	4.04	104.09
	Midlands	11.27	13.43	5.77	4.67	3.21	38.35	8.81	5.56	4.40	3.51	3.46	3.18	3.22	3.04	2.93	2.77	2.73	81.96
	South	11.39	11.93	5.28	3.98	2.97	35.55	7.62	6.02	4.69	3.84	3.23	3.26	2.52	2.54	2.37	2.45	2.11	76.20
	Wales	10.95	14.56	5.48	4.50	3.71	39.20	10.30	6.90	4.95	4.80	4.40	4.00	3.80	3.82	3.33	2.98	3.22	91.70
London		11.49	12.11	5.65	4.28	2.94	36.47	8.25	7.32	5.74	4.90	3.91	3.94	3.16	3.33	2.91	2.75	2.62	85.30
County Boroughs	North	13.62	14.73	6.69	5.35	4.02	44.41	11.12	7.08	6.46	5.44	4.93	4.70	4.65	5.10	4.80	4.96	4.25	107.90
	Midlands	11.79	14.07	5.70	5.14	3.25	39.95	9.52	6.64	5.18	3.97	3.83	3.87	3.58	3.82	3.30	3.33	3.23	90.22
	South	11.58	10.79	5.51	3.81	3.60	35.29	9.02	5.51	4.34	3.21	3.03	3.29	2.12	2.04	2.51	2.30	2.12	74.75
	Wales	10.82	13.35	5.93	3.95	3.48	37.53	11.01	7.81	6.40	6.18	3.27	4.42	3.67	3.11	3.29	3.39	3.39	94.47
	England and Wales	12.74	14.10	6.23	4.71	3.71	41.86	10.41	6.82	5.86	4.75	4.29	4.03		4.32	4.05	4.12	3.69	98.62
Other Urban Districts	North	13.27	14.52	6.35	5.59	4.06	42.79	10.41	6.37	5.40	4.17	4.86	5.05	4.37	4.35	3.68	4.19	4.06	100.70
	Midlands	10.98	12.77	5.35	4.29	3.37	36.76	8.53	4.94	4.17	3.68	3.46	2.81	3.10	2.50	2.84	2.54	2.47	77.91
	South	11.25	12.28	4.94	3.55	2.78	34.80	6.69	4.87	4.00	2.07	2.54	2.66	1.82	1.82	1.87	2.01	1.61	67.66
	Wales	10.68	15.28	4.99	4.53	3.68	39.16	10.29	7.11	4.63	3.64	3.87	3.72	3.43	3.43	3.21	3.08	2.65	92.51
	England and Wales	11.78	13.59	5.58	4.63	3.54	39.12	9.07	5.71	4.63	3.94	3.87	3.72	3.43	3.43	3.21	3.08	2.65	85.69
Rural Districts	North	14.44	14.43	7.13	5.37	3.32	44.69	9.80	6.01	5.34	4.46	3.87	3.90	4.40	3.93	4.20	3.49	3.14	97.23
	Midlands	10.94	13.48	6.51	4.59	2.93	38.45	8.22	4.80	3.69	2.63	2.95	2.81	2.92	2.79	2.56	2.34	2.45	76.50
	South	11.20	11.89	4.58	3.89	2.83	34.39	6.09	4.48	3.03	2.63	2.44	2.24	2.01	1.78	1.91	1.91	1.38	64.29
	Wales	11.46	14.08	6.04	4.80	3.92	40.30	8.34	5.92	4.49	4.86	4.11	3.49	3.30	3.74	2.49	2.93	2.45	88.46
	England and Wales	11.94	13.43	6.18	4.65	3.12	39.32	8.34	5.27	4.35	3.35	3.04	3.13	3.13	2.96	2.81	2.60	2.45	80.46

Table XXXII shows that the excess of mortality in the North over the South is well marked from the very first day of life. The Midlands return a slightly lower figure for this first day than the South, but after it the mortality of the South is definitely lower at most ages. In the two preceding years the South returned rather the lower rate even for the first day, but in each of the three years there has been little difference for it between Midlands and South, with a markedly higher rate in the North. After the first day the regular increase from South to North becomes the rule. In each of the three years open to comparison much the highest rate for the first day has been returned by the rural districts of the North, so it seems that for some reason the birth risk is at its maximum in them. There was a similar rural excess in Wales, though not in other parts of England, so if defective midwifery service in remote districts is the cause, this does not seem to apply to the Midlands and South. In 1917 on the other hand the first day mortality of the rural districts was in excess in all sections of England; but the excess was greatest in the North, and seems likely to prove a characteristic feature of the table only in its northern section.

Comparison of Table XXXII with its two predecessors shows that the increased mortality of the first four weeks is practically limited to the first two, the third and fourth having remained almost stationary. It shows, moreover, that the increase in the first two weeks is limited to legitimate infants, the rates for the illegitimate being intermediate between those of 1917 and 1918. The increase for the first two weeks over either of the two preceding years is very widespread, applying with few exceptions to all types of area in all sections of the country.

The comparison can be carried back further for the country as a whole with distinction of legitimacy and of class of area. The mortality of the first day in 1919 was higher for all legitimate infants, for London, and for the county boroughs, than in any of the previous eight years; but not for illegitimate infants, the smaller towns, or the rural districts. That at 1–7 days was the highest of the nine years which can be compared for all types of area, but not for illegitimates. The second week rate was the highest for London and for the rural districts, but not elsewhere. The rate for the first four weeks as a whole was highest only in London and the rural districts, 1911 providing the heaviest figure in other instances.

The other eleven months provide a most remarkable contrast. For all infants and for legitimate infants the 1919 rate is the lowest yet recorded for each one of these eleven

months. This holds good also for London and for the county boroughs. There are only three inconsiderable exceptions to the same rule for illegitimate infants as a whole and two for the smaller towns as a whole. The rural district rates are lowest in 1919 only at 2–5 months. At each month from the sixth onwards the rate was lower in 1916. The declines from the lowest level previously reached are in many instances very substantial, and the movement as a whole is a notable one, even though explained in some degree by the exceptional freedom of the year from infectious disease (other than influenza) and by the effect of the increasing birth-rate.

The excess of the mortality of illegitimate infants in the first week of life, which had gradually risen from 70 per cent. in 1907 to 105 in 1917, has fallen again to 79 per cent.

Mortality of Separate Counties and County Boroughs.—On pages 122–126 will be found a table, appearing for the second time in the present Report, of the deaths of infants in each administrative county, and county or metropolitan borough, distinguishing urban and rural portions of counties, detail of age, and legitimacy. The total deaths and those occurring in the first four weeks of life are also shown as ratios per 1,000 births. This table, like that for 1918, shows general adherence to the rule of increase of mortality from South to North both in the first twelve months and in the first four weeks of life.

Dealing first with the county boroughs, there is only one, Yarmouth, south of the Wash–Bristol Channel line in which the average rate of 99 for these boroughs as a whole is exceeded, whereas north of this line excess of average is the rule. Much the same applies to the mortality of the first four weeks. In this case Bournemouth, with a rate of 47 deaths per 1,000 births as against 42 in the county boroughs generally, forms a striking exception to the general rule of low rates in the South, but it should be pointed out that in 1918 Bournemouth had the lowest mortality amongst the county boroughs, both for the first four weeks and for the whole twelve months. Another coast resort with a very high rate for the first four weeks is Blackpool, which returns the highest rate but two on the list, and returned the highest of all in the corresponding table for 1918. Other coast resorts—Eastbourne, Yarmouth, Southport, etc.—return low rates at this age. The numbers of deaths on which the rates quoted are based were 48 in Bournemouth and 43 in Blackpool.

One of the most notable features of Table XXXIII is the position occupied by the North-east coast towns. From Hull and Grimsby northwards there are nine of these ranking as county boroughs. Grimsby holds a favourable position with a mortality 19 per cent. below the average for the county boroughs, but the other eight are included amongst the last eighteen in the list, their excess of mortality varying from 11 per cent. for Hull to 40 per cent. for Middlesbrough. Of the other ten places four go to the West Riding, four to Lancashire, one to Durham, and one to Stafford.

In Tables XXXIII and XXXIV the county boroughs are arranged in order of mortality for the twelve months and four weeks respectively, the rate for each being shown as a percentage of that for the whole county borough population. As might be expected, the highest places in both tables are occupied for the most part by residential towns, but the position of East Ham, eighth for the mortality of the first twelve months and fifth for that of the first four weeks out of the whole 82 county boroughs, shows what results may be attained in a working-class community. The conditions here, of course, differ materially from those of the more common case where the areas of industry and residence coincide ; and the habitually low rates returned by this and neighbouring residential working-class suburbs of London are of good omen for the success which may be achieved elsewhere by improvements in town planning and transport. The position of East Ham in 1918 was very similar.

Amongst the twenty boroughs returning the highest rates at ages over four weeks, those chiefly affected by the harmful surroundings of city life, all but one are northern industrial towns. The exception is Yarmouth, which with a mortality at these ages of 72 per thousand births occupies the seventy-fourth place in the list of 82 boroughs. Its rate was high also in 1918—67. For the first four weeks the Yarmouth rate was quite low, so its case is the reverse of those of Bournemouth and Blackpool, for which the rates were high for the first four weeks and low afterwards.

The variations in the mortality of illegitimate infants are naturally very much greater than for infants generally, as in the case of the smaller boroughs the facts are too few to yield really satisfactory rates. Still the general feature of the tabulation for illegitimates is much the same as for all infants, the rates being generally lowest in the residential towns of the South and highest in the industrial towns of the North.

London, however, forms a notable exception. In both 1919 and 1918 its rate was higher than that of the northern county boroughs or any of the other populations included in the summary on page 122.

In both years the three highest rates have been returned, in order, by London and the Welsh and Northern county boroughs, and the two lowest by the rural districts of the South and Midlands. Even when the conditions of comparison are made more favourable, as well as fairer, for London, by inclusion of the " Outer Ring," this position is little altered. Its mortality during the first four weeks is also exceptionally high. The highest rates in London were returned by Greenwich, Hackney, and Bermondsey, all of which lost over one-third of their illegitimate infants before completion of the first year. It is possible, however, that the mortality of a single metropolitan borough may be seriously affected by the existence of homes for receiving these infants, though this consideration would probably tell in favour of London as a whole in comparison with the rest of the country.

Of course there are individual county boroughs returning higher rates than London. The mortality of Bury, which records the highest illegitimate rate amongst the county boroughs both for the first four weeks and for the whole year, exceeds that of any metropolitan borough, but the total number of deaths involved is only 16.

TABLE XXXIII.—Infant Mortality in County Boroughs.—Boroughs arranged in order of Mortality, with the proportion in each per cent. of that in the County Boroughs as a whole, 1919.

Position.*	County Borough.	Deaths under One Year per 1,000 Births.	Mortality per cent. of that in total County Boroughs.	Position.*	County Borough.	Deaths under One Year per 1,000 Births.	Mortality per cent. of that in total County Boroughs.
	Total County Boroughs ...	99	100	41	Cardiff	95	96
				42	Warrington	96	97
1	Bath	43	43	43	Blackburn	96	97
2	Oxford	55	56	44	Bootle	97	98
3	Southend-on-Sea ...	59	60	45	Sheffield	97	98
4	Canterbury	59	60	46	Manchester	97	98
5	Eastbourne	60	61	47	Huddersfield	98	99
6	Worcester	60	61	48	Stockport	98	99
7	Reading	69	70	49	Barrow-in-Furness ...	99	100
8	East Ham	69	70	50	Leicester	99	100
9	Ipswich	70	71	51	York	100	101
10	Hastings	71	72	52	Dudley	100	101
11	Croydon	73	74	53	Wolverhampton ...	102	103
12	Portsmouth	74	75	54	West Bromwich... ...	103	104
13	Southampton	74	75	55	Birkenhead	103	104
14	Exeter	78	79	56	Swansea	104	105
15	Brighton	79	80	57	Great Yarmouth ...	104	105
16	Wallasey	79	80	58	Salford	105	106
17	Lincoln	79	80	59	Carlisle	107	108
18	Grimsby	80	81	60	Nottingham	107	108
19	Newport (Mon.) ...	81	82	61	Preston	108	109
20	Bristol	83	84	62	Walsall	108	109
21	Gloucester	84	85	63	Liverpool	109	110
22	Coventry	84	85	64	Dewsbury	110	111
23	Northampton	84	85	65	Kingston-upon-Hull ...	110	111
24	Norwich	84	85	66	West Hartlepool ...	112	113
25	Chester	84	85	67	Stoke-on-Trent ...	112	113
26	Smethwick	85	86	68	Bradford	114	115
27	West Ham	86	87	69	Gateshead	116	117
28	Plymouth	86	87	70	Wigan	117	118
29	Bolton	87	88	71	South Shields	118	119
30	Bournemouth	87	88	72	St. Helens	118	119
31	Birmingham	89	90	73	Leeds	119	120
32	Burton-on-Trent ...	89	90	74	Burnley	119	120
33	Southport	90	91	75	Wakefield	120	121
34	Blackpool	90	91	76	Newcastle-on-Tyne ...	121	122
35	Merthyr Tydfil ...	92	93	77	Sunderland	121	122
36	Rotherham	93	94	78	Barnsley	122	123
37	Bury	94	95	79	Rochdale	125	126
38	Oldham	95	96	80	Tynemouth	128	129
39	Halifax	95	96	81	Darlington	138	139
40	Derby	95	96	82	Middlesbrough	139	140

* The positions in this table and similar tables have been derived from rates calculated in sufficient detail to discriminate between all areas.

TABLE XXXIV.—DEATHS under FOUR WEEKS of AGE per 1,000 BIRTHS in COUNTY BOROUGHS.—Boroughs arranged in order of Mortality, with the proportion in each per cent. of that in the County Boroughs as a whole, 1919.

Position.*	County Borough.	Deaths under 4 weeks per 1,000 Births.	Mortality per cent. of that in total County Boroughs.	Position.*	County Borough.	Deaths under 4 weeks per 1,000 Births.	Mortality per cent. of that in total County Boroughs.
	Total County Boroughs...	42	100	41	Salford	42	100
				42	Kingston-upon-Hull ...	42	100
1	Oxford	24	57	43	Gloucester	43	102
2	Bath	25	60	44	Manchester	43	102
3	Canterbury	26	62	45	Barnsley	43	102
4	Exeter	27	64	46	Wigan	43	102
5	East Ham...	27	64	47	Chester	43	102
6	Southend-on-Sea ...	27	64	48	West Hartlepool ...	44	105
7	Ipswich	28	67	49	Sheffield	44	105
8	Rotherham	28	67	50	Blackburn	44	105
9	Worcester	29	69	51	Derby	44	105
10	Eastbourne	30	71	52	Walsall	45	107
11	Great Yarmouth ...	32	76	53	West Bromwich... ...	45	107
12	Plymouth	33	79	54	York	45	107
13	Preston	33	79	55	Huddersfield ...	45	107
14	Southport	34	81	56	Warrington	45	107
15	Cardiff	34	81	57	Carlisle	45	107
16	Croydon	35	83	58	Halifax	46	110
17	Bootle	36	86	59	Barrow-in-Furness ...	46	110
18	Lincoln	36	86	60	Gateshead	47	112
19	Portsmouth	36	86	61	Rochdale	47	112
20	Brighton	37	88	62	Stockport	47	112
21	West Ham	37	88	63	Newcastle-on-Tyne ...	47	112
22	Wolverhampton ...	37	88	64	Bradford	47	112
23	Southampton	38	90	65	Bournemouth	47	112
24	Newport (Mon.) ...	38	90	66	St. Helens	47	112
25	Reading	38	90	67	Oldham	48	114
26	Bristol	39	93	68	Coventry...	48	114
27	Merthyr Tydfil ...	39	93	69	Burton-on-Trent ...	48	114
28	Norwich	39	93	70	Bury	48	114
29	Birmingham	40	95	71	Middlesbrough ...	49	117
30	Bolton	40	95	72	Dudley	49	117
31	Liverpool	40	95	73	Leeds	49	117
32	Wallasey	41	98	74	Burnley	50	119
33	Northampton	41	98	75	Dewsbury	50	119
34	Leicester	41	98	76	Tynemouth	51	121
35	Swansea	41	98	77	Nottingham	51	121
36	Birkenhead	41	98	78	South Shields ...	51	121
37	Smethwick	41	98	79	Sunderland	52	124
38	Grimsby	41	98	80	Blackpool	53	126
39	Hastings	42	100	81	Wakefield	57	136
40	Stoke-on-Trent ...	42	100	82	Darlington	58	138

* The positions in this table and similar tables have been derived from rates calculated in sufficient detail to discriminate between all areas.

The following tables arrange the urban and rural portions of the counties in order of their mortality at both the periods dealt with, and show the proportion in each case to that for the corresponding areas in the whole country, taken as 100.

These tables show the same increase, generally speaking, from the South to the North of England as do those relating to the county boroughs, though there are more exceptions to the rule than in 1918. Durham returns the highest rates for the twelve months for both urban and rural districts, and its rates for the first four weeks are only exceeded by those of one or two very small counties. Both the small towns and the rural districts of the West Riding return rates higher than those of Lancashire for the first four weeks and for the whole twelve months alike.

TABLE XXXV.—INFANT MORTALITY in the AGGREGATES of URBAN and of RURAL DISTRICTS in each ADMINISTRATIVE COUNTY.—Aggregates arranged in order of Mortality, with the proportion in each per cent. of that in the Urban or Rural Districts as a whole, 1919.

Position.		Deaths under One Year per 1,000 Births.	Mortality per cent. of that in total Urban or Rural Districts.	Position.		Deaths under One Year per 1,000 Births.	Mortality per cent. of that in total Urban or Rural Districts.

Aggregates of Urban Districts.

	Total Urban Districts	86	100	31	Lincoln, Kesteven ...	79	92
				32	Bedford	79	92
1	Cardigan	30	35	33	Gloucester	80	93
2	Hertford	48	56	34	Wilts	81	94
3	Radnor	49	57	35	Cornwall	82	95
4	Cambridge	50	58	36	Isle of Ely	84	98
5	Montgomery	53	62	37	Westmorland	84	98
6	Berks	55	64	38	Cheshire	85	99
7	Buckingham	56	65	39	Brecknock	85	99
8	Southampton	57	66	40	Leicester	87	101
9	Sussex, East	58	67	41	Anglesey	87	101
10	Pembroke	61	71	42	Huntingdon	88	102
11	Merioneth	63	73	43	Carmarthen	89	103
12	Devon	63	73	44	Monmouth	90	105
13	Oxford	64	74	45	Flint	90	105
14	Surrey	65	76	46	Carnarvon	91	106
15	Isle of Wight	65	76	47	Northampton	94	109
16	Suffolk, East	66	77	48	Lancaster	95	110
17	Sussex, West	67	78	49	Lincoln, Lindsey ...	96	112
18	Essex	68	79	50	Stafford	97	113
19	Middlesex	68	79	51	Derby	98	114
20	Somerset	69	80	52	Glamorgan	99	115
21	Suffolk, West	70	81	53	Soke of Peterborough ...	99	115
22	Dorset	71	83	54	Rutland	100	116
23	Warwick	71	83	55	York, West Riding ...	100	116
24	Kent	71	83	56	Nottingham	100	116
25	Worcester	71	83	57	Denbigh	102	119
26	Norfolk	72	84	58	York, North Riding ...	108	126
27	York, East Riding ...	73	85	59	Northumberland ...	111	129
28	Salop	74	86	60	Cumberland	113	131
29	Lincoln, Holland ...	75	87	61	Durham	114	133
30	Hereford	76	88				

Aggregates of Rural Districts.

	Total Rural Districts ...	80	100	31	Worcester	76	95
				32	Brecknock	76	95
1	Isle of Wight	46	58	33	Cornwall	77	96
2	Sussex, West	49	61	34	Westmorland	77	96
3	Hertford	53	66	35	Hereford	78	98
4	Surrey	55	69	36	Cheshire	78	98
5	Berks	56	70	37	Lincoln, Lindsey ...	79	99
6	Radnor	59	74	38	Soke of Peterborough ...	79	99
7	Essex	60	75	39	Leicester	79	99
8	Dorset	61	76	40	Norfolk	80	100
9	Merioneth	61	76	41	Warwick	82	103
10	Middlesex	63	79	42	Bedford	83	104
11	Kent	64	80	43	Nottingham	85	106
12	Suffolk, West	64	80	44	Isle of Ely	85	106
13	Somerset	64	80	45	Lincoln, Holland ...	85	106
14	Sussex, East	66	83	46	Glamorgan	86	108
15	Cambridge	66	83	47	Flint	86	108
16	Wilts	66	83	48	Suffolk, East	88	110
17	Buckingham	66	83	49	Lancaster	88	110
18	Northumberland ...	67	84	50	Rutland	88	110
19	Devon	68	85	51	Carmarthen	89	111
20	Huntingdon	68	85	52	Anglesey	90	113
21	Oxford	69	86	53	Pembroke	92	115
22	Northampton	70	88	54	Cumberland	93	116
23	Southampton	70	88	55	York, North Riding ...	93	116
24	Monmouth	71	89	56	Cardigan	94	118
25	Montgomery	72	90	57	Derby	97	121
26	Gloucester	73	91	58	York, West Riding ...	100	125
27	Stafford	73	91	59	Carnarvon	102	128
28	Salop	74	93	60	Denbigh	111	139
29	Lincoln, Kesteven ...	75	94	61	Durham	115	144
30	York, East Riding ...	75	94				

TABLE XXXVI.—DEATHS under FOUR WEEKS of AGE per 1,000 BIRTHS in the AGGREGATES of URBAN and of RURAL DISTRICTS in each ADMINISTRATIVE COUNTY.—Aggregates arranged in order of Mortality, with the proportion in each per cent. of that in the Urban or Rural Districts as a whole, 1919.

Aggregates of Urban Districts.

Position.		Deaths under 4 weeks per 1,000 Births.	Mortality per cent. of that in total Urban Districts.	Position.		Deaths under 4 weeks per 1,000 Births.	Mortality per cent. of that in total Urban Districts.
	Total Urban Districts ...	39	100	31	Lincoln, Kesteven ...	37	95
				32	Carmarthen ...	37	95
1	Cambridge	18	46	33	Isle of Ely ...	37	95
2	Cardigan	20	51	34	Dorset ...	38	97
3	Brecknock	21	54	35	Denbigh ...	38	97
4	Buckingham	24	62	36	York, East Riding ...	38	97
5	Hertford	26	67	37	Monmouth ...	38	97
6	Suffolk, West ...	28	72	38	Cumberland ...	39	100
7	Worcester	28	72	39	Berks ...	40	103
8	Westmorland ...	30	77	40	Cheshire ...	40	103
9	Pembroke	30	77	41	Salop ...	41	105
10	Suffolk, East ...	30	77	42	Cornwall ...	41	105
11	Sussex, West ...	31	79	43	York, North Riding ...	41	105
12	Isle of Wight ...	31	79	44	Glamorgan ...	41	105
13	Hereford	31	79	45	Carnarvon ...	41	105
14	Southampton ...	32	82	46	Anglesey ...	42	108
15	Surrey	32	82	47	Lincoln, Lindsey ...	42	108
16	Warwick	32	82	48	Gloucester ...	43	110
17	Essex	32	82	49	Lancaster ...	43	110
18	Middlesex ...	33	85	50	Bedford ...	43	110
19	Somerset	33	85	51	Stafford ...	43	110
20	Kent	34	87	52	York, West Riding ...	44	113
21	Oxford	35	90	53	Leicester ...	44	113
22	Flint	35	90	54	Wilts ...	45	115
23	Devon	35	90	55	Nottingham ...	46	118
24	Sussex, East ...	35	90	56	Derby ...	46	118
25	Merioneth ...	35	90	57	Northampton ...	47	121
26	Lincoln, Holland ...	35	90	58	Northumberland ...	47	121
27	Norfolk	36	92	59	Durham ...	48	123
28	Montgomery ...	37	95	60	Soke of Peterborough ...	54	138
29	Huntingdon ...	37	95	61	Rutland ...	75	192
30	Radnor	37	95				

Aggregates of Rural Districts.

Position.		Deaths under 4 weeks per 1,000 Births.	Mortality per cent. of that in total Urban Districts.	Position.		Deaths under 4 weeks per 1,000 Births.	Mortality per cent. of that in total Urban Districts.
	Total Rural Districts ...	39	100	31	Buckingham ...	37	95
				32	Cambridge ...	37	95
1	Merioneth	19	49	33	Cumberland ...	37	95
2	Sussex, West ...	27	69	34	Wilts ...	37	95
3	Dorset	29	74	35	Westmorland ...	38	97
4	Northampton ...	29	74	36	Norfolk ...	39	100
5	Lincoln, Holland ...	30	77	37	Glamorgan ...	40	103
6	Middlesex ...	30	77	38	Southampton ...	40	103
7	Devon	30	77	39	Lancaster ...	40	103
8	Huntingdon ...	31	79	40	Worcester ...	40	103
9	Berks	31	79	41	Salop ...	40	103
10	Essex	32	82	42	Bedford ...	40	105
11	Kent	32	82	43	York, North Riding ...	41	105
12	Suffolk, West ...	32	82	44	Cardigan ...	41	105
13	Surrey	32	82	45	Warwick ...	42	108
14	Oxford	33	85	46	Carnarvon ...	42	108
15	Monmouth ...	33	85	47	Lincoln, Kesteven ...	42	108
16	Radnor	33	85	48	Cornwall ...	44	113
17	Northumberland ...	33	85	49	Derby ...	44	113
18	Hertford	33	85	50	Flint ...	44	113
19	Isle of Wight ...	34	87	51	Rutland ...	44	113
20	Brecknock ...	34	87	52	York, West Riding ...	45	115
21	Lincoln, Lindsey ...	34	87	53	Hereford ...	46	118
22	Somerset	35	90	54	Soke of Peterborough ...	47	121
23	Gloucester ...	35	90	55	Montgomery ...	48	123
24	Stafford	36	92	56	Nottingham ...	50	128
25	Pembroke ...	36	92	57	Suffolk, East ...	50	128
26	Leicester	36	92	58	Denbigh ...	50	128
27	Sussex, East ...	36	92	59	Anglesey ...	53	136
28	Carmarthen ...	36	92	60	Durham ...	54	138
29	Cheshire	36	92	61	Isle of Ely.	58	149
30	York, East Riding ...	37	95				

Causes of Infant Mortality.—It will be seen from Table XXXVII, which compares the rates recorded in Table 16 with those of the previous year and of the years 1911–14, taken as representing the most recent pre-war experience, that at each period distinguished after the first four weeks the mortality from all the causes shown in the table, except influenza and the respiratory diseases, was lower than in the years immediately preceding the war. It was lower than that of 1918 from all the causes shown, including these, though a slight rise from bronchitis is concealed by a larger fall from pneumonia. In the case of whooping cough and the other common infectious diseases the reduction is, as already noted, very great. The further large decreases from tubercle and convulsions beyond the low records for these causes recorded in 1918 are especially noteworthy. Table 15 shows that the mortality ascribed to tubercle was less than one-third, and that to convulsions less than one-half, of that so returned fourteen years earlier. It may be said of these causes, as of diarrhœa, but with more confidence, that they are gradually disappearing from our returns. In their case, however, the change is, in all probability, very largely one merely of nomenclature, whereas in that of diarrhœa it presumably represents in the main an actual decrease of mortality. The London mortality from convulsions is as usual very much below, and that of Wales above, that of the country generally (Table 18). London has long led the way in the elimination of this form of return.

TABLE XXXVII.—ENGLAND AND WALES, 1919.—INCREASE or DECREASE of INFANT MORTALITY as compared with 1911–14 and with 1918.

	Under 4 weeks.		4 weeks–3 months.		3–6 months.		6–9 months.		9–12 months.		Under 1 year.	
	1911–14.	1918.	1911–14.	1918.	1911–14.	1918.	1911–14.	1918.	1911–14.	1918.	1911–14.	1918.
Amount.												
Whooping cough	-0·07	-0·08	-0·46	-0·63	-0·54	-0·75	-0·67	-1·09	-0·73	-1·29	-2·47	-3·84
Other common infectious diseases...	-0·02	-0·01	-0·01	-0·11	-0·04	-0·58	-0·41	-1·10	-0·90	-1·82	-1·36	
Influenza	+0·07		+0·21	-0·07	+0·48	-0·29	+0·61	+0·71	+1·75	-0·11	-11·47	-0·82
Diarrhœa and enteritis	+0·34	+0·08	-2·26	-0·06	-3·04	-0·56	-2·95	-0·17	+1·98	-0·44	+2·08	-1·40
Premature birth	+1·89	+1·94	-0·05	-0·04	-0·02	-0·02		-0·01	-0·01	-0·01	+1·81	+1·86
Congenital defects	+0·20	+0·55	-0·02	-0·06	-0·06	-0·07			-0·02		+0·07	+0·43
Atrophy debility and marasmus ...	+0·76	+0·34	-0·99	-0·17	-0·93	-0·26	-0·03	-0·02	-0·12	-0·01	+0·07	+0·43
Developmental and wasting diseases	+1·33	+2·83	-1·06	-0·40	-1·02	-0·31	-0·47	-0·15	-0·31	-0·10	-1·53	+2·00
Tuberculous diseases			-0·18	-0·03	-0·47	-0·10	-0·50	-0·11	-0·37	-0·09	-1·52	-0·33
Convulsions	-0·56	+0·08	-0·60	-0·20	-0·66	-0·25	-0·47	-0·15	-0·24	-0·15	-2·53	-0·67
Bronchitis and pneumonia	-0·01	+0·07	-0·22	-0·13	+0·16	-0·22	+0·47	-0·39	+0·16	-0·79	+0·56	-1·46
Suffocation, overlying	-0·14	-0·04	-0·34	-0·03	+0·16		-0·02	-0·01	-0·01		-0·67	-0·08
Other causes	+0·28	+0·39	-0·12	-0·08	-0·42	-0·16	-0·45	-0·18	-0·31	-0·04	-1·02	-0·07
All causes	+0·54	+3·29	-5·04	-1·50	-6·68	-2·68	-5·03	-3·23	-4·18	-3·91	-20·39	-8·03
Percentage.												
Whooping cough	-64	-67	-61	-68	-57	-65	-62	-73	-66	-78	-62	-72
Other common infectious diseases...	-50	-33	-13	-50	-27	-52	-53	-62	-57	-60		-53
Influenza	+175	-21	+350	-21	+800	-59	+1,017	-46	+1,775	-37	+800	-37
Diarrhœa and enteritis	-28	+10	-49	-2	-59	-17	-65	-10	+63	9	+57	-9
Premature birth	+10	+11	-3	-3	-10	-10		-25	-100	-100	+9	+9
Congenital defects	+5	+15	-2	-3	+18	-9		-18			+9	+8
Atrophy debility and marasmus ...	+11	+6	-29	-7	-46	-19	-54	-24	-67	-36	+25	+3
Developmental and wasting diseases	+5	+10	-18	-5	-39	-16	-47	-22	-56	-29	-4	+6
Tuberculous diseases			-47	-13	-52	-19	-53	-20	-43	-16	-49	-17
Convulsions	-17	+3	-30	-12	-40	-20	-41	-18	-32	-22	-49	-10
Bronchitis and pneumonia	-1	+5	-6	-3	+4	-5	+17	-14	+4	-20	+29	-10
Suffocation, overlying	-29	-11	-60	-12	-53	-7	-20	-20	+50		-47	-9
Other causes	+8	+11	-5	-4	-19	-8	-26	-12	-22	-3		-1
All causes	+1	+9	-25	-9	-34	-17	-32	-23	-30	-29	-19	-8

Other causes calling for mention are diarrhœa and enteritis, with the lowest infant mortality recorded except that of 1912, a year which owed its immunity to favourable weather conditions in the summer much more than did 1919; syphilis, which shows a continued decline from the rather startling rate of 1917, though the pre-war level has been by no means regained; over-lying, which has manifested a remarkable decline in mortality since 1914, so that the rate in 1919, ·76 per 1,000 births, is less than half those prevalent a few years before the war; and atrophy debility and marasmus, which, notwithstanding an increase, noted later, in the first month, shows the lowest mortality, 10·3 per 1,000 births, ever returned for England and Wales. The unusually high mortality of London as compared with other classes of area, from atrophy debility and marasmus, which was noted in last year's report, has disappeared, the rates for London and the South generally being again, as usual, much below the average.

TABLE XXXVIII.—ENGLAND AND WALES.—DEATHS OF CHILDREN under ONE YEAR of AGE from DEVELOPMENTAL and WASTING DISEASES per 1,000 BIRTHS, 1886–1919.

	Sex.	Proportion of Deaths to 1,000 Births of each Sex.									
		1886–1890.	1891–1895.	1896–1900.	1901–1905.	1906–1910.	1911–1915.	1916.	1917.	1918.	1919.
Premature birth (151A)	M.	17·8	20·3	21·7	22·4	22·0	21·7	20·6	21·0	21·9	23·6
	F.	14·4	16·4	17·5	18·1	17·8	17·6	16·6	17·1	17·6	19·6
	P.	16·1	18·4	19·6	20·2	19·9	19·7	18·6	19·1	19·8	21·7
Congenital defects (150 and 152B)	M.	3·5	3·9	4·3	6·4	7·3	6·2	6·4	6·4	5·6	6·2
	F.	2·9	3·3	3·5	5·0	5·9	4·9	5·1	5·4	4·6	4·9
	P.	3·2	3·6	3·9	5·7	6·6	5·6	5·6	5·9	5·1	5·6
Atrophy Debility and Marasmus (151 B–E)	M.	24·9	25·0	23·9	20·8	17·5	15·3	13·0	13·0	11·9	11·8
	F.	20·6	20·3	19·3	16·6	13·7	11·6	9·4	10·1	9·2	8·7
	P.	22·8	22·7	21·7	18·7	15·6	13·5	11·2	11·6	10·6	10·3
Total : Developmental and Wasting diseases.	M.	46·2	49·2	49·9	49·6	46·8	43·2	40·0	40·4	39·4	41·6
	F.	37·9	40·0	40·3	39·7	37·4	34·1	31·1	32·5	31·5	33·2
	P.	42·1	44·7	45·2	44·6	42·1	38·8	35·6	36·6	35·5	37·5

Table XXXVIII, which is continued from previous reports, shows that the decline in mortality from developmental and wasting diseases which is shown as having occurred during the last 20 or 25 years has been arrested in 1919 in association with the increase in the mortality of the first four weeks, when these deaths mainly occur. Table XXXVII shows that each of these causes has shared in the decline recorded in the mortality of each of the later portions of the first year in 1919, but the increase in the first month is of much greater importance.

One peculiarity of the year's record is that the line of demarcation between increase and decrease is drawn, not by cause, but by age. As just noted, even the causes chiefly affecting early infancy show a decline after, as well as an increase within, the first four weeks ; and other causes not especially affecting the first four weeks show the same peculiarity. These causes of the increase of mortality in early infancy must now be examined.

By far the most important increase is that under the heading of premature birth. This cause, which very uniformly covers a little less than half the mortality of this period, accounts for 59 per cent. of the total increase ; and for the first time since 1905, when the record begins, gave rise to more than half the total mortality. During the previous 14 years the mortality ascribed to it had varied only from 16·94 deaths (under four weeks of age) per 1,000 births in 1916 to 18·38 in 1906, but for 1919 it stands at 19·93. All the other causes grouped under the heading developmental and wasting diseases record increased mortality at this age as compared with 1918, but in no other case is the level reached higher than any previously recorded. Thus injury at birth shows a rise from ·98 in 1918 to 1·11 in 1919. This is entirely confined to male infants, whose mortality has risen from 1·11 to 1·34, whereas that of females has remained stationary at 0·85. Similar increases are recorded under the headings of atelectasis and congenital malformations (grouped in Tables XXXVII and XXXVIII as congenital defects) and even of "atrophy debility and marasmus," mortality from which had been declining considerably. But almost every heading, except overlying and influenza and the other infectious diseases, shows an increase of mortality under four weeks in 1919, accompanied in most cases, as in all those already quoted, by a decrease in the later stages of infancy. This applies to diarrhœa, non-tuberculous meningitis, convulsions, bronchitis and pneumonia, and syphilis. It looks as if the infants born during the year were for some reason exceptionally susceptible to death within the month, and as if this increased susceptibility had increased the mortality attributed to nearly all the causes commonly accounting for death at this period.

The possibility that premature birth may have been exceptionally common on account of the influenza epidemic naturally suggests itself, but this explanation can scarcely account for what occurred. Premature births caused by the epidemic were presumably at their maximum in November, 1918, and as the mortality under discussion all occurred within four weeks, and most of it within one week, of birth, the effect of influenza should have been chiefly manifest in the 1918 return. The third wave alone of the great epidemic

could have had much influence upon the death-rate in 1919, and it seems inconceivable that it could have produced the effects described while the much greater second wave left mortality at this age in 1918 lower than any previously recorded. (Table XXVII.)

This matter may be tested by comparing the mortality during the first four weeks from premature birth in the separate quarters of 1918 and 1919. The result is as follows :—

	Year.	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.
1919	19·93	21·89	19·77	18·96	19·50
1918	17·99	16·99	16·58	16·95	21·57
1911–17	17·67	18·99	17·35	16·01	18·34

Before attributing the excess mortality of the fourth quarter of 1918 and the first quarter of 1919 entirely to the two main waves of the influenza epidemic which occurred during those quarters it is necessary to bear in mind the normal winter excess of mortality from this cause, as shown by the quarterly rates for 1911–17, the only years for which the records are available. These have been added to the statement to serve as some indication of how far the excess in question may be merely of seasonal origin. The share attributable to influenza in the high rates for the two influenza quarters is seen from this point of view to be probably less than the figures for 1918 and 1919 would by themselves suggest ; and in addition we have the continued high mortality throughout the remainder of 1919, for which influenza offers no obvious explanation at all.

For the last three quarters of 1919 as a whole the rate is 19·40, and for the first three of 1918, 16·83. The first of these rates is much higher, and the second somewhat lower, than that for any of the other years, 1905 to 1917, for which this rate is recorded. It therefore follows that while influenza has had a certain influence upon the matter it cannot account either for the difference between 1918 and 1919, nor, except in a minor degree, for the high mortality of the latter year.

The increase over 1918 applies to almost every heading to which any appreciable number of deaths in the first four weeks of life is ascribed. Increases are shown by the following causes not already dealt with, in order of the numerical importance of the cause of death :—icterus neonatorum, lack of care, diseases of the umbilicus, pemphigus, homicide, phlegmon and acute abscess, intestinal obstruction, cyanosis neonatorum, hæmophilia, hernia, purulent ophthalmia, purpura, pyæmia and septicæmia, and tetanus. The mortalities from lack of care, pemphigus, homicide, intestinal obstruction, cyanosis neonatorum, hernia, and purulent ophthalmia are the highest recorded since 1911, when comparable records commence. Such a uniform movement as this can hardly be attributed to the separate action of the several causes catalogued, and seems much more probably dependent upon increase of vulnerability.

The increases from lack of care and homicide stand, of course, by themselves. The latter at least is presumably due to the return of men from the army, as the death-rate from homicide, which had declined during the war, increased in 1919 by 44 per cent. during the remainder of life as against an increase of 29 per cent. for the first four weeks. The rate for the first four weeks was almost twice as high in the first two quarters, while demobilization was most active, as in the second two, the quarterly rates, per thousand births in each quarter, being ·12, ·13, ·07 and ·06 respectively. The mortality attributed to lack of care has been increasing since these deaths were first distinguished in 1911, and the rate for 1919, ·42 per 1,000 births, is, as stated, the highest yet reached. This fact may not, however, imply any real increase in such mortality. The great bulk of these deaths are so returned as the result of coroners' inquests, and their increase may have no further significance than that increased vigilance is being shown in such cases. They were most frequent in the first quarter of 1919, when the rate of ·58 per 1,000 births was reached. This may have been a consequence of the disablement or loss of their natural guardians during the influenza epidemic.

On comparing the mortality from the causes chiefly affecting early infancy quarter by quarter in 1919, the excess in the first quarter from causes which seem to have little relation to influenza is remarkable. The following are the rates, per thousand births in the period, for each quarter and for the whole year, from each of the principal causes :—

E 2

TABLE XXXIX.—ENGLAND AND WALES, 1919.—MORTALITY during the FIRST FOUR WEEKS OF LIFE in each Quarter of the year, per thousand BIRTHS in the Quarter, from the chief causes of DEATH at this AGE.

	Year.	First Quarter.	Second Quarter.	Third Quarter.	Fourth Quarter.
Premature Birth	19·93	21·89	19·77	18·96	19·50
Atrophy, Debility, etc....	6·25	7·12	5·40	4·49	5·38
Congenital Malformations	2·63	2·94	2·52	2·31	2·76
Atelectasis	1·57	1·81	1·43	1·29	1·73
Total Developmental and Wasting diseases ...	30·38	33·76	29·12	27·05	29·37
Convulsions	2·70	3·45	2·44	2·39	2·60
Injury at Birth	1·11	1·08	1·11	1·06	1·14
Bronchitis	0·91	2·54	0·52	0·23	0·64
Diarrhœa and Enteritis	0·86	0·75	0·71	1·06	0·86
Icterus neonatorum	0·68	0·85	0·73	0·64	0·55
Syphilis	0·57	0·66	0·60	0·55	0·51
Pneumonia	0·51	1·11	0·31	0·29	0·44
Lack of care	0·42	0·58	0·46	0·33	0·37
Other causes	1·65	3·14	2·36	1·91	2·37
All causes	39·79	47·92	38·36	35·51	38·85

The excess in the first quarter from bronchitis and pneumonia is readily explained as a combined effect of season and influenza; but it is not at all so apparent why atrophy, congenital malformations, atelectasis, convulsions, icterus neonatorum, syphilis, and lack of care should all present the same peculiarity. The only exceptions to the rule of excess in the first quarter are diarrhœa, which shows the usual third quarter excess, and injury at birth.

Table XL, which contrasts the mortality of male with that of female and of legitimate with that of illegitimate infants, shows that the mortality of males was 29 per cent. greater than that of females, and that all the principal causes of death except whooping cough display the same feature, and on the whole to a very uniform extent. The excess in the mortality of males was greatest at 1–3 months. All these features of the table—excess in male mortality of about 25 per cent. from all causes and from the principal groups of causes, excess of female mortality from whooping cough, and the decrease with advancing age of the excess in male mortality—reproduce themselves with remarkable constancy from year to year. The proportionate male excess was less in the case of illegitimate infants, as it has been in (at least) each of the past fourteen years. The excess in mortality of illegitimate children varied greatly for different causes of death. It was comparatively slight for whooping cough and congenital defects, but heavy for diarrhœa and for atrophy etc. These are all very constant features of this table.

TABLE XL.—ENGLAND AND WALES, 1919 : 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 ...	44·49	34·80	42·58	32·98	74·19	63·22	128	129	117	174	192
	4 weeks–3 months ...	17·94	12·89	16·32	11·67	43·22	31·70	139	140	136	265	272
	3–6 months ...	14·80	11·51	13·45	10·29	35·87	30·38	129	131	118	267	295
	6–9 „ ...	12·31	9·46	11·80	8·97	20·31	17·00	130	132	119	172	190
	9–12 „ ...	10·46	8·94	10·19	8·59	14·63	14·31	117	119	102	144	167
	Total under one year ...	100·00	77·60	94·34	72·50	188·22	156·61	129	130	120	200	216
All ages under one year.	Whooping cough ...	1·48	1·57	1·45	1·56	2·00	1·62	94	93	123	138	164
	Other common infectious diseases.	1·31	1·15	1·23	1·10	2·52	1·86	114	112	135	205	169
	Influenza	2·75	1·91	2·75	1·92	2·84	1·72	144	143	165	103	90
	Diarrhœa and enteritis ...	9·89	7·48	8·84	6·56	26·27	21·47	132	135	121	297	330
	Premature birth ...	23·60	19·63	22·84	18·84	35·54	31·95	120	121	111	156	170
	Congenital defects ...	6·19	4·90	6·11	4·83	7·45	5·83	126	127	128	122	121
	Atrophy debility and marasmus.	11·77	8·69	10·75	7·81	27·62	22·35	135	138	124	257	286
	Developmental and wasting diseases.	41·56	33·22	39·70	31·48	70·61	60·13	125	126	117	178	191
	Tuberculous diseases ...	1·78	1·42	1·66	1·36	3·49	2·45	125	122	142	210	180
	Convulsions ...	7·16	5·39	6·90	5·11	11·09	9·65	133	135	115	161	189
	Bronchitis and pneumonia ...	21·58	16·02	20·94	15·39	31·44	25·78	135	136	122	150	168
	Other causes ...	12·49	9·44	10·87	8·02	37·96	31·74	132	136	120	349	396
	All causes	100·00	77·60	94·34	72·50	188·22	156·61	129	130	120	200	216

Distribution throughout the country of mortality from various causes :—Table XLI, which is derived from Table 18, furnishes an analysis by cause of the differences in total mortality under one year of age shown in Table XXVIII. Table 18 having been prepared for the first time in 1917, the results for that year and 1918 alone are available for comparison.

The greatest departures from the average mortality of the whole country in these tables are furnished by the county boroughs of the North, with excesses under every cause distinguished, except whooping-cough, aggregating to 18·77 deaths per 1,000 births; and by the rural and urban districts of the South, which hold advantages under nearly every head aggregating to 24·84 and 21·47 per 1,000 births respectively. In each of these three cases the first place in order of numerical importance amongst the causes of death accounting for the differences is occupied by bronchitis and pneumonia and the second by diarrhœa and enteritis, the two former being treated as one cause on account of the interchangeability of certification between them. All of these statements apply equally to 1917 and 1918, except that in 1917 the order of importance of the two principal causes accounting for the differences was reversed, diarrhœa coming first and the respiratory diseases second. In 1917 and 1918, however, the rural districts of the Midlands also displayed outstandingly low mortality, whereas in 1919 their mortality exceeds that even of the county boroughs of the South, as well as the rate for the South as a whole, though the latter includes London.

TABLE XLI.—COMPARISON of INFANT MORTALITY from the PRINCIPAL CAUSES in VARIOUS AREAS, 1919.

		Measles.	Whooping Cough.	Other Infectious Diseases, all.	Tuberculosis, forms.	Diarrhœa and Enteritis.	Convulsions.	Bronchitis and Pneumonia.	Syphilis.	Suffocation, Overlying.	Injury at Birth.	Congenital Malformations.	Premature Birth.	Atrophy, Debility and Marasmus.	Other Causes.	All Causes.
		DIFFERENCES FROM RATES FOR ENGLAND AND WALES PER 100,000 BIRTHS.														
All Areas ...	North ...	+ 76	— 22	— 1	+ 28	+ 142	+ 195	+ 507	+ 25	— 2	+ 10	+ 28	+ 208	+ 119	+ 183	+ 1,496
	Midlands ...	— 36	+ 33	— 1	— 14	— 218	— 126	— 176	— 19	— 2	— 14	— 26	— 30	+ 29	— 117	— 717
	South ...	— 43	— 47	+ 6	— 7	+ 84	— 270	— 526	+ 9	+ 17	+ 4	— 2	— 184	— 209	— 125	— 1,293
	Wales ...	— 63	+ 125	— 11	— 54	— 59	+ 486	+ 110	— 70	— 41	— 6	— 18	— 228	+ 28	+ 58	+ 257
London ...		— 27	— 65	+ 30	+ 5	+ 602	— 346	— 353	+ 34	+ 28	+ 2	+ 2	+ 55	— 126	— 206	— 383
County Boroughs.	North ...	+ 112	— 35	+ 5	+ 23	+ 271	+ 194	+ 590	+ 96	+ 18	+ 3	+ 34	+ 264	+ 85	+ 217	+ 1,877
	Midlands ...	— 8	+ 32	+ 5	— 6	— 1	— 153	+ 133	+ 49	+ 23	— 18	— 31	+ 6	+ 126	+ 109	+ 109
	South ...	— 42	— 57	— 16	+ 30	— 191	— 175	— 518	+ 110	+ 32	+ 22	— 55	— 183	— 162	— 1,435	— 1,435
	Wales ...	— 66	+ 102	— 10	— 20	+ 219	+ 236	+ 380	+ 31	— 38	+ 10	— 54	— 126	— 303	+ 173	+ 534
	England and Wales.	+ 52	— 10	+ 3	+ 12	+ 140	+ 52	+ 332	+ 80	+ 19	— 2	+ 2	+ 140	+ 59	+ 70	+ 949
Other Urban Districts.	North ...	+ 49	— 13	— 8	+ 29	+ 55	+ 186	+ 492	— 41	— 23	— 8	+ 33	+ 204	+ 116	+ 86	+ 1,157
	Midlands ...	— 39	+ 4	— 7	— 2	— 262	— 115	— 359	— 18	— 10	— 21	— 8	— 90	— 65	— 130	— 1,122
	South ...	— 51	— 15	— 8	— 15	— 400	— 220	— 689	+ 44	+ 6	— 2	— 31	— 202	— 246	— 230	— 2,147
	Wales ...	— 69	+ 152	— 11	— 73	+ 2	+ 502	+ 118	— 91	+ 51	— 34	— 32	— 194	+ 134	— 38	+ 338
	England and Wales.	— 14	+ 13	— 8	— 2	— 146	+ 45	— 68	— 39	— 17	— 15	— 1	— 22	— 9	— 61	— 344
Rural Districts.	North ...	— 3	+ 6	— 8	+ 44	— 159	+ 221	+ 222	— 97	— 29	+ 82	— 6	— 3	+ 254	+ 280	+ 810
	Midlands ...	— 69	+ 78	— 3	— 42	— 447	— 105	— 324	— 111	— 26	+ 1	— 47	— 59	— 2	— 87	— 1,243
	South ...	— 74	+ 33	— 26	— 59	— 454	— 205	— 778	— 64	+ 7	+ 3	+ 7	— 184	— 149	— 241	— 2,484
	Wales ...	— 63	+ 91	— 10	— 43	— 343	+ 622	— 82	— 101	— 26	+ 31	+ 31	— 355	+ 25	+ 156	+ 67
	England and Wales.	— 53	+ 37	— 11	— 24	— 364	+ 40	— 260	— 96	— 22	+ 25	— 34	— 137	+ 33	— 1	— 867
		RATES PER CENT. OF THOSE FOR ENGLAND AND WALES.														
All Areas ...	North ...	181	86	97	117	116	131	127	114	97	109	107	110	112	116	117
	Midlands ...	62	122	97	84	89	97	88	93	99	103	90	92	103	90	92
	South ...	54	69	121	96	110	57	72	105	122	104	99	92	80	85	85
	Wales ...	33	182	62	66	93	177	106	60	46	95	95	89	103	105	103
London ...		71	57	203	103	169	45	81	119	137	102	114	94	80	99	96
County Boroughs.	North ...	219	77	117	114	131	131	131	155	124	103	109	112	108	119	121
	Midlands ...	91	121	117	96	100	76	107	128	130	84	92	103	115	89	101
	South ...	55	63	45	119	72	72	73	163	142	120	86	92	78	86	84
	Wales ...	30	167	66	88	125	137	120	118	50	109	86	94	71	115	106
	England and Wales.	155	93	110	107	116	108	118	145	125	98	101	106	106	106	111
Other Urban Districts.	North ...	152	91	72	118	106	130	126	77	70	93	108	109	111	108	113
	Midlands ...	59	103	76	99	70	82	81	90	87	81	98	96	94	89	87
	South ...	46	90	72	91	54	65	75	108	98	92	91	76	80	90	76
	Wales ...	34	200	62	55	100	180	106	48	33	70	92	91	115	97	104
	England and Wales.	85	109	72	99	83	107	96	78	78	87	100	99	99	95	96
Rural Districts.	North ...	97	104	72	127	82	135	112	45	62	173	98	100	125	125	109
	Midlands ...	27	151	74	49	83	83	37	66	101	88	97	100	92	88	88
	South ...	21	78	10	63	48	67	59	64	91	103	80	86	79	72	72
	Wales ...	33	160	66	73	61	199	96	43	66	128	108	84	102	114	99
	England and Wales.	44	124	62	85	58	106	86	45	71	122	91	94	103	100	90

When the different classes of area are compared without distinguishing sections of the country we find that in all four classes, taking London separately, the respiratory diseases and diarrhœa head the list of causes accounting for the departure from average. As infant mortality from both causes falls comparatively late in the first year of life, only about 30 per cent. of it falling on the first three months, as against about 62 per cent. (in 1919) from all causes, it can readily be seen why the adverse influence of city life increases in importance as age advances. The two causes in question accounted in 1919 for 72 per cent. of the total advantage of the rural districts and 62 per cent. of that of the smaller towns. They also accounted for 50 per cent. of the excess mortality of the county boroughs.

The case of premature birth in this connexion is somewhat anomalous. It helps to account for the favourable experience of the smaller towns and rural districts and ranks along with diarrhœa as a cause of excess mortality in the county boroughs, but in London the mortality ascribed to it is almost as low as that even of the rural districts. During the nine years for which the comparison can be made the excess mortality of the county boroughs from premature birth has been very steady, varying only between 136 in 1915 and 195 in 1918, while in six out of the nine years the London mortality has been lower than that in any other class of area. The explanation so far as it goes appears to be that mortality from premature birth as well as from other less important causes peculiarly affecting early infancy increases from South to North as much or more than from country to town, so that the London rate is low because London is situated in the South even though it is a great city.

No other deductions to be drawn from Table XLI can be confirmed on the same scale by appeal to the experience of former years as those referring to grades of urbanization alone, so until the basis of the comparison can be extended by the inclusion of later data any conclusions drawn must be of a more tentative nature. Certain differences, however, between North and South (the position of the Midlands being almost always intermediate) are so clearly marked in the present table and in those for the two preceding years that there can be little doubt as to their permanence. The excess mortality of the North is principally due to four causes—bronchitis and pneumonia, premature birth, convulsions, and diarrhœa and enteritis. Together these four causes account for 70 per cent. (75 in 1917 and 72 in 1918) of the total northern excess above the average for England and Wales.

The favourable experience of the Midlands applies to almost every cause shown, but is chiefly due to diarrhœa, bronchitis and pneumonia, and convulsions. The South records numerically unimportant excesses under various headings, but the great advantage held by it as regards bronchitis and pneumonia, convulsions, atrophy, and premature birth reduces its total mortality to a figure below that of the Midlands, notwithstanding the inclusion of London in the South. If London is excluded from the comparison, the experience of the South is much more favourable, mainly in consequence of the high diarrhœal mortality in London—the highest in the table—which contrasts with a low mortality from this cause amongst the other southern populations. The London diarrhœal mortality was the highest also in the corresponding tables for 1917 and 1918, and higher than that of any other class of area in each of the last six years. The principal feature of the Welsh figures is the enormous excess of mortality from convulsions.

Turning now to the lower section of Table XLI we find that the mortality ascribed to convulsions is over three times as heavy in Wales as in the South of England, while that in the North is over twice as great. The probable unreality of these differences, which were of practically equal dimensions in the corresponding tables for 1917 and 1918, was pointed out in the Report for the former year, where the low rates of mortality from tubercle and overlying in Wales were also commented upon. The low Welsh mortality from syphilis is also a feature in all three tables, and generally speaking the differences brought out appear so far to be very constant.

The causes of death accounting for the differences in the mortality of the first four weeks of life (pages l and lii) may now be referred to. They are chiefly convulsions, premature birth, and atrophy debility and marasmus, and, in minor degree, bronchitis, congenital malformations, and injury at birth. The departure, both absolutely and proportionally, in the case of each population dealt with in Table 18 from the average mortality of England and Wales from the first three of these causes is shown in the following table:—

TABLE XLII.—Comparison of Mortality (Deaths per 100,000 Births) of the First Four Weeks of Life, 1919.

		Differences from Rates for England and Wales.					Rates per cent. of those for England and Wales.				
		Convulsions.	Premature Birth.	Atrophy Debility and Marasmus.	Other Causes.	All Causes.	Convulsions.	Premature Birth.	Atrophy Debility and Marasmus.	Other Causes.	All Causes.
All Areas.	North	+ 83	+195	+ 70	+ 98	+446	131	110	111	109	111
	Midlands	− 61	− 30	+ 35	− 88	−144	77	98	106	92	96
	South	−112	−164	−155	+ 7	−424	59	92	75	101	89
	Wales	+218	−242	+ 58	− 93	− 59	181	88	109	91	99
London ...		−139	−115	−238	+160	−332	49	94	62	115	92
County Boroughs.	North	+ 89	+245	+ 1	+127	+462	133	112	100	112	112
	Midlands	− 72	+ 61	+ 69	− 42	+ 16	73	103	111	96	100
	South	− 75	−168	−147	− 60	−450	72	92	76	95	89
	Wales	+135	−195	−163	− 3	−226	150	90	74	100	94
	England and Wales	+ 25	+129	+ 1	+ 52	+207	109	106	100	105	105
Other Urban Districts.	North	+ 56	+193	+ 56	+ 95	+400	121	110	115	105	110
	Midlands	− 69	− 97	− 20	−117	−303	74	95	97	89	92
	South	− 91	−180	−104	−124	−499	66	91	83	89	87
	Wales	+211	−207	+171	−238	− 63	178	90	127	78	98
	England and Wales	+ 5	− 27	+ 27	− 72	− 67	102	99	104	93	98
Rural Districts.	North	+120	+ 2	+279	+ 89	+490	144	100	145	108	112
	Midlands	− 35	− 50	+ 67	−116	−134	87	97	111	89	97
	South	− 99	−270		−171	−540	63	86	100	84	86
	Wales	+285	−336	+ 4	+ 98	+ 51	206	83	101	109	101
	England and Wales	+ 27	−119	+ 98	− 53	− 47	110	94	116	95	99

It will be seen that each of the causes specified in the table contributes to the excess mortality of the North and to the favourable position of the South, and that this holds good practically for each class of area in both cases.

In proportion to the mortality attributed to it convulsions is the chief contributor to the difference, for while its share in the mortality of the whole country is less than seven per cent. it accounts for 22 per cent. of the difference between North and South. Atrophy, with a share of 16 per cent. in mortality, accounts for 26 per cent. of the difference, and prematurity, to which just over half the total mortality was attributed, for 41 per cent.

The great excess of mortality in the rural districts of the North, and the fact that it is greater than that of either the Northern county boroughs or smaller towns, are features of the table common also to its two predecessors. This large excess in rural mortality is mainly attributed to the very indefinite headings atrophy and convulsions. There is no appreciable excess from premature birth, but the rural mortality from this cause of other parts of the country is much below the general average. In the case of rural Wales, however, the heavy excess of mortality from convulsions must largely represent deaths which in England are attributed to other causes, and so possibly in many instances to prematurity. One interesting item in the northern rural excess is injury at birth, which is shown by Table 18 to have caused a mortality of 1·91 as against 1·11 in the country at large. So great an excess however was not recorded in either 1917 or 1918, though the northern rural mortality from this cause is consistently high. Rural mortality in general from birth injury was high, and as the health and physical development of the mothers must presumably be on the whole superior to those of town mothers the excess seems likely to be dependent on an inferior midwifery service in the rural areas, especially those of the North.

The fact that considerably higher mortality is attributed to premature birth in the North as a whole than elsewhere might seem to point to the greater industrial employment of married women in the North as a possible cause, but as against this view we have the facts that mortality from this cause declined during the early part of the war, reaching a

minimum in 1916, notwithstanding the increased employment of women in physical labour, and has increased chiefly since the war ceased, and their abnormal employment with it. The excess over the mortality from this cause of 1918, which should presumably have been more increased by influenza than that of 1919, is large and widespread.

It is interesting to note that even as regards congenital malformations the North is at a considerable disadvantage, returning a mortality from this cause ten per cent. in excess of the general rate. This excess has been practically constant for the three years for which Table 18 has been published, and forms an interesting illustration of the apparent physical inferiority of the northern infant at birth, apart from any question of the environment into which it is born. This is true, at least, if such deaths are to be regarded as inevitable, as they no doubt mainly are ; but in so far as they may be avoided or postponed by careful attention the influence of environment may perhaps be traceable in the northern excess even from this cause.

As in the two previous years mortality attributed to syphilis is in considerable excess in the North, and that to overlying in the South (Table 18). The southern excess from the latter cause amounts to about 30 per cent. over the general average, and applies to all classes of area, but its reality seems open to question.

Mortality at 1–5.—Notwithstanding the continuance, during the first few months of the year, of the epidemic of influenza which had raised the mortality of 1918 at this age to a height quite exceptional in recent experience, the rate recorded in 1919 was very low. When allowance is made for the greater average age of the children concerned in the later year the rate recorded in 1916 was very slightly lower—12·65 per 1,000 living against 12·75 in Table XLIII—but apart from 1916 there has probably been no year recording so low a figure, and if mortality due to the influenza epidemic is deducted the rate for 1919 is reduced much below that of any previous year.

TABLE XLIII.—ENGLAND and WALES.—Mortality per 1,000 living in each of the First Five Years of Life, 1911–14, 1918, and 1919.

Year of Life.	Males.				Females.				Persons.			
	1911–14.	1918.	1919.	1919% of 1911–14.	1911–14.	1918.	1919.	1919% of 1911–14.	1911–14.	1918.	1919.	1919% of 1911–14.
0–1	132·06	118·79	121·36	91·9	104·47	92·90	91·62	87·7	118·40	106·03	106·72	90·1
1–2	35·12	40·98	26·04	74·1	32·43	39·91	22·95	70·8	33·79	40·45	24·51	72·5
2–3	13·71	13·37	12·33	89·9	13·37	21·98	11·75	87·9	13·54	21·87	12·05	89·0
3–4	8·26	13·58	8·10	98·1	8·13	14·60	8·17	100·5	8·19	14·09	8·14	99·4
4–5	6·08	10·33	6·29	103·5	6·05	10·94	6·38	105·5	6·07	10·64	6·34	104·4
0–5 {Crude	40·23	38·52	32·36	80·4	33·65	33·85	26·12	77·6	36·96	36·20	29·27	79·2
Standardized	* 40·71	42·48	36·38	89·4	34·17	37·09	29·31	85·8	37·45	39·80	32·86	87·7
1–5 {Crude	15·85	21·09	12·57	79·3	15·03	21·26	11·78	78·4	15·44	21·18	12·18	78·9
Standardized	* 15·79	21·66	13·19	83·5	14·99	21·86	12·31	82·1	15·39	21·76	12·75	82·8

* Based on the constitution of the population in 1901.

Table XLIII shows how the mortality of each of the first five years of life compares with that of 1918 and of the last four years unaffected by war conditions. It will be noticed that mortality at 0–1, as measured in terms of estimated population living at that age, shows no decrease from the corresponding rate for 1918, notwithstanding the decline in infant mortality. This anomaly is explained by the history of the birth-rate during the year. The exceptionally scanty births of the first two quarters (page xxviii) alone contributed to the mid-year population, on which the rate in the table is founded, whereas the numerous births of the last quarter are taken into account in fixing the infant mortality rate. The population basis of statement exaggerates the mortality of 1919, and that in proportion to births minimises it ; in the one case because more deaths of very young infants accompanied the comparatively high birth-rate of the last quarter than the mid-year population would account for, and in the other because the births of the last quarter, which naturally yield a lower mortality within the year than those of earlier quarters, were in exceptionally high proportion.

Mortality in the second year of life was lower in 1919 than in any other of the last few years, and therefore almost certainly the lowest yet experienced, but at each of the three succeeding years, 2–3, 3–4, and 4–5, lower rates were recorded in 1916, and for some of them in other years as well. At 4–5 the 1919 rate is seen from the table to exceed the 1911–14 average.

The tabulation of deaths of infants by separate months of age, which has been carried out for the first year of life since 1905, has been continued for 1919 throughout the second year of life, with distinction of sex, legitimacy, class of area, and section of the country. The result is shown in Table XLIV, with distinction of locality but not of sex or legitimacy, and the same local distinction is also given for each year of life from the second to the fifth. Corresponding mortalities for the second year of life only are given in Table XLV. This has not been extended beyond the second year owing to the difficulty of framing the estimates of local populations required for the purpose. The estimates for the first two years have been arrived at by deduction of deaths from births, without any allowance for migration. Migration of course becomes of increasing importance with increase of age, and in view of the near approach of the census it has been thought best to limit these local population estimates to the first two years of life.

TABLE XLIV.—DEATHS during 1919 in each Month of the SECOND YEAR OF LIFE ; and in each YEAR OF LIFE from Age 1 to Age 5.

		Month of Life.												Year of Life.			
		13th.	14th.	15th.	16th.	17th.	18th.	19th.	20th.	21st.	22nd.	23rd.	24th.	2nd.	3rd.	4th.	5th.
All Areas.	North	850	712	652	645	595	538	557	466	487	432	424	423	6,781	3,564	2,587	2,104
	Midlands	487	398	346	308	322	293	340	247	269	226	242	266	3,744	2,155	1,449	1,270
	South	335	247	268	233	255	173	235	172	185	158	149	156	2,566	1,521	1,061	972
	Wales	126	113	121	88	98	84	90	67	62	64	67	53	1,033	519	372	327
	England and Wales	1,798	1,470	1,387	1,274	1,270	1,088	1,222	952	1,003	880	882	898	14,124	7,658	5,469	4,673
London		164	146	159	129	152	93	141	92	103	81	73	97	1,430	763	579	504
County Boroughs.	North	502	405	389	377	369	349	344	265	273	267	249	249	4,038	2,060	1,493	1,179
	Midlands	194	164	148	142	143	141	142	116	125	112	108	113	1,648	948	618	493
	South	46	28	29	29	31	24	25	22	19	20	18	15	300	176	119	133
	Wales	19	14	23	20	22	14	8	10	13	8	13	16	180	114	75	68
	England and Wales	761	605	589	568	565	528	519	413	430	407	388	393	6,166	3,298	2,305	1,873
Other Urban Districts.	North	267	229	190	201	165	137	167	144	156	119	139	128	2,042	1,095	807	676
	Midlands	195	146	127	98	109	85	118	81	95	71	89	83	1,297	754	521	496
	South	74	53	48	35	40	34	40	33	38	32	34	27	488	284	227	190
	Wales	61	69	66	53	55	54	58	39	28	38	37	22	580	258	194	164
	England and Wales	597	497	431	387	369	310	383	297	317	260	299	260	4,407	2,391	1,749	1,526
Rural Districts.	North	81	78	73	67	61	52	46	57	58	46	36	46	701	409	287	249
	Midlands	98	88	71	68	70	67	80	50	49	43	45	70	799	453	310	281
	South	51	26	32	40	32	22	29	25	25	25	24	17	348	197	186	145
	Wales	46	30	32	15	21	16	24	18	21	18	17	15	273	147	103	95
	England and Wales	276	222	208	190	184	157	179	150	153	132	122	148	2,121	1,206	836	770

TABLE XLV.—MORTALITY during 1919 per 1,000 POPULATION aged 1–2 years, in each Month of the SECOND YEAR OF LIFE.

		Month of Life.												Second Year of Life.		
		13th.	14th.	15th.	16th.	17th.	18th.	19th.	20th.	21st.	22nd.	23rd.	24th.	Both Sexes.	Males.	Females.
All Areas.	North	4·3	3·5	3·2	3·2	3·0	2·7	2·8	2·3	2·4	2·2	2·1	2·1	33·8	36·0	31·6
	Midlands	2·6	2·2	1·9	1·7	1·8	1·6	1·9	1·4	1·5	1·3	1·3	1·5	20·7	21·7	19·7
	South	2·2	1·7	1·8	1·5	1·8	1·2	1·6	1·2	1·3	1·1	1·0	1·1	17·6	19·2	16·1
	Wales	2·4	2·3	2·5	1·8	2·0	1·7	1·8	1·4	1·3	1·3	1·4	1·1	21·0	22·2	19·7
	England and Wales	3·1	2·6	2·4	2·2	2·2	1·9	2·1	1·7	1·7	1·5	1·5	1·5	24·5	26·0	23·0
London		2·6	2·3	2·6	2·0	2·4	1·4	2·2	1·4	1·6	1·3	1·1	1·5	22·3	24·0	20·4
County Boroughs.	North	4·8	3·8	3·7	3·6	3·5	3·3	3·2	2·5	2·6	2·5	2·3	2·3	38·1	40·4	35·8
	Midlands	3·2	2·7	2·4	2·3	2·3	2·3	2·3	1·9	2·0	1·8	1·7	1·8	26·7	27·3	26·1
	South	2·4	1·1	1·5	1·5	1·6	1·2	1·3	1·1	1·0	1·0	0·9	0·8	15·4	17·4	13·4
	Wales	2·2	1·6	2·7	2·3	2·6	1·6	0·9	1·2	1·5	0·9	1·5	1·9	20·9	19·9	21·9
	England and Wales	3·8	3·1	3·0	2·9	2·9	2·7	2·7	2·1	2·2	2·1	2·0	2·0	31·5	33·0	29·9
Other Urban Districts.	North	4·1	3·5	2·9	3·1	2·5	2·1	2·5	2·2	2·4	1·8	2·1	1·9	31·1	32·6	29·5
	Midlands	2·7	2·0	1·8	1·4	1·6	1·2	1·7	1·2	1·4	1·0	1·3	1·2	18·5	19·4	17·6
	South	2·0	1·5	1·3	1·0	1·1	1·0	1·1	0·9	1·1	0·9	1·0	0·8	13·7	14·7	12·6
	Wales	2·4	2·6	2·6	2·1	2·2	2·1	2·3	1·5	1·1	1·5	1·4	0·9	22·7	24·5	20·9
	England and Wales	3·1	2·6	2·2	2·0	2·0	1·9	2·0	1·5	1·6	1·3	1·5	1·3	22·4	23·6	21·2
Rural Districts.	North	2·7	2·7	2·5	2·3	2·1	1·8	1·6	2·0	2·0	1·6	1·2	1·6	24·1	27·4	20·7
	Midlands	2·1	1·9	1·5	1·4	1·4	1·4	1·6	1·0	1·0	0·9	0·9	1·4	16·4	18·4	14·7
	South	1·9	1·0	1·2	1·5	1·2	0·8	1·1	1·0	1·0	1·0	0·9	0·7	13·3	14·5	12·1
	Wales	2·9	2·0	2·1	1·0	1·4	1·1	1·6	1·2	1·4	1·2	1·1	1·0	18·0	20·0	15·9
	England and Wales	2·4	1·9	1·7	1·6	1·5	1·3	1·5	1·3	1·3	1·1	1·0	1·2	17·8	19·8	15·8

Table XLV shows that the decline of mortality during the first year of life (Table XXXII) continues throughout the second. It appears in fact to be more rapid during the first two months of the second year than during any of the last seven months of the first year, but it would be unsafe to assume the exact accuracy of all these returns of age without checking them from the birth registers. There is, however, little evidence of an undue tendency to return the age of children dying at about one year as twelve months, and the same fact is noticeable in the returns for 1918, which have also been similarly tabulated. On the other hand both years show some increase of mortality in the nineteenth month, presumably as the result of a tendency to return children of about that age as eighteen months old. On the whole, however, the gradation of the figures suggests that the detail of age has been satisfactorily stated.

The decline of mortality with advancing age is naturally less regular for the sectional populations dealt with, as the data are in many cases scanty, but on the whole it applies all round with considerable regularity. For instance, the ratio of mortality in the South to that in the North, or in the rural districts to that in the county boroughs, remains much the same at the end of the year as at its beginning. The percentage ratio of the higher to the lower mortality in each case is as follows for each quarter of the second year of life :—

———	North to South.	County Boroughs to Rural Districts.	All Urban Areas to Rural Districts.
12–15 months ...	193	165	143
15–18 ,, ...	193	193	155
18–21 ,, ...	183	171	146
21–24 ,, ...	200	185	148
Second Year ...	192	177	148

The excess of mortality in all urban over that in rural areas is shown for comparison with Table XXIX, where the same excess is stated for the different periods of the first year. The urban excess remains at a very high level throughout the whole of the second year, and does not vary much with age, as in the first year. It is much greater than that for any portion of the first year in 1919 ; but whether, like the urban excess in the first year, it was abnormally low in 1919, cannot be determined until the records of other years are available for comparison.

The county borough excess is naturally much greater than that of the towns as a whole, but even it is considerably less than that of the North over the South. At all parts of the second year the mortality of the North is almost double that of the South. In the county boroughs and smaller towns it is much more than double, but inclusion of London increases the southern total. Apart from London the mortality of the South is almost equally low in town and country, and even in London it is lower than that of the rural districts of the North.

The mortalities of legitimate and illegitimate children in the second year cannot be compared precisely owing to lack of material for estimating the number of lives at risk in each case ; but an idea of the relative mortality at each age in the two cases may be gathered from the percentages which the deaths of the illegitimate form of the total. Throughout the first five years of life these were as follows in 1919 :—

Under 4 weeks.	4 weeks to 3 months.	3–6 months.	6–9 months.	9–12 months.	12–15 months.	15–18 months.	18–21 months.	21–24 months.
10·5	14·7	15·2	10·4	9·0	9·3	7·9	6·9	7·3

First year.	Second year.	Third year.	Fourth year.	Fifth year.
11·7	8·0	6·1	4·3	4·5

It is true that, owing to the greater mortality of children born out of wedlock, their proportion to the total gradually falls, and that a certain amount of the decrease in the proportion of their deaths is due to this fact. But this can only account for a minor part of the change in proportion shown. By far the greater part seems to be due to gradual approximation of the mortality of illegitimate to that of other children. The ratios for the fourth and fifth years, representing the births of, approximately, 1916 and 1915, differ little from those of the births of those years (Table XX).

The causes of the low mortality at 1–5 in 1919, despite the heavy rate from influenza, are set out in Table XLVI. It will be seen that when the last four years of the pre-war period are taken as a standard for comparison an improvement is recorded under almost every head, but chiefly from measles, whooping cough, and diarrhœa. The total death-rate of the year from both measles and whooping cough was by far the lowest yet recorded (Table 12) and that from diarrhœa was also exceptionally low. Mortality at this age is so largely due to infectious disease and its results that the prospects of maintenance of the progress made, and of further improvement, must very largely depend upon the future history of these diseases.

TABLE XLVI.—MORTALITY PER MILLION LIVING AT AGES 1–5 YEARS IN 1911–14, 1918, AND 1919.—BOTH SEXES.

———	Death-rate.			Increase (+) or Decrease (−) between 1911–14 and 1919.		———	Death-rate.			Increase (+) or Decrease (−) between 1911–14 and 1919.	
	1911–14.	1918.	1919.	+	−		1911–14.	1918.	1919.	+	−
6. Measles ...	2,643	2,497	908	—	1,735	87B. Laryngitis	141	127	125	—	16
7. Scarlet fever ...	369	161	201	—	168	89 & 90. Bronchitis	862	1,193	942	80	—
8. Whooping cough	1,202	2,064	538	—	664	91. Broncho-pneumonia.	2,146	3,725	2,352	206	—
9A. Diphtheria ...	769	791	769	—	—	92. Pneumonia, lobar and undefined.	856	1,374	772	—	84
10. Influenza ...	59	4,057	1,300	1,241	—	103A. Gastritis	93	106	84	—	9
28 & 29. Pulmonary tuberc., acute and chronic.	307	309	225	—	82	104 & 105. Diarrhœa and enteritis.	1,621	769	596	—	1,025
30. Tub. meningitis	697	610	547	—	150	119. Acute nephritis	88	104	79	—	9
31. Tub. peritonitis	387	375	238	—	149	150. Congenital malformations.	84	90	73	—	11
32–35. Other tuberc. diseases.	212	172	135	—	77	167. Burns ...	356	353	346	—	10
36A. Rickets ...	170	159	106	—	64	Other violence...	271	265	250	—	21
61. Meningitis ...	480	404	346	—	134	Other causes ...	1,177	1,013	930	—	247
71. Convulsions ...	455	459	317	—	138						
						All causes ...	15,445	21,177	12,179	—	3,266

Mortality of the Aged.—It has already been seen from Tables XXIII and 6–8 that the death-rate of both sexes in 1919 at 65–75 was low, but that at 75–85 and especially at 85 and upwards it was above the average of recent experience.

The principal causes to which mortality at ages over 70 is attributed are set out in Table XLVII for each of the last nine years. The rates for 1919 present no very remarkable features, all falling within the extremes of the previous eight years except pneumonia, the rate from which is the lowest in the table. Mortality from bronchitis, on the other hand, was rather high, so that the joint rate from the two diseases was exceeded only by those of 1915 and 1916, the two years of highest total mortality. As in 1915, the increase in the total rate was accompanied by increase in mortality attributed to " old age," notwithstanding the general tendency to decline in the frequency of that form of return. The first part of the table, however, shows that while the proportion of deaths attributed to " old age " fell very rapidly from 1911 to 1915 it has been almost stationary since that date. Possibly the increased pressure under which medical practice has been carried on since that time has checked the movement towards increased specificness of certification evidenced by the earlier figures. This portion of the table also shows that the share in total mortality attributed to diseases of the heart and blood vessels jointly has been increasing throughout the whole period covered, and was higher in 1919 than in any previous year. A corresponding increase for respiratory diseases may be noted up to 1915, but came to an end in that year.

On the whole, the increase in the mortality of old age recorded for 1919 is not attributed specially to any one cause, but takes the form rather of a general tendency to increase from all causes except influenza and pneumonia.

TABLE XLVII.—ENGLAND AND WALES, 1911–1919.—MORTALITY OVER 70 YEARS of AGE in each YEAR from the CHIEF CAUSES of DEATH.

	Deaths from each Cause per 1,000 Total Deaths.									Mortality per 1,000 Living.								
	1911.	1912.	1913.	1914.	1915.	1916.	1917.	1918.	1919.	1911.	1912.	1913.	1914.	1915.	1916.	1917.	1918.	1919.
MALES.																		
Influenza (10)	10	14	14	13	24	23	18	41	31	1·2	1·6	1·7	1·5	3·1	2·9	2·2	4·6	3·7
Cancer (39–45)	78	80	81	84	74	78	80	84	81	8·8	9·3	9·5	10·0	9·7	9·9	10·0	9·4	9·6
Heart disease (79)	124	135	141	138	148	151	150	146	149	14·1	15·7	16·6	16·3	19·4	19·2	18·7	16·4	17·7
Disease of blood vessels (64, 81–3)	120	134	145	150	143	143	154	149	155	13·6	15·5	17·0	17·7	18·8	18·2	19·2	16·7	18·3
Bronchitis (89, 90)	119	135	132	136	152	143	138	131	149	13·5	15·7	15·5	16·1	19·6	18·2	17·2	14·7	17·7
Pneumonia (91, 92)	31	34	32	35	37	35	36	39	30	3·6	4·0	3·7	4·2	4·9	4·5	4·4	4·3	3·5
Bright's disease (120)	29	29	31	30	29	29	28	27	25	3·3	3·4	3·6	3·6	3·9	3·7	3·5	3·0	3·0
Old age (154)	274	247	234	223	212	215	204	208	208	31·2	28·7	27·4	26·3	27·9	27·4	26·9	22·8	24·7
Other causes	215	192	190	191	181	183	181	179	172	2·43	22·1	22·4	22·5	23·9	23·2	22·6	19·8	20·3
All causes	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	113·6	116·0	117·5	118·2	131·6	127·2	124·7	111·7	118·5
FEMALES.																		
Influenza (10)	11	16	18	16	30	29	22	44	33	1·1	1·6	1·8	1·7	3·5	3·1	2·3	4·1	3·5
Cancer (39–45)	85	87	89	88	78	84	87	94	86	8·4	8·9	9·0	9·2	9·1	9·2	9·0	8·8	9·0
Heart disease (79)	131	140	148	149	147	156	155	159	159	13·0	14·3	14·9	15·5	17·1	17·1	16·1	14·1	16·8
Disease of blood vessels (64, 81–3)	119	129	138	139	134	132	142	146	148	11·8	13·1	13·9	14·5	15·6	14·5	14·8	13·7	15·6
Bronchitis (89, 90)	129	148	142	145	169	157	154	142	163	12·8	15·0	14·3	15·1	19·6	17·2	15·9	13·4	17·1
Pneumonia (91, 92)	31	32	30	34	37	34	33	34	29	3·1	3·2	3·0	3·5	4·3	3·7	3·4	3·2	3·0
Bright's disease (120)	21	23	24	27	25	24	20	18	18	2·1	2·3	2·5	2·8	2·9	2·6	2·2	2·0	1·9
Old age (154)	301	275	260	247	238	241	229	233	233	29·9	28·0	26·2	25·7	27·8	26·4	25·1	21·5	24·5
Other causes	172	150	152	158	145	147	146	142	131	17·0	15·5	15·5	16·1	17·1	16·3	15·2	13·3	13·8
All causes	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	99·2	101·9	100·9	103·8	116·6	109·7	103·8	93·8	105·2
PERSONS.																		
Influenza (10)	11	15	16	15	27	26	20	43	32	1·1	1·6	1·7	1·6	3·3	3·0	2·2	4·3	3·6
Cancer (39–45)	81	84	85	86	76	81	84	89	84	8·6	9·0	9·3	9·3	9·4	9·5	9·4	9·1	9·3
Heart disease (79)	128	138	145	144	147	154	153	149	155	13·4	14·9	15·6	15·8	18·1	18·0	17·2	15·1	17·1
Disease of blood vessels (64, 81–3)	119	131	141	144	138	137	148	147	151	12·5	14·1	15·2	15·8	16·9	16·0	16·6	14·9	16·7
Bronchitis (89, 90)	125	142	137	141	161	151	146	137	157	13·1	15·3	14·8	15·5	19·8	17·7	16·5	13·9	17·3
Pneumonia (91, 92)	31	33	31	34	37	34	36	36	29	3·1	3·5	3·3	3·5	4·6	4·0	3·8	3·7	3·2
Bright's disease (120)	24	26	26	27	25	24	24	23	21	2·6	2·8	2·9	3·1	3·4	3·2	2·8	2·6	2·3
Old age (154)	289	262	248	236	227	229	230	218	222	30·4	28·3	26·8	25·9	27·8	26·8	25·8	22·1	24·6
Other causes	192	169	171	173	162	164	162	159	149	20·1	18·3	18·3	18·9	19·9	19·2	18·3	15·8	16·5
All causes	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	105·1	107·8	107·7	109·7	122·8	117·0	112·4	101·2	110·7

Centenarians.—Among the deaths registered during the year there were 76 of reputed centenarians, 13 of whom were males and 63 females. In the preceding three years the numbers were 88, 73, and 60 respectively. Particulars of the ages returned and of the classes of area concerned are given in Table XLVIII.

TABLE XLVIII.—ENGLAND AND WALES, 1919.—DEATHS OF CENTENARIANS.

	Males.						Females.							
	Age.						Age.							
	100 and over.	100.	101.	102.	103.	106.	100 and over.	100.	101.	102.	103.	104.	105.	106.
London	1	—	—	—	1	—	2	2	—	—	—	—	—	—
County Boroughs	1	1	—	—	—	—	16	6	3	3	1	2	—	1
Other Urban Districts	6	3	1	1	—	1	22	4	6	4	4	2	2	—
Rural Districts	5	4	—	—	1	—	23	14	4	3	1	—	—	1
All areas	13	8	1	1	2	1	63	26	13	10	6	5	2	1

CAUSES OF DEATH.

The causes of death of males and females at 27 groups of ages are stated in the abstracts at pages 142–243 for the whole country, for London, for county boroughs in the aggregate, for other urban districts in the aggregate, and for rural districts in the aggregate; and at pages 244–261 the deaths in these areas are shown by cause but not by age for each quarter of the year. So far as they relate to the whole country these tables include all deaths registered during the year; but naval and military deaths are excluded from all tables relating to portions of the country (see page xi). A condensed table, stating, by ages, the causes of these latter deaths, will be found on page 262. The tables on pages 142–261 include the full International List of Causes of Death with certain sub-divisions introduced for reasons stated in the "Manual of the International List" (page vi). All other abstracts of the causes of death are arranged in the form of the short list of causes adopted by the Registrar-General and the Local Government Board in 1911. The relation of this list to the detailed and condensed International Lists as revised by the International Commission which met for the purpose at Paris, in 1909, is as follows:—

	Corresponding Number.	
Short List of Registrar-General and of Local Government Board.	Detailed International List.	Abridged International List.
1. Enteric fever	1	1
2. Small-pox	5	4
3. Measles	6	5
4. Scarlet fever	7	6
5. Whooping cough	8	7
6. Diphtheria and croup	9	8
7. Influenza	10	9
8. Erysipelas	18	12 in part.
9. Phthisis (pulmonary tuberculosis)	28, 29	13
10. Tuberculous meningitis	30	14
11. Other tuberculous diseases	31–35	15
12. Cancer, malignant disease	39–45	16
13. Rheumatic fever	47	37 in part.
14. Meningitis	61	17
15. Organic heart disease	79	19
16. Bronchitis	89, 90	20, 21
17. Pneumonia (all forms)	91, 92	22, and 23 in part.
18. Other diseases of respiratory organs	86–88, 93–98	23 in part.
19. Diarrhœa and enteritis, ages stated	104, 105	25, and 37 in part.
„ „ ages unstated	104	25
20. Appendicitis and typhlitis	108	26
21. Cirrhosis of liver	113	28
21A. Alcoholism	56	37 in part.
22. Nephritis and Bright's disease	119, 120	29
23. Puerperal fever	137	31
24. Other accidents and diseases of pregnancy and parturition	134–136, 138–141	32
25. Congenital debility and malformation, including premature birth.	150, 151	33
26. Violent deaths, excluding suicide	164–186	35
27. Suicide	155–163	36
28. Other defined diseases	2–4, 11–17, 19–27, 36–38, 46, 48–55, 57–60, 62–78, 80–85, 99–103, 105–107, 109–112, 114–118, 121–133, 142–149, 152–154.	37 plus detailed list Nos. 2–4, 11–17, 19, 64, 65, 102, 103, 109, 128–132, 154; and less detailed list Nos. 47, 56, and, where ages are stated, 105.
29. Diseases ill-defined or unknown	187–189	38

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

On pages 279–405 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 all other administrative areas the deaths are shown on pages 406–504 arranged by sex and short list of causes without distinction of age.

In addition to the above presentations, all of which follow the International List, the deaths and death-rates of the year are shown in Tables 9 and 10 for England and Wales only, and with distinction of sex but not of age, arranged according to the list in use up to 1910. In these tables the figures for each cause in the old list are shown for each of the last 15 years, the series being uninterrupted by the adoption in 1911 of the International List. The method by which this result is secured is described in the "Manual" above referred to (pages vi and xxvi–xxxi). Similar tables (Nos. 14 and 15) state the mortality of infants under one year of age from various causes during the past 15 years in proportion to births.

1. Enteric Fever.—The deaths classified to this heading during 1919 numbered 577, of which 26 occurred amongst the non-civilian population. The resultant mortality, 16 per million living, is by far the lowest ever recorded in this country. To some slight extent the fall is still, as it was to a larger extent during the war, due to absence on foreign service of a large number of males of the ages at which mortality from this cause is highest, but the following table shows how trifling a share in the fall recorded is now attributable to this cause. The excess of the standardized rate for males over the crude rate, which arose in this way, has now almost disappeared.

TABLE XLIX.—ENTERIC FEVER—MORTALITY PER MILLION LIVING, 1901–1919.

	Crude Rates.			Standardized Rates.		
	Males.	Females.	Persons.	Males.	Females.	Persons.
1901–10 (Total Population) ...	109	74	91	109	74	91
1911–14 ,, ,, ...	60	39	49	60	39	49
1915 (Civil Population) ...	43	29	35	46	29	38
1916 ,, ,, ...	37	25	30	41	25	32
1917 ,, ,, ...	33	24	28	44	23	33
1918 ,, ,, ...	29	25	26	35	25	30
1919 (Total Population) ...	18	13	16	19	13	16

Mortality from typhoid fever has now been separately distinguished in our records for the past 51 years, and its gradual fall from 390 deaths per million living in 1869 to 16 in 1919 can be traced in Table 12. The fall was almost continuous down to 1885, after which date it underwent complete arrest until 1900, since when progress has been steady and rapid. But even this remarkable record of a decline in half a century to 4 per cent. of the initial mortality understates the case. In 1869 a death-rate of 239 per million was attributed to 'fever,' without specification of its nature. No doubt these deaths also were largely caused by typhoid fever, but their number has declined still more rapidly than that of those definitely attributed to the disease, and for over ten years past it has been quite negligible. This mortality declined rapidly during the period of arrest in the decline of that attributed to enteric, but as it had been already reduced to very moderate dimensions at the commencement of this period, the arrest would still remain almost complete even if all these doubtful cases were reckoned as enteric.

The death-rate of 1919 is only about one quarter of what it was even ten years ago. Its distribution throughout the country is outlined in Table L.

TABLE L.—ENTERIC FEVER, 1919.—MORTALITY (UNSTANDARDIZED) PER MILLION CIVILIAN POPULATION.

Class of Area.	North.	Midlands.	South.	Wales.	England and Wales.
London	18	—	14	—	14
County Boroughs	18	11	15	8	15
Other Urban Districts ...	23	10	11	27	16
Rural Districts	20	10	16	21	15
All Areas	20	10	14	21	15

The mortality of 1919 was almost the same in all types of area, urban and rural, the excess returned by the smaller towns during the four preceding years having almost disappeared. Before that mortality in the provinces increased with urbanization, but the position of London was specially favourable (Table LI). As regards the different sections of the country the table shows that Wales and the North of England are, as usual, at a disadvantage, but this is much greater than usual for Wales, and less for the North. As in each of the last eight years, mortality was lowest in the Midlands, and next to that in the South. This is the first of the nine years dealt with in which it was not highest in the North. In fact the constancy of distribution which has accompanied the extremely rapid fall in all sections of the country is very noticeable. The movement has been much more parallel in their case than as regards classes of area.

TABLE LI.—ENTERIC FEVER : MORTALITY (UNSTANDARDIZED) PER MILLION (1915–1919 CIVILIANS ONLY) LIVING IN EACH YEAR, 1911–1919.

	Mortality per million living.					Proportion per cent. of mortality in England and Wales.				
Year.	A.—In various classes of area.									
	London.	County Boroughs.	Other Urban Districts.	Rural Districts.	All Areas.	London.	County Boroughs.	Other Urban Districts.	Rural Districts.	All Areas.
1911	32	77	78	55	67	48	115	116	82	100
1912	27	56	48	29	44	61	127	109	66	100
1913	25	51	42	33	41	61	124	102	80	100
1914	33	53	49	38	46	72	115	107	83	100
1915	24	40	40	28	35	69	114	114	80	100
1916	18	31	35	29	30	60	103	117	97	100
1917	25	23	31	30	28	89	82	111	107	100
1918	21	21	33	28	26	81	81	127	108	100
1919	14	15	16	15	15	93	100	107	100	100

	North.	Midlands.	South.	Wales.	England and Wales.	North.	Midlands.	South.	Wales.	England and Wales.
	B.—In sections of the country.									
1911	107	49	39	68	67	160	73	58	101	100
1912	65	31	33	46	44	148	70	75	105	100
1913	63	28	29	42	41	154	68	71	102	100
1914	73	28	36	38	46	159	61	78	83	100
1915	54	23	27	33	35	154	66	77	94	100
1916	46	19	24	32	30	153	63	80	107	100
1917	36	21	23	33	28	129	75	82	118	100
1918	38	18	21	29	26	146	69	81	112	100
1919	20	10	14	21	15	133	67	93	140	100

Table LII, which is founded in part on the returns of notified cases issued as a separate publication (Reports on Public Health and Medical Subjects, No. 2) by the Ministry of Health, shows, when compared with the similar tables in the Reports for 1911–1913, that the decline in mortality is almost entirely due to a decline in the prevalence of the disease. The fatality per 1,000 cases in those years varied from 176 to 194, and in 1919 it was 153

on a similar basis. These rates take non-civilian cases and deaths into account, but exclude cases notified to port sanitary authorities. The rate of 167 in the table excludes both non-civilian and port cases and non-civilian deaths in order to compare with the local rates in the table, in which such cases and deaths cannot be included. The non-civilian fatality rate was only 56 per 1,000 cases. If both port and non-civilian cases and deaths are included, the prevalence for the whole country becomes 106, and the fatality 147. In the first three years of the decade the cases per 100,000 population were 38, 23, and 22 in 1911, 1912, and 1913 respectively. These figures include non-civilian cases, but exclude those notified to port sanitary authorities. On this basis the rate for 1919 is 10·3.

TABLE LII.—ENTERIC FEVER, 1919—PREVALENCE and FATALITY.*

Class of Area.	Cases per 1,000,000 Population.					Deaths per 1,000 Cases.				
	North.	Midlands.	South.	Wales.	England and Wales.	North.	Midlands.	South.	Wales.	England and Wales.
London	—	—	78	—	78	—	—	186	—	186
County Boroughs	82	72	85	55	78	217	154	176	138	192
Other Urban Districts ...	129	87	115	132	111	181	112	99	206	147
Rural Districts ...	117	76	82	121	91	170	126	196	170	161
All Areas... ...	102	79	89	113	92	195	128	158	188	167

* Excluding port cases and non-civilian cases and deaths.

Table LII shows that both prevalence and fatality are lowest in the Midlands, both factors thus contributing to the lowness of the mortality in that section of the country. On the other hand, as between different classes of area it is in the smaller towns, where the cases notified were most numerous, that the case-mortality is lowest.

Table 13 shows that the counties returning the highest mortalities were Brecknock, Monmouth, Pembroke, Westmorland, and Northumberland. As in 1918, the Northumberland outbreak was chiefly centred in Ashington, where 77 out of the 109 cases and 8 out of the 12 deaths occurred. But by far the highest county mortality was returned by Brecknock, where the rural district of Crickhowell, with an estimated population of 6,566, returned 28 cases and 5 deaths. Amongst the county boroughs Dewsbury, Tynemouth, and Exeter returned the highest mortalities. The first of these returned 4 deaths although only 6 cases were notified.

4. **Malaria.**—The number of deaths allocated to this cause has largely increased during the last three years, and in 1919 amounted to 268 as against an average of 59 in 1911–14, and 65, 62, 126, and 197 in the four succeeding years. At first sight these figures may seem alarming, but the fact that of the 268 decedents in 1919 only 4 were women is sufficient evidence that in these fatal cases infection was incurred abroad. This subject was discussed at considerable length in last year's report.

5. **Small-pox.**—The deaths from this cause, 28 in number, were more numerous than in any year since 1905, when 116 were returned. The number of cases notified was 361, the highest since tabulation of these notifications began, in 1911. Four of the deaths and 67 of the cases were of non-civilians, and of the latter 50 were convalescent from illness incurred abroad.

The cases and deaths were widely distributed throughout the country in a number of local centres, many of which were seaports, or connected with ports. Thus amongst the county boroughs there were 19 cases—without a death—in Cardiff; 14 cases and 1 death in Manchester, with 4 cases in Salford; 13 cases and 1 death in Liverpool, with 13 cases, but no deaths, in Bootle, Wallasey, and Birkenhead; 9 cases and 1 death in Croydon; 6 cases and 1 death in Southampton etc.; in all, 92 cases and 7 deaths. Amongst urban districts Gravesend returned 21 cases and 2 deaths, Beccles 18 cases and 1 death, Pontefract 12 cases and 2 deaths, Cowes 9 cases and 1 death, Hartlepool 8 cases and 1 death, Wisbech 7 cases and 1 death, and Bury St. Edmunds 4 cases and 2 deaths. London returned 24 cases and 6 deaths. It will be seen that the large majority of the centres quoted are ports. As might be expected from this evidence of importation most of the deceased were males, 18 out of 18 belonging to that sex.

The case-mortality amongst civilians was 8·2 per cent. Deaths occurred during each quarter of the year, in the following numbers—4, 15, 8, 1.

The vaccinal condition was definitely stated in 18 out of the 28 fatal cases. Of these 12 are returned as unvaccinated, and the remaining 6, of whom only 1 was under 42 years of age, as vaccinated in infancy only. No death of any person revaccinated before the date of infection is recorded. Of the 12 unvaccinated, 5 were under ten years of age, and only 4 were over 25. In 7 of the 10 doubtful cases vaccination was stated to have been performed in infancy, but marks were either absent, or, if present, obscured by rash, so that the statement could not be confirmed. In the remaining 3 cases the vaccinal condition was returned as unknown.

6. **Measles.**—The deaths registered from this cause numbered 3,534 (3,531 of civilians and 3 of non-civilians), against 9,787 in 1918. They correspond to a death-rate of 96 per million total population at all ages. At ages under 15 years, for which comparison is unaffected by the calculation of the rate upon civilian population only during the war, the mortality was 326 per million living at those ages and is by far the lowest ever recorded. Apart from the record of 468 in 1916, the lowest hitherto returned was 704, in 1875 (Table 12).

The distribution of this mortality throughout the country cannot be satisfactorily studied in the absence of estimates of the ages of the people in different localities, for, stated in terms of population at all ages, a low rate may mean either comparative freedom from fatal disease or a small proportion of children in the population, and *vice versa* ; but as the calculation cannot be made, as formerly, on the basis of the child population, it is given in Table LIII in the form of crude death-rates at all ages, and this course has been followed in other similar cases.

TABLE LIII.—MEASLES, 1919.—CIVILIAN MORTALITY per MILLION LIVING AT ALL AGES.

	North.	Midlands.	South.	Wales.	England. and Wales.
London	—	—	81	—	81
County Boroughs	213	102	41	13	152
Other Urban Districts	155	57	39	44	85
Rural Districts	95	30	24	19	42
All Areas	178	65	55	30	98

As in each year since 1912, mortality was higher in the North than elsewhere ; and as in each of the last nine years (for which alone the comparison can be made) and probably many more, it was highest in the great towns. Sometimes the London rate is highest, and sometimes that of the county boroughs, but 1919 provides the only instance out of the nine in which the rates for both London and the county boroughs have not been in excess of those for either the smaller urban or the rural districts.

Table 13 shows that all the administrative counties returning the highest death-rates—Cumberland, Northumberland, Durham, and the North Riding—were in the North. Despite the unprecedentedly low mortality in the country generally, Middlesbrough returned the high rate of 1,604 per million and Rotherham of 1,449. The mortality in Barnsley, which had reached a remarkable level in 1918, remained high at 677 per million.

7. **Scarlet Fever.**—The deaths allocated to this disease during 1919 numbered 1,221 (1,214 of civilians and 7 of non-civilians). The deaths correspond to a rate of 33 per million total population at all ages, and of 101 per million at ages under 15 years.

Table 12 shows that both these rates are the lowest recorded in this country except those of the two preceding years, the mortality being now trifling compared with that prevalent a generation earlier.

TABLE LIV.—SCARLET FEVER, 1919.—CIVILIAN MORTALITY per MILLION LIVING AT ALL AGES.

	North.	Midlands.	South.	Wales.	England and Wales.
London	—	—	34	—	34
County Boroughs	56	30	18	101	46
Other Urban Districts	44	21	11	33	28
Rural Districts	47	14	13	35	24
All Areas	51	22	22	47	34

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Table LIV shows that the mortality in the North and in Wales was more than twice as high as in the Midlands or South. The rate in the North was high, as compared with the rest of the country, in all classes of area, but in Wales the excess was mainly confined to the county boroughs and in them was due entirely to a mortality of 201 in Cardiff (Table 13). The English county boroughs returning the highest rates were West Hartlepool (259) and Birkenhead (209), while amongst the administrative counties Durham for the second year in succession returned the highest rate. The four neighbouring county boroughs which headed the list in 1918, Birkenhead, Bootle, St. Helens, and Liverpool, all again returned high rates in 1919, Birkenhead, first in 1918, coming second in 1919. As pointed out in last year's Report the mortality of these towns has now been specially high for several years.

TABLE LV.—SCARLET FEVER, 1919.—PREVALENCE AND FATALITY.*

| | Cases per 10,000 population. | | | | | Deaths per 1,000 cases. | | | | |
	North.	Mid-lands.	South.	Wales.	England and Wales.	North.	Mid-lands.	South.	Wales.	England and Wales.
London	—	—	30	—	30	—	—	11	—	11
County Boroughs ...	27	22	17	57	26	21	14	11	18	18
Other Urban Districts	24	20	15	26	21	18	10	7	13	13
Rural Districts ...	28	13	13	22	17	17	11	10	15	14
All Areas	26	19	21	31	23	19	12	10	15	15

* Excluding port cases and non-civilian cases and deaths.

Table LV shows that the increase of mortality in 1919 was entirely due to increased prevalence of the disease, the fatality of notified cases having fallen from 20 per 1,000 in the preceding year to 15. But the cases notified increased from 49,637 in 1918 to 82,800 in 1919. While the prevalence of the disease has declined greatly during the nine years for which the numbers of notifications have been published, the fatality per 1,000 cases has remained almost constant, varying only between 15 in 1917 and 1919 and 20 in 1918. Both prevalence and fatality were above the average in each class of area in the North, and were at their lowest in each class in the South. Prevalence increased almost regularly with urbanization, but there was no corresponding relationship for fatality, which was below average (though above the Southern average) in London. Non-civilian fatality fell from 27 in 1917 and 37 in 1918 to 17 per 1,000 cases, but is still above the average for the country, although normally the highest fatality occurs amongst young children.

8. **Whooping Cough.**—The deaths allocated to this heading numbered 2,605—1,145 of males and 1,460 of females. The excess for females is shown by Table 9 to be a constant feature of this disease. The corresponding rates of mortality are 71 per million total population at all ages, and 241 at ages under 15 years.

As in the case of measles these rates are by far the lowest ever yet recorded in this country. No previous year except 1917 has ever returned rates less than twice as great as those of 1919 ; and the lowest of those recorded during the nineteenth century were about four times as high (Table 12).

The distribution of the mortality is shown in the following table.

TABLE LVI.—WHOOPING COUGH, 1919.—CIVILIAN MORTALITY per MILLION LIVING at ALL AGES.

	North.	Midlands.	South.	Wales.	England and Wales.
London	—	—	49	—	49
County Boroughs	70	107	38	113	80
Other Urban Districts	73	59	48	161	72
Rural Districts	72	83	49	107	75
All Areas	71	82	47	135	72

The rates returned are extremely low in all parts of England, but lowest of all in the South. Though considerably higher in Wales they are such even there as would appear very low in any other year.

Contrary to the general rule for this disease the mortality of 1919 did not increase with urbanization, being rather above the average for all classes of area in the rural districts of all parts of England.

Table LVII shows that as usual the proportion of total deaths occurring in the first year of life declined with increasing urbanization.

TABLE LVII.—WHOOPING COUGH, 1919.—DEATHS UNDER ONE YEAR OF AGE per CENT. of those AT ALL AGES.

	North.	Midlands.	South.	Wales.	England. and Wales.
London	—	—	34	—	34
County Boroughs	34	34	45	46	35
Other Urban Districts	37	48	48	43	43
Rural Districts	47	51	41	47	48
All Areas	37	43	40	44	40

The constancy with which this rule applies may be seen from the following comparison between different classes of areas in each of the last nine years.

TABLE LVIII.—WHOOPING COUGH.—DEATHS UNDER ONE YEAR of AGE per CENT. of those at ALL AGES, 1911–1919.

	1911.	1912.	1913.	1914.	1915.	1916.	1917.	1918.	1919.
London	42	45	41	45	42	44	36	30	34
County Boroughs	42	43	44	44	43	41	34	35	35
Other Urban Districts ...	48	50	47	50	45	47	43	38	43
Rural Districts ...	55	54	58	56	50	53	51	42	48

The proportion of infantile deaths to the total has naturally fallen with the decline in the birth-rate, but there is no year in which it is not higher in the rural districts than in the smaller towns, or in these than in the county boroughs. And the same difference was shown in the Report for 1911 to have held good in earlier years between the registration counties classified as mainly rural and as mainly urban respectively.

The cause of this persistent characteristic of the disease is difficult to surmise. It is not shared by measles, the only other infectious disease causing important mortality in the first year of life. And it might have been expected that infants would be less exposed to infection and consequent risk of death in rural districts than elsewhere. But without knowledge of the numbers of cases occurring at different ages it is, of course, impossible to say whether the heavy rural mortality of the first year of life is caused by heavy incidence or high case-mortality. It may be of interest to compare the actual mortalities returned for measles and whooping cough in the four classes of area, as in the following table.

TABLE LIX.—COMPARISON OF MORTALITIES FROM WHOOPING COUGH AND MEASLES AT AGES 0–1 AND 1–2 IN DIFFERENT CLASSES OF AREAS.

| | Rates per million Living. | | | | Rates per cent. of that for England and Wales. | | | |
| | Whooping Cough. | | Measles. | | Whooping Cough. | | Measles. | |
	0–1	1–2	0–1	1–2	0–1	1–2	0–1	1–2
London	1,125	887	860	1,961	62	73	77	92
County Boroughs	1,736	1,466	1,786	3,448	95	121	159	162
Other Urban Districts ...	1,953	1,147	951	1,711	107	95	85	80
Rural Districts... ...	2,120	1,059	462	765	116	88	41	36
England and Wales	1,823	1,208	1,124	2,133	100	100	100	100

It will be seen that at both ages dealt with the provincial mortality from measles decreases rapidly with decreasing urbanization and that the same rule applies, though not to the same extent, to the mortality from whooping cough in the second year of life ; but that in the first year this relationship is inverted for whooping cough, there being a regular increase with decreasing urbanization from London to the rural districts. No stress need be laid on the London figures, which must vary from year to year with the prevalence there of the two diseases, but the provincial figures, which are free from this defect, bring out the point quite clearly.

Amongst the administrative counties returning high death-rates Flint, Monmouth, and Oxford are the most important ; while the highest rates for county boroughs are returned by Stoke on Trent, Dudley, Hull, and Yarmouth.

9. Diphtheria and Croup.—The 4,916 deaths in 1919 from diphtheria and croup, of which all but 33 were allocated to diphtheria, correspond to a death-rate of 134 per million total population. This rate is rather under the recent average ; but mortality from this cause, which declined rapidly during the first decade of this century from the level maintained throughout the later decades of the preceding one, has varied little during the past ten years. The rate for children under 15 years of age was 436 per million, which compares favourably with all but six out of the fifty years covered by Table 12.

TABLE LX.—DIPHTHERIA AND CROUP, 1919.—CIVILIAN MORTALITY per MILLION LIVING AT ALL AGES.

	North.	Midlands.	South.	Wales.	England. and Wales.
London	—	—	178	—	178
County Boroughs	124	140	131	101	129
Other Urban Districts ...	151	128	130	139	137
Rural Districts	155	110	103	134	121
All Areas	137	127	146	130	136

For many years the mortality in the towns has exceeded that in the country, but the difference appears to have been less in 1919 than usual. The distribution of mortality shown in the table is indeed much more uniform than in the case of the other chief infectious diseases of childhood.

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

TABLE LXI.—DIPHTHERIA, 1919.—PREVALENCE AND FATALITY.*

	Cases per 10,000 population.					Deaths per 1,000 cases.				
	North.	Mid-lands.	South.	Wales.	England and Wales.	North.	Mid-lands.	South.	Wales.	England and Wales.
London	—	—	22	—	22	93	—	82	—	82
County Boroughs ...	13	16	18	16	18	95	88	73	62	87
Other Urban Districts	13	16	16	11	14	115	82	81	124	95
Rural Districts ...	14	12	11	11	12	109	92	98	125	101
All Areas ...	13	15	18	12	15	102	86	82	107	91

* Excluding port cases and non-civilian cases and deaths.

There were proportionately fewer cases of the disease notified in the North than in the South of England, but their fatality was higher, 10·2 as against 8·2 per cent. In London on the other hand the high mortality appears to have been entirely due to wide prevalence of the disease, its fatality there being below the average. In both these respects the present table resembles those for each of the years 1911–13 and 1918, for which alone similar tabulation has been carried out. The greater apparent severity of the type of disease prevalent in the North of England may therefore be accepted as a more or less permanent feature, and not dependent upon the absence of information for 1918 and 1919 as to the numbers of children in the populations compared. The question whether it may not be in some degree a result of greater resort to bacteriological means of diagnosis in the South was discussed in the Report for 1911.

Table 13 shows that the administrative counties returning the highest mortalities were the North Riding, which headed the list also in 1918, Lincoln (Kesteven), Denbigh, Cumberland, Anglesey, and Cornwall. The County Boroughs returning the highest rates were, in order, Bolton, Middlesbrough, Liverpool, Nottingham, and St. Helens. The last named appears in this short list for the fifth year in succession, after heading it, with wholly exceptional mortalities, in each of the three preceding years. Liverpool also returned one of the highest rates in 1918. Both of these cities have already been referred to as having now for several years in succession returned conspicuously high mortalities from scarlet fever.

10. Influenza.—The deaths assigned to this cause numbered 44,801—23,198 of males and 21,603 of females. Of the 44,801 deaths 2,945 were those of non-civilians. The mortality amounted to 1,217 per million persons living. The heavy mortality from this cause which occurred during the early part of the year has already been dealt with in a special report.

14. Dysentery.—The deaths allocated to this cause numbered 435—272 of males and 163 of females—but in addition to these the deaths of 7 males and 17 females occurring in lunatic asylums from ulcerative colitis, and classed under the International Rules to 104G. "ulceration of intestines," were presumably of the same nature. Of the 435 deaths classed to dysentery 55 occurred amongst non-civilians. The remainder yield a death-rate of 11 per million civilians, 13 for males and 8 for females. These figures are shown by Table 10 to be normal for females but about twice as high for males as those prevalent before the war, the abnormal mortality due to the war, and dating from 1915, being now on the decline.

Of the 272 deaths of males 115, or 42 per cent., occurred in lunatic asylums, as against 131 out of the 163 deaths of females, or 80 per cent. The asylum deaths are only about one-third for each sex of their number in 1918, when they formed 81 per cent. of the whole, but the deaths of males in hospitals and infirmaries have increased considerably.

15. Plague.—Five deaths were reported, about the same number as in each of the three preceding years. Two, in May and July, occurred in the neighbourhood of Liverpool, and the remaining three, in October and November, at the Port of London Hospital at Strood. Four of the five were Lascar seamen, the last three, who were shipmates, being natives of Bombay. The fifth, who died in July, was a stevedore.

20c. Vaccinia.—Only one death has been assigned to this cause. It was certified as due to gangrenous vaccination and generalised vaccinia. In six other cases, five of which were infants and the sixth a boy of seven, death was ascribed to secondary infection of a vaccination wound ; and, in the absence of any mention of vaccinia, four of these were allocated to 20B. Septicæmia, one to 18. Erysipelas and one to 144A. Phlegmon, in accordance with the certificates.

28–35. Tuberculosis.—The deaths assigned to tuberculous affections in the aggregate numbered 46,312—24,550 of males and 21,762 of females—or 11,761 fewer than those so classified in the previous year. Of these 819 were deaths of non-civilians. The crude mortality amounted to 1,258 per million, a rate considerably below that of any previous year, the lowest hitherto recorded having been 1,352, in 1913 (Table 10). The corresponding standardized rates are 1,261 in 1919 (Table LXIII) and 1,339 in 1913.

This fall has occurred, moreover, notwithstanding the effects of the influenza epidemic in the early part of the year. During the epidemic period, i.e. up to May 10th, 737 deaths were ascribed to tuberculosis and influenza in combination (Supplement to Report for 1918, Table XXVII), but there is reason to believe, as pointed out in last year's Report, that the number of deaths so certified understates the increase in tuberculosis mortality brought about by the epidemic. It is impossible to arrive at any useful conception of the course of tubercle mortality during 1918 and 1919 without an attempt to estimate what this would probably have been in the absence of the violent disturbance caused by influenza. This can best be done by considering the mortality of each quarter of the year separately, for the second quarter of neither year was appreciably affected by influenza, and the other three quarters were affected in very varying degrees.

The material for viewing the records from this point of view is provided by Table LXII, and Diagram II. Deaths of females alone are dealt with, as in previous Reports since the outbreak of war, because the violent and incompletely traced fluctuations in the male population make it impossible to determine a series of reliable and comparable mortality rates for that sex. And if the matter can be judged by pre-war experience— a point open, perhaps, to question—the trend of mortality over a few years can be perfectly well established by the experience of females alone.

TABLE LXII.—ENGLAND AND WALES, 1911–1919.—MORTALITY OF FEMALES FROM TUBERCULOSIS, per MILLION LIVING, in each YEAR and QUARTER, and the PROPORTION in each case to the AVERAGE for the NINE YEARS.

	Tuberculosis, All Forms. (28–35.)					Tuberculosis of the Lungs. (28 and 29.)					Tuberculosis of other Organs. (30–35.)				
	Year.	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.
1911	1,279	1,379	1,310	1,228	1,200	923	1,018	940	844	892	356	361	370	384	308
1912	1,181	1,277	1,225	1,068	1,155	877	979	894	782	853	304	298	331	286	302
1913	1,154	1,282	1,213	1,021	1,105	848	949	883	747	814	306	333	330	274	291
1914	1,164	1,254	1,211	1,052	1,143	882	967	892	777	892	282	287	319	275	251
1915	1,237	1,353	1,318	1,090	1,190	932	1,044	970	794	923	305	309	348	296	267
1916	1,234	1,295	1,360	1,083	1,201	936	985	1,020	799	942	298	310	340	284	259
1917	1,303	1,449	1,469	1,144	1,155	991	1,130	1,088	858	891	312	319	381	286	264
1918	1,373	1,348	1,355	1,234	1,555	1,082	1,038	1,029	968	1,293	291	310	326	266	262
1919	1,109	1,402	1,160	937	945	871	1,132	887	729	741	238	270	273	208	205
1911–1919	1,227	1,338	1,292	1,095	1,184	928	1,027	957	811	917	299	311	335	284	267

Proportion to Nine Years Average, taken as 100.

	Year.	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.
1911	104	103	101	112	101	99	99	98	104	97	119	116	110	135	115
1912	96	95	95	98	98	95	95	93	96	93	102	96	99	101	113
1913	94	96	94	93	93	91	92	92	92	89	102	107	99	96	109
1914	95	94	94	96	97	95	94	93	96	97	94	92	95	97	94
1915	101	101	102	100	101	100	102	101	98	101	102	99	104	104	100
1916	101	97	105	99	101	101	96	107	99	103	100	100	101	100	97
1917	106	108	114	104	98	107	110	114	106	97	104	103	114	101	99
1918	112	101	105	113	131	117	101	108	119	141	97	100	97	94	98
1919	90	105	90	86	80	94	110	93	90	81	80	87	81	73	77
1911–1919	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

The quarterly rates as plotted in the upper portion of the diagram show how the mortality, after reaching a minimum in the years 1912–14, gradually increased during the three following years, but had begun to fall again during the first two quarters of 1918, after which the great epidemic of influenza temporarily arrested the fall, raising the rates for the next three quarters to a very high level. That this super-imposed rise was due merely to the epidemic in question is made very evident by the unprecedentedly low rates which have been since experienced.

The upper portion of the diagram shows the normal seasonal rise and fall of tuberculosis mortality, from a minimum in the third quarter to a maximum in the first or second ; but the seasonal fluctuation somewhat obscures the general trend of the yearly mortality. Yet when this is plotted, as in the lower section of the diagram (continuous line), the evidence of a commencing fall before the onset of the influenza epidemic is entirely obscured. The course of events can therefore best be followed on the curves relating separately to the four quarters of the year. Of these only one, the second, was unaffected by the great epidemic, and it may therefore be taken as most nearly representing the probable behaviour of the yearly mortality if the epidemic had not occurred. After maintaining a minimum for the three years 1912–14 it gradually rises during the next three to a maximum in 1917, and thence falls uninterruptedly to the lowest point yet reached in 1919. The curves for the third and fourth quarters were raised in 1918, when they would presumably otherwise have fallen, like those for the first and second, by the first two influenza waves, the great second wave raising that for the fourth quarter, which is normally below the yearly average, to much the highest point noted in the diagram. The first quarter was affected by the epidemic only in 1919, and its curve therefore rose in that year although it had commenced to fall in the previous one.

We may conclude that the recent trend of tuberculosis mortality can only be profitably studied by disentangling it from the mortality caused amongst the tuberculous population by influenza, but that when this is done it is shown to have reached a maximum in 1917 from which a decline set in during the last year of the war and has developed to a remarkable extent during the first year of peace. It is necessary to lay stress on these

points as in the absence of their consideration the recently experienced tuberculosis mortality has been regarded as ' disappointing.'

There is need for caution in accepting the 10–20 per cent. reduction of the last three quarters' mortality below the nine years average as representing the real trend of affairs in so far as it also may be in part an effect of the influenza epidemic. If influenza increased the death-rate of the preceding three quarters by killing off tuberculous patients who would otherwise have died a little later the great fall which has occurred since the epidemic came to an end may be in part attributable to this earlier removal of persons who would otherwise have died in the quarters of low mortality. But the third section of Table LXII does not support this idea. Both the pulmonary and non-pulmonary forms of the disease

DIAGRAM II.—MORTALITY OF FEMALES FROM TUBERCULOSIS in each QUARTER (1, 2, 3, 4) of the YEARS 1911–19.

Deaths per Million Females.

1911. 1912. 1913. 1914. 1915. 1916. 1917. 1918. 1919.
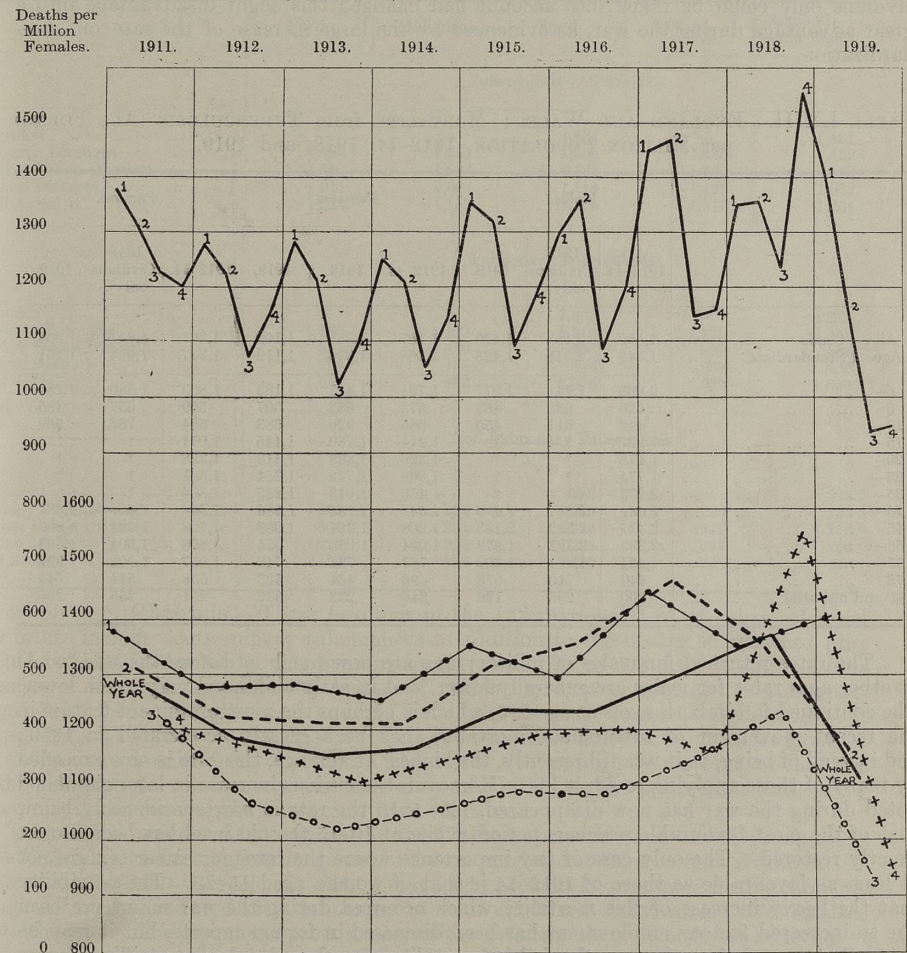
have behaved on the whole very similarly throughout the period dealt with. Both show an initial decline, followed by a rise which reached its maximum (discounting, in the case of the pulmonary form, the results of the influenza epidemic) in 1917, with a further fall since. But there is no evidence that mortality from the non-pulmonary forms of the disease was increased by the epidemic, so the very low non-pulmonary rates recorded for 1919 appear also to be unconnected with it, and they therefore seem to point to a real decline in the destructiveness of tuberculosis as the explanation of the low mortality of the last three quarters of 1919. How that change has arisen, and why the increase of mortality, which earlier experience seemed to connect with the war, should have changed

to decrease while war conditions were at their maximum, are questions suggested by the table to which it cannot provide an answer.

The evidence of decline in 1918 would have been greater than it was but for increase in the mortality returned from lunatic asylums, but a decline in the number of these deaths from 5,605 in 1918 to 3,326 in 1919 (page 265) has materially contributed to the fall in the latter year. The institutional mortality, however, remains very high, for the asylum deaths in 1912–14 numbered only about 1,800 per annum, so it may be hoped that the restoration of normal conditions in these institutions will contribute further to the reduction of the general mortality. Table LXIII analyses the fall in mortality by sex and age, and shows that the crude and standardized rates for both sexes are now practically identical, as those for females have remained throughout. The loss of males at early adult ages has practically removed the disadvantage of the male population of 1912–14 in regard to mortality as compared with the standard population of 1901; just as the much greater loss at these ages when civilians only could be taken into account had changed this slight disadvantage into a great advantage during the war, as evidenced by the large increase of the rate on standardization.

TABLE LXIII.—ENGLAND AND WALES: MORTALITY from TUBERCULOSIS (ALL FORMS) per MILLION POPULATION, 1912–14, 1918, and 1919.

		Males.			Females.			Persons.		
		1912–14.	1918 (Civilians only).	1919.	1912–14.	1918.	1919.	1912–14.	1918 (Civilians only).	1919.
All Ages	Crude	1,569	2,153	1,429	1,167	1,373	1,109	1,361	1,694	1,258
	Standardized	1,546	2,518	1,425	1,168	1,378	1,112	1,347	1,924	1,261
0—		2,063	1,741	1,377	1,701	1,417	1,193	1,883	1,580	1,286
5—		566	632	463	572	682	507	569	657	485
10—		442	611	455	685	920	683	564	766	569
15—		927	?	?	1,214	1,789	1,445	1,071	?	?
20—		1,478	?	?	1,326	1,888	1,518	1,398	?	?
25—		1,774	?	?	1,369	1,723	1,354	1,561	?	?
35—		2,233	?	?	1,405	1,613	1,285	1,804	?	?
15–45		*1,681*	*3,681*	*1,696*	*1,342*	*1,733*	*1,380*	*1,505*	*2,328*	*1,521*
45—		2,437	2,592	2,183	1,208	1,321	1,093	1,798	1,924	1,607
55—		2,283	2,192	1,879	1,004	1,050	935	1,608	1,604	1,393
65—		1,421	1,484	1,300	767	791	740	1,057	1,102	992
75—		649	740	573	496	464	525	558	574	544
85 and upwards		260	295	126	246	233	332	251	255	258

The rates returned for males of military age are now much as before the war, while at other ages rates for males are generally lower, and in early childhood very much lower. The continued fall in both sexes at age 0–5, which is perhaps the most prominent feature in the recent movement of tuberculous mortality, has been greatly accelerated in 1919; and instead of being, as it was till recently, the highest at any age, this rate is now exceeded by many of those applying to adult life. Moreover, the curious increase in later childhood noted during the war has now disappeared. At 5–10 the rate is now considerably below that of the most favourable previous period, while at 10–15 the old level has been almost exactly restored. The only case of any importance where the rates for either sex are not at least as favourable as those of 1912–14 is that of women aged 15–25. The possibility that the heavy increase of this mortality which occurred during the war may have been due to increased factory employment has been discussed in former reports, but it may be noted that even before the war the fall in mortality was shared only to a trifling degree by females of these ages. As a result the age of highest female mortality has moved back, from 25–35 in each decade 1851–90, and 35–45 in 1891–1910, to 20–25 in each year from 1916 onwards, except 1917, when the age-group 15–20 returned the highest rate. The excess, moreover, over the rate at the former maximum age, 35–45, is so considerable as to suggest that it will probably be maintained at least for some considerable time. Whether any corresponding change applies to males can only be determined after a new census has once more provided reliable information as to their ages.

The impossibility at the present time of making proper allowance for variations in the age distribution of the populations compared seriously reduces the value of Table

LXIV and of the mortalities from tuberculosis and phthisis for separate areas in Table 13. As it may be assumed however that the differences shown are to a large though indeterminable extent real ones, these tables are given as representing what can be done by way of local comparison in the absence of fresh census data. It will be seen that except in Wales the mortality shows definite increase with urbanization. This relationship is clearly shown only in the case of the pulmonary disease. There are no very marked geographical variations in the rates, and it is possible that such as do occur may be largely due to variations in the sex and age of the populations compared, but so far as they go the figures point to some excess of phthisis in the South and of non-pulmonary tubercle in the North and Wales. The heavy mortality in the Welsh rural districts is, as always, a notable feature.

TABLE LXIV.—DISTRIBUTION OF MORTALITY from TUBERCULOSIS THROUGHOUT ENGLAND and WALES in 1919. RATES per MILLION CIVILIAN POPULATION.

	North.	Midlands.	South.	Wales.	England and Wales.
	Tuberculosis (All Forms).				
London	—	—	1,451	—	1,451
County Boroughs	1,486	1,352	1,355	1,465	1,429
Other Urban Districts	1,187	1,083	1,163	1,177	1,143
Rural Districts	1,011	1,007	1,114	1,425	1,079
All Areas	1,324	1,152	1,306	1,312	1,264
	Pulmonary Tuberculosis.				
London	—	—	1,223	—	1,223
County Boroughs	1,160	1,113	1,110	1,175	1,140
Other Urban Districts	881	849	938	928	885
Rural Districts	738	769	886	1,088	825
All Areas	1,011	916	1,076	1,027	1,000
	Non-Pulmonary Tuberculosis.				
London	—	—	228	—	228
County Boroughs	326	239	245	290	289
Other Urban Districts	306	234	225	249	258
Rural Districts	273	238	228	337	254
All Areas	313	236	230	285	264

28 and 29, **Phthisis.**—These headings in the International List of causes of death now in use include acute miliary tuberculosis in addition to the deaths so classified prior to 1911. The addition under this heading in 1919 amounts to 678 deaths, and the total contents of the headings to 36,662 deaths, of which 26,141 were returned as pulmonary tuberculosis, 7,381 as "phthisis," and the remainder as acute forms of the disease. In comparison with those for 1918 these numbers show a continuance of the transfer from the less to the more definite form of return. The 36,662 deaths form 79 per cent. of the total deaths allocated to tuberculosis, the mortality amounting to 996 per million total population, or 7·3 per cent. of the death-rate from all causes.

Table LXV repeats so closely for phthisis the features already noted as applying in Table LXIII to tuberculosis in general that no special comment is here required. In this case the fact that the male population taken into account is once more nearly complete at military age has restored the relationship between crude and standardized rates existing before the war. The estimated proportions, of the total numbers of both sexes, living at the ages of high mortality are now rather larger than in 1901, and the crude mortality is reduced accordingly on standardization. As with tuberculosis in general the age of highest mortality for females is now very definitely 20–25. The change, pointed out in last year's Report, from a curve of age distribution of mortality with a single peak at 35–40, as met with up to 1915, through a transition stage of two peaks, at 20–25 and 35–40, in 1916 and 1917, to a simple curve again with one peak only at 20–25 in 1918, has been fully maintained in 1919, notwithstanding the reversion towards normal in the conditions of life for women. It may however be too early to look for any noticeable effect upon the death-rate of this return towards normal, and the influenza epidemic must have contributed in both years towards the change recorded.

TABLE LXV.—ENGLAND AND WALES : MORTALITY from PHTHISIS (28 and 29) per MILLION POPULATION, 1912–14, 1918, and 1919.

	Males.			Females.			Persons.		
	1912–14.	1918 (Civilians only).	1919.	1912–14.	1918.	1919.	1912–14.	1918 (Civilians only).	1919.
All { Crude	1,210	1,717	1,140	869	1,082	871	1,034	1,343	996
Ages { Standardized	1,179	2,077	1,116	849	1,055	842	1,005	1,543	971
0–	339	328	234	290	280	237	315	304	235
5–	142	212	129	191	271	166	166	241	147
10–	191	288	203	420	604	436	306	447	320
15–	724	?	?	1,002	1,509	1,212	864	?	?
20–	1,319	?	?	1,184	1,688	1,341	1,248	?	?
25–	1,639	?	?	1,255	1,574	1,243	1,438	?	?
35–	2,105	?	?	1,290	1,475	1,165	1,683	?	?
15–45	1,530	3,328	1,512	1,204	1,554	1,232	1,361	2,096	1,357
45–	2,305	2,428	2,037	1,104	1,188	978	1,680	1,776	1,478
55–	2,132	2,024	1,728	885	897	798	1,473	1,444	1,249
65–	1,290	1,338	1,150	642	623	581	929	944	838
75–	544	543	458	371	282	328	441	386	380
85 and upwards	188	253	42	183	93	142	184	150	106

30. Tuberculous Meningitis.—Mortality from this form of the disease further declined in 1919, the crude death-rate recorded, 100 per million persons living, being much the lowest yet reached (Table 10). The exclusion of the non-civilian population and deaths during the four years of war spoils comparison for those years, except for females, whose mortality has fallen from 106 in 1918 to 92 per million. Up to 1914 the lowest rate recorded for persons of both sexes was 126, in that year. The decline to 100 now must be partly due to the reduced proportion of young children in the population, but if for this reason the comparison is restricted to the first five years of life, in which over 50 per cent. of all the deaths returned occur, it is found that the low records established in 1918 of 72 and 60 deaths per 100,000 males and females have been further reduced to 64 and 56 respectively. The disease is, for the time being at least, steadily tending towards extinction, and this the more definitely because of similar movement of the mortality ascribed to other forms of meningitis. Table 10 shows that the rates have fallen from 179 per million for tuberculous and 178 for other forms of meningitis in 1905 to 100 and 91 in 1919.

31. Tubercle of the Peritoneum and Intestines.—An equally striking fall has occurred in this case—from 94 per million in 1918, and a minimum till then of 89 in 1912, to 65 in 1919. And here again the movement of the rate for children aged 0–5 shows that the reduction in number of births is not the explanation. The mortality at this age in 1918, 48 per 100,000 for males and 37 for females, which was lower than any previously recorded, has been further reduced to 32 and 27.

Taking all forms of non-pulmonary tuberculosis jointly Table 10 shows a reduction of mortality from 493 per million in 1905 to 338 in 1914 and 279 in 1919, but some part of this must be due to the reduced proportion of children in the population.

36. Rickets.—A still more remarkable reduction in mortality is recorded under this head than in the case of the juvenile forms of tuberculosis. The death-rate has fallen from 22 per million in 1918 to 13. It was 25 in 1914 and 41 in 1905 (Table 10). Males consistently suffer much more than females.

37. Syphilis.—The total mortality returned under this heading, which was raised shortly before and during the war above its previous usual level, has now returned thereto, but the infant mortality is still higher than before 1917, when it underwent a sudden and considerable increase, though it is not so high now, at 1·76, as in that year, when it reached 2·03 per 1,000 births. While the mortality attributed directly to the disease has but fallen to its level of a few years ago, the more comprehensive rate obtained by adding together deaths attributed to syphilis, tabes dorsalis, general paralysis of the insane, and aneurysm shows this year a definite decline, having fallen from 158 per million in 1918, and 162 in 1912—the year before the recent rise in syphilis mortality so returned set in —to 136 in 1919. These figures are of course not put forward as affording any indication

of the total mortality attributable to the disease, but merely as summing up the deaths so returned that all or nearly all of them can be assumed to be due to syphilis.

The greater part of the decline is accounted for by a remarkable fall in the mortality attributed to general paralysis of the insane. Comparison with 1918 is especially unsafe in the case of a disease mainly affecting males, as the comparison must be greatly affected by re-inclusion of ex-service men in the 1919 population ; but the rate of 44 per million compares not only with 56 in 1918, but with rates ranging from 58 to 68 during the ten years before the war (Table 10). Mortality from aneurysm also shows a considerable decline, but that from tabes dorsalis remains about stationary.

39–45. Cancer.—The deaths ascribed to cancer during 1919 number 42,144— 18,723 of males, including 268 non-civilians, and 23,421 of females. For both sexes these numbers are the highest yet recorded.

Of the 42,144 deaths 28,621 were referred to carcinoma, 2,253 to sarcoma, and 11,270 to "cancer," not otherwise defined. This carcinoma figure is the highest, and the "cancer" figure is the lowest recorded in Table 9. The sarcoma returns have been almost stationary for the last few years.

The return of peace has made it possible to take into account once more the whole of the male population actually present in the country in preparing Table LXVI. This has proved the truth of the surmise in previous Reports that the very high mortality shown for males aged 15–45 was an artificial one resulting from the rejection of sufferers as unfit for military service. To get a fair comparison with the years before the war this adventitious increase was eliminated by assuming the continuance of the pre-war rate of mortality of males aged 15–45—an assumption which reduced the standardized total mortality of males in 1918 from 953 to 912. The justice of this assumption is shown by the return with demobilization of male mortality at 15–45 to its pre-war level ; but with one exception all the higher ages show an increase over 1918, so that the standardized total rate has risen sharply from the comparable figure of 912 in 1918 to 943 in 1919. No such general increase in age-group mortalities applies to females, and we find accordingly that although their crude rate has increased appreciably their standardized rate remains, as in 1918, a trifle lower than before the war. The increase in the crude rate must therefore be due to the rapid diminution of the proportion of the young, whose mortality is very slight, in the population. The fall shown in the total rates for persons of both sexes is not a real one, resulting merely, as explained above, from the re-inclusion in the table of the military population of 1918.

TABLE LXVI.—ENGLAND AND WALES : MORTALITY from CANCER per MILLION POPULATION, 1911–14, 1918, and 1919.

	Males.			Females.			Persons.		
	1911–14.	1918 (Civilians only).	1919.	1911–14.	1918.	1919.	1911–14.	1918 (Civilians only).	1919.
All { Crude	934	1,280	1,090	1,134	1,175	1,194	1,037	1,218	1,145
Ages { Standardized... ...	914	953	943	994	986	986	955	969	964
0–	25	23	16	20	16	18	22	19	17
15–	44	?	?	35	30	32	39	?	?
25–	111	?	?	156	139	152	135	?	?
35–	280	?	?	564	526	512	427	?	?
40–	634	?	?	1,136	1,081	1,091	894	?	?
15–45	179	264	178	299	285	292	241	279	241
45–	1,285	1,242	1,305	1,913	1,886	1,913	1,611	1,585	1,631
50–	2,266	2,305	2,373	2,860	2,919	2,659	2,576	2,623	2,522
55–	3,698	3,601	3,731	4,008	3,930	3,962	3,861	3,770	3,850
60–	5,595	5,307	5,630	5,334	5,316	5,404	5,456	5,312	5,513
65–	7,279	7,504	7,855	6,557	6,814	6,720	6,885	7,132	7,238
70–	9,193	8,841	9,746	8,294	7,837	8,081	8,679	8,269	8,328
75–	10,033	10,482	11,152	9,534	9,912	9,746	9,739	10,142	10,313
80–	9,170	9,601	10,638	9,236	9,386	10,150	9,210	9,469	10,337
85 and upwards	8,376	8,590	9,565	9,297	10,360	10,809	8,970	9,729	10,361

The parts of the body affected by fatal cancer in 1919 are shown in Tables LXVII and LXVIII in greater detail than that provided by the international classification, six out of its seven headings (Nos. 39–45) relating to cancer being subdivided according to a scheme approved by the Director of the Cancer Research Fund, at whose request also deaths returned from institutions are separately tabulated.

A few only of the most important sites have been selected for incorporation in Table LXIX, which shows the rates of mortality at different ages from cancer of certain organs, and in Tables LXX and LXXI, which compare the returns of deaths at various ages in private houses with those occurring in institutions. The principal features of all these tables remain very much the same year after year; for instance, the differences between the sexes. The mortality of females from cancer of the upper portion of the alimentary canal, that above the stomach, is a small fraction only of that of males, but females suffer more from intestinal cancer. Disease of the stomach and rectum attacks males principally, but not at all with the overwhelming preponderance applying from the œsophagus upwards. Cancer of the skin is also very much more fatal to males, but the excess is mainly due to disease of the penis and scrotum. The excess of cancer mortality in the female sex is dependent upon disease of the breast and generative organs. If such deaths are excluded in both sexes, deaths of females are reduced from 23,421 to 14,112, but those of males only from 18,723 to 17,820.

TABLE LXVII.—ENGLAND AND WALES, 1919.—SITES OF FATAL CANCER—MALES.

ALL DEATHS.

	All Ages	0–	5–	15–	25–	35–	40–	45–	50–	55–	60–	65–	70–	75–	80–	85–
Total	18,723	42	45	106	266	325	678	1,271	2,086	2,704	3,189	3,215	2,361	1,579	629	227
39 Lip	243	—	—	—	1	2	2	6	16	31	30	31	37	38	26	23
Tongue	1,134	—	—	—	2	2	43	80	171	200	218	179	132	69	35	3
Mouth	507	—	1	1	5	1	14	45	62	84	87	99	52	31	14	10
Jaw	503	1	3	2	8	8	16	36	65	66	96	92	47	39	15	9
Pharynx	224	—	—	—	4	2	7	32	36	51	27	34	20	13	5	3
40 Œsophagus	1,329	—	—	—	7	35	103	190	235	247	240	155	70	35	9	—
Stomach	3,763	—	1	1	44	92	146	290	417	572	651	695	435	308	89	27
Liver and gall bladder	1,933	3	2	3	22	24	66	105	200	288	339	336	277	181	71	16
Mesentery and peritoneum	111	—	—	3	9	3	8	11	15	11	26	9	8	6	1	1
41 Intestines	2,141	—	2	9	23	39	78	125	206	240	393	394	316	218	72	26
Rectum	1,926	—	1	4	23	27	50	109	186	284	341	347	284	184	70	16
43 Breast	28	—	—	—	1	2	—	1	4	2	3	9	—	2	4	—
44 Penis and scrotum	185	—	—	—	—	2	4	9	23	32	30	28	25	20	6	6
Other skin	529	2	3	2	8	7	18	17	35	44	64	62	85	83	63	36
Larynx	519	—	—	3	1	12	24	43	74	84	101	85	54	39	7	1
Lung and pleura	255	—	1	2	14	15	19	32	37	31	40	30	21	10	3	—
Pancreas	337	—	—	2	7	8	21	27	48	43	68	53	31	26	2	1
45 Kidneys and suprarenal glands	171	18	7	2	3	4	7	20	23	24	20	22	7	11	2	1
Bladder	590	1	1	1	4	9	10	16	45	78	88	125	113	60	29	10
Prostate	599	—	—	1	2	1	4	6	27	57	100	128	125	100	34	13
Testes	91	—	—	8	15	15	11	15	8	4	4	8	2	5	3	1
Brain	51	2	3	3	3	5	7	5	7	5	3	3	3	1	—	—
Bones (jaw excepted)	306	5	9	27	20	16	15	31	29	41	35	31	23	16	6	2
Other specified organs	595	7	8	22	29	23	48	56	84	96	73	73	41	24	6	5
Abdominal cavity, organ unspecified	119	1	1	4	5	2	8	6	4	20	12	24	16	11	5	—
Other and undefined	524	1	—	9	7	15	.45	79	81	93	81	52	19	25	8	—

DEATHS IN INSTITUTIONS.

	All Ages	0–	5–	15–	25–	35–	40–	45–	50–	55–	60–	65–	70–	75–	80–	85–
Total	5,768	18	20	58	135	143	303	485	740	897	991	913	573	325	113	54
39 Lip	63	—	—	—	1	—	1	2	1	7	8	9	14	7	5	8
Tongue	469	—	—	—	1	—	20	37	72	83	95	80	51	20	9	1
Mouth	175	1	—	—	2	—	4	18	24	32	27	28	22	9	3	4
Jaw	193	—	1	2	5	3	6	19	22	21	40	31	22	16	4	1
Pharynx	68	—	—	—	3	1	1	12	9	17	12	8	5	—	—	—
40 Œsophagus	437	—	—	1	3	11	36	81	81	90	71	32	14	5	2	—
Stomach	931	—	—	1	20	46	59	101	130	148	161	153	62	36	10	4
Liver and gall bladder	381	1	1	—	10	9	21	28	55	64	59	55	46	23	8	1
Mesentery and peritoneum	38	—	—	3	5	—	4	5	2	1	11	2	3	1	—	—
41 Intestines	704	—	2	6	16	16	37	51	95	90	114	113	67	37	12	7
Rectum	592	—	1	1	10	8	12	39	61	106	123	99	70	46	15	1
43 Breast	9	—	—	—	—	—	1	—	1	—	—	—	—	—	—	—
44 Penis and scrotum	90	—	—	—	—	3	5	10	17	14	16	12	6	12	2	1
Other skin	169	—	—	1	—	4	5	10	9	8	14	22	17	28	23	15
Larynx	195	—	—	1	—	1	14	25	31	36	43	19	7	2	1	—
Lung and pleura	70	—	—	1	7	8	11	12	12	11	7	32	14	5	2	—
Pancreas	143	—	—	—	1	6	6	13	13	21	17	26	23	9	8	—
45 Kidneys and suprarenal glands	70	12	4	1	3	1	2	10	10	9	6	9	—	3	—	—
Bladder	185	—	—	1	1	3	5	9	9	16	38	26	36	25	4	1
Prostate	198	—	—	—	1	—	2	3	13	19	36	40	49	24	7	4
Testes	26	—	—	4	5	3	3	3	3	1	—	2	—	1	—	—
Brain	25	—	2	1	3	3	1	3	2	5	4	1	—	—	—	—
Bones (jaw excepted)	103	3	3	14	7	7	7	10	9	13	11	7	7	6	2	4
Other specified organs	226	1	5	14	17	12	27	26	24	32	21	24	9	11	2	1
Abdominal cavity, organ unspecified	25	—	—	2	3	1	5	—	—	3	3	2	2	3	1	—
Other and undefined	183	—	—	3	5	5	12	36	32	28	27	26	18	6	4	4

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

It cannot be assumed, however, that the institutional deaths are a fair sample of the whole. That they are subject to some selection by age is shown by the fact that the average age at death is lower in institutions than elsewhere.* Moreover, it is very possible that there may be greater relative frequency of cancer of certain sites amongst that section of the population which chiefly furnishes the deaths reported from institutions. The tables, however, are of interest as showing, in institutional and private practice respectively, the chance of fatal cancer at any given age in either sex affecting any particular organ (Table LXX); and the chance of death from cancer of any organ occurring at any given age (Table LXXI). The principal features in these tables also recur with regularity from year to year.

TABLE LXVIII.—ENGLAND AND WALES, 1919.—SITES OF FATAL CANCER—FEMALES.

ALL DEATHS.

	All Ages	0–	5–	15–	25–	35–	40–	45–	50–	55–	60–	65–	70–	75–	80–	85–
Total	23,421	49	48	111	503	764	1,431	2,147	2,535	3,044	3,260	3,188	2,876	2,044	965	456
39 Lip	19	—	—	—	—	1	—	1	2	—	2	—	3	5	2	2
Tongue	107	—	—	—	4	3	7	8	8	18	14	10	11	11	4	8
Mouth	82	—	4	—	3	2	4	8	7	11	9	9	9	2	2	2
Jaw	170	—	1	7	3	5	13	10	20	23	18	25	17	10	9	4
Pharynx	72	—	—	4	6	9	8	9	12	7	5	5	2	1	—	—
40 Œsophagus	376	—	—	7	13	34	36	58	56	46	48	33	26	15	4	—
Stomach	3,315	1	—	7	50	70	124	225	284	405	545	539	526	357	127	55
Liver and gall bladder	2,526	1	—	1	19	43	93	134	180	297	403	455	415	287	145	53
Mesentery and peritoneum	280	—	1	3	7	9	15	25	32	42	36	38	35	27	8	2
41 Intestines	2,865	1	—	5	43	37	90	159	247	381	393	472	471	333	162	71
Rectum	1,472	1	—	5	29	36	66	103	138	171	224	219	225	153	72	30
42 Ovary and fallopian tube	546	1	5	13	30	51	72	81	89	71	40	36	23	14	1	—
Uterus	4,151	—	—	6	114	223	404	573	609	651	535	429	322	189	71	25
Vagina and vulva	303	—	2	—	8	7	16	17	19	32	37	43	46	42	21	11
43 Breast	4,309	—	—	5	87	197	355	530	590	563	502	478	400	322	164	116
44 Skin	416	2	—	3	10	10	12	14	27	24	47	44	63	62	56	42
Larynx	162	—	—	7	12	16	30	22	24	16	12	8	6	7	—	—
Lung and pleura	175	1	2	4	9	9	15	19	21	23	32	20	10	5	4	1
Pancreas	305	—	—	2	9	7	16	25	25	49	54	46	43	19	7	3
Kidneys and suprarenal glands	182	14	10	3	—	6	8	13	16	18	32	27	14	13	3	1
45 Bladder	234	—	1	—	2	4	5	8	13	16	33	33	35	17	10	—
Brain	27	—	1	2	—	4	5	2	3	2	2	3	—	—	—	—
Bones (jaw excepted)	321	9	19	23	11	16	18	32	27	29	36	34	31	24	8	4
Other specified organs	456	12	4	11	22	15	31	49	50	39	71	61	45	28	13	5
Abdominal cavity, organ unspecified	310	1	—	2	5	4	11	20	19	35	54	65	42	24	21	7
Other and undefined	240	2	—	6	8	17	20	21	30	31	33	33	20	7	4	—

DEATHS IN INSTITUTIONS.

	All Ages	0–	5–	15–	25–	35–	40–	45–	50–	55–	60–	65–	70–	75–	80–	85–
Total	4,995	15	18	46	171	236	398	540	604	672	649	602	500	332	135	77
39 Lip	6	—	—	—	—	1	—	—	—	1	—	1	1	1	—	—
Tongue	28	—	—	—	1	1	4	3	1	4	3	—	3	3	1	—
Mouth	13	—	3	—	1	1	—	1	2	—	4	3	2	1	—	—
Jaw	44	—	—	4	1	1	4	2	5	9	8	3	3	1	2	—
Pharynx	18	—	—	—	2	1	1	—	9	12	10	9	2	—	1	—
40 Œsophagus	68	—	—	2	2	6	7	13	12	10	9	3	2	—	1	—
Stomach	546	—	—	4	18	25	38	67	59	78	82	66	48	49	6	6
Liver and gall bladder	352	—	—	6	8	19	22	35	54	61	64	40	31	8	4	—
Mesentery and peritoneum	48	—	1	—	1	2	4	8	6	4	7	6	2	—	—	—
41 Intestines	700	—	2	2	12	13	33	57	84	116	102	112	88	44	14	14
Rectum	410	—	—	2	12	18	30	41	50	50	46	57	53	37	9	5
42 Ovary and fallopian tube	181	1	2	9	10	11	21	27	25	28	25	9	7	4	—	—
Uterus	1,011	—	—	3	35	76	112	143	149	137	123	94	76	42	18	3
Vagina and vulva	80	—	—	1	1	—	7	2	5	12	11	6	13	11	3	3
43 Breast	804	—	—	—	20	35	66	85	113	95	82	88	92	63	38	27
44 Skin	115	—	1	—	2	2	—	3	7	4	9	13	23	18	18	10
Larynx	37	—	—	3	7	8	5	7	2	2	2	1	—	—	—	—
Lung and pleura	42	—	1	4	2	3	7	6	1	5	7	3	2	—	1	—
Pancreas	97	—	—	1	5	4	9	14	6	19	16	13	6	3	—	1
Kidneys and suprarenal glands	51	6	4	1	1	4	2	5	6	5	6	4	2	—	—	—
45 Bladder	51	—	—	—	—	1	1	4	3	5	6	12	6	5	4	2
Brain	16	—	2	2	3	4	1	1	2	—	—	1	—	—	—	—
Bones (jaw excepted)	74	3	6	4	7	4	12	7	3	7	7	2	7	2	2	1
Other specified organs	104	3	2	4	5	12	16	12	10	17	13	3	4	—	3	—
Abdominal cavity, organ unspecified	44	—	—	1	1	3	7	4	5	3	10	5	2	3	—	—
Other and undefined	51	—	—	2	—	5	2	2	4	8	8	3	2	5	1	—

* In 1919 the proportion of deaths at each age-period, per 1,000 at all ages, was in excess for institutional deaths up to age 65 for males and 60 for females, and for other deaths at all higher ages. (Table LXXI.)

Table LXIX.—England and Wales, 1919.—Mortality per Million Population at several Ages from Cancer of various Parts of the Body.

—		All Ages	0–	25–	35–	40–	45–	50–	55–	60–	65–	70–	75–	80–	85–
Tongue	M.	66	4*	?	?	?	82	195	276	385	436	484	487	592	126
	F.	5	7	—	2	5	7	8	23	23	21	31	67	84	47
Œsophagus	M.	77	3*	?	?	?	106	216	324	436	585	568	494	592	379
	F.	19	—	?	2	9	26	32	61	73	76	101	93	124	95
Stomach	M.	219	22*	?	15	47	95	298	474	789	1,149	1,694	1,594	2,140	1,505
	F.	169	1	?	?	?	201	298	527	903	1,136	1,478	1,702	1,336	1,304
Liver and gall bladder	M.	113	9*	0	6	29	71	108	228	397	598	819	1,015	1,278	1,201
	F.	129	0	?	?	?	119	189	387	668	959	1,166	1,368	1,525	1,683
Intestines	M.	125	12*	1	13	25	69	128	234	331	694	960	1,158	1,540	1,218
	F.	146	1	?	?	?	142	259	496	651	995	1,323	1,588	1,704	1,683
Rectum	M.	112	8*	?	9	24	50	112	212	392	602	846	1,040	1,299	1,184
	F	75	1	?	?	?	92	145	223	371	462	632	730	757	711
Uterus	M.														
	F.	212	1	34	149	308	511	639	847	887	904	905	901	747	593
Breast	M.	2	0*	?	?	?	?	5	3	5	22			14	
	F.	220	1	26	132	271	472	619	733	832	1,008	1,124	1,535	1,725	2,750
Skin	M.	42	4*	?	3	7	9	27	66	105	166	219	727	747	1,770
	F.	21	1	?	?	?	12	28	31	78	93	177	296	589	996

* Age-group 0–45 years.

Table LXX.—England and Wales, 1919.—Sites of Fatal Cancer: Percentage of Deaths at Various Ages to Total Deaths from Cancer at the same Ages.

—	0– Instn.	0– Private.	25– Instn.	25– Private.	35– Instn.	35– Private.	45– Instn.	45– Private.	55– Instn.	55– Private.	65– Instn.	65– Private.	75– Instn.	75– Private.	85– Instn.	85– Private.	All Ages Instn.	All Ages Private.
Males.																		
Tongue	—	—	0·7	1·5	4·7	4·3	8·9	6·7	9·4	6·0	8·8	4·4	6·6	4·2	1·9	1·2	8·1	5·1
Œsophagus	—	—	1·5	1·5	5·4	3·2	9·6	9·1	7·8	6·9	4·3	4·9	3·7	4·0	7·6	6·9		
Stomach	1·0	1·0	14·8	18·3	23·5	23·9	18·9	22·3	16·4	22·8	14·5	22·4	10·5	19·5	7·4	13·3	16·1	21·9
Liver and gall bladder	2·1	6·5	7·4	9·2	6·7	10·8	6·8	10·4	6·5	12·6	6·8	12·5	7·1	12·5	1·9	8·7	6·6	12·0
Intestines	8·3	3·1	11·9	5·3	11·9	11·5	11·9	8·7	12·3	10·0	12·9	12·7	11·2	13·6	13·0	11·0	12·2	11·1
Rectum	2·1	6·2	7·4	9·9	4·5	10·2	8·2	9·1	12·1	9·9	11·4	11·3	13·9	10·9	1·9	8·7	10·3	10·3
Skin	1·0	6·2	3·0	3·1	4·0	2·3	2·6	2·4	3·5	2·6	4·9	3·1	11·6	6·8	24·1	16·8	4·5	3·5
Other organs	85·5	80·4	54·8	51·2	39·3	33·8	33·1	32·1	30·7	28·3	33·8	26·5	34·8	27·6	46·1	36·3	34·6	29·2
All sites	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0
Females.																		
Œsophagus	—	—	1·2	1·5	1·3	2·5	1·7	2·1	1·7	1·6	1·1	1·4	0·9	1·5	—	—	1·1	1·7
Stomach	5·1	3·1	10·5	9·6	9·9	8·4	11·0	10·8	12·1	15·9	10·3	19·2	11·8	16·9	7·0	11·8		
Liver and gall bladder	—	1·6	3·5	3·9	4·3	7·0	5·0	7·3	7·5	11·7	9·4	18·1	15·0	15·5	5·2	12·9	7·0	11·8
Intestines	2·5	3·1	12·3	6·6	7·3	5·2	12·3	8·0	16·5	11·2	18·6	10·0	6·7	9·9	9·9	7·0	8·2	5·8
Rectum	2·5	3·1	7·0	8·5	4·2	7·8	5·5	6·0	9·7	7·3	15·4	18·6	16·3	14·1	21·6	15·1	20·2	11·1
Uterus	3·8	2·3	20·5	28·8	29·7	28·1	25·5	25·2	19·7	13·4	17·8	13·9	10·9	7·7	3·2	24·1	16·1	19·0
Breast		3·9	11·7	20·2	15·9	28·9	17·3	26·1	13·4	17·8	16·3	14·1	21·6	35·1	23·5	10·3	8·4	2·3	1·6
Skin	3·8	1·6	1·2	2·4	0·8	0·3	1·0	0·9	1·0	1·2	3·3	1·4	7·7	3·2	16·8	8·4	2·3	1·6
Other organs	82·3	81·3	32·1	26·9	23·2	15·3	18·3	15·9	19·6	16·0	16·1	15·1	14·5	15·7	10·3	13·8	19·9	16·4
All sites	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0

Table LXXI.—England and Wales, 1919.—Sites of Fatal Cancer: Percentage of Deaths at various Ages to Deaths from Cancer of the same Site at all Ages.

		0–	25–	35–	45–	55–	65–	75–	85–	All Ages.
Males.										
Tongue	Instn.	—	—	4·5	23·2	38·0	27·9	6·2	0·2	100·0
	Private	—	0·3	3·6	21·4	36·0	27·1	11·3	0·3	100·0
Œsophagus	Instn.	—	0·2	5·5	26·8	39·1	23·6	4·3	0·5	100·0
	Private	—	0·2	2·0	19·7	35·0	32·7	9·6	0·8	100·0
Stomach	Instn.	0·1	2·1	11·3	24·8	33·3	23·1	4·9	0·4	100·0
	Private	0·0	0·8	4·7	16·8	32·3	32·4	12·2	0·8	100·0
Liver and gall bladder	Instn.	0·5	2·6	7·9	21·8	32·3	26·5	8·1	0·3	100·0
	Private	0·4	0·8	3·9	14·3	32·5	32·9	14·2	1·0	100·0
Intestines	Instn.	1·1	2·3	7·5	20·7	33·1	27·3	7·0	1·0	100·0
	Private	0·2	0·5	4·5	12·9	27·8	36·0	16·8	1·3	100·0
Rectum	Instn.	0·3	1·7	3·4	16·9	38·7	28·5	10·3	0·2	100·0
	Private	0·2	1·0	4·3	14·6	29·7	34·6	14·5	1·1	100·0
Skin	Instn.	0·4	1·5	6·9	12·4	25·9	28·2	19·7	5·0	100·0
	Private	1·3	0·9	2·9	11·4	22·6	27·9	26·6	6·4	100·0
Other organs	Instn.	4·1	3·7	8·8	20·4	28·9	25·2	7·6	1·3	100·0
	Private	2·1	1·8	5·0	18·1	29·9	28·5	12·9	1·7	100·0
All sites	Instn.	1·7	2·3	7·7	21·2	32·8	25·8	7·6	0·9	100·0
	Private	0·7	1·0	4·3	16·5	30·9	31·6	13·7	1·3	100·0
Females.										
Œsophagus	Instn.	—	2·9	11·8	29·4	32·4	17·6	5·9	—	100·0
	Private	—	1·6	12·7	24·0	26·0	22·4	12·0	1·3	100·0
Stomach	Instn.	0·7	3·3	11·5	23·1	29·3	20·9	10·1	1·1	100·0
	Private	0·1	1·2	4·7	13·8	28·5	34·4	15·5	1·8	100·0
Liver and gall bladder	Instn.	—	1·7	7·7	16·2	32·7	29·5	11·1	1·1	100·0
	Private	0·1	0·6	5·0	11·8	26·9	35·2	18·1	2·3	100·0
Intestines	Instn.	0·3	3·0	6·6	20·1	31·1	28·6	8·3	2·0	100·0
	Private	0·2	1·0	3·7	12·2	25·7	34·4	20·2	2·6	100·0
Rectum	Instn.	0·5	2·9	11·7	22·2	23·4	26·9	11·2	1·2	100·0
	Private	0·4	1·6	5·1	14·1	28·1	31·4	16·9	2·4	100·0
Uterus	Instn.	0·3	3·5	18·6	28·9	25·7	16·8	5·9	0·3	100·0
	Private	0·1	2·5	14·0	28·3	29·5	18·5	6·4	0·7	100·0
Breast	Instn.	—	2·5	12·6	24·5	22·0	22·4	12·6	3·4	100·0
	Private	0·1	1·9	12·9	26·4	25·3	19·9	11·0	2·5	100·0
Skin	Instn.	2·6	1·7	4·3	8·7	11·3	31·4	31·3	8·7	100·0
	Private	0·7	2·7	5·6	10·3	19·3	23·6	27·2	10·6	100·0
Other organs	Instn.	6·6	5·6	15·0	21·1	26·2	17·8	6·9	0·8	100·0
	Private	3·5	3·0	8·0	18·9	26·6	25·0	13·3	1·7	100·0
All sites	Instn.	1·6	3·4	12·7	22·9	26·5	22·1	9·3	1·5	100·0
	Private	0·7	1·8	8·5	19·2	27·0	26·9	13·8	2·1	100·0

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

The table includes 2,117 deaths, of which 975 were returned as due to tumours of non-malignant nature, and 1,142 as due to tumours the nature of which had not been ascertained. It will be seen that even if all the latter could be assumed to have been malignant the mortality from cancer would be increased by less than 3 per cent. Of these 1,142 cases of undetermined nature no less than 783 were cerebral tumours, respecting which in the majority of cases, even in institutional practice, no further information can be furnished in response to inquiry as to their nature.

TABLE LXXII.—ENGLAND AND WALES, 1919.—TUMOURS NOT RETURNED AS MALIGNANT.

Part affected.	All Ages M	All Ages F	0– M	0– F	15– M	15– F	35– M	35– F	45– M	45– F	55– M	55– F	65– M	65– F	75– M	75– F
Tumours classed with other disease of organ affected.																
74C. Cerebral tumour — Cyst	3	8	1	3	—	5	1	—	—	1	—	—	2	3	2	1
Glioma	52	49	8	7	10	16	5	9	17	7	8	6	2	—	2	1
Other benign	1	1	—	—	—	1	—	—	1	—	1	1	—	—	—	—
Nature unstated	410	373	67	33	81	100	79	69	84	78	72	53	25	30	2	10
Total (74C)	**466**	**434**	**76**	**43**	**91**	**122**	**85**	**78**	**102**	**85**	**81**	**60**	**27**	**34**	**4**	**12**
129. Uterine tumour — Fibroid	—	242	—	—	—	14	—	78	—	78	—	28	—	21	—	23
Fibro-myoma	—	26	—	—	—	2	—	9	—	9	—	3	—	3	—	—
Myoma	—	18	—	—	—	—	—	8	—	5	—	3	—	2	—	—
Polypus	—	15	—	—	—	1	—	5	—	5	—	3	—	1	—	2
Other benign	—	5	—	—	—	—	—	1	—	1	—	2	—	1	—	—
Nature unstated	—	7	—	—	—	—	—	1	—	2	—	—	—	2	—	2
Total (129)	—	**313**	—	—	—	**17**	—	**102**	—	**100**	—	**37**	—	**30**	—	**27**
131. Ovarian tumour — Cyst	—	216	—	1	—	27	—	31	—	48	—	36	—	39	—	34
Cyst-adenoma	—	3	—	—	—	1	—	—	—	1	—	2	—	—	—	—
Papilloma	—	6	—	—	—	—	—	2	—	1	—	—	—	2	—	2
Other benign	—	11	—	—	—	—	—	2	—	2	—	3	—	2	—	6
Nature unstated	—	37	—	—	—	—	—	6	—	8	—	10	—	7	—	—
Total (131)	—	**273**	—	**1**	—	**28**	—	**41**	—	**60**	—	**53**	—	**48**	—	**42**
In 63. Spinal cord — Glioma	1	—	—	—	1	—	—	—	—	—	1	—	—	—	—	—
Other benign	2	—	—	—	1	—	—	—	—	—	—	—	1	—	—	—
Nature unstated	2	1	—	—	1	—	1	—	—	—	—	1	—	—	—	—
„ 75. Eye — Glioma	8	10	1	1	—	3	1	2	1	5	1	—	4	—	—	—
Nature unstated	1	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—
„ 76. Ear — Polypus	2	1	—	—	2	—	—	—	—	—	—	—	—	1	—	—
Other benign	1	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—
„ 86. Nose — Polypus	1	6	—	—	1	1	—	2	—	2	1	—	1	—	—	—
Other benign	1	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—
Nature unstated	—	1	—	—	—	1	—	—	—	—	—	—	—	—	—	—
„ 87. Larynx — Papilloma	4	1	1	—	6	1	—	—	—	—	—	—	2	—	—	1
Nature unstated	6	1	—	—	1	1	3	—	1	—	—	1	1	—	1	—
„ 88. Thyroid — Adenoma	1	6	—	—	—	1	1	—	—	2	—	—	—	1	—	1
Cyst	1	3	—	—	—	—	—	—	—	—	—	2	—	1	—	—
Nature unstated	2	2	—	—	—	1	1	—	1	1	—	—	—	—	—	—
„ 98. Lung — Non-malignant	13	3	—	—	—	3	—	4	—	2	3	2	3	1	—	—
„ 101. Œsophagus — Nature unstated	4	—	—	—	—	—	3	—	—	—	—	1	—	—	—	—
„ 110. Intestine — Adenoma	1	2	—	—	—	—	—	—	1	—	—	1	—	1	—	—
Papilloma or villous	2	—	—	—	—	—	2	—	—	—	—	—	—	—	—	—
Other benign	3	3	1	—	—	—	—	—	—	—	—	1	1	1	1	—
Nature unstated	11	14	—	1	1	1	—	—	—	3	—	4	5	5	5	4
„ 115. Liver — Cyst	1	2	—	1	—	1	1	—	—	—	—	—	—	—	—	—
Other benign	1	3	—	—	—	—	—	—	—	—	—	1	—	1	—	—
Nature unstated	4	9	—	—	1	—	—	—	3	1	2	2	3	3	1	—
„ 116. Spleen — Non-malignant	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—
„ 118. Pancreas — Cyst	1	4	—	—	—	1	1	—	—	—	—	2	—	1	—	—
Nature unstated	3	5	—	—	—	1	1	—	—	—	—	1	—	—	—	2
„ 122. Kidney — Cyst	3	—	—	—	—	—	—	—	—	—	2	—	1	—	—	—
Other benign	1	2	—	—	—	—	—	—	—	—	—	2	—	—	1	3
Nature unstated	3	6	—	—	—	1	1	—	1	—	1	2	—	2	—	3
„ 124. Bladder — Papilloma or villous	87	25	—	—	1	—	7	—	13	1	20	5	28	6	18	13
Polypus	2	1	—	—	—	—	—	—	—	—	—	—	—	1	—	—
Other benign	4	—	—	—	—	—	1	—	—	1	—	—	2	—	3	—
Nature unstated	12	4	—	—	—	1	—	—	6	—	16	—	29	—	17	—
„ 126. Prostate — Adenoma	64	—	—	—	—	—	—	—	2	—	16	—	29	—	17	—
Fibro-adenoma	3	—	—	—	—	—	—	—	—	—	2	—	1	—	—	—
Other benign	2	—	—	—	—	—	—	—	1	—	—	—	1	—	—	—
Nature unstated	5	—	—	—	—	—	—	—	1	—	—	—	3	—	1	—
Other sites — Non-malignant	8	17	—	1	3	4	—	1	1	2	1	4	3	4	1	2
Nature unstated	7	7	—	1	—	1	—	4	2	—	1	3	—	—	1	2
Total	**284**	**153**	**9**	**9**	**17**	**15**	**20**	**12**	**37**	**13**	**64**	**31**	**85**	**40**	**52**	**33**
Tumours not classed with other disease or part of body affected.																
46. Pituitary body — Non-malignant	2	—	—	—	1	—	1	—	—	—	—	—	—	—	—	—
Mediastinum — Non-malignant	2	5	—	—	1	2	1	2	—	—	—	—	—	—	—	1
Nature unstated	50	26	2	2	3	1	8	2	12	4	15	11	7	5	3	1
Abdomen — Non-malignant	3	2	—	—	1	—	1	—	—	—	—	2	—	—	—	—
Nature unstated	20	49	—	1	—	3	2	4	3	7	—	6	5	3	14	15
Other ill-defined sites — Non-malignant	3	4	1	1	1	—	—	—	—	—	—	1	6	2	1	—
Nature unstated	12	4	1	—	1	—	—	—	2	—	1	—	—	2	1	—
Site not stated — Adenoma	1	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—
Angioma	—	1	—	—	—	1	—	—	—	—	—	—	—	—	—	—
Other benign	—	3	—	—	—	1	—	1	—	1	—	—	—	—	—	—
Nature unstated	2	4	—	—	—	—	1	1	1	1	2	1	—	1	—	—
Total (46)	**96**	**98**	**5**	**4**	**6**	**14**	**8**	**14**			**25**	**20**	**18**	**24**	**10**	**20**
Total, all tumours	**846**	**1,271**	**90**	**57**	**114**	**188**	**119**	**241**	**157**	**274**	**170**	**201**	**130**	**176**	**66**	**134**
„ benign tumours	270	705	17	20	24	76	20	151	42	166	53	106	68	97	46	89
„ nature unstated	576	566	73	37	90	112	99	90	115	108	117	95	62	79	20	45

The age-distribution of the deaths from tumour of unstated nature is sufficient in itself to show that a great many of them were non-malignant, for it does not at all resemble that of cancer mortality. A large proportion of the deaths from cerebral tumour occur before middle age, so it seems probable that these at least are very largely of a non-malignant nature. But out of the 359 tumours of undetermined nature affecting organs other than the brain almost 80 per cent. occurred at ages over 45 years as against about 90 per cent. for cancer and 68 per cent. for benign tumours, so a large proportion of these tumours may have been malignant.

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

56. Alcoholism.—This heading in the International List of causes of death excludes organic disease attributed to alcoholism, therein differing from the " alcoholism, delirium tremens " of the list in use prior to 1911. The effect of the change may be gathered from comparison of the number of deaths (115) from alcoholism in the new list on page 148 with that (384) of deaths referred to the same heading in the old list in Table 9.

In order that this change in classification might not lessen the information afforded with regard to mortality from over indulgence in alcohol, all the death certificates in which any mention of alcohol appears have been assembled in Table LXXIII. These deaths make up a total of 466, or only 82 in excess of the 384 referable to the old heading, the difference being accounted for mainly by causes of death formerly selected in preference to alcoholism when recorded in conjunction with it. 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, 97; violence, 70; organic heart disease, 47; lobar pneumonia, 18; influenza, bronchitis, and Bright's disease, 12 each.

TABLE LXXIII.—ENGLAND AND WALES, 1919.—DEATHS FROM OR CONNECTED WITH ALCOHOLISM.

	All Ages M	All Ages F	Under 25 M	Under 25 F	25– M	25– F	35– M	35– F	45– M	45– F	55– M	55– F	65– M	65– F	75– M	75– F
56. Deaths attributed directly to alcoholism	88	27	—	—	5	6	28	8	34	9	17	3	4	1	—	—
Deaths of which alcoholism was recorded as a secondary cause :																
10. Influenza	9	3	—	—	1	—	4	2	1	1	1	—	2	—	—	—
28, 29. Phthisis	4	1	—	—	1	—	1	—	1	1	1	—	—	—	—	—
37, 38. Venereal diseases	1	1	—	—	—	—	—	—	1	1	—	—	—	—	—	—
39–45. Cancer	1	2	—	—	—	—	—	1	—	—	1	—	—	1	—	—
47. Rheumatic fever	2	—	—	—	—	—	1	—	1	—	—	—	—	—	—	—
Other general diseases	4	—	—	—	1	—	1	—	2	—	1	—	—	—	—	—
64. Cerebral hæmorrhage, apoplexy	6	3	—	—	—	1	2	—	3	1	1	1	—	—	—	—
65. Softening of brain	2	—	—	—	—	—	1	—	1	—	—	—	—	—	—	—
69. Epilepsy	1	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—
73B. Neuritis	3	4	—	—	1	—	—	2	—	2	2	—	—	—	—	—
Other diseases of nervous system	4	1	—	—	1	—	1	1	1	—	—	—	1	—	—	—
79A. Valvular disease of the heart	8	2	—	—	1	—	2	—	2	—	2	2	1	—	—	—
79B. Fatty degeneration of the heart	7	9	—	—	2	—	3	2	1	2	1	2	—	1	—	—
79C. Other organic disease of the heart	19	2	—	—	1	—	6	1	8	—	4	1	—	—	—	—
81. Diseases of the arteries, atheroma, aneurysm, etc.	5	—	—	—	—	—	2	—	2	—	1	—	—	—	—	—
89, 90. Bronchitis	10	2	—	—	—	—	4	—	1	1	2	1	1	3	—	—
91. Broncho-pneumonia	1	3	—	—	—	—	1	—	—	—	—	—	—	—	—	—
92A. Lobar pneumonia	18	—	—	—	3	—	8	—	5	—	2	—	—	—	—	—
93. Pleurisy	2	—	—	—	—	—	1	—	1	—	—	—	—	—	—	—
98A. Fibroid disease of lung	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other diseases of respiratory system	5	—	—	—	—	—	2	—	2	—	1	—	—	—	—	—
103. Diseases of stomach (not ulcer)	4	—	—	—	—	—	2	—	—	—	1	—	—	—	—	—
104, 105. Diarrhœa and enteritis	2	1	—	—	—	—	1	—	—	1	—	—	1	—	—	—
108. Appendicitis	—	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—
113B. Cirrhosis of the liver	69	28	—	—	—	—	11	6	29	7	18	7	9	6	1	2
Other diseases of digestive system	4	—	—	—	—	—	3	—	1	—	—	—	—	—	—	—
119, 120. Acute nephritis, Bright's disease	10	2	—	—	—	—	3	—	5	1	1	1	—	—	—	—
124. Diseases of the bladder	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—
127. Non-venereal diseases of the male genital organs	1	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—
136. Other accidents of childbirth	—	1	—	—	—	1	—	—	—	—	—	—	—	—	—	—
143. Carbuncle, boil	1	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—
144. Phlegmon, acute abscess	2	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—
155–163. Suicide	5	1	—	—	1	—	4	1	—	—	—	—	—	—	—	—
169. Accidental drowning	7	1	—	—	2	—	2	—	2	1	1	—	—	—	—	—
172. Injury by fall	15	7	2	—	2	—	2	1	1	2	4	3	2	1	—	—
175. Injury by crushing (vehicles, railways, etc.)	7	1	1	—	1	1	2	—	3	—	—	—	—	—	—	—
Other violence	20	3	1	—	4	2	3	1	2	—	5	—	1	—	—	—
Total	**354**	**112**	**6**	**—**	**23**	**13**	**73**	**25**	**117**	**31**	**84**	**23**	**43**	**18**	**8**	**2**

All the figures so far quoted form but a small fraction of the corresponding numbers prevalent before the war. Thus the total deaths shown in Table 9 have fallen from 1,969 in 1914 to 384 in 1919, and the deaths of females from 819 to 96. Although the number of deaths has increased from 339 in 1918 to 384 in 1919, this increase is confined to males, and is only proportionate to the increased number of males due to demobilization. For each sex the mortality remains the same as in the preceding year. (Table 10.)

Table LXXIV shows how general has been the decline in the association of alcohol with disease in death certification. The decline in the number of such certificates from those received before the war ranges from 64 per cent. in the case of violence associated with alcoholism to 93 per cent. in that of neuritis with alcoholism. The return of deaths under this cause has always been notoriously unreliable and incomplete, owing to the reluctance of practitioners to mention on an open certificate the alcoholic origin of the pathological conditions met with in such cases, but such considerations as these have a very constant effect from year to year upon the statistics of the whole community, as may be seen from the comparative steadiness of the death-rate from alcoholism in Table 10 prior to 1915. The one important factor in the situation which has obviously changed since then has been the supply of alcohol, and when the recorded death-rate has fallen enormously in conjunction with drastic restriction of the supply it is difficult to avoid associating the two phenomena as cause and effect.

TABLE LXXIV.—ENGLAND and WALES.—DEATHS in each year 1915–1919 from the CAUSES principally associated in certification with ALCOHOLISM per CENT. of the corresponding average NUMBERS so associated in 1911–14.

Cause of Death.	Males.					Females.					Both Sexes.				
	1915.	1916.	1917.	1918.	1919.	1915.	1916.	1917.	1918.	1919.	1915.	1916.	1917.	1918.	1919.
56. Deaths attributed directly to alcoholism...	72	58	30	15	22	88	52	36	9	12	78	56	33	13	18
64. Cerebral hemorrhage, apoplexy ...	94	57	49	17	17	73	41	10	12	7	83	49	28	14	12
73B. Neuritis	88	27	35	15	12	70	37	20	4	6	75	34	24	7	7
79. Organic heart disease	74	50	38	19	35	103	49	45	8	18	86	49	40	14	28
89, 90. Bronchitis ...	132	105	73	41	45	115	85	23	15	15	129	100	56	32	35
92A. Lobar Pneumonia ...	78	49	35	23	16	87	50	47	20	—	80	49	38	22	13
113B. Cirrhosis of the Liver ...	103	86	57	37	45	109	77	47	23	19	106	82	52	30	32
120. Bright's disease ...	91	56	21	12	29	76	41	29	3	6	84	49	25	7	18
155–186. Violence ...	93	67	36	22	39	117	65	38	23	27	99	66	36	22	36
Other causes	88	61	31	33	31	97	60	40	19	19	91	60	34	28	27
Total	84	62	37	23	29	94	56	37	14	14	88	60	37	19	23

60. Encephalitis.—This title calls for comment because it includes the deaths ascribed to encephalitis lethargica. This fact accounts for the increase of the numbers so listed from an average of 184 in 1911–17 to 207 in 1918 and 334 in 1919 in the case of males, and from 133 in 1911–17 to 159 in 1918 and 329 in 1919 in that of females. The deaths certified as due to encephalitis lethargica and allocated to No. 60 in 1919 numbered 136 for males and 154 for females. If these numbers are deducted from the totals for the year the remainders are not greatly in excess of the seven years' average. And in addition to them a few other deaths allocated to this heading were certified in such a way as to suggest the same cause. Thus three deaths were ascribed to 'meningitis lethargica,' (included here as almost certainly implying encephalitis lethargica) and one to 'epidemic encephalitis.'

This certification is very different from that of 1918, when only four deaths were ascribed to encephalitis lethargica, eleven to epidemic encephalitis, and one to epidemic stupor. The change in the contents of the heading may be set out in tabular form as follows :—

TABLE LXXV.—DEATHS allocated to 60. ENCEPHALITIS.

	1913.	1918.	1919.
Cerebral abscess	199	163	180
Cerebritis	20	26	28
Encephalitis	110	161	161
Encephalitis lethargica	—	4	290
Epidemic encephalitis, meningitis lethargica, etc.	—	12	4
Total	329	366	663

Comparison before 1918 can only be made with 1913, since that happens to be the only year for which the facts have been taken out separately.

The use of the term encephalitis lethargica has for the first time become general in 1919, when there were directly ascribed to it many more deaths than the approximate number—180—of which the returns of 1918 furnished evidence, and which were made up of 101 returned as encephalitis lethargica, polioencephalitis, etc., 28 as 'botulism,' and about 50 deaths from 'encephalitis' so returned in excess of the standard of 1913. But in addition to the 290 deaths certified as due to encephalitis lethargica in 1919 there were 17 deaths ascribed to influenza and encephalitis lethargica and allocated to influenza (and 2 allocated to other causes), the same excess of about 50 over the previous standard returned simply as 'encephalitis,' and 49 returned as polioencephalitis as against an average of 10 yearly during 1913–17. The opinion advanced in last year's Report that the latter are for the most part of the nature of encephalitis lethargica is supported by the fact that five deaths were ascribed in 1919 to 'polioencephalitis lethargica,' one (allocated to poliomyelitis) to acute poliomyelitis and encephalitis lethargica, and one to 'poliomyelitis lethargica.' The total traceable in the records thus seems to have grown from about 180 in 1918 to about 400 in 1919. Taking however only those so certified, these number 310, while the corresponding number of cases of the disease notified was 552, yielding a case mortality of 56 per cent.

The seasonal distribution of this mortality is such as to support the surmise that the excess deaths ascribed to polioencephalitis were of the nature of encephalitis lethargica, whereas those returned as poliomyelitis, only 148 in number as against 164 to 202 in the preceding six years, were not. For the polioencephalitis deaths were, like those from encephalitis lethargica, concentrated upon the first three months of the year, while those ascribed to poliomyelitis occurred chiefly in August, September, and October. This seasonal incidence of encephalitis lethargica is quite different from that of 1918, when the deaths chiefly occurred in spring and early summer.

The deaths ascribed to polioencephalitis in 1919 were much more confined to childhood than in 1918, when, along with the great increase in their number, there was a large increase in the proportion of adults. It would seem to be only in the case of children that the disease is now returned as polioencephalitis to any considerable extent, for only about 29 per cent. of these deaths occurred at ages over 20, whereas the corresponding proportion for the 290 deaths certified as encephalitis lethargica was 65 per cent.

61A. Cerebro-spinal Fever.—The deaths allocated to this cause numbered 573 (including 73 non-civilian) as against 1,974 in 1915, 1,214 in 1916, 1,531 in 1917, and 812 in 1918, the highest numbers recorded before 1915 having been 194 in 1914 and 163 in 1913.

The epidemic which commenced in 1915 has thus continued for five years without any approach to the old level of mortality. The features noted in previous reports, such as concentration of mortality on the first half of the year, and on London and the surrounding counties (see Table LXXVI) have been maintained.

TABLE LXXVI.—CEREBRO-SPINAL FEVER: CRUDE CIVILIAN DEATH-RATES per MILLION POPULATION, 1919.

	North.	Midlands.	South.	Wales.	England and Wales.
London	—	—	25	—	25
County Boroughs	14	14	21	6	15
Other Urban Districts	9	12	13	10	11
Rural Districts	6	13	14	5	11
All areas	12	13	19	7	14

As in the four preceding years, the mortality of non-civilians was very much higher than that of civilians. The extent to which the certified mortality is associated with military life can only be fully appreciated when the deaths at the ages of military service are compared. The following are their numbers :—

	15–	20–	25–	30–	35–	40–45
Non-civilian Males	23	28	16	4	1	—
Civilian Males	48	15	15	9	6	7
Females	21	16	12	3	9	5

Even if far more civilian than non-civilian cases escaped recognition these figures seem clearly to show that, as has often been noted in connection with other outbreaks of this disease, it is specially associated with the conditions of military or naval service.

63B. Poliomyelitis, Polioencephalitis.—Deaths from poliomyelitis and polioencephalitis have hitherto been merged with those from many other forms of disease under title 63, " Other diseases of the spinal cord." They have for the past eight years, however, been distinguished in a table in the text of the report, which is reproduced below for 1919. Since 1918 a separate title, 63B, has been assigned to this disease in the full tabulation of causes of death ; but as the text tables hitherto published have included all deaths for which this cause was certified, whereas the figures on page 150 exclude certain deaths assigned, under the rules for classification, to some other cause of death mentioned on the certificate, the text table is continued in order to afford means of comparison with the records of previous years.

—	All Ages.	Under 1 month.	1–3 months.	3–6 months.	6–12 months.	1–	2–	3–	4–	5–	10–	15–	20–	25–	35–	45–	55–	65– and up.
Males ...	105	1	1	3	—	5	7	13	8	7	18	12	13	7	2	3	2	—
Females ...	92	1	1	—	4	11	13	4	3	10	14	5	8	8	2	2	5	1

The seasonal and age distribution of these deaths has already been dealt with under cause No. 60 in discussing their relationship to encephalitis lethargica. The number of notified cases of the disease, which fell suddenly, without reduction in the mortality, from 704 in 1916 to 357 in 1917 and 236 in 1918, has risen again in 1919 to 616—554 of poliomyelitis and 62 of polioencephalitis. This ratio of about one death to three cases was the rule during the first four complete years of notification, 1913–16. The sudden drop in notifications during 1917 and 1918 was not accompanied by any corresponding fall in the number of deaths, which has remained very constant in the case of poliomyelitis as distinguished from polioencephalitis, while the number of cases notified was fluctuating as described.

64. Cerebral Hæmorrhage, Apoplexy.—The numerical importance of this cause of death is very great. During the decade 1901–10 the corresponding headings in the list of diseases then in use (" cerebral hæmorrhage, cerebral embolism " and " apoplexy, hemiplegia ") accounted for 6·2 per cent. of the deaths at 45–55, 9·5 per cent. at 55–65, 11·3 per cent. at 65–75, 10·3 at 75–85, and 6·7 at ages over 85. Amongst individual causes of death this occupied 7th place at 35–45, 5th at 45–55, 3rd at 55–65, and 4th at 65–75 and at 75–85 (Supplement to 75th Annual Report, Part III, Tables XX and 6).

But notwithstanding its importance it is difficult to tell at first sight from the tables as published whether this mortality is increasing or decreasing. A considerable increase is shown for " cerebral hæmorrhage, cerebral embolism " (which includes cerebral thrombosis) in Table 10, but this is evidently due in part to transfer from " apoplexy, hemiplegia," which shows a decrease. Taking the two together a moderate increase is shown from 692 deaths per million living in 1905 to 770 in 1919. (The rates during the four war years were higher, owing to the exclusion of young males from the population.)

An increase such as this might be accounted for by the increasing proportion in our population of the old people by whom these deaths are furnished. This, tested by standardization, proves to be the case. The sex and age group mortalities of 1905 from these causes, applied to the standard population of 1901, yield a death-rate of 666 per million, and those of 1919 one of 649. The actual rate yielded in 1901 by the standard population was 734. It thus appears that instead of increasing this form of mortality has been slightly decreasing. This conclusion is supported by the course of the crude rates for the twenty years before 1901, beyond which the comparison cannot be carried. These show a gradual decline from a maximum of 927 in 1886.

One consideration remains, which must to some extent diminish the validity of the recent decline, and which, if the matter could not be tested, might be thought likely to explain away the fall altogether or perhaps, indeed, to convert it into a rise. The mortality attributed to ' other diseases of blood-vessels ' in Table 10 has increased from 55 per million in 1905 to 286 in 1919. The corresponding deaths for 1919 in Table 9 number 10,510, and of these 10,053, or 96 per cent., consist of those allocated to 81B, Arterial sclerosis. Deaths attributed to this cause have grown very rapidly from 3,675 in 1911 to 10,053 in 1919. As this disease is the antecedent cause of most deaths from cerebral hæmorrhage it might be thought that the increase quoted was mainly due to an increasing practice of mentioning the primary as well as the proximate cause in certifi-

cation, the primary cause being the one selected for tabulation in all such cases. Fortunately it has been possible to test this matter on the returns for 1914, which had been prepared for tabulation by secondary causes of death before that scheme of publication was stopped by the war. There were 7,387 deaths attributed to arterial sclerosis in 1914, but of these only 1,091, or 15 per cent., were attributed to arterio-sclerosis and cerebral hæmorrhage. The addition of these to the two lines taken as representing cerebral hæmorrhage would increase their mortality for 1914 only by four per cent.; and if the same proportion of the 10,053 deaths in 1919 were added to its cerebral hæmorrhage mortality this would be increased from 770 per million to 811, the corresponding standardized rate being about 684. It appears therefore that the records indicate a definite fall in mortality from this cause during the past 30–40 years.

73B. Neuritis.—The deaths from this cause, which averaged 481 per year in 1911–14, have since gradually fallen to 158 in 1918 and 159 in 1919. Notwithstanding the reduction in male and increase in female population, this decline is much greater for females than for males. Whereas the mortality of females ascribed to this cause has generally been about twice that of males, the more rapid fall in female mortality has reduced it for the last three years to a level as low as or lower than that of males. The reduction in the rate for males has been barely half that for females, which has fallen to about a quarter of its pre-war level.

Presumably this remarkably sudden change is dependent upon the reduction in alcoholism during the war. For the four years 1911–14 the average number of deaths annually assigned to neuritis associated with alcoholism was 26 for males and 70 for females, but these numbers have now been cut down to 3 and 4 (Table LXXIII). It seems probable that the proportionately smaller reduction which has occurred in deaths ascribed to neuritis without mention of alcoholism may be due to the same cause.

91 and 92. Pneumonia.—The total deaths assigned to pneumonia in its various forms numbered 38,949—21,981 of males and 16,968 of females. The corresponding death-rates are 1,279 and 865 per million living of each sex, and 1,058 per million of both sexes. These represent a return to normal from the unprecedentedly high rates of 1918, and that notwithstanding the continuance during the early months of the year of the great influenza epidemic.

From January 1 to May 10, 28,186 deaths were ascribed to various forms of pneumonia in association with influenza, so it is practically certain that many other deaths really due to the epidemic must have been attributed to pneumonia without mention of influenza, and this number was estimated in the special report on influenza at almost 5,000 for the first three months of the year, or close on one-fourth of the total deaths from pneumonia during the quarter (p. 252).

This inference is supported by the following table, which shows that as compared with the average of the years 1911–17 (leaving the abnormal mortality of 1918 out of account) pneumonia mortality was far above the average in the first quarter, when influenza was prevalent, and well below it in the remaining three.

TABLE LXXVII.—England and Wales.—Quarterly Mortality of Females from Pneumonia per Million Living in 1911–17 and in 1919.

	1911–17.				1919.			
	1st Qr.	2nd Qr.	3rd Qr.	4th Qr.	1st Qr.	2nd Qr.	3rd Qr.	4th Qr.
Broncho-pneumonia	722	431	212	442	1,059	295	149	301
Lobar pneumonia	224	189	100	169	276	134	77	154
Undefined pneumonia	371	269	155	261	537	196	103	198
All forms	1,317	889	467	872	1,872	625	329	653

The distribution throughout the country of mortality allocated to pneumonia is shown in the following table, the rates of which are unavoidably uncorrected for differences in sex and age constitution (*see* page xii). Standardization, however, affects pneumonia death-rates but slightly.

TABLE LXXVIII.—Pneumonia (all forms), 1919.—Crude Death-rates per Million Civilian Population.

	North.	Midlands.	South.	Wales.	England and Wales.
London	—	—	1,062	—	1,062
County Boroughs	1,567	1,119	785	1,156	1,326
Other Urban Districts	1,219	795	661	979	927
Rural Districts	1,067	684	629	895	778
All areas	1,385	873	848	990	1,048

Outside London, where it was fairly high, mortality decreased generally from North to South, the position of Wales being intermediate between those of the North and Midlands. The table also shows a steady and considerable decrease in mortality with decreasing urbanization. Both these features are repeated with such regularity from year to year that they may be accepted as defining the normal type of distribution of mortality from pneumonia in this country. This type has not been materially affected by the epidemic of influenza, though the northern excess may well have been increased by it, as the epidemic in 1919 affected the North much more severely than the rest of the country.

113. Cirrhosis of the Liver.—During 1919 the deaths assigned to this cause numbered 1,507—969 of males and 538 of females. These numbers are very much below those of former years. The corresponding heading in the list of causes of death in use prior to 1911 was somewhat less comprehensive, excluding cirrhosis certified as alcoholic as well as various conditions, such as amyloid and fatty degeneration, classed with cirrhosis under the International List. The deaths in 1919 falling under the more restricted heading were 874 of males and 482 of females. These figures are about 14 per cent. below the exceptionally low level of the previous year, and are lower by far than those of any other year since 1875, when the record commences, notwithstanding increase of population. The decline from the number of deaths registered in 1914, which fairly represented the average of recent pre-war years, has been about 58 per cent. for males and 70 per cent. for females, whose deaths have fallen from 1,572 in 1914 to 482 in 1919. Since 1914 the death-rate of males has fallen from 117 to 53 per million, and of females from 82 to 25. It is quite conceivable, however, that in the case of a disease, such as this, which is generally attributable to chronic alcoholism, the reaction of mortality to consumption might be delayed, the enforced temperance of the years of war continuing to affect the death-rate favourably even after consumption had again begun to rise.

The mortality of males is still rather more than twice that of females, though before the war the excess was usually only about 40 per cent. in our certification, as against the 150–200 per cent. excess quoted in text-books.

134–141. The Puerperal State.—The number of deaths assigned to pregnancy or childbirth numbered 3,028 (Table LXXXII), corresponding to a rate of 4·37 per 1,000 births. It will be seen from Table 9 that this number is 176 in excess of that assignable to these causes of death under the classification in use up to 1910 (see Manual of Causes of Death, pages xxvi and xxx). Deducting these 176 deaths, which, with one exception, are those allocated to puerperal nephritis and albuminuria, formerly not distinguished as puerperal, the mortality amounted to 4·12 per 1,000 births, as against an average rate of 3·74 in the ten years immediately preceding and 3·55 in 1918. Inclusion of the 1,337 deaths in Table LXXXIII raises the proportion to 6·30 deaths stated to have been caused by or associated with pregnancy and childbirth for every 1,000 births.

The rate of 4·12 deaths, definitely assigned to pregnancy or childbirth under the old classification, per thousand living births, can be compared with a series of similar rates reaching back to 1876. Of these it is the highest since 1905, but prior to that year higher rates were the rule, the highest of all, 6·51, having been experienced in 1893. From that date the mortality declined until it reached 3·57 in 1908, since when it has stood at between 3½ and 4 deaths per thousand births until 1919. The lowest level reached was 3·55 in 1918, so it is curious that it should show such a sudden increase in 1919. When the deaths from these causes recorded in Table 9 are set out, not as rates per million population, as in Table 10, but as rates per thousand births, the trend of mortality from this cause, which is obscured in Table 10 by the fall in the birth-rate, is revealed. And when distinction is made between deaths from puerperal sepsis and from other causes it proves that the increase in 1919 is preponderantly due to septic disease. The deaths per 1,000 births in

the last fifteen years from this cause and from other diseases and accidents of childbirth compare as follows :—

TABLE LXXIX.—Mortality of Women in Childbirth, per Thousand Children Born Alive, distinguishing Septic and Other Causes, 1905–19.

(Classification as in use before 1911.)

Year.	Deaths per 1,000 Births.			Year.	Deaths per 1,000 Births.		
	Sepsis.*	Other Causes.	Total Childbirth.		Sepsis.*	Other Causes.	Total Childbirth.
1905	1·87	2·33	4·20	1913	1·34	2·37	3·71
1906	1·75	2·27	4·02	1914	1·63	2·32	3·95
1907	1·60	2·23	3·83	1915	1·56	2·38	3·94
1908	1·48	2·09	3·57	1916	1·47	2·40	3·87
1909	1·56	2·14	3·70	1917	1·39	2·27	3·66
1910	1·42	2·14	3·56	1918	1·35	2·20	3·55
1911	1·52	2·15	3·67	1919	1·76	2·36	4·12
1912	1·47	2·31	3·78				

*Including phlegmasia alba dolens.

It thus appears that the mortality from puerperal septic diseases suddenly rose in 1919 from almost the lowest to the highest level reached since 1905, while at the same time that from other risks of childbirth also rose to a comparatively high figure.

The 1,337 deaths not ascribed to but associated with childbirth also represent a rate much in excess of the average, but it appears from Table LXXXIII that the increase in these deaths is entirely ascribable, as was their much greater increase in 1918, to the influenza epidemic. Comparison of Table LXXXIII with its predecessor for 1917 (when the number of births was very similar) shows an excess in the later year of 567 deaths from influenza and 81 from pneumonia. Apart from these the number of deaths in the table is only 689, as compared with numbers varying from 638 in 1917 to 1,221 in 1909 for the ten years 1908–17, in most of which, however, births were, of course, more numerous.

The distribution throughout the country of the mortality ascribed to childbirth is outlined in Table LXXX. It is somewhat greater in the large towns, apart from London, than in the less thickly populated areas.

TABLE LXXX.—Distribution throughout England and Wales of Mortality of Women in Childbirth, per Thousand Children Born Alive, distinguishing Septic and other Causes, 1919.

		North.	Midlands.	South.	Wales.	England and Wales.
London	Sepsis	—	—	1·88	—	1·88
	Other causes	—	—	1·85	—	1·85
	All causes	—	—	3·73	—	3·73
County Boroughs ..	Sepsis	2·01	1·36	1·82	2·16	1·80
	Other causes	2·96	2·29	2·69	3·02	2·72
	All causes	4·97	3·65	4·51	5·18	4·52
Other Urban Districts ..	Sepsis	1·50	1·71	1·41	1·70	1·59
	Other causes	3·19	2·57	2·31	3·75	2·87
	All causes	4·69	4·28	3·72	5·45	4·46
Rural Districts ..	Sepsis	1·56	1·35	1·65	1·37	1·47
	Other causes	3·16	2·77	2·30	3·74	2·88
	All causes	4·72	4·12	3·95	5·11	4·35
All areas	Sepsis	1·78	1·49	1·72	1·69	1·67
	Other causes	3·06	2·52	2·15	3·61	2·70
	All causes	4·84	4·01	3·87	5·30	4·37

This urban excess, which is only slight, is entirely accounted for by greater mortality from sepsis, for so far as other causes are concerned the great towns have somewhat the advantage. This is most marked in the case of London, which owes its very favourable position entirely to non-septic causes, its rate from sepsis being above average. London is the only population shown in the table to return a lower rate from other causes than from sepsis. The highest rate for each class of area distinguished is returned by Wales, mainly as the result of high non-septic mortality, but the highest rate shown for septic diseases is that of the Welsh county boroughs. (The basis in this case is small—23 deaths.) Mortality from sepsis is on the whole much more evenly distributed than that from other

puerperal causes. For instance, the South and Midlands hold a constant advantage over the North and Wales as regards non-septic mortality in all classes of area, but not as regards septic. The very favourable position of the great towns of the Midlands as regards both classes of causes will be noted.

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

TABLE LXXXI.—PUERPERAL FEVER, 1919.—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	—		38	—	38	—	—	495	—	495
County Boroughs	41	35	24	37	37	491	395	764	590	484
Other Urban Districts	20	24	24	20	22	736	705	590	857	709
Rural Districts ..	21	22	22	19	21	757	625	758	710	697
All Areas	31	27	30	23	29	566	549	573	738	574

The most striking feature of this table is the regularity with which fatality varies inversely with prevalence. In almost every case where the notification rate is high that of fatality is comparatively low, and *vice versa*, the probable inference being that both prevalence and fatality vary much less than the table makes them appear to do, but that many cases are notified in the great towns which escape notification elsewhere.

Table LXXXII gives the particulars of the deaths assigned to the puerperal state, and in the case of headings "other accidents of pregnancy," "other accidents of childbirth," and "puerperal fever" amplifies the information on page 164 by giving details of the causes comprised by those titles.

Table LXXXIII shows the causes of deaths stated to have been complicated by the existence of the puerperal state. Apart from influenza and pneumonia the cause of death most largely represented in this table is, as usual, heart disease. Next to this come tuberculosis, bronchitis, and Bright's disease.

TABLE LXXXII.—ENGLAND and WALES, 1919.—DEATHS of WOMEN CLASSED to PREGNANCY and CHILDBEARING.

| Cause of Death. | All Ages. | Ages | | | | | | |
		15—	20—	25—	30—	35—	40—	45 and up-wards.
134A. Abortion	121	1	8	20	35	35	21	1
B. Hæmorrhage of pregnancy	43	—	1	3	13	13	11	2
C. Uncontrollable vomiting	28	—	3	6	11	5	3	—
D. Ectopic gestation	73	1	9	17	17	23	4	2
E. Other accidents of pregnancy :—								
Hydatid mole	6	—	—	3	—	1	1	1
Retroversion of gravid uterus ..	3	—	1	1	—	1	—	—
Hydramnios	1	—	—	—	—	1	—	—
Pregnancy apart from above complications :—								
(a) With secondary causes as follows :—								
Meningitis	1	—	—	1	—	—	—	—
Cerebral hæmorrhage	1	—	—	—	1	—	—	—
Cardiac disease	1	—	—	—	—	1	—	—
Embolism, thrombosis	2	—	—	1	—	—	—	1
Broncho-pneumonia	1	—	1	—	—	—	—	—
Pneumonia (type not stated) ..	1	—	—	1	—	—	—	—
Pyelitis	1	—	—	—	—	—	1	—
Pyelo-nephritis	1	—	1	—	—	—	1	—
(b) Without stated secondary cause ..	3	—	—	2	—	—	1	—
135. Placenta praevia	169	1	9	23	44	53	36	3
Other puerperal hæmorrhage ..	211	8	29	57	26	60	29	2
136. Other accidents of childbirth :—								
Contracted pelvis	47	1	8	10	12	8	6	2
Craniotomy	9	1	—	2	1	4	1	—
Cæsarean section	20	—	4	3	6	6	1	—
Version	2	—	—	—	1	1	—	—
Instrumental delivery	8	1	—	2	3	—	2	—
Rupture of uterus	20	—	2	5	5	5	2	1
Laceration of uterus, vagina and perineum	1	—	—	—	—	—	1	—

TABLE LXXXII.—*continued.*

| Cause of Death. | All Ages. | Ages. | | | | | | |
		15—	20—	25—	30—	35—	40—	45 and up-wards.
136. Other accidents of childbirth—*cont.*								
Malpresentation	12	1	1	—	5	3	2	—
Inversion of uterus	8	2	3	2	—	1	—	—
Extroversion of uterus	1	—	1	—	—	—	—	—
Sub-involution of uterus	1	—	1	—	—	—	—	—
Inertia of uterus	7	—	1	1	3	—	2	—
Abnormal fœtus	9	—	—	1	6	—	2	—
Hyper-lactation	1	—	—	1	—	—	—	—
Operation (nature unstated) ..	2	—	—	1	1	—	—	—
Difficult and prolonged labour ..	44	1	8	10	11	7	6	1
Childbirth apart from above complications :—								
(a) With secondary causes as follows :—								
Tumour of mediastinum ..	1	—	—	—	—	1	—	—
Anæmia	7	—	—	2	3	2	—	—
Meningitis	2	1	—	—	1	—	—	—
Apoplexy	1	—	—	—	1	—	—	—
Acute myocarditis	1	—	—	1	—	—	—	—
Carditis	1	—	—	—	1	—	—	—
Dilatation of heart	4	—	1	—	—	2	1	—
Auricular fibrillation	1	—	—	—	1	—	—	—
Tachycardia	1	—	—	—	—	1	—	—
Bronchitis	4	—	2	—	—	1	1	—
Broncho-pneumonia	11	—	2	3	2	3	1	—
Pneumonia (type not stated) ..	35	3	6	8	10	6	1	1
Pleurisy	4	—	—	1	1	1	1	—
Congestion of lungs	3	1	—	—	1	—	1	—
Gastritis	5	—	—	2	1	1	1	—
Other diseases of the stomach ..	3	—	1	—	2	—	—	—
Diarrhœa and enteritis	8	—	—	3	2	1	2	—
Intestinal obstruction	1	—	—	—	1	—	—	—
Intestinal paralysis	2	—	—	1	—	1	—	—
Acute yellow atrophy of the liver ..	3	—	—	1	—	—	2	—
Jaundice	3	—	2	—	1	—	—	—
Pyelitis	1	—	—	1	—	—	—	—
Cystitis	2	—	—	1	—	1	—	—
Ulcer of vagina	1	—	1	—	—	—	—	—
(b) Without stated secondary cause ..	35	2	4	6	8	9	6	—
137. Puerperal fever :—								
streptococcal infection	4	—	1	1	—	2	—	—
strepto-pneumococcal infection ..	1	—	—	1	—	—	—	—
pneumococcal infection	1	—	—	—	—	1	—	—
bacillus coli infection	1	—	—	—	1	—	—	—
septic phlebitis, septic thrombosis ..	20	—	3	4	6	6	1	—
septic pneumonia	10	—	—	4	1	4	1	—
septic endocarditis	3	—	—	1	—	1	1	—
septicæmia, sepsis	671	21	106	166	174	133	62	9
septic intoxication, sapræmia ..	57	1	10	14	16	12	4	—
pelvic peritonitis	12	—	4	5	—	3	—	—
peritonitis	105	7	15	31	20	24	8	—
salpingitis	6	—	1	1	3	1	—	—
metritis	8	—	1	2	4	1	—	—
endometritis	22	1	1	5	9	4	2	—
parametritis	9	—	—	2	—	4	3	—
perimetritis	5	—	—	1	3	1	—	—
erysipelas	4	—	—	1	—	1	2	—
pyæmia	24	—	5	2	12	3	2	—
pelvic cellulitis	34	2	7	5	12	5	1	2
cellulitis	2	—	—	1	1	—	—	—
pelvic abscess	5	—	—	2	2	1	—	—
blood poisoning	4	—	1	1	2	—	—	—
other specified septic conditions ..	6	—	2	2	1	1	—	—
"puerperal fever"	143	4	29	45	33	19	13	—
138A. Puerperal nephritis and uræmia	131	1	19	28	33	32	12	6
B. Puerperal albuminuria and Bright's disease ..	44	2	6	12	15	4	5	—
C. Puerperal convulsions	420	21	106	111	80	62	34	6
139A. Puerperal phlegmasia alba dolens and phlebitis ..	51	1	5	7	13	15	10	—
B. Puerperal embolism and sudden death ..	179	4	19	45	39	47	25	—
140. Puerperal insanity	37	1	7	12	5	8	4	—
141. Puerperal diseases of the breast	10	—	3	3	1	2	1	—
Total	3,028	91	461	715	724	655	342	40

TABLE LXXXIII.—ENGLAND and WALES, 1919.—DEATHS OF WOMEN NOT CLASSED to PREGNANCY and CHILDBEARING, but RETURNED as ASSOCIATED THEREWITH.

Cause of Death.	All Ages.	15—	20—	25—	30—	35—	40—	45 and up- wards.
Enteric fever	3	—	2	1	—	1	—	—
Scarlet fever	10	—	1	5	2	1	1	—
Diphtheria	1	—	1	—	—	—	—	—
Influenza	585	8	94	180	170	90	38	5
German measles	1	—	1	—	—	—	—	—
Tetanus (bacillary)	1	—	—	1	—	—	—	—
Pulmonary tuberculosis	66	1	10	21	21	11	2	—
Phthisis (not defined as tuberculous)	11	—	4	4	1	2	—	—
Acute phthisis	13	—	4	1	4	4	—	—
Acute miliary tuberculosis	2	—	1	—	1	—	—	—
Tuberculosis of peritoneum and intestines	3	—	1	1	—	1	—	—
Tuberculosis of spinal column	1	—	—	—	—	1	—	—
Disseminated tuberculosis	4	—	1	1	1	1	—	—
Rickets, softening of bones	4	—	1	1	1	1	—	—
Syphilis	7	—	1	4	1	—	1	—
Cancer	6	—	—	1	2	2	1	—
Rheumatic fever	7	—	2	2	—	2	1	—
Diabetes	6	1	—	1	2	1	1	—
Exophthalmic goître	4	1	—	1	1	—	1	—
Anæmia	21	—	4	1	5	8	2	1
Purpura	1	—	—	1	—	—	—	—
Hæmophilia	1	—	1	—	—	—	—	—
Encephalitis	1	—	—	1	—	—	—	—
Meningitis	1	—	—	1	—	—	—	—
Disease of the spinal cord	1	—	—	—	1	—	—	—
Cerebral hæmorrhage	2	—	—	2	—	—	—	—
Hemiplegia	1	—	—	—	—	1	—	—
Epilepsy	8	1	1	2	2	2	—	—
Chorea	6	1	2	2	1	—	1	—
Other diseases of the nervous system	2	—	—	—	1	—	1	—
Pericarditis	1	—	—	—	—	1	—	—
Acute myocarditis	3	—	—	1	—	2	—	—
Infective endocarditis	4	—	1	3	—	—	—	—
Acute endocarditis	4	—	—	1	1	2	—	—
Valvular disease	114	—	13	24	31	26	17	3
Fatty degeneration of the heart	16	—	2	1	2	3	8	—
Other organic disease of the heart	47	1	3	13	10	11	9	—
Angina pectoris	2	—	—	—	1	1	—	—
Arterio sclerosis	3	—	—	—	—	—	3	—
Varix	4	—	1	—	2	—	1	—
Other diseases of the circulatory system	1	—	—	—	1	—	—	—
Laryngitis	1	—	—	—	1	—	—	—
Diseases of the thyroid body	1	—	—	—	1	—	—	—
Bronchitis	39	—	1	9	8	11	6	4
Broncho-pneumonia	34	1	7	7	9	10	—	—
Lobar pneumonia	76	1	10	21	21	17	6	—
Pneumonia (type not stated)	76	3	13	19	24	13	4	—
Pleurisy	3	—	1	—	—	2	—	—
Asthma	6	—	—	1	2	3	—	—
Emphysema	1	—	—	—	—	1	—	—
Diseases of the teeth and gums	1	—	—	—	1	—	—	—
Tonsillitis	1	—	—	—	1	—	—	—
Other diseases of the pharynx	1	—	—	—	1	—	—	—
Perforating ulcer of stomach	4	—	—	3	1	—	—	—
Inflammation of stomach	3	—	—	—	—	1	1	—
Diarrhœa and enteritis	7	—	2	4	—	1	—	—
Appendicitis	10	—	4	—	4	2	—	—
Hernia	1	—	—	1	—	—	—	—
Intestinal obstruction	10	—	—	3	3	3	—	1
Acute yellow atrophy of the liver	9	—	—	3	3	1	2	—
Bright's disease	37	—	4	6	10	10	6	1
Other diseases of the kidney and annexa	2	—	1	—	1	—	—	—
Diseases of the bladder	4	—	—	—	—	3	—	—
Uterine tumour (non-cancerous)	10	—	—	1	1	4	4	—
Ovarian cyst, tumour (non-cancerous)	4	—	—	—	1	3	—	—
Other diseases of the female genital organs	2	—	—	1	1	—	—	—
Congenital malformation of heart	1	—	—	1	—	—	—	—
Violence	12	1	5	2	—	2	2	—
Total	**1,337**	**20**	**201**	**361**	**354**	**268**	**118**	**15**

Anæsthetics.—Deaths during or connected with the administration of an anæsthetic have all, from 1911 onwards, been classified to the condition for which the anæsthetic was administered. In order, however, to continue the information previously afforded as to such cases a secondary tabulation is now made of all deaths on the certificates relating to which any mention is made of the administration of an anæsthetic. These are classified in Table LXXXIV 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 LXXXIV.—ENGLAND and WALES, 1919.—DEATHS UNDER or CONNECTED WITH THE ADMINISTRATION of VARIOUS ANÆSTHETICS.

Anæsthetic.		All Ages.	0—	1—	2—	3—	4—	5—	10—	15—	20—	25—	30—	35—	40—	45—	50—	55—	65—
Chloroform	M.	54	4	3	2	1	1	7	3	2	1	5	4	2	6	4	1	2	8
	F.	34	1	—	1	—	—	3	3	5	1	1	4	3	2	6	1	1	2
Delayed chloroform poisoning*	M.	4	—	1	—	—	1	—	—	—	1	—	—	1	—	—	—	—	—
	F.	4	—	—	—	—	—	2	—	—	—	—	—	1	—	1	—	—	—
Chloroform and ether	M.	34	1	2	1	1	4	3	1	2	3	2	2	4	2	2	2	—	—
	F.	22	—	—	—	—	2	—	3	1	2	3	3	4	2	4	—	—	2
Chloroform and ether, delayed chloroform poisoning	M.	1	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Chloroform followed by ether	M.	5	—	—	—	—	—	—	—	—	1	—	2	—	—	1	—	—	1
	F.	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Chloroform and ether followed by ether	M.	2	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	1
	F.	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Chloroform, ethyl chloride and ether	M.	1	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—
Chloroform and stovaine	M.	1	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—
Ether	M.	27	1	2	—	—	1	1	—	3	3	1	3	—	—	2	3	2	5
	F.	20	—	1	—	—	—	3	—	1	2	1	1	1	—	3	—	—	3
Ether and oxygen	F.	1	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—
Ether and local anæsthetic	F.	1	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—
Gas and ether followed by (1) ether and (2) ether and chloroform	M.	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—
A.C.E. mixture	M.	1	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—
	F.	3	—	—	—	—	—	2	—	1	—	—	—	—	—	—	—	—	—
Cocaine	M.	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—
Ethyl chloride	M.	3	—	—	1	—	1	—	—	1	—	—	—	—	—	—	—	—	—
	F.	1	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—
Ethyl chloride and ether	M.	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Nitrous oxide	M.	3	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	1	1
Nitrous oxide and oxygen	M.	2	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	1
	F.	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—
Stovaine	F.	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Kind not stated	M.	40	2	—	1	—	5	3	3	—	1	3	5	1	2	2	1	7	—
	F.	30	—	2	—	—	—	4	1	2	2	3	5	—	2	6	1	2	—
Total	M.	182	10	9	6	4	3	22	10	10	7	13	12	11	6	9	10	13	19
	F.	120	1	3	1	—	3	13	4	10	7	12	14	8	9	13	5	11	—

* Also 2 deaths of females from acidosis—nature of anæsthetic not stated. These deaths are included under the heading "kind not stated."

CONDITIONS FOR WHICH ANÆSTHETICS WERE ADMINISTERED IN THE ABOVE CASES.

9. Diphtheria—tracheotomy (4); operation (*5*). **20.** Septicæmia (53); pyæmia, (*27*). **31.** Tuberculous peritonitis, operation (*4*). **32.** Opening of lumbar abscess (28). **34.** Tuberculous glands of neck (7, *8*, *9*, *68*); operation on tuberculous glands of neck, tonsils, and adenoids (*5*); removal of tubercular kidney (27). **37.** Syphilis, operation on urethra, and circumcision (42). **39–45.** Cancer of—tongue (61, 61, 65); mouth (56, 64); jaw (*25*); tonsil (55); pharynx (47, 63); hypo-pharynx (*46*); œsophagus (*52*); stomach (28); bile duct (32); colon (68); large intestine (61); rectum (59, 67, 73); intestine (52, 77, *51*); uterus (*46*, *52*, *53*, *65*); breast (*45*, *65*); penis (68); epiglottis (59); kidney (*54*); testes (69); throat (64). **46.** Tumour of—chest (70); abdomen (*66*). **51.** Exophthalmic goître (*38*, *38*). **61.** Meningitis, lumbar puncture (17). **75.** Glaucoma (59, 64); cataract (59); excision of lacrymal sac (*58*). **76.** Mastoid disease (6, 20, 34, *1*); middle ear disease (5, 23, 30). **77.** Operation for relief of pericardial effusion (9). **81.** Tumour in aorta, tracheotomy (45). **83.** Hæmorrhoids (36); varicose veins (28, 28). **84.** Operation on glands of neck (6, *4*). **86.** Adenoids (5, *5*, *7*, *16*, *19*); operation for nasal obstruction (19); operation on nose (31). **87.** Tumour of vocal chords (*50*). **88.** Goître (*30*); operation for cystadenoma of thyroid (15); tumour of thyroid gland (56); operation on thyroid gland (22). **93.** Empyema (1, 3, 4, 9, 10, 16, 18, 26, 47, 55, 57, *16*, *52*, *66*). **98.** Opening of pulmonary abscess (*17*); removal of fluid from chest (*18*). **99.** Extraction of teeth (8, *18*, 27); pyorrhœa (60). **100.** Enlarged tonsils (2, 6, 12, 14, *2*, *6*, *6*, *12*, *16*, *22*, 27); enlarged tonsils and adenoids (4, 5, 5, 9, 9, 10, 11, *5*, *5*, *7*, *12*); abscess of throat (2); Ludwig's angina (49, 73).

102. Gastric ulcer (34, 36, 39, 45, 45, *58*). **104.** Duodenal ulcer (50). **108.** Appendicitis (2, 3, 6, 7, 11, 14, 18, 26, 35, 35, 44, *6, 20, 22, 32, 39, 41, 55*). **109.** Hernia (0, 0, 0, 0, 1, 1, 1, 3, 3, 39, 49, 49, 50, 53, 67, 68, 76, 77, *48, 50, 54, 59*) ; intestinal obstruction (0, 7, 54, 67, *1, 9, 38, 40, 44, 54, 62, 74, 79*) ; intussusception (5). **110.** Abscess of rectum (43) ; fissure of rectum (*32*) ; examination of rectum (75). **114.** Gallstones (*54*). **115.** Cyst of liver (*13*) ; inflammation of liver and colon (*33*) ; stenosed bile ducts (31). **117.** Peritonitis (*18*). **120.** Bright's disease (12). **122.** Abscess of kidney (*20*) ; nephrectomy (*52*). **123.** Calculus of kidney (*65*). **124.** Examination of bladder (24, *48*). **125.** Stricture of urethra (60). **126.** Enlarged prostate (53, 61). **129.** Fibroid tumour of uterus (*33, 38, 47*) ; fibro-myoma of uterus (*45*) ; polypus of uterus (*44*) ; tumour of uterus (*45*). **130.** Curettage of uterus for missed periods (*28*) ; ventral fixation of uterus (*65*). **131.** Cyst of ovary (*34, 67*) ; simple ovarian tumour (*37*). **132.** Pyosalpingitis (*35*) ; pyosalpinx, laparotomy (*48*) ; tumour of Fallopian tube (*37*). **134.** Missed abortion (*25*) ; incomplete abortion, curettage (*39*) ; ante-partum hæmorrhage, removal of adherent placenta (*36*) ; extra-uterine pregnancy (*35*) ; extra-uterine pregnancy and pyosalpinx (*32*). **135.** Post-partum hæmorrhage (*37*). **136.** Childbirth (*19, 24, 28, 38, 44*) ; contracted pelvis, version (*41*) ; instrumental delivery (*34*) ; difficult labour (*43*). **137.** Septic abortion (*38*) ; version (*33*) ; curettage for retained placenta (*34*). **142.** Gangrene of foot, amputation (80). **143.** Carbuncle of neck (67). **144.** Cellulitis of leg (67) ; of thumb (52) ; abscess of neck (16, 42) ; abscess under jaw (28) ; pelvic abscess (47). **146.** Abscess and necrosis of jaw (37) ; diseased bone of forehead (29) ; multiple exostoses (19) ; lipoma of breast bone (*53*) ; osteomyelitis of hip (*6*) ; sphenoidal sinusitis (*22*). **147.** Arthritis of shoulder (16) ; genu varum, osteotomy (*6*) ; removal of diseased bone from hip (39). **150.** Circumcision (0, 0, 0, 1, 1, 1, 1, 1, 20) ; cleft palate (2, *1, 10*) ; ectopia vesicæ (0) ; nævus (0, *0*) ; talipes—stretching tendons (2) ; tenotomy and moulding of feet (2). **155–186.** Various forms of violence (6, 7, 10, 14, 18, 20, 21, 22, 24, 24, 25, 25, 28, 29, 30, 31, 32, 33, 34, 38, 39, 39, 42, 50, 51, 56, 68, *4, 34, 40*). **187.** Removal of fluid from abdomen (7). **189.** Swelling in thumb (42) ; operation, nature not stated (15).

The total number of deaths in Table LXXXIV, 302, is much the same as in the eight preceding years, for which alone the information is available. This number is very constant, having varied only between 261 in 1915 and 306 in 1916. The nature of the anæsthetic was stated in only 77 per cent. of the cases. In 41 per cent. of those in which it was stated chloroform is recorded as the only anæsthetic administered, and in 32 per cent. as administered in combination with some other agent, so that in only 27 per cent. of these cases was chloroform not used. The proportion for chloroform alone is the lowest, while that for chloroform in combination, which was the same in 1918, is the highest for any of the nine years compared. As the same statement has applied for several years there seems to be a tendency at present towards increasing mixture of other anæsthetics with chloroform.

The conditions which involved the greatest mortality under or related to anæsthetics were, in order—Cancer (33 deaths), various forms of violence (30), tonsils and adenoids (28), hernia (22), appendicitis (18), parturition (17), empyema (14), intestinal obstruction (14), circumcision (10). In some of these cases the mortality is evidently due to the frequency with which the operation is performed, and in others to its gravity or to the severity of the condition requiring it.

84A. Status Lymphaticus.—In addition to the 110 deaths primarily classified to status lymphaticus (page 154) its presence was noted in the case of 36 deaths under anæsthetics, which were referred to the condition leading to the administration of the anæsthetic.

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

	All Ages.	0–	5–	10–	15–	20–	25–	35–
Males	24	10	3	2	2	2	3	2
Females	12	3	3	2	2	1	1	—

In 15 of the cases the nature of the anæsthetic was not stated ; in 10 of the remainder it was chloroform only, in 6 chloroform and ether, in 4 ether, and in 1 ethyl chloride.

The excess in deaths of males is far greater than for deaths listed to 84A. This must

be mainly due to the much greater frequency of operations upon male children, of whom 32 died under anæsthetics at less than five years of age as against 8 females. Of these 32, 17 were operated on for hernia or phimosis (Table LXXXIV).

155–163. Suicide.—The deaths allocated to this heading numbered 3,348—2,340 (including 183 non-civilians) of males and 1,008 of females. These numbers include only the deaths definitely attributed to suicide. In addition to them 1,116 others, 790 of males and 326 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 page 506). The 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, 614 of males and 199 of females, are cases of drowning returned by coroners' juries as " found drowned."

Table LXXXV shows that mortality from this cause has been increasing for both sexes since 1917, when it had reached a notably low level. That for females has now returned to about its accustomed level during recent years, but the rate for males is still distinctly low. (The 1914 rates were just below the averages for 1901–10, which were 157 for males and 47 for females.) In both sexes practically the whole of the increase over the previous year has occurred at ages over 45, at which it is very pronounced, and in both it was very largely concentrated on the second and third quarters of the year.

TABLE LXXXV.—ENGLAND AND WALES.—SUICIDE : MORTALITY PER MILLION LIVING in each year, 1914–19.

	Males.						Females.					
	1914.	1915.*	1916.*	1917.*	1918.*	1919.	1914.	1915.	1916.	1917.	1918.	1919.
All Ages (Standardized).	} 150	102	110	97	109	126	45	45	38	35	42	46
0—	—	—	—	—	—	—	—	—	—	—	—	—
5—	—	—	—	—	—	—	—	—	—	—	—	—
10—	4	2	2	2	4	3	2	2	2	4	1	2
15—	38	21	?	?	?	?	27	36	32	22	23	20
20—	79	71	?	?	?	?	44	39	30	30	42	38
25—	156	94	?	?	?	?	50	40	38	38	53	53
35—	248	185	?	?	?	?	79	80	66	70	75	78
15–45	*145*	*101*	*116*	*103*	*118*	*115*	*53*	*50*	*43*	*43*	*52*	*52*
45—	347	224	215	201	230	281	113	111	80	75	99	120
55—	512	365	292	257	288	400	106	123	102	86	101	116
65—	502	363	406	285	312	458	94	94	87	76	72	90
75—	360	338	318	322	277	438	47	64	64	55	63	69
85—	129	252	384	352	337	337	24		47	24	70	71

* Civilians only.

The distribution of mortality from suicide in various classes of area and sections of the country is shown in Table LXXXVI, from which no very definite differences between the populations compared emerge except a decidedly low rate for all classes of area in Wales. The Welsh mortality from this cause is usually lower than the English, but in 1919 the difference was greater than usual. The excess of the rate shown for the rural districts over that for the large towns may well be due entirely to the greater age of their inhabitants. As this cause of death chiefly affects persons over 45 years of age, the larger proportion of such persons in the rural districts must tend to cause some excess of the crude death-rate there. Unfortunately it is impossible, in the absence of any means of estimating the present age distribution of the population in urban and rural districts, to state their standardized death-rates. All that can be done is to quote these rates for the period 1911–14. This has been done in Table LXXXVI, and the rates show that under pre-war conditions the effect of standardization is not very great, the crude death-rate being slightly reduced in all cases, but most in the rural districts. It may well be that the average age of the rural exceeds that of the urban population more now than it did before the war, and if so the relative tendency to suicide of the two populations may remain unchanged. Otherwise it must be assumed that the conditions of rural life during and since the war have promoted suicide more, as compared with urban conditions, than they did formerly.

TABLE LXXXVI.—SUICIDE.—MORTALITY PER MILLION POPULATION, 1911–14, 1917, 1918, and 1919.

		1911–14.			1917, 1918, and 1919. (Crude rates : Civilians of both sexes.)					
		Males.	Females.	Persons.	Year.	North.	Midlands.	South.	Wales.	England and Wales.
London	Crude	168	54	108	1917	—	—	58	—	58
	Standardized	160	49	101	1918	—	—	82	—	82
					1919	—	—	93	—	93
County Boroughs	Crude	152	49	98	1917	57	60	82	48	60
	Standardized	151	47	96	1918	66	72	85	83	71
					1919	79	88	84	67	82
Other Urban Districts	Crude	147	49	96	1917	68	61	72	47	64
	Standardized	144	46	92	1918	77	69	67	39	68
					1919	96	93	87	52	89
Rural Districts	Crude	151	44	97	1917	75	76	78	61	75
	Standardized	140	42	88	1918	87	83	102	64	87
					1919	89	97	99	76	93
All Areas	Crude	152	49	99	1917	63	65	68	52	64
	Standardized	147	46	93	1918	72	74	82	56	74
					1919	86	93	91	62	88

TABLE LXXXVII.—ENGLAND AND WALES, 1919.—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	54	52	Diphtheria 9, Laryngismus stridulus 11, Laryngitis 28.
Membranous laryngitis	15	14	Diphtheria 8, Laryngitis 4.
Pyæmia, septicæmia, etc.	182	136	Tonsillitis 5, Puerperal fever 18, Diseases of the skin 12.
Tuberculosis	280	280	Pulmonary tuberculosis 149, Acute phthisis 51, Acute miliary tuberculosis 12, Tuberculosis of peritoneum 6, Disseminated tuberculosis 49, Other forms of tubercle 12.
Cancer (part or organ not stated) ..	982	899	Part or organ stated in 895 cases.
Tumour, growth, etc.	506	369	Tuberculosis 6, Cancer 252.
Rheumatism	44	43	Rheumatic fever 22, Chronic rheumatism 7, Rheumatoid arthritis 2.
Basal or basic meningitis	59	55	Tuberculous meningitis 18, Cerebro-spinal fever 12, Meningitis—other forms 15.
Cerebro-spinal meningitis	187	179	Tuberculous meningitis 7, Cerebro-spinal fever 152.
Paraplegia	144	109	Syphilis 7, Diseases of the spinal cord 48, Cerebral hæmorrhage, apoplexy 22.
General paralysis (outside asylums) ..	106	97	Syphilis 4, Diseases of spinal cord 15, Cerebral hæmorrhage, apoplexy 5, General paralysis of the insane 57, Cerebral embolism 5.
Paralysis	113	94	Syphilis 5, Diseases of the spinal cord 16, Cerebral hæmorrhage, apoplexy 39.
Fibroid phthisis	127	108	Pulmonary tuberculosis 63, Fibroid disease of lung 41.
Hæmoptysis	47	37	Pulmonary tuberculosis 18.
Stomatitis	40	40	Thrush, aphthous stomatitis 28.
Stricture of œsophagus	72	58	Cancer 43.
Hæmatemesis..	29	21	Cancer 4, Gastric ulcer 6, Cirrhosis of liver 3.
Pyloric obstruction, stenosis, etc. ..	54	50	Cancer 22, Gastric ulcer 10.
Jaundice	64	44	Cancer 14, Cirrhosis of liver 6, Other diseases of liver 15.
Peritonitis	270	168	Tuberculosis of peritoneum, etc., 19, Gonorrhœa 4, Cancer 10, Gastric ulcer 13, Appendicitis 44, Intestinal obstruction 6, Diseases of female genital organs 14, Puerperal fever 5.
Pemphigus (of infants)	106	94	Syphilis 32.
Hydrocephalus	84	78	Tuberculous meningitis 9, Congenital hydrocephalus 60.
Violence	237	235	Precise form of suicide 15, Injury by fall 64, Injury in mines and quarries 21, Injury by machines 9, Injury by crushing 50.
Ascites, dropsy	23	19	Diseases of the heart 10, Cirrhosis of liver 4.
Syncope, heart failure (ages 1–70)..	191	162	Influenza 8, Diseases of the heart 94.
Operation	212	200	Cancer 30, Hernia, intestinal obstruction 16, Uterine tumour 22, Congenital malformations 10, Violence 7.
Other indefinite forms of certificate	1,092	897	
Total	5,320	4,538	—

189. **Ill-Defined Causes of Death.**—This heading in the International List of Causes of Death, to which 2,075 deaths have been allocated, excludes the ill-defined diseases of infancy and old age, which furnish the great majority of the deaths so classified in the Tables—Nos. 9 and 10—comparing mortality from year to year according to the list of causes in use before 1911. In this more comprehensive sense the deaths from ill-defined causes in 1919 numbered 37,580, of which 29,777 were ascribed to " old age." Although the latter figure, the most important item in the total, has declined only by 5 per cent. during the 15 years covered by these tables (for the fall in mortality under this head, *see* Table 10, page 28) the grand total of ill-defined deaths has fallen by 11,446, or 23 per cent., during this period. This fall has occurred chiefly under the heading " atrophy, debility, and marasmus," deaths attributed to which have declined steadily from 16,010 to 6,764. Some share in the reduction under this head in recent years is due to the abnormal decline in births.

Inquiries sent to medical practitioners and coroners requesting further information as to indefinitely certified deaths amounted to 5,980 and to these 5,320 replies were received, with results to classification the most important of which are set out in Table LXXXVII.

DEATHS IN INSTITUTIONS FOR THE SICK OR INFIRM.

The number of deaths in public institutions for the sick or infirm, including those of 6,540 non-civilians, was **121,262.** Of these 57,015 occurred in Poor Law institutions (workhouses and workhouse infirmaries), 13,464 in lunatic asylums, and 50,783 in hospitals. In addition to these, 3,790 occurred at addresses known as those of nursing homes, but it is probable that many more deaths in nursing homes were not recognised as such. These numbers are all considerably below those of 1918, especially in the case of lunatic asylums, where the excessive mortality of the later years of the war has much abated. Other factors in the reduction are the fall in mortality generally, and in the number of non-civilian deaths especially, a large proportion of which occurred in hospitals.

TABLE LXXXVIII.

Public Institutions.	Percentage of Total Deaths.			Rate per 1,000 living.		
	Ten years, 1909–18.	1918.	1919.	Ten years, 1909–18.	1918.*	1919.
Poor Law Institutions ..	11·27	10·92	11·31	1·66	1·99	1·55
Lunatic and Idiot Asylums ..	2·59	3·55	2·67	0·39	0·64	0·37
Hospitals ..	8·49	10·34	10·07	1·13	1·31	1·38
Total	22·35	24·81	24·05	3·18	3·94	3·30

* Civilians only ; based upon estimated civilian population, 1918.

The number of deaths occurring in institutions, and their proportion to the total deaths registered, have been increasing for many years, but their growth during the last few years preceding 1918 was particularly rapid. During 1911–13 the number was almost stationary, averaging 105,840 per year, or 20·9 per cent. of the total deaths. In 1914 the proportion rose to 22·3 per cent., and in 1915 to 22·5, while in 1916 and 1917 it was 24·35 and 26·25 respectively. With the return of peace the proportion has fallen again (the fall in 1918 was largely a consequence of the influenza epidemic), but not to its pre-war level.

The detailed table of deaths in various classes of institutions showing cause of death, sex, and class of area will be found on pages 263–277.

UNITED KINGDOM.

Population.

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

The populations of the several divisions of the United Kingdom are provisionally estimated as follows :—

TABLE LXXXIX.—POPULATION ESTIMATED to the MIDDLE of the YEAR 1919.

	Persons.	Males.	Females.
England {Total (including forces at home) ..	36,800,000	17,180,655	19,619,345
and Wales {Civilian population	35,993,000	16,373,655	19,619,345
Scotland (No allowance for movement of troops overseas).	4,894,077	2,373,422	2,520,655
Ireland (Movements of military taken into account)	4,462,000	2,255,000	2,207,000

For the purposes of the calculation of the marriage-rate and birth-rate of the United Kingdom a total population including armed forces at home and abroad has been employed. This population was estimated to be 46,749,000 (22,402,000 males). A similar population was used in the case of England and Wales (*see* page xii).

Marriages.

The marriages in the United Kingdom during the year 1919 numbered 440,741, corresponding to a rate of 18·9 persons married per 1,000 of the total population as estimated for this purpose.

This rate was 4·2 per 1,000 above the corresponding rate in 1918, and 4·0 per 1,000 above the average rate in the ten years 1909–1918.

TABLE XC.

	Marriages, 1919.	Persons Married per 1,000 living.	
		Ten Years, 1909–1918.	1919.
England and Wales	369,411	15·6	19·7
Scotland	44,137	13·7	18·0
Ireland	27,193	10·4	12·2
United Kingdom	440,741	14·9	18·9

Births.

The births registered in the United Kingdom in the year 1919 numbered 888,031, and were in the proportion of 19·0 per 1,000 of the total population as estimated for this purpose.

This rate was 0·9 per 1,000 above the corresponding rate in 1918 ; compared with the average in the ten years 1909–1918 it showed a decrease of 3·7 per 1,000.

The year 1915 was the first in which a higher (crude) birth-rate was recorded for Ireland than for England and Wales, and this excess has been repeated in 1917, 1918, and 1919.

TABLE XCI.

	Births, 1919.	Births per 1,000 living.	
		Ten Years, 1909–1918.	1919.
England and Wales	692,438	22·5	18·5
Scotland	106,268	24·4	21·7
Ireland	89,325	22·1	20·0
United Kingdom	888,031	22·7	19·0

Deaths.

The deaths registered in the United Kingdom in the year 1919 numbered 657,964 and were in the proportion of 14·3 per 1,000 of the total population in the United Kingdom.

This rate was 3·1 per 1,000 below the corresponding rate in 1918 ; compared with the average in the ten years 1909–1918 the death-rate in 1919 showed a decrease of 0·6 per 1,000.

TABLE XCII.

	Deaths, 1919.	Deaths per 1,000 living.	
		Ten years, 1909–1918.	1919.
England and Wales	504,203	14·6	13·7
Scotland	75,149	15·5	15·4
Ireland	78,612	16·9	17·6
United Kingdom	657,964	14·9	14·3

Infant Mortality.

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

TABLE XCIII.

	Deaths under 1 year per 1,000 Births.	
	1909–1918.	1919.
England and Wales	105	89
Scotland	108	102
Ireland	90	88
United Kingdom	104	90

In Table 22 (pages 54 and 55) the population, marriages, births, deaths, and principal causes of death are given for a series of years for the United Kingdom and for each of its three divisions.

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 1919, this register was increased by the addition of 151 entries of birth and 3,927 entries of death.

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 1919 by 1,935,463, this addition raising the total of names in the indexes, which at the end of 1919 embraced a period of 82½ years, to 137,863,459. (Table 19.)

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

H

Offences against the Registration Acts.

In 1919, thirteen persons, on prosecution by order of the Registrar-General, were convicted of offences against the Registration Acts. The offences for which convictions were obtained were as under :—

For giving a false age when registering the death of an old age pensioner ..	3
For registering the births of illegitimate children as legitimate	7
For failing to register a birth within 42 days	1
For using as true a falsified certificate of birth	1
For giving false information as to relationship when registering a death ..	1

In addition to the above cases proceedings were taken by the Public Prosecutor or by Chief Constables in several cases reported through the Registrar-General for offences including (1) bigamy, (2) making false declaration for marriage, (3) marrying within the prohibited degrees, (4) forging consent to the marriage of minors, and (5) aiding and abetting the making of false entries in birth registers.

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 XCIV affords an indication of the extent to which the copies of the records kept in this Office have been utilised by the public for legal evidence of births, deaths, and marriages since 1866. It will be observed that the numbers of searches, &c., in 1919 has declined from the maximum attained in 1916, owing to falling off in the number of gratuitous searches. The number of paid searches was much higher than ever before.

The 170,670 gratuitous searches during 1919 include 62,300 searches made for the purpose of verifying the ages of persons claiming old age pensions, 106,870 made to assist dependents of men serving with H.M. Forces to produce evidence of marriage and of the births of children in connexion with claims to Naval and Military Pensions, Separation Allowances, etc., and to verify the ages of certain classes of youths and men in connexion with service in the Army, Navy, and Royal Air Force, and 1,500 made for other public purposes.

Table XCIV.

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	53,058	10,194	9	0
1907 (52 weeks) ..	69,249	—	69,249	54,870	10,550	8	0
1908 (53 weeks) ..	72,370		72,370				
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) ..	242,457	163,142	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

* Including some searches made in 1908.

T. H. C. Stevenson.

METEOROLOGY OF THE YEAR 1919.

Remarks on the Conspicuous Occurrences in the British Isles, 1919.

(Prepared in the Meteorological Office under the direction of
Sir Napier Shaw, LL.D., Sc.D., F.R.S., Director.)

A Generally Dry Year.

The year 1919 will be remembered for the heavy snowstorm at the very end of April and for the exceedingly cold March and November. A striking departure from the usual run of the seasons was shown by October, normally the wettest, this year, in many places, the driest of the months.

January was a dull and wet month, with wintry conditions prevailing in the opening days, and again during the last week, but mild in the interval. The mildest period was about the 14th, the weather becoming very cold at the close of the month, with snow over the greater part of the country. A notable feature in February was the persistence of winds from points between North-East and South-East and the infrequency of those from the West and South-West. The first sixteen days of the month were very cold, and a severe frost was experienced between the 8th and 15th, which was especially intense in the eastern parts of England. Milder conditions set in on the 18th, and thereafter the month was dull, unsettled and rainy. With the exception of brief warm spells round about the 2nd and 10th, March was dull, cold and wet ; it was the coldest March experienced in Scotland for at least sixty years. At Southport and Blundellsands it was the wettest March for 57 and 43 years respectively. For the most part April was true to type, and very generally was changeable and unsettled. Showers of rain and hail were frequent, and only on the 18th and 19th was there any really warm weather. The outstanding event of the month was the remarkable snowstorm which passed southwards across England on the 27th–28th. During May there was a preponderance of winds from points between South and East, and in the South and East of England the month was abnormally dry. At many of the coast stations fog and mist were unusually frequent, but for the most part the month was sunny and warm. Until about the 19th, June was of a seasonable character, with many hot days and abundant sunshine during the second and third weeks. Thereafter the month was cool and rainy, the closing week being inclement for the time of year. At Southport it was the windiest June for 48 years. At the begining of July the weather was, in some respects, a continuation of that which characterized the closing days of June. The only really warm days were between the 9th and 11th, the 16th and 20th, about the 25th, and at the close of the month. The month was sunny and dry in Scotland and Ireland, and dull in England. August had many hot days, the rainfall was moderate and the sunshine abundant. As a whole September was fine, dry and quiet, and although somewhat variable, was, as a rule, of a typical character. During October there was a preponderance of winds from northerly points, and the month was dry and sunny, and rather cold, ground frosts being very common. Except for some mild days between the 17th and 20th, and between the 23rd and 25th, November was exceedingly cold, with frequent snow and hail. Ground frosts were numerous and occasionally very severe. Winds between South-West and North-West predominated during December, and the general character of the month was dull, rainy, and mild.

Gales.—The following table shows the principal gales of the year, the associated depressions being indicated by letters, which are those assigned to them on the monthly track charts.

Date.			Track.	Area affected.
January	1– 2	.. ..	A.	West and North Districts.
„	27		J.	Western Channel.
February	9–10		M.	England S.W. and Ireland.
March	27		D.	General.
April	14		A.	English Channel.
August	2		D.	Northern Scotland.
„	26		—	Northern Districts.
September	20		H.	North and West Coasts.
November	23–24		B.	General.
December	2		—	South England.
„	18–19		—	General.
„	27		L.	Northern Scotland.
„	30–31			South and West England.

On January 1st-2nd gales occurred in the western and northern districts, and in the rear of the accompanying depression there was heavy snow in Scotland and in the English Midlands. In association with a depression which moved rapidly from Iceland across the British Isles gales were also reported in the Western Channel on January 27th. On February 9th, co-existing with an intense anticyclone over England there was a steep pressure gradient in the South-West, a south-east gale of force 9 being reported at Scilly, and force 8 at Cahirciveen, Roches Point and Falmouth. These same stations also reported gale force on the following day, when the barometer at Nottingham was as high as 1035 mb. A very deep depression was centred over the North-East of Scotland on March 27th which, as it moved eastwards, caused strong winds and gales from the North-West in all parts of the British Isles. During this gale the highest gusts recorded were 29 m/s at Rosyth, Southport and Scilly, and 34 m/s at Edinburgh. At 7h. on April 14th a deep depression was situated off the North-West of Ireland and moving slowly eastwards was centred over the North-East of England by 7h. on the following day. This system caused gales along the English Channel, a wind of force 10 being reported from Scilly. On August 2nd a large depression moving between Iceland and Spitzbergen caused winds of gale force in the Orkneys and in the North-East of England. In the northern districts gales and heavy rain were also caused on August 26th, by a depression which came from the North of Ireland and passed across Scotland during the day. On September 20th, under the influence of a secondary depression, snow showers and gales were experienced at many stations on the North and West Coasts, a northerly wind of force 10 being reported from Houton Bay (Orkney) and Lerwick (Shetland). A large and deep depression moving eastwards from Iceland and a secondary to this system travelling very rapidly across the British Isles on November 23rd-24th increased the wind in many places to gale force, with line squalls at some of the northern stations. A gale was experienced in parts of southern England on December 2nd, and damage was done to buildings, a gust of 30 m/s being recorded at Kew Observatory and one of 33 m/s at Pendennis Castle, Falmouth. A secondary depression which crossed the British Isles on December 18th-19th caused westerly gales on almost all coasts, 31 m/s in a gust being recorded at Paisley and Alnwick Castle and 35 m/s at Southport. A severe south-east gale was caused in the Shetlands and in the North-East of Scotland by a depression of considerable depth which passed between the Hebrides and Iceland on December 27th. On December 30th-31st a small depression which passed across England from West to East was associated with gales in southern and western districts.

Air Pressure.—In January the mean monthly air pressure was everywhere below the normal, but the gradient was less steep than usual. The mean trend of the isobars in February was abnormal, the type being south-easterly instead of the customary south-westerly. At the individual stations the departures from the normal pressure covered the wide range from +3·7 mb. at Lerwick to −9·4 mb. at Falmouth. Except at Stornoway, where it was 0·6 mb. above the normal and

at Castlebay, where it was normal, the mean monthly pressure of March was deficient. The trend of the isobars was north-westerly instead of the usual westerly. In April the trend of the isobars was north-westerly instead of south-westerly, and the gradient was much steeper than usual. A notable event of the month was the low reading of the barometer recorded on the 14th and 15th, when a deep depression was moving slowly eastwards from the North-West of Ireland. On the latter date a reading of 970 mb. was registered at Meltham, Yorks., and was the lowest air pressure recorded in April at this station during 41 years. At Southport 969 mb. was recorded on the 14th, the lowest April record during 48 years; at Stonyhurst it was the lowest during 72 years. At Leith 973 mb. was recorded, the lowest April value since 1874. By the morning of the 20th the pressure at Leith had risen to 1042 mb., and was the highest reading recorded at this station for at least 60 years. The mean monthly distribution of pressure in May was very abnormal, the highest pressure being in the East instead of in the South, as is customary in May. Throughout the month there was no instance of a primary depression passing directly across the British Isles. In June the mean distribution of pressure was also abnormal, and the type was north-westerly instead of south-westerly, with a much steeper gradient than usual. As in the two preceding months the mean trend of the isobars in July was abnormal, the pressure distribution being much more of a northerly type than usual. At Southport the frequency of north-westerly and northerly winds was greater than in any July since 1871. In August the mean monthly trend of the isobars was a little to the North of West instead of to the South of West as in a normal August, and the gradient was steeper than usual. During September the trend of the isobars was slightly more westerly than usual, and the gradient much steeper. Moreover, with the exception of that of the 22nd, the centres of all the primary depressions passed outside the limits of the British Isles. In October the mean monthly air pressure was abnormally high, and over Scotland the mean was above the highest previously recorded in October during the past 60 years. At Stornoway the monthly mean was as much as 12·6 mb. above the normal. Primary depressions which passed directly across the British Isles, as in the three preceding months, were again remarkably rare. The mean monthly trend of the isobars in November was considerably from the North of West instead of from the South of West, and, although the mean values were lower than usual, the gradient was about normal. In December the mean values were slightly lower than the normal, and the gradient a little steeper, the trend of the isobars being of a normal south-westerly type.

Temperature.[*]—All Districts in January had a mean monthly temperature below the normal. Except in the Channel Islands the minimum everywhere went down to or below the freezing point, and at the end of the month 266 a. was recorded at Garforth (Yorks.) and Porton (Wilts.), and 265 a. at Leyland (Lancs.), Stonehenge, and Eskdalemuir. Ground frosts were numerous, and a reading of 259 a. was recorded in the open at Bucklebury Place (Berks.). In February also the mean temperature was below the normal in all Districts, a deficiency which was largely due to some very cold weather during the week ended on the 15th. The 9th was a very cold day, and at Woburn a minimum of 256 a. was recorded, with 254 a. on the grass. On the 13th there was a great contrast between some of the inland minima and those at coast stations, Woburn recording 256 a. and Hitchin and Rothamsted 261 a., compared with 279 a. at Falmouth, Fowey and Penzance. As in the two preceding months the mean temperature for March was also below the normal, and in Scotland it was the coldest March for at least 60 years, and, judging by the Edinburgh records, probably for a century. This was a striking contrast to the corresponding month of last year, in which all Districts had an excess of warmth. The highest reading of the month in Scotland was 285 a. at Leith on the 2nd, and never before during the past 60 years had the thermometer failed to reach an appreciably higher level in March. At some stations on the 11th in the South and South-West of England the minimum did not fall below 283 a. In Scotland East and Ireland South the mean temperature in April was equal to the normal, and in England North-East it was 0·3 above it; but in all other Districts the mean was below the normal. The mean for May was above the normal in all Districts. At Glasgow, during the last 60 years, a warmer May was experienced

	Temperature Scales.
100—	—310
90—	
80—	—300
70—	
60—	—290
50—	
40—	—280
30—	—270
20—	
10—	—260

[*] Temperature is given on the Absolute Centigrade Scale. To the nearest degree 225a=0°F., 273a=32°F., 280a=45°F., 300a=81°F., and 310a=99°F.
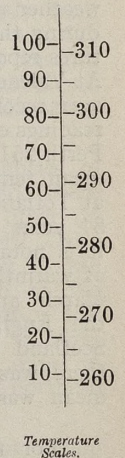
only in 1896. The mean at Worksop (Nottingham) (286·5 a.) was higher than in any previous May for 44 years; and at Southport it was the warmest May for 48 years. On the 23rd the range of temperature at some of the inland stations was very large, and was 23 a. at Cambridge, Raunds, and Worksop, compared with only 1 a. at Castlebay and 4 a. at Lerwick. Very generally the warmest days in June were the 7th and 11th, when temperatures of 300 a. and above were recorded at many English stations. To a large extent these high readings balanced some low ones experienced during the last week, with the result that very commonly the mean temperature for the whole month did not differ much from the normal. On the 3rd a shade minimum as low as 271 a. was recorded at West Linton.

July was a cold month and the mean temperature was below the normal in all Districts, the deficiency of warmth in England East being as much as 2·2 a. In Scotland the first week was unusually cold for midsummer. It was also very cold at Balmoral on the 14th, when a shade minimum of 271 a. was recorded. At Totland Bay (Isle of Wight) it was the coldest July for 39 years. Some warm days during the first part of August were nearly balanced by some cold ones during the latter part, so that the mean temperature for the month did not differ very largely from the normal. Between the 8th and 13th shade temperatures of 300 a. and above were quite common. During the night of the 18th the minimum at Copdock (Ipswich) did not fall below 291 a., the previous highest minimum at this station being 290 a. on July 29th, 1911. At Meltham (Yorks.) the maximum on the 28th (282 a.) was lower than on any other day in August here for at least 41 years. On the same day at Leyland (Lancs.) the maximum was 283 a., the coldest August day ever recorded at this station, and the 31st (minimum 275 a.) was the coldest August night. It is noteworthy that on the usually bracing East Coast the extreme maximum for the month at Yarmouth was as high as 302 a., but in the West at Aberystwyth and Pembroke it was only 295 a. Although slightly below the normal in most districts the mean temperature for September did not differ much from the normal. From the 20th to the end of the month it was cold for the time of year, and a frost on the 29th did much damage to vegetation. At Copdock (Ipswich) a minimum of 272 a. occurred twice, the records of this station providing no previous instance of a frost in the screen in September. At Kew Observatory also a shade minimum of 272 a. was recorded on the 30th (north wall screen), so low a temperature having never before been recorded here in September. Except in Ireland the mean temperature for October was below the normal, a result largely due to low night temperatures. At Richmond (Kew Observatory) ground frosts occurred on as many as 19 nights, the normal number in the October of the previous 15 years being only 7. At Copdock (Ipswich) the mean minimum (276 a.) was the lowest ever recorded at this station in October. From the 11th to 16th of November the weather was unprecedentedly cold for the time of year, and a frost which occurred during this period was experienced all over the British Isles, many of the temperatures reported being lower than any recorded in November during at least 50 years. At Valencia Observatory a minimum of 269 a. was recorded on the 12th, the lowest ever recorded at this station in November. In Scotland some remarkably low readings occurred during the night of the 13th-14th, when Braemar registered 250 a., Perth 251 a., Balmoral and West Linton 252 a., and Kettins 254 a. At Belper the mean temperature (275·7 a.) was the lowest in November during 43 years, and at Totland Bay (Isle of Wight) the mean maximum (280·3 a.) was the lowest in 34 years. In all Districts the mean temperature was below the normal, and it is notable that November was the fifth month in the year with a deficiency of warmth over the whole Kingdom, the other months being January, February, March and July. December had a mean temperature which at many of the English and Irish stations was 2·5 a. above that of November. In Scotland West the mean was normal, but both in Scotland North and East there was a slight deficiency of warmth of 0·3 a.; in all other Districts the mean was above the normal.

For the whole year the mean temperature was below the normal in all Districts, but only in Scotland was the deficiency at all large, the departures from the normal ranging from 0·9 a. in Scotland East to 0·2 a. in Ireland South. For the individual stations the highest maximum temperature was 305 a. at Geldeston and Raunds on September 11th; the lowest minimum 250 a. at Braemar on November 14th; the lowest maximum 261 a. at

Balmoral on November 14th; and the highest maximum 292 a. at Felixstowe, Halstead, Kew Observatory, Tottenham, St. James's Park, and Killerton on August 19th.

Precipitation.*—Taking the British Isles as a whole, the year, although by no means exceptional, was probably the driest since 1908, a result largely due to the persistent shortage of rain during the summer and autumn. The general rainfall for the greater divisions of the country during the year was 103 per cent. of the normal in England, 98 in Wales, 92 in Scotland, and 90 in Ireland, and the percentage for the British Isles as a whole 96. In December the percentage was as high as 147, and 143 in March, 124 in January and 113 in April, but only 54 in October and 55 in July. During January the aggregate at many stations was more than double the normal, 230 per cent., for instance, at Portsmouth, 242 at Portland Bill, and 252 at Bournemouth. In February the totals were very variable, and at Fort William the total (16 mm.) was only 8 per cent. of the normal, and at Glencarron, normally very wet, the total (28 mm.) was only 15 per cent. Contrasted with these aggregates, some of those in Devonshire were equally notable, and at Teignmouth, Plymouth, and Ashburton the percentages were 282, 216, and 191 respectively. Generally March was a wet month, and at Southport and Blundellsands (Lancs.) it was the wettest March during 57 and 43 years respectively. April also was generally wet, but commonly there was more precipitation in the Midlands, Eastern, and Northern Districts than in the Southern and Western. The outstanding feature of May was the prolonged drought, which at numerous stations in the South and East of England commenced quite at the beginning of the month and was still unbroken at the close. Many new records were set up, some of which are detailed in the May Monthly Weather Report, to which reference should be made. At some of the English stations the drought continued until the 19th of June, and generally the latter month was a dry one, but at Stornoway it was the wettest June on record. July also was dry, and at Glasgow it was the driest July since 1878, and in Berwickshire and Morayshire the driest since 1868. August, September, October and November also were generally dry months, and their percentages of the normal over the British Isles as a whole were 84, 94, 54 and 91 respectively. Like January, December was a very wet month, with a percentage of 147, and at some stations rain fell on every day of the month. At Rothesay the total fall for the month was 282 mm. more than twice the normal, and greater than in any December at this station during 120 years; and at Markree Castle it was the wettest for at least 48 years.

Sunshine.—The mean daily amount of sunshine differed very little from the normal, the departures from the latter ranging from +0·35 hr. per day in Scotland West to −0·25 hr. in England South-East. The sunniest District was the English Channel (4·92 hr.), and the least sunny Scotland North (3·10 hr.). In August there was an excess of sunshine all over the Kingdom, but in no month was there a general deficiency.

Snow.—Snow was very general in the Midlands and northern counties of England during the early days of January, but, except in Scotland, there was not much in February, whereas in March it fell somewhere or other on most days. The most notable fall of the year occurred as late as April 27th; snow was reported on this day by every telegraphic reporting station in the British Isles except Portland Bill. It lay to a considerable depth in the eastern counties. September and October had only a little snow at a few stations, but in November it fell frequently, especially from the 11th to 16th. It also fell frequently in Scotland during December, on several days in England, and less frequently in Ireland, but only at a few of the more northern stations did it lie on the ground to any considerable depth.

Thunderstorms were reported in every month except February, but taking the year as a whole they were comparatively infrequent, and on only a few occasions were the storms at all general. In Scotland there was a remarkable absence of thunderstorms in July, and there was a notable scarcity of them in England during August.

* Precipitation is given in Millimetres; 1 mm. is nearly 0·4 in.; 25·4 mm.=1 in.

Hail was reported somewhere or other in every month, and was frequent in January, March, April, October and November, but rare in February, June, July and August.

Fogs.—Although somewhat frequently reported at some of the coast stations, where they were unusually frequent in May, fogs were not numerous during the year, and none was very widespread. They were remarkably rare in November, and were infrequent in December.

Aurora was observed in every month except June and July, and the most widely seen displays were those of February 27th, September 19th, and during the night of October 1st-2nd. The latter display was seen as far south as the Isle of Wight.

As in previous Annual Reports the following notes refer exclusively to the stations, the results from which are given on pages 62-65.

The highest temperatures of the air were 88°F. at Cambridge; 87°F. at Tottenham, Westminster, and Cromer; and 86°F. at Oxford, Salisbury, Bennington, Berkhamsted, Bath, and Woolacombe.

The lowest temperatures were 10°F. at Buxton and Cambridge; 11°F. at Durham; and 14°F. at Belvoir Castle, Bennington, and Berkhamsted.

The heaviest totals of rain were 1223 mm. at Buxton; 1155 mm. at Guernsey; and 1122 mm. at Falmouth.

The smallest totals of rain were 516 mm. at Cromer; 559 mm. at Clacton; and 586 m.m. at Greenwich.

The stations with the greatest number of days of rain were Scilly with 228; Cromer with 223; and Falmouth with 216.

The stations with the least number of days of rain were Cheltenham with 137; Portsmouth with 154; and Cambridge with 155.

Further Information.—Charts showing the distribution of pressure, temperature, sunshine, and rainfall for the year will be found in the Annual Summary of the Monthly Weather Report (issued by the Meteorological Office) for 1919.

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