

THE BAOK-OP REGISTRAR GENERAL'S STATISTICAL REVIEW OF ENGLAND AND WALES FOR THE YEAR 1951

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TEXT VOLUME



LONDON: HER MAJESTY'S STATIONERY OFFICE 1954

TEN SHILLINGS NET

# Census 1951

## **COUNTY REPORTS**

These reports contain the definitive 1951 Census populations for Local Authority areas, wards, civil parishes, parliamentary constituencies and petty sessional divisions. Local populations are analysed by sex, age, marital condition, birth-place and nationality, numbers in full-time education, and social class.

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THE

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# ENGLAND AND WALES

# FOR THE YEAR

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The Tables summarizing the meteorological conditions of the year will continue to be published in the Statistical Review, Tables, Part I. More detailed information may be obtained from the "Monthly Weather Report" and other publications of the Meteorological Office.

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#### EXPLANATORY NOTES

#### 1. Numbering of Tables

Of the tables referred to in this review, those numbered in Arabic numerals, will be found in "Tables, Part I—Medical", and those lettered will be found in "Tables, Part II —Civil", for the year in question, whilst those numbered in Roman numerals appear in this volume.

#### 2. Indication of Significance

Rates based upon less than 20 births, deaths or cases notified are distinguished by italic type as a warning to the user that the smallness of the experience may affect their significance. Rates given as 0 indicate that the rate is insignificant. A dash (-) in tables showing rates indicates that there were no deaths or cases.

#### 3. Regions

The constitution of the Standard Regions of England and Wales that are used in this volume is as follows :---

REGION I.	REGION IV. Eastern.	REGION VI. Southern.	Wales II Anglesey.
Northern.	Bedfordshire.	Berkshire.	Caernarvonshire.
Cumberland.	Cambridgeshire.	Buckinghamshire.	Cardiganshire.
Durham. Northumberland.	Ely, Isle of.	Dorset.	Denbighshire.
Westmorland.	Essex, Part of <sup>2</sup>	Oxfordshire.	Flintshire.
Yorkshire, North Riding.	Hertfordshire, Part of <sup>3</sup>	Southampton.	Merionethshire.
rorksnire, North Riding.	Huntingdonshire.	Wight, Isle of.	Montgomeryshire.
V Denne Villing Laffrance	Norfolk.		Pembrokeshire.
REGION II.	Suffolk, East.		Radnorshire.
East and West Ridings.	Suffolk, West.	REGION VII.	Tolloriden M. M. article
Yorkshire, East Riding.	Second and the second second	South Western.	The second second
Yorkshire, West Riding.	The state of the s	Cornwall.	REGION IX.
	REGION V.	Devon.	Midland.
REGION III.	London and South Eastern.	Gloucestershire	Herefordshire
North Midland.	Essex, Part of <sup>4</sup>	Somerset.	Shropshire.
Derbyshire, Part of <sup>1</sup>	Hertfordshire, Part of <sup>5</sup>	Wiltshire.	Staffordshire.
Leicestershire.	Kent.		Warwickshire.
Lincolnshire—	London Admin. County.		Worcestershire.
Parts of Holland.	Middlesex.	REGION VIII.	E. C. C. C.
Parts of Kesteven.	Surrey.	Wales I.	REGION X.
Parts of Lindsey.	Sussex, East.	Brecknockshire.	
Northamptonshire.	Sussex, West.	Carmarthenshire.	North Western. Cheshire.
Nottinghamshire.	The second real of the second second	Glamorganshire.	Derbyshire, Part of
Peterborough, Soke of.	and the second sec	Monmouthshire.	Lancashire.
Rutland.		and the second state of the second	Lancasmre.

 All except Buxton M.B., Glossop M.B., New Mills U.D., Whaley Bridge U.D., and Chapel en le Frith R.D.
 All except East Ham C.B., West Ham C.B., Chingford M.B., Wanstead and Woodford M.B., Leyton M.B., Walthamstow M.B., Ilford M.B., Barking M.B., Dagenham M.B., Waltham Holy Cross U.D., and Chigwell U.D.

3. All except Barnet U.D., Bushey U.D., Cheshunt U.D., East Barnet U.D., and Elstree R.D.

4. All areas stated in 2 above.

5. All areas stated in 3 above.

6. All areas stated in 1 above.

#### 4. Conurbations

The conurbation areas used in this volume were agreed by an interdepartmental committee, representing the principal Departments preparing statistics, as a means of securing uniformity and comparability in statistics published by Government Departments in the United Kingdom.

Conurbation is the word used to describe those areas of urban development where a number of separate towns have grown into each other and become linked by such factors as a common industrial or business interest, or a common centre of shopping, education, etc. The conurbations are each made up of a collection of complete local authority areas, constituted as follows :---

H.M. Mont	C: Statuer U.D.	Tyneside	
Gateshead C.B. South Shields C.B.	Durham Felling U.D. Hebburn U.D. Jarrow M.B. Whickham U.D.	Northu Newcastle-upon-Tyne C. Tynemouth C.B. Gosforth U.D.	mberland B. Longbenton U.D. Newburn U.D. Wallsend M.B. Whitley Bay U.D.

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#### EXPLANATORY NOTES-continued.

#### West Yorkshire Yorkshire, West Riding Bradford C.B. Dewsbury C.B. Halifax C.B. Huddersfield C.B. Leeds C.B. Wakefield C.B. Aireborough U.D. Baildon U.D. Batley M.B. Bingley U.D. Brighouse M.B. Heckmondwike U.D. Holmfirth U.D. Horbury U.D. Horsforth U.D. Ossett M.B. Pudsey M.B. Queensbury and Shelf U.D. Ripponden U.D. Rothwell U.D. Keighley M.B. Colne Valley U.D. Denby Dale U.D. Denholme U.D. Elland U.D. Kirkburton U.D. Meltham U.D. Mirfield U.D. Shipley U.D. Sowerby Bridge U.D. Spenborough U.D. Stanley U.D. Morley M.B. South East Lancashire Cheshire Lancashire Bolton C.B. Bury C.B. Manchester C.B. Oldham C.B. Rochdale C.B. Salford C.B. Urmston U.D. Wardle U.D. Westhoughton U.D. Whitefield U.D. Whitworth U.D. Worsley U.D. Stockport C.B. Horwich U.D. Horwich U.D. Irlam U.D. Kearsley U.D. Lees U.D. Littleborough U.D. Alderley Edge U.D. Altrincham M.B. Bowden U.D. Bredbury and Romiley U.D. Cheadle and Gatley U.D. Dukinfield M.B. Hale U.D. Little Lever U.D. Middleton M.B. Milnrow U.D. Mossley M.B. Prestwich M.B. Ashton-under-Lyne M.B. Audenshaw U.D. Chadderton U.D. Crompton U.D. Denton U.D. Limehurst R.D. Hazelgrove and Bramhall U.D. Hyde M.B. Marple U.D. Sale M.B. Radcliffe M.B. Droylsden U.D. Royton U.D. Stretford M.B. Failsworth U.D. Failsworth U.D. Farnworth M.B. Heywood M.B. Stalybridge M.B. Wilmslow U.D. Swinton and Pendlebury M.B. Tottington U.D. Disley R.D. Mersevside Cheshire Ellesmere Port U.D. Hoylake U.D. Neston U.D. Wirral U.D. Lancashire Birkenhead C.B. Wallasey C.B. Huyton with Roby U.D. Litherland U.D. Bootle C.B. Liverpool C.B. Bebington M.B. Crosby M.B. West Midlands Staffordshire Warwickshire Worcestershire Smethwick C.B. Walsall C.B. West Bromwich C.B. Wolverhampton C.B. fordshire Darlaston U.D. Rowley Regis M.B. Sedgley U.D. Tettenhall U.D. Tipton M.B. Birmingham C.B. Dudley C.B. Solihull U.D. Sutton Coldfield M.B. Halesowen M.B. Oldbury M.B. Stourbridge M.B. Aldridge U.D. Amblecote U.D. Bilston M.B. Brierley Hill U.D. Coseley U.D. Wednesbury M.B. Wednesfield U.D. Willenhall U.D. **Greater London** London (whole county) Middlesex (whole county) Kent Essex Kent Beckenham M.B. Bexley M.B. Bromley M.B. Chislehurst and Sidcup East Ham C.B. West Ham C.B. Surrey Surrey Kingston upon Thames M.B. Malden and Coombe M.B. Merton and Morden U.D. g- Mitcham M.B. Barking M.B. Chigwell U.D. Chingford M.B. Dagenham M.B. U.D. Crayford U.D. Erith M.B. Orpington U.D. Penge U.D. Croydon C.B. Banstead U.D. Barnes M.B. Beddington and Walling-ton M.B. Ilford M.B. Carshalton U.D. Coulsdon and Purley U.D. Epsom and Ewell M.B. Esher U.D. Richmond M.B. Surbiton M.B. Wimbledon M.B. Leyton M.B. Waltham Holy Cross U.D. Hertfordshire Barnet U.D. Bushey U.D. Cheshunt U.D. East Barnet U.D. Elstree R.D. Walthamstow M.B. Wanstead and Wood-ford M.B.

#### 5. General

See also explanatory notes to the Tables volumes, Parts I and II.

CORRIGENDA

#### Statistical Review, 1946-50, Text, Civil

Page 125.	Table LXX, Part (a),
	1945/46 cohort, duration 2- years,
	for 129 read 128.
	Table LXX, Part (b), 1945/46 cohort,
	duration 2- years, for 629 read 628,
	duration 3- years, for 698 read 697,
	duration 4- years, for 738 read 737.
Page 196.	Appendix II, Table 6, Part I,
	Under 25, 1937-38 cohort, duration 2 years
	tor 629 read 639.
Page 217.	Line 7, for pages 220-221 read page 213.
Page 220.	Appendix III, Table 4, Section 7, year of bi
C.	age 15- for 3,472 read 3,550,
	age 20- for 3,550 read 3,472.

#### Statistical Review, 1950, Text, Medical

Page 157. Influenza table heading, for per 100,000 living, read per million living.

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#### LOMBOLRSOD .

Natistical Review, 1946-50, Text. Chvil

# Tage 125. Table LXX Part MTRODUCTION

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#### INTRODUCTION

The present volume is the first Text (i.e. commentary) volume of the Registrar General's Statistical Review to cover both civil and medical statistics since the Text volume for the years 1938–39 was published in 1947. This was the normal pre-war practice. It is hoped that reversion to it will give readers a better opportunity to survey the whole field of the year's vital statistics.

#### **Object of the Text Volume**

The primary object of the Text volume is to provide a commentary on those statistics of the period under review which have already been published in the Tables volumes of the Statistical Review. This commentary aims to set the statistics in perspective particularly by drawing attention to trends and significant characteristics which will be a guide to research workers and others concerned with public health and with vital and health statistics. It also seeks to explain the reasons for changes in presentation of the statistics as the interest and the significance of different factors change. Obviously on some subjects commentary in the Review every year is unnecessary or impossible either because nothing of significance has happened or because, the numbers being comparatively small, the experience of a series of years is needed before worthwhile comment can be made. Thus, in the present volume Maternal Mortality and Multiple Births are not treated at length. With these topics, as with some causes of death, a periodic review over several years is likely to be the most useful approach.

In addition to this primary aim, it is necessary to relate the vital statistics of a year to other work in similar fields. In particular, there have been great developments since the war in international discussion and interest in the fields of demography and health statistics ; a reference to the activities of such bodies as the World Health Organization and the Population Commission of the United Nations assists understanding of their influence on work in similar fields in this country and at the same time illustrates the contribution made by this country to their work. Some account of these activities is given herein.

Finally, to complete the story of the year's work, a brief description is added of other activities of the General Register Office. In particular, there is a summary of the operation and uses of the National Register from its beginning in 1939, an account of the progress of the registration (births, deaths and marriages) service during the year, a list of committees on which the Registrar General was represented and a list of published contributions by officers of the Department.

#### **Civil and Medical Statistics**

The statistical commentary of the present volume falls into two main parts, corresponding to the division of the Tables volumes into Civil and Medical statistics respectively.

The civil part is concerned in the main with population, births and fertility, marriages and divorces ; the primary aim here is to show what trends are apparent in post-war experience and to compare them so far as possible with the pre-war position. It is hoped that this account will be of value to research workers and others as a guide to the large volume of statistics which is now available in this field.

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The medical part of the present volume, like the Medical Text volumes of earlier years, is concerned with the mortality and notification statistics of the year, particularly where they point to the need for further action or research. It cannot be exhaustive in this respect, whether in the subjects covered or in the extent to which they are examined. The purpose is to provoke others to examine further those matters which *prima facie* appear to merit investigation and to provide evidence to help in deciding where and in what ways administrative and clinical action might be taken.

The subjects discussed show some changes from other recent years. This year, maternal mortality, which continued to decline, is not discussed. Compared with the year 1950, greater emphasis is placed on respiratory diseases in view of the serious influenza epidemic early in 1951 and a section on diseases of the circulatory system is introduced in view of their increasing importance as a cause of death.

As noted in earlier volumes, mortality statistics can give but a partial picture of the condition of the people's health, but Supplements to the Annual Review, which deal with the conditions treated in mental and other hospitals, cases of cancer registered by hospitals and the illnesses and ailments reported to interviewers by a sample of the population, are being prepared and will later be published for the two years 1950 and 1951.

A useful step towards improving knowledge of the illnesses from which people suffer was taken early in 1951 when ten general practitioners started recording, for statistical analysis by the General Register Office, details of what their patients consulted them for. The first year's results of this enquiry have been published\* and a further two years' results are being analysed. Plans are now being made, in collaboration with the College of General Practitioners, to conduct a similar enquiry based on the records of some 100 practices.

As in previous years, the Department is indebted to the Registrar General's Advisory Committee on Medical Nomenclature and Statistics, under the chairmanship of Sir Ernest Rock Carling, for much valuable assistance and advice in planning and overcoming difficulties encountered in the various enquiries which the Department undertakes, and also for keeping the Department in closer touch with those who can use its material with profit. The list of members of the main Committee and of the Sub-Committee is given in Appendix D (page 308). A report relating to the Committee's work during 1951 and 1952 has been published in the Registrar General's Quarterly Return for the December Quarter, 1952.

#### **Population**

1951 was the first year since 1931 in which a census of population was held. Preliminary results of the Census from the provisional count were used as the foundation for the mid-year estimates for local authority areas (pages 13–17); and data from the 1 per cent sample contributed to the national estimates of the population by sex, age and marital condition (pages 10–13).

#### Births, Fertility and Reproductivity

This is one of the more important subjects dealt with by the Text volume. The value of population studies lies not only in their analysis of the present population and its composition but in the indications they can give on future trends. In this sense an analysis of fertility is essential both to show what has happened and to provide pointers to the future.

Pages 43 to 49 of the present volume throw light on some striking changes which seem to be taking place in family building habits. "Seem" is the appropriate word because the experience of 1951 is not sufficient in itself to justify a firm conclusion. Nevertheless, there is evidence that the disturbances of the war are past and that fertility is reaching a comparatively stable level above that of the pre-war period 1931–38 (page 20).

Another suggestion offered is that the size of families may be becoming more uniform, in that the proportion both of childless families and of large families may be decreasing. The evidence for this is discussed in the section on " maternities by number of previous children " (page 44).

One reason for caution in making comparisons of fertility is that much of the information was only collected for the first time under the Population (Statistics) Act in 1938 and that year is not necessarily a normal pre-war year. Although the trends are still uncertain, it may be that with the help of the continuing information provided under the Act it will be possible to look back in a few years' time and see that the year 1951 did in fact mark the beginning of a relatively stable period of fertility.

#### Marriage and Divorce

Present fertility affects both the size and the composition of the future population. Going back a stage further, changes in the present marriage rate are likely to affect present and future fertility ; and the population structure of the past has some influence on present marriage rates. The interaction of the various factors is well illustrated by the following facts : the proportion of men to women in the population aged 15-44 has been steadily increasing since 1921 ; since 1938 marriage rates have on an average been maintained at a higher level than the highest previously recorded, which was in the nineteenth century. The combination of these two facts has produced some striking results : taking into account only those men and women who, at a particular period, were not married, we find that, whereas at ages 25-34 there were 960 men for every 1,000 women in 1931, the figure in 1951 was 1,349. Similarly, the proportion of married women in the total population of women has increased enormously (at ages 15-19 it was in 1951 83 per cent above 1938, at ages 20-24 45 per cent higher). There has thus been a remarkable change in marriage habits so that not only are more people married but they tend, especially the girls, to marry younger ; an important factor has been the relatively greater supply " of marriageable young men. This tendency has undoubtedly played its part in the increased fertility mentioned in the last section. Marriages are discussed on pages 62 to 77.

The importance of divorce and its effect on the numbers of people married in the population is discussed on pages 80–83. It is probable that about twothirds to three-quarters of those who have been divorced ultimately re-marry.

#### Mortality in 1951

The 549,380 deaths registered in England and Wales in 1951 were 8 per cent more than those registered in 1950. More than a third of them were registered in the March quarter when there was an influenza epidemic more severe than any since 1943. There is no reason to think that any other factor had a marked influence in increasing the mortality of the year and the size of the increase emphasizes, if emphasis is needed, the importance of having ready the means

<sup>\*</sup> Studies on Medical and Population Subjects, No. 7: General Practitioners' Records— An analysis of the clinical records of eight practices during the period April 1951 to March 1952. H.M.S.O., price 8s. 6d. net.

of controlling such an epidemic, or better still, of discovering how to prevent it altogether. That the epidemic had little effect on mortality at ages under 45 does not detract from the fact that it imposed a heavy burden on the medical services and seriously affected the productive resources of the country while it lasted. The Survey of Sickness shows that the number of medical consultations of adults in the March quarter of 1951 was 12 per cent greater than in the March quarter of the previous year ; this represents an increase of about six million consultations, but it does not reflect the full strain on general practitioner services, since less urgent needs were no doubt postponed or not met at all. The effect on the country's productive resources is evident from the excess of 647,600 new claims to sickness benefit under the National Insurance scheme in the March quarter compared with the corresponding period of 1950.

#### **Infant Mortality**

Vital statistics have in the past undoubtedly contributed much towards provoking the initiation of measures aimed at reducing loss of life during the first year. While it would be difficult to assign any specific administrative measure or medical advance solely to the influence of the statistics, these have, since the turn of the century at least, pointed the need for and, in some respects, the way to remedial and preventive action. The continued improvements in sanitation, the appointment of health visitors, the special emphasis on care of illegitimate babies, the provision of special foods for mother and child have all derived their impetus to a greater or less extent from the evidence of the statistics. So, now, the evidence highlights the importance of immaturity as the most important single factor in the loss of infant life. The present volume follows up that for 1950 in drawing attention to some of the characteristics associated with deaths of immature infants and deaths arising from other factors operating on the foctus before birth, while continuing to draw attention to the persistent differentials which exist between different parts of the country, between legitimate and illegitimate babies and between different social classes.

#### **Infectious Diseases**

Figures for 1951 confirmed the experience of 1950 that the notifications of *food poisoning* were relatively more frequent in the areas with lowest and highest density of population than in the small and medium-sized towns. Whether this reflects variations in the completeness of notification, variations in the amount of communal feeding, or some other factor cannot be determined from the notification statistics alone.

After two successive epidemic years, *poliomyelitis* showed a comparatively low incidence in 1951. With 30 per cent of cases affecting children under 5, the age distribution continued to follow the pattern of 1949 and 1950 and the pre-war years, rather than that of 1947 when an exceptional proportion of cases related to adults. In contrast with the experience of the years 1947 to 1950, the notification rates in London and in the South-Western Region were below the average for the country.

The benefits of immunization against *diphtheria* continue to manifest themselves in declining notification and mortality rates. These benefits are perhaps most obvious when the experience of children who have been immunized is compared with that of children who have not. In 1951 there was only one death from the disease of a child recorded as immunized, representing a fatality ratio of 0.8 per cent among immunized children compared with a fatality ratio of 6.4 per cent among those who had not been immunized.

Other infectious diseases discussed are typhoid and paratyphoid fevers,

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dysentery, scarlet fever, whooping cough, meningococcal infections, acute infectious encephalitis, measles and smallpox. Three of these had exceptionally high notification rates in 1951, namely, dysentery, whooping cough and measles, while the outbreak of smallpox in Brighton early in the year resulted in 10 deaths, an unusual event in recent years.

#### Tuberculosis

The difficulty of determining from the available statistics whether the number of cases of respiratory tuberculosis has been increasing or decreasing in recent years and how the present situation compares with the years before the war is again emphasized. Since, moreover, males and females at various ages have fared differently, it is essential to consider each sex-age group separately. Thus, the 1951 increase in notifications in males in the age group 15–24 may reflect a further improvement in case finding or it may be a consequence of the influenza epidemic early in the year, a hypothesis which is supported by the fact that the increase was greatest in the North Western Region. In spite of the continued decline in mortality from respiratory tuberculosis, except at ages over 65, the question of what is really happening about morbidity is of increasing importance, because steps to eradicate tuberculosis from the community will be greatly facilitated by such knowledge. It is unlikely that notification and mortality statistics alone can give the answer but more intensive examination of other statistical evidence may help.

The areas of high rates of notification and mortality from respiratory tuberculosis show little change from year to year, but the table on page 162 again picks out the county boroughs with particularly high or low mortality rates. This table, for which the arbitrary rates used to define high or low mortality have had to be reduced because of the overall decline in mortality, shows numerous changes from 1950, but the names of some towns appear in both years. It remains to be seen whether towns which tend to have high rates at present can substantially and permanently improve their relative position.

#### Cancer

In view of the difficulty introduced by changes of classification in studying trends of mortality from cancer, an attempt has been made to adjust all-age figures for such changes since the beginning of the century and figures for individual age-groups since 1936. Figures so adjusted for cancer of the lung, cancer of the prostate, cancer of the uterus and cancer of the breast are presented in this volume as well as aggregate figures for all other sites. The increase from cancer of the lung has already been extensively discussed, but a point which is brought out by the diagram on page 182 is that, since 1944, the rate of increase among women at ages over 65 has closely approximated to that among men. There are signs that the general tendency for mortality from cancer of the prostate to rise has been reversed in recent years in the age-group 55-64. The most marked change since 1936 in mortality from cancer of the female breast is in the age-group 35-44, in which there has been a definite tendency for mortality to increase. In recent years the age-group 35-44 has not continued the declining trend in mortality from cancer of the uterus, which was well-marked in that age group until 1948 and seems to have accelerated in other age groups since that year.

Geographical variations in mortality from cancer of the lung are further discussed on page 185 and changes in cancer mortality amongst children since 1921 on page 187.

#### Diseases of the Circulatory System

Since 1946 there has been a tendency for mortality from diseases of the circulatory system as a whole to rise from the lower levels recorded during the years 1942–46. Trends within the group have been much affected by changes in classification, changes in certification practice and confusion about nomenclature. In showing those trends allowance has been made in the present volume for the change in classification introduced in 1950, but the effect of changes in certification practice cannot be assessed and there is a real need to clarify nomenclature, which is recognized in current research.

The increasing trend of mortality reported as due to coronary disease was not materially interrupted by the war and has continued since ; the other main contributor to the increase in mortality for the group as a whole is hypertensive disease.

The geographical distribution of mortality from these diseases is shown, the most notable features being the higher mortality in the towns than in the rural areas for coronary disease, myocardial degeneration (except for a very low rate in Greater London) and hypertension.

#### **Respiratory Diseases**

Mortality from *influenza* in 1951 was four times as great as in the previous year and was much greater than in any year since 1943. Nevertheless, it was no more than the normal in years up to 1935. This comparatively low mortality in what was regarded as a severe epidemic reflects the efficacy of chemotherapy in combating some of the respiratory complications particularly in the younger age-groups, whose mortality was little affected by the epidemic. The experience of Liverpool, which suffered its highest weekly death roll since the cholera epidemic of 1849, demonstrates, however, that influenza may still be a serious menace.

Mortality from *pneumonia* and *bronchitis* shared in the upward fluctuation associated with the influenza epidemic, but it is apparent that their importance as causes of death has generally been declining in recent years. A tendency is also apparent for doctors to certify other conditions rather than bronchitis as the underlying cause of death at ages over 65, notably heart disease and pneumonia.

#### **Violent Deaths**

Death rates from violence in 1951 were more than in any of the preceding three years ; the increase was mainly among people aged 75 and over and men aged 20–24. The increase in the latter group was due mainly to an increase in fatal road accidents which also affected most other age groups.

Deaths from *accidental poisoning* continued the rising trend which has been evident since 1944. This trend has affected deaths from household gas poisoning, but only at ages over 45, and deaths from poisoning by drugs. A detailed analysis is made of the poisons causing fatal accidents in children under 15 in the nineteen years 1931 to 1949; the annual number of deaths in the latter half of this period was double that in the earlier half. The age group under 5, chiefly the one-year-olds, experiences a higher risk of death from accidental poisoning by drugs than any other age-group; yet the remedy at this age seems to be a simple matter of taking reasonable precautions with drugs which may be dangerous to children.

#### Multiple Causes of Death

In the normal tabulation of mortality statistics, no account is taken of any disease which may have played a part in causing death unless it was the under-

lying cause. The form of certificate provides for such associated causes to be stated and an analysis of causes so stated in a sample of death certificates in 1951, carried out by the World Health Organization Centre for Classification of Diseases, is included in this volume (page 250).

#### International Co-operation in Population and Health Statistics

The vital statistics of a country acquire an added importance and value when they can be compared with similar data in other countries. To secure such comparability much painstaking and careful work is now done at International Conferences and in International Committees ; this is concerned with promoting uniformity of classification, nomenclature and statistical methodology. The object of the International chapter on pages 270–281 of the present volume is to demonstrate the progress which is being made internationally in these matters. This country has always been active in furthering these efforts and is continuing to do so.

An account is given of the historical background and of the activities of the Population Commission of the United Nations from 1947 to the end of 1951.

On the medical statistics side, the volume discusses the work of the World Health Organization in relation to its Centre for Classification of Diseases (which is based on the General Register Office), its Expert Committee on Health Statistics and the World Health Assembly.

Notes on the Conference of British Commonwealth Statisticians and on visitors from abroad to the General Register Office complete this brief survey of international matters.

#### National Registration

This introduction has been concerned so far only with vital statistics. The National Register which was created in 1939 and brought to an end in February, 1952, was intended primarily to serve administrative purposes. It did so notably in its link with food rationing—an association which proved to be of **value** to both the Ministry of Food and the General Register Office. But it also had its statistical uses, particularly in the production of population estimates. In addition it served a wide variety of other purposes from verifying ages on claims for Post-War Credits to locating the children born on Prince Charles's birthday. Altogether 110 million removals were recorded in the Register in the nearly twelve years of its existence which are dealt with on pages 285–292.

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<sup>1</sup> Convertibility England and Wale: Precisionary Report Bandon (I.M.S.O., 1961, S. 9) Consultation Construction One Per Contension Tables (Soundon, M.M.S.O., 1953) Part I. Fragat, Part R. (201)

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#### POPULATION

The year 1951 saw the first census of population in the United Kingdom for twenty years, that due in 1941 having been rendered impracticable by the war, though to a very limited extent the National Register enumeration of 1939 formed a substitute. The population enumerated in England and Wales numbered 43,744,924 (21,024,187 males and 22,720,737 females), an increase of 3.8 millions since 1931. These are the provisional figures published in the Preliminary Report\* based on the enumerators' summaries, but judging by past experience they will not be appreciably modified by the final count.

The preliminary results derived from these summaries and from a sample of 1 per cent of the returns<sup>†</sup> have been used in arriving at the population estimates for 1951, and also to try to assess the extent and character of the errors in the estimates for recent years which were bound to accumulate in such a long and disturbed intercensal period.

The census has also allowed a return to the basis of the estimates which was normal before the war, when they were likewise projected forward from the last census. The data available for an estimate are bound to influence its character and content to some extent, at least at the margin. For recent years the chief sources have been the statistics of food ration books issued and those of population movement recorded in the National Register, apart from the national records of births, deaths and marriages. These statistics related in the first instance to the resident civilian population in possession of ration books and identity cards, and had to be supplemented in respect of special classes such as certain institution inmates without ration books, members of the British merchant navy, and non-civilians. The census, however, counts not the people on a certain register or in possession of certain documents, but those actually present on Census Day. It also supplies data for adjusting the numbers in local areas in respect of people away from their usual residence, provided they were enumerated in England and Wales. The balance of persons temporarily visiting over those absent from the country can only be assessed with the help of much less complete data, and only for the country as a whole. But the census is held in early Spring when such movement is at a relatively low level.

On 8th April, 1951, the number of people enumerated in England and Wales who stated that their usual residence was outside these two countries was about 108,000. Against this, the number of England and Wales residents enumerated elsewhere in the British Islands and the Irish Republic was about 36,000; the number temporarily absent from the British Islands and the Irish Republic (other than merchant seamen) may be estimated very roughly as about 20,000–30,000<sup>‡</sup>; and the number of merchant seamen similarly absent as about 60,000; together these elements amount to, say, 110,000–130,000, or a number very similar to those temporarily present here. In other words the balance of temporary visitors is so small in relation to the total numbers in the country that the simple count of those present may be accepted as equivalent to those resident here. (The approximation is a little less close for individual sexes or age-groups, but is still acceptable.)

In the above figures the Armed Forces have been treated as resident where stationed. This is the concept of the *Home Population*. If, on the other hand, the whole contribution of England and Wales to the British Armed Forces, whether at home or abroad, is included, and Commonwealth and Allied Forces stationed here are excluded, this gives the *Total Population*; excluding all Forces gives the *Civilian Population*. The mid-1951 estimates of these three types, by sex, are shown in Table I.

#### Table I.—Estimated Population of England and Wales, Mid-1951

(Thousands)

A BERLEY BILL STORE	Persons	Males	Females
Total Civilian	$44,008 \\ 43,269$	$21,255 \\ 20,535$	22,753 22,734
Home	43,800	21,049	22,751

These estimates have been built up from the numbers enumerated at the census, i.e., the home population on 8th April, 1951, as follows : First the estimated number of non-civilians included in the count was subtracted and the estimated contribution of England and Wales to the British Armed Forces at home and abroad added, thus giving the *total* population at census date. Adding the births and immigrants and subtracting the deaths and emigrants during the period to 30th June (the migration figures being derived mostly from the National Register) gave the total population at the middle of the year. From this the civilian and home population estimates could then be obtained by subtracting or adding the appropriate types of non-civilians, information about the latter being provided by the Service Departments and the Central Statistical Office.

Comparison of previous population estimates with the census is not altogether easy, because of the differences in content discussed earlier. However, using the above assessment of those differences, and assuming that the preliminary census figures represent a complete and accurate count, an estimate of the expected numbers at census date is about 150,000, or  $\frac{1}{3}$  of 1 per cent, in excess of those actually found.<sup>\*</sup> The excess is confined to the males. In view of the long and disturbed period since the previous census this result may be regarded as sufficiently satisfactory.

The approximate amount and composition of the change in the total population in the year since mid-1950, after allowing for any errors in the estimates for that date, are shown in Table II.

It will be seen that the increase of 132 thousand is almost entirely due to the excess of births over deaths, the migration balance for the year being negligible. Of the fall in the percentage rate of increase to 0.30 from the average of 0.64 for 1945–50, the greater part is accounted for by the decline in the number of

<sup>\*</sup> Census 1951, England and Wales, Preliminary Report (London, H.M.S.O., 1951, 5s.)

<sup>†</sup> Census 1951, Great Britain, One Per Cent Sample Tables (London, H.M.S.O., 1952.-Part I, 17s, 6d., Part II, f2).

<sup>&</sup>lt;sup>‡</sup> This figure was estimated in conjunction with the Board of Trade on the basis of the limited information available about passenger movement. It is subject to a large margin of error, but is believed to be of the right order of magnitude.

<sup>\*</sup> This figure differs from others published earlier because the information about the balance of visitors other than merchant seamen has only recently become available.

births from the exceptionally high levels in the immediate post-war years, and the remainder by the temporary rise in deaths associated with the influenza epidemic in the winter of 1950–51.

teore de l'anter a datter de Les seutendes seutendes		Increase	or Decrea	se (—) in	Total Po	pulation	
Mid-year to Mid-year		Total	the seal	Births	Deaths	Natural	Net Migra-
	Persons	Males	Females	Births	Deaths	Increase	tion
1950-51 ${Thousands} Per cent$	$\begin{array}{c} 132 \\ 0\cdot 30 \end{array}$	69 0-33	63 0·28	$689 \\ 1.57$	-566 - 1.29	$     \begin{array}{c}       123 \\       0.28     \end{array} $	$9 \\ 0.02$
1945–50 {Per cent per annum	0.64	0.77	0.52	1.80	-1.16	0.64	0.00

# Table II.—Analysis of Population Movement, 1950–51, and Comparisonwith 1945–50

#### National Sex-Age Estimates

The estimates of the national total, civilian and home populations by sex and age at mid-1951 published in Table 1 of Part I and Table A2 of Part II\* are based on the 1951 Census one per cent sample tabulations. The data were first graduated (smoothed) to correct them approximately for mis-statements of age and sampling variation, then converted from a home to a total population basis by adding the difference between the Armed Forces belonging to England and Wales and those stationed there, and finally moved on from census date to the middle of the year by the method described in previous reports. This consists of suitably ageing the numbers at the earlier date, adding the births of the intervening period at age 0 and the immigrants at the ages they would have had at mid-year and deducting the deaths and emigrants at the corresponding ages. The civilian and home populations are obtained from the total population by subtracting or adding the appropriate types of noncivilians. (Similar estimates for 31st December, 1951, are shown in Appendix A.)

Comparison of this census-based estimate with one moved on in the usual manner from the published estimate for 1950, with small adjustments to secure comparability, gives an indication of the errors in the estimates for years before 1951. It suggests that the male age-group 20–24 in 1951 would have been overstated by the pre-census estimates by about  $3\frac{1}{2}$  per cent, and that the remaining errors are smaller, mostly much smaller, except at ages 85 and over, where, however, the numbers in the census one per cent sample are too small to allow any accurate assessment of the estimate excess found. The published estimates for the earlier years may thus be regarded as adequate for most purposes until the final census results are available.

The average age of the population, at 34.4 years for males and 36.9 years for females, is hardly changed since 1945, and about a year higher than in 1939 for males and about a year and a half for females. But this conceals appreciable increases, compared with both dates, in the proportion of the population at both the youngest and oldest ages at the expense of those aged 15–44, especially of females, as the following figures show :

and the state of the second se	Per thou	isand of Total Pop	oulation
Sex-age Group	1939	1945*	1951
Under 15, Males and Females	210	205	221
(Males	234	228	-213
15-44 $\begin{cases} Males & \dots & \dots & \dots \\ Females & \dots & \dots & \dots & \end{pmatrix}$	241	232	215
(Males .	104	107	112
45-64 {Males Females	122	126	129
65 and over, Males and Females	89	102	110
Francis	encane	a second production of the second sec	and the first
Total	1,000	1,000	1,000

\* The 1945 figures are subject to some degree of error, which is, however, most unlikely to affect the general picture.

Again, while the ratio of females to males in the total population, after a slight rise during the war, is back at its 1939 value of 107 per cent, in fact the excess of females is becoming more and more confined to the higher ages, as is shown by the following summary :

Females per 100 Males

Mid-year	All ages	Under 15	15-24	25-34	35-44	45-64	65 and over
1939	107	98	98	102	110	117	134
1951	107	96	100	101	102	115	145

The main reasons for this change are the fact that war losses in 1939–45 were much smaller than in 1914–18, and that the volume of predominantly male net emigration was much greater before the first world war than since. The rise in the sex ratio at birth and the decline in child mortality have also contributed. The increase in the excess of females at ages 65 and over is due partly to the fact that the generations most affected by the 1914–18 war losses and by the heavy emigration before 1914 have now moved into this age-group, and partly to the greater improvement in the mortality of females as compared with males.

#### National Sex-Age-Condition Estimate

The 1951 estimate of the total population by sex, age and marital condition was derived from the census one per cent sample in a similar way to that described for the sex-age estimates. It is shown in Table III.\*

Comparison with an alternative estimate, based on that for 1950 published in Table A3 for that year, showed that the apparent errors which had accumulated in this series of estimates over the years were relatively greater than in the estimates discussed in earlier paragraphs. This applies particularly to the widowed and divorced at ages under 50, where their numbers are comparatively small and, at least in the younger age-groups, the majority of them are divorced people. Data on current divorces by age of the parties have only become available since 1950, and data on the sex-age-condition distribution of migrants

<sup>\*</sup> For the total population, see also Table III of this volume.

<sup>\*</sup> The figures in this table differ slightly from those previously published in Table A3 at female ages 15-24.

were fragmentary for most of the period ; even between 1948 and 1951, when they were much better than before or since, they did not distinguish the widowed and divorced from other classes. This lack of adequate information, together with the war disturbance and especially the large number of divorces since the war, is probably responsible for the discrepancies now found.

Among males, the overstatement at age 20–24, already noted, applied particularly to the married, where it was of the order of 10 per cent. At age

Table	III.—Estimated	Total ]	Population	by	Sex,	Age	and	Marital
	Condition	, Engla	and and Wa	les,	Mid-1	1951		

(Thousands)

Age	Persons		М	ales			Fem	ales	
Group	All Conditions	All Conditions	Single	Married	Widowed and Divorced	All Conditions	Single	Married	Widowed and Divorced
$\begin{array}{cccc} 0-& \dots \\ 5-& \dots \\ 10-& \dots \end{array}$	8,722 3,187 2,829	1,905 1,631 1,438	1,905 1,631 1,438			1,817 1,556 1,391	1,817 1,556 1,391		
15-        20-        25-        30-        35-        40-	2,773 2,968 3,259 3,124 3,325 3,399	$1,389 \\ 1,481 \\ 1,626 \\ 1,549 \\ 1,638 \\ 1,688$	$1,382 \\ 1,145 \\ 569 \\ 290 \\ 213 \\ 183$	$7\\335\\1,049\\1,242\\1,402\\1,472$	- 1 8 17 23 33	1,384 1,487 1,633 1,575 1,687 1,711	$1,326* \\ 777* \\ 355 \\ 224 \\ 218 \\ 235$	58* 706* 1,260 1,308 1,408 1,391	 4 18 43 61 85
5– 0– 5– 0– 5– 5– 0– 5 and over	3,198 2,818 2,436 2,157 1,821 1,429 1,563	$1,569 \\ 1,327 \\ 1,096 \\ 950 \\ 779 \\ 587 \\ 602$	$     \begin{array}{r}       151 \\       112 \\       92 \\       77 \\       66 \\       51 \\       49 \\     \end{array} $	1,380 1,168 945 787 595 400 307	$     38 \\     47 \\     59 \\     86 \\     118 \\     136 \\     246   $	$1,629 \\ 1,491 \\ 1,340 \\ 1,207 \\ 1,042 \\ 842 \\ 961$	$248 \\ 219 \\ 206 \\ 187 \\ 168 \\ 134 \\ 156$	$1,270 \\ 1,114 \\ 899 \\ 690 \\ 491 \\ 309 \\ 196$	111 158 235 330 383 399 609
All Ages	44,008	21,255	9,354	11,089	812	22,753	9,217	11,100	2,436

\* Revised since the publication of Table A3.

25–29 on the other hand, it was the single men who were overstated by a similar proportion, together with the widowed and divorced (for whom the proportion was much higher but the numbers small), at the expense of a deficiency in the married men of between 5 and 10 per cent. At ages over 35 single men were generally understated, the significant deficiencies being between ages 35 and 50, where they were in the 10–20 per cent range, though single men over 75 were *overs*tated by about a quarter. The discrepancies for married men over age 35 were small, apart from an excess of about 3 per cent at age 35–39 and a little less at 40–44, but widowed and divorced men were generally overstated, especially at ages 35–39 and 45–49 (between 25 and 30 per cent) and 60–69 (between 3 and 10 per cent).

Among females, there were significant differences for the single throughout the age range 25-74; *under*statement at ages 25-29 (between 5 and 10 per cent) and 55-74 (mostly about 3 per cent), and *over*statement at ages 30-54(between 5 and 10 per cent). Among married women significant discrepancies in the estimates were confined to age-groups 65-69 and 75 and over, which were understated by about 5 and 15 per cent respectively. Widowed and divorced women, on the other hand, showed significant differences throughout, though the numbers were small under age 30. They were *under*stated below age 50 (the deficiency declining with increasing age from 25-30 per cent at 30-39 to 10 per cent or less at 45-49), and at 60-64 and 70-74 (about 5 per cent), and *over*stated at 50-59, 65-69 and 75 and over (errors of the order of 5 per cent, but generally somewhat below that figure). Provisional adjustments to the estimates for 1946–50 in the light of the above were incorporated in Table IV of the Civil Text volume for those years.

The proportion married rose between 1939 and 1951 from 48 to 52 per cent among males and from 45 to 49 per cent among females. The increases are, of course, most marked at the younger ages, where most of the people married in recent years are to be found. In the age-group 25–29, for example, the proportions married have risen from 54 to 65 per cent among males and from 65 to 77 per cent among females. In fact not only has a greater proportion of people been getting married, but they have also been marrying younger. One consequence has been a decline in the proportion of females to males in the unmarried population (the single, widowed and divorced) in all age-groups between 20 and 55. These matters are discussed in more detail on pages 62–70 below.

#### Estimates of Married Women by Duration of Marriage

It has been customary to include in the Text Volume estimates of the mean number of married women exposed to risk of child bearing by separate years of duration of marriage as well as by age. Such estimates for each year from 1938 to 1945 were given in Appendix I of the Civil Text for 1940–45 and from 1946 to 1950 in Appendix II of the Civil Text for 1946–50. The similar estimates for 1951 are given in Appendix B of the present volume.

A full revision of the series from the 1951 Census one per cent sample tabulations has been prevented by the relatively large sampling errors liable to occur in such a detailed subdivision of the data. The 1951 estimates were therefore prepared from the previous year's estimates in the normal manner but in addition, for consistency, the estimates were subsequently adjusted to produce all durations totals agreeing with the marital condition estimates for 1951 shown in Table III. No revision of previous estimates has been attempted at this stage.

#### Local Populations

Estimates of the home populations of all boroughs, urban and rural districts in England and Wales as at the middle of 1951 are shown in Table 12 of Part I and Table E of Part II. The Appendix to Part II gives details of changes in boundary during the year; this is the first time since the war that they have been other than trivial.

The 1951 estimates are based on the preliminary results of the census. They therefore differ slightly in character from those for the immediately preceding years, in the way described on page 9 above. They also differ from the figures published in the Preliminary Report on the census, since the latter relate to the enumerated and the estimates relate to the resident population.

The numbers enumerated in each area at census date were first converted to the numbers resident by adding those enumerated elsewhere in England and Wales who had stated as their usual residence an address in the area concerned, subtracting those enumerated in the area who had stated a usual residence address elsewhere in England and Wales,\* and making some special adjustments. These last related to certain classes of the population absent from their usual residence as defined for census purposes but from only part of whom statements to that effect had been obtained on the census schedules.

<sup>\*</sup> Persons with a usual residence outside England and Wales were thus, as in 1931, allocated to the area of enumeration. This is not only consistent with the procedure adopted for the national estimates, but also reflects the fact that areas where this element is numerically important are usually those permanently characterized by a considerable floating population of such visitors.

The most important of these were members of residential schools and colleges absent on holiday, for whom the school or college address should have been given as that of usual residence, though in many cases the home address must have been given instead, and members of the Forces on leave from their stations, to whom the same applied (occasionally larger numbers were absent from their stations on manœuvres or at sea, in which case no usual residence statement would have been obtained on the schedules). These elements can be of importance, especially in some rural areas where the school or service establishment accounts for an appreciable part of the local population.

The resident (home) population at the middle of the year was obtained from that at census date (8th April) by, in effect, adding the net population movement recorded in the National Register, allowing for any known changes in locally stationed Armed Forces in the intervening period, and adjusting the results to agree with the independently calculated aggregate for the whole country.

In an attempt to assess the quality of the estimates for previous years a set of such estimates as at census date was derived from those for mid-1950, mostly by using the National Register statistics of movement for the intervening period, and was compared with the preliminary census results, after adjusting for the difference between resident and enumerated population. As explained earlier such a comparison cannot be exact, because of the differences in data, coverage and definitions, but is nevertheless helpful. Table IV shows the distribution of percentage differences between the census population and that expected on the basis of previous estimates. It may be compared with the similar comparison made after the 1931 Census and discussed in the Text volume of the Statistical Review for 1930 (pages 100–102).\*

It will be seen that the larger percentage errors are relatively more frequent in the smaller areas. Of the 1,470 areas in the table, 197, or 13.4 per cent, had an estimate error of 3 per cent or more, and of these only 7 were urban areas with a population of 50,000 or more (3.9 per cent of such areas).<sup>†</sup> The table also shows that over-estimation was relatively more frequent for urban areas (the more so the larger the area) and under-estimation more frequent for rural ones. The last point represents to some extent a reversal of the relationship found in 1931, especially for rural areas.

Further analysis of the kind of areas where large errors arose, and for what reasons, must take account of the estimate methods used, and the data available, before the 1951 Census. These were described in the Civil Text volume for 1946–50. Briefly, the main data were the annual statistics of food ration books issued and the National Register statistics of local population movement between one mid-year estimate date and the next. These were supplemented by returns of the numbers of electors, some data about the number of people in residential schools and other institutions with special reference to the proportion included in the local ration book issue figures, Service Department returns of the number of non-civilians stationed in each area, and a few other items. All were subject to various imperfections, but the most important point was

<sup>\*</sup> The 1931 table shows many more large errors than that for 1951. Part of this is no doubt due to the fact that in recent years the data available for these estimates have (temporarily) been much better than before the war. But another part is due to the type of comparison reflected by the 1931 table ; the accompanying text shows that a comparison strictly like that in Table IV would have yielded rather smaller discrepancies.

 $<sup>\</sup>dagger$  In Table IV, unlike the remainder of this volume, areas in conurbations (see page xi) have been counted with those of the same size class in the remainder of the country. The errors for each of the six conurbations taken as a whole were less than  $\frac{1}{2}$  per cent, except for Greater London (+1.1 per cent).

	Type of Area		Est	imat	e less	than	Cens	sus b	y per	centa	.ge sh	nown		All		Estin	nate ¿	greate	er that	n Cer	isus l	oy pe	rcent	age s	hown	
		10+	9-	8-	7-	6-	5-	4-	3-	2-	1-	0-	Total	areas	Total	0	1-	2-	3	4-	5-	6-	7	8	9-	10+
15	Urban, with population: 100,000 and over 50,000-100,000 under 50,000 Rural	$1^{2}_{4^{4}}$	2	2 1	1 4	6	5 13	21 13	$1\\16\\23$	2 1 27 48	1 9 97 90	194	$17 \\ 29 \\ 364 \\ 304$	78 102 813 477	61 73 449 173	45 43 247 87	12 22 91 44	2 4 53 22	2 18 14	1 8 2	1. 13 1	5 2	1 6	1 3	2	3 <sup>3</sup> 1 <sup>5</sup>
	Total	5	2	3	5	6	18	34	40	78	197	326	714	1,470	756	422	169	81	34	11	15	7	7	4	2	4

# Table IV.—Distribution of Percentage Differences between Actual and Expected 1951 Census Populations, Administrative Areas in England and Wales<sup>1</sup>

<sup>1</sup> The table excludes Newcastle-upon-Tyne Moot Hall and precincts and Nottingham Shire Hall, both with an enumerated population at the 1951 Census of 2.

<sup>2</sup> 13- per cent. <sup>3</sup> 1 each of 16-, 14- and 11- per cent. <sup>4</sup> 1 each of 18-, 17-, 15- and 10- per cent.

<sup>5</sup> 20- per cent.

101, 201

Table v.—Causes of Differe	ences exceeding 3 per cent between Actual and Expected 1951 Census Populations,
	Administrative Areas in England and Wales

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	Apparent Major Source of Error in Estimate of	ang (	E				an Ce e show		by		All	bes cen	Est			<i>ater th</i> ntage			s by	
	Expected Census Population	10+	9-	8	7→	6-	5-	4	3-	Total	Areas	Total	3-	4-	5-	6-	7-	8-	9-	10+
16	Subdivision of Food Group          Ration Books <sup>1</sup> Subdivision of Food Group and Ration Books <sup>1</sup> <sup>2</sup> Residential Schools and other Institutions         do. and Group Subdivision and/or Ration         Books <sup>1</sup> Misallocation of Non-civilians          do. and Group Subdivision and/or Ration         Books <sup>1</sup> Visitors from outside England and Wales, Mer-	14 1 <sup>5</sup> 1 <sup>7</sup> 2 <sup>10</sup>	1	1	3 1 1	4 1 1	$     \begin{array}{c}       6 \\       4 \\       2 \\       1 \\       3 \\       2     \end{array} $	$     \begin{array}{c}       11 \\       6 \\       5 \\       3 \\       5 \\       1 \\       1     \end{array} $	15     8     8     6     1	$42 \\ 21 \\ 19 \\ 4 \\ 16 \\ 2 \\ 5$	94313241837	$ \begin{array}{r} 52 \\ 10 \\ 13 \\ - \\ 2 \\ 1 \\ 2 \end{array} $	21 5 5 2	9 2	10 3	4	4 1 1	3	111	16 18 19 111
•	chant Seamen, Fishermen without Ration Books <sup>3</sup>		i Ino	-0-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-	5.9 (c)	Saul		2	2	4	8	4	1		1	and a second	1	1	141 1104 1104 1104 1104 1104 1104 1104	
	Total	5	2	3	5	6	18	34	40	113	197	84	34	11	15	7	7	4	2	4

<sup>1</sup> Includes residual errors. <sup>2</sup> Includes 2 areas where National Register movement statistics were also at fault. <sup>3</sup> Of which 7 also with Ration Book (and/or residual) errors, including 1 area where National Register movement statistics and 1 where Group Subdivision were also at fault. <sup>4</sup> 17- per cent. <sup>5</sup> 13- per cent. <sup>6</sup> 14- per cent. <sup>7</sup> 10- per cent. <sup>8</sup> 11- per cent. <sup>9</sup> 20- per cent. <sup>10</sup> 1 each of 18- and 15- per cent. <sup>11</sup> 16- per cent. that many of the ration book figures related to groups of two or more areas having a joint Food Office, so that it was necessary to estimate first the population of the group and then divide it into those of the component areas. All the estimates were made in the first place for the civilian resident population, and then the non-civilians stationed in each area were added to give the home population.

The 197 estimates in Table IV differing from the census figure by 3 per cent or more were investigated in some detail, in an effort to trace and analyse the sources of error. The results are summarized in Table V.

The leading source of error is easily the difficulty of sub-dividing food groups of areas, which by itself accounts for about half the cases in the table and contributes to nearly another quarter. The next most important weakness was in the ration book statistics, accounting for about 15 per cent of cases on its own and contributing to about another quarter of them; but this category also includes residual errors to which no specific cause could be assigned. Then follow cases of inadequate information about residential schools and other institutions, accounting for 2 per cent entirely and contributing to another 9 per cent. Next came those where information was insufficient about noncivilians, usually about their precise location with regard to local government boundaries; about  $1\frac{1}{2}$  per cent of the errors investigated were entirely due to this and another  $3\frac{1}{2}$  per cent partly so. This group includes some of the larger errors, including the largest of all, +20 per cent. Finally there is a small group of areas (4 per cent) where accurate estimation was made difficult by the presence in exceptional numbers of visitors from outside the country, merchant seamen and fishermen without ration books ; usually such cases (the worst of which are three of London's Metropolitan Boroughs) also showed weakness in the ration book figures.

To sum up, with the data and the conditions prevailing just before the 1951 Census large percentage errors in local population estimates tended to be concentrated in rural or small urban areas, especially if grouped with others for Food Office purposes, and areas with important special population elements such as non-civilians, residential institutions or visitors from abroad.

#### Local Age Distributions

Estimates of the home population by sex and age in Standard Regions, Conurbations and Density Aggregates are shown in Tables 2 and A4. Those for 1951 have been derived in the main from the count of the National Register as at the end of 1947 in the way described in the Civil Text volume for 1946–50. The figures were compared with others based on the 1951 Census 1 per cent Sample, and some adjustments were made, but the discrepancies were on the whole very moderate in size; the sample cells were too small, and hence the chance variations in the sample data too large, to allow the substitution of a complete set of estimates based on them for that made from the earlier data.

The changes in the regional population structure since before the war were discussed in the 1946–50 Civil Text.

Since 1950 the figures in the table have related to Standard Regions and to the six major Conurbations as defined on page xi above, instead of the Geographical Regions used by the General Register Office since 1931, and to a new type of Density Aggregate based on international recommendations in place of the old grouping of Greater London, and outside it, County Boroughs, Municipal Boroughs and Urban Districts, and Rural Districts. The new division is between the Conurbations and, outside them, urban areas with a 1951 Census population of 100,000 or more, 50,000 to 100,000 and under 50,000, and rural areas. Estimates of the number of children under 15 years of age at mid-1951 in each administrative area (borough or county district), based on preliminary census data, were published, together with the population of all ages, in the annual population pamphlet.\*

The leading source of error is easily the difficulty of sub-dividing food groups on treas, which by itself accounts for about half the cases in the table and contributes to nearly anniter quarter. The next most important devices as an in the ration book statistics, accounting for about 15 per cert of cases on the own and contributing to about mother quarter of them. But this category abo includes residual errors to about no apening, cases cauld be assigned. Then onstitutions, accounting to about mother quarter of them, but this category abo follow cases of madequate information of opening, cases could be assigned. Then onstitutions, accounting to a source of them, but this category abo per cent. Next came those where entormation was insufficient about our boundaries, about their process externation avertigated with regret to local gravitoring this and contributing the form one of the second with regret to local gravitoring this and contained their process externation avertigated wire sufficient doot on group of areas (4 per cent) where account is investigated wire sufficient doot to group of areas (4 per cent) where accounts for nonside its charte by the group of areas (4 per cent) where accounts for nonside its county for the group of areas (4 per cent) where accounts for nonside its county for the group of areas (4 per cent) where accounts for nonside its county for the group of areas (4 per cent) where accounts for nonside its county for the group of areas (4 per cent) where accounts for nonside its county for the group of areas (4 per cent) where accounts for nonside its county for the group of areas (4 per cent) where accounts for nonside its county for the progroup of areas (4 per cent) where accounts for nonside its county for the period of which are three of the and the store from onside its county for the store account is three of a county for the base (5 per cent) where a store is there is a store of the period of the store for nonside its county for the store of which are three of a county (5 per c

To sum up with the data and the conditions prevailing just before the 1850 Course large percentage errors in local population estimates trinded to be concentrated in earal or small urban areas, expectally if grouped with others for Food Office purposes, and areas with important special population elements such as non-ordinans, residential institutions or visitors from abread.

Jocal Ade Distributions

Estimates of the home population by we and age in Standard Rogions, Constitutions and Density Agenerates are shown in Tables 2 and Ma. Those is a statue endors 1947 in the way described in the count of the Mathies (1946–30). The figures were compared with others based on the 1951 Census 1 (ner cent Sample, and some adjustments were made but the discrepancies were on the whole very moderate in size (the sample data too longs to allow the substitutions of the chance variations in the sample data too longs to allow the substitution of a complete set of estimates based on them they in allow the substitution of a

The changes in the regional population structure since before the user uses discussed in the Pate-50 Grvl Text.

Since 1959 the formes in the rable have related to Standard Regions and to the six major (contributions as defined on page xi abova, instead of the Grossuphical Regions used by the General Register Office since (931, and to a new type of Density Aggregate based on international recommendations in phace of the old grouping of Grater London, and outside it, fourity Foronalis Municipal Binoughurned Urban Distingty, and Rural Dimnicts. The new

\* The Registrar General's Estimates of the Population of England and Wales. Populations of each Administrative Area at 30th June, 1951. London, H.M.S.O., 1952, 6d. net.

### BIRTHS, FERTILITY AND REPRODUCTIVITY

#### Live Births

The number of live births occurring in 1951 numbered 677,529, compared with 697,097 in 1950. Until 1938, statistics of birth registrations only were available but in most years the numbers of occurrences and of registrations were not different for all practical purposes and the registrations of 1938, numbering 621,204, may be compared with the occurrences of 1950 and 1951 without straining comparability. The births of 1951 represented a rate per 1,000 population of all ages of 15·4, compared with 15·8 in 1950 and 15·1 in 1938. (Tables B and C of Part II.) The similarity of these three rates gives no hint of the broad fluctuations through which the rate passed in the intervening years, but these were associated with the war, and have been discussed in detail in the Civil Texts of 1940–45 and 1946–50. It need be recorded only that the rate rose to a peak at 20·5 in 1947, declining sharply at first to 17·8 in 1948, and then more slowly to 16·7 in 1949, 15·8 in 1950 and 15·4 in 1951. The violent fluctuation subject to only very slow movement.

A similar situation exists in many other countries, as is shown by Table Q of Part II, which compares the rates of European and some other countries during the last thirty years. The figures up to 1948 are discussed in more detail in the Civil Text volume for 1940-45.

In 1951, as in 1939, England and Wales had the lowest birth rate but one of all the countries in the table, Austria having the lowest in 1951 and France the lowest in 1939. But, as will be shown later in this chapter, a much more detailed analysis than that of crude birth rates is needed for a true appreciation and comparison of current fertility trends and levels.

#### Birth Rates per 1,000 Women aged 15-44

Relating births to the total population, though convenient and conventional may be misleading since only a fraction of the population are capable of childbearing. It seems appropriate to relate them to the childbearing component of the population, for this purpose assumed to be composed of women of ages 15–44. Since the proportion of these women in the total population has been decreasing for many years, the crude birth rate has been increasingly deflated by the inclusion in the denominator of a growing proportion of the population not at risk of childbearing. Removing this number and relating the births only to women of fertile ages produces therefore a rate which declines less steeply than the crude birth rate from 1921, and rises more rapidly after the lowest level is reached.

Table VI gives live birth rates per 1,000 women aged 15–44 (Table C, Part II) and the ratios of these rates to that of 1938. In census years from 1881 the ratio standardized for age is also shown, i.e. after correcting for changes in age structure of women *within* the age group 15–44, though this is an unimportant correction and has little effect on the ratios.

In the left-hand side of the table, giving rates for the average of 3 years round each census year since 1841, the highest rate is associated with 1871 and is no less than two and a half times that of 1938. The rates then decline to 1931, when the rate was substantially the same as that of 1938.

Year	31234	Live Births per 1,000		938 (taken 100)	Year	Live Births per 1,000	Ratio to 1938 (taker	
1 car		women aged 15-44	Direct (Unstan- dardized)	Standard- ized for age		women aged 15–44	as 100)	
स्वयत्। वद्यस्य मृ	Lo	ong Range (3	-year averag	es)	Individual	Years or Ann	nual Average	
1841		148.3	238	abers of dec	1938	62.2	1 100	
1851		149.8	241	and market	1939-49	71.5	115	
861	0.10	151.1	243	ALTER TO CHER PROPERTY	LUMN DOTEC	1903 BO 76	To the second	
871		155.7	250	101 (- add)	1946	83.3	134	
881		147.7	238	235	1947	90.6	146	
891		129.8	209	205	1948	80.2	129	
1901		114.8	185	179	1949	76.0	122	
1911		98.3	158	155	1950	73.0	117	
921		90.9	146	147	1951	71.5	115	
1931		64.3	104	102	1952*	71.7	115	
1951*		72.1	116	117		1: 3.00 1. 3.	line and the base	

#### Table VI.—Live Birth Rates per 1,000 Women aged 15–44, 1841 to 1952, England and Wales

#### \* Provisional.

After 1931 the rate declined to a minimum of 59.4 in 1933, or 95 per cent of the 1938 rate, and then rose slightly to 62.2 in 1938. The rise from 1935 to 1938 was itself insignificant, but that the rate should have remained so nearly constant for almost a decennium from 1931 to 1938, after a steep decline prolonged for no less than 60 years, was highly significant. From the figures shown in Table VI above, it would appear that the decline was first arrested in the decennium 1911–21 but in fact this was due to the exceptionally high rate in 1921 after the disturbance of the first world war—the making good of postponed births. The underlying trend was still downward.

The intervention of the second world war in 1939 produced fluctuations in the rate which temporarily obscured the trend, but it is now possible to minimize this disturbance by aggregating the experience of the war and post-war years to yield an average rate of 71.5 for the period 1939–49 as a whole, or 15 per cent higher than the 1938 rate. The rate for 1950 was very slightly higher than this at 73.0 but the 1951 rate and the provisional rate for 1952, at 71.5 and 71.7 substantially reproduce the 1939–49 average.

This evidence suggests that the fertility disturbances associated with the second world war have passed; that the long decline up to the early thirties has not continued, indeed the average rate since 1938 shows an improvement on that of the previous decade; and though small chance variations from year to year are occurring and are only to be expected there is no sign at present of a significant downward trend.

Thus the study of crude birth rates by neglecting to take account of the declining proportion of the population represented by women at the reproductive ages, suggested that current experience was similar to that of pre-war years and masked a real rise in fertility (when births are related to women of reproductive ages). As between 1938 and 1951 the increase in the rate on this basis was 15 per cent.

#### Age Standardization

A further refinement may be introduced into the analysis by recognizing that the fertility of women varies with age between 15 and 45. Since only a small proportion are married the birth rate of girls under 20 is low, but otherwise the rates are higher at younger than at older ages. The ageing of the population has added weight to the older groups and tends to reduce the average fertility of the age-group 15–44 taken as a whole.

The left-hand section of Table VI, giving 3-year averages around census years, shows both unstandardized and standardized ratios of the rate to that of 1938. In 1881 the effect of this standardization was to reduce the ratio from 238 to 235 and, in 1931 from 104 to 102. In 1951, however, the effect was to increase the ratio, from 116 to 117. Thus the improvement from 1931 to 1951 is only 12 per cent as shown by the unstandardized ratio, but 15 per cent as shown by the standardized ratio. Nevertheless as has already been remarked the general trend of the fertility rates is hardly affected to any significant extent by age standardization.

#### **Reproduction Rates**

The rapid fall in the birth rate from 1871 gave rise in pre-war years to expressions of fear in some quarters that a catastrophic decline in the population would eventually ensue.

These fears were indeed exaggerated, but they served to stimulate closer study of the problem of a declining population and to awaken public interest. There was general recognition of the need for further essential statistical information from which the true nature of current population changes might be better ascertained. The Population (Statistics) Act was passed in 1938 to increase the scope of registration statistics, and in 1944 a Royal Commission on Population was appointed "to examine the facts relating to the present population trends in Great Britain; to investigate the causes of these trends and to consider their probable consequences; to consider what measures, if any, should be taken in the national interest to influence the future trend of population; and to make recommendations." There had been no population census since 1931 and no census fertility enquiry since 1911 and so the Commission found it necessary to conduct a sample Family Census in 1946 from which valuable information was obtained.

The investigations carried out during this period of widespread public interest were directed to ascertaining whether the births currently occurring were sufficient to ensure the maintenance of the population either at its present level or at some other suitable level selected on the basis of economic or other considerations. It was natural that these investigations should have sharpened interest in the notion of a single figure index—the reproduction rate—expressing the sufficiency of births for population maintenance. Ignoring migration it is clear that unless in the long run deaths are replaced by births the size of the population must change ; and attention became focused upon replacement. The concept of replacement had been developed to the more specific point of considering whether a generation of women in passing through the reproductive years of life might bear sufficient female babies to replace themselves and thus to enable the same cycle of replacement to continue. (The same concept can of course be applied to the replacement of the male, as the other partner in procreation, by thinking in terms of fathers and male babies.)

The simplest index is obtained by calculating fertility rates based on female births at each age (in practice in quinary groups) within the reproductive range and adding these together to estimate the average number of female babies born to women passing through the reproductive ages if they experience these fertility rates—this is the Gross Reproduction Rate (G.R.R.). Such a rate fails to take account of the mortality of infants before they themselves become the parents they are supposed to replace, and, therefore, before the rates for each age group are added together they should each be multiplied by the appropriate proportion of infants surviving to that age group on the basis of current mortality experience—this yields the Net Reproduction Rate (N.R.R.). If forecast mortality is employed to allow for improvement in survivorship in the successive generations the rate becomes an Effective Reproduction Rate.

These reproduction rates suffer from a number of statistical defects but there is an overriding difficulty of interpretation which has tended to bring them into disrepute. Exact replacement is indicated only if rates of unity are consistently yielded and if the assumed conditions of mortality and age variations in fertility are reproduced in the future. In turn this involves other assumptions of stability in marriage experience, in the sex ratio at birth and birth spacing. These conditions are never fulfilled. The rate measures the experience of a single calendar year and even a series of rates indicates only past trends and gives no reliable guide to the future in which rapid changes in conditions might take place. The rates are therefore likely to undergo fluctuation from year to year, and even movement persisting over a period of years, without providing a sure guide to ultimate population growth.

Other approaches have been made to the problem of assessing replacement by measuring family sizes attained at different durations of marriage for couples married at different times in the past, or by calculating the ratio of successive generations, but these are retrospective measurements of past fertility in which current experience carries little weight.

With all these defects the reproduction rates, while not indicating the future population growth, do give a broad indication of the adequacy of current births to support the population and it is possible to speak of the births of a particular year being above replacement level if the reproduction rate exceeds unity.

At the current low level of mortality reached in England and Wales, the difference between the Net and the Effective Reproduction Rate is relatively unimportant especially since, as we have seen, neither index is above reproach. Furthermore, the N.R.R. has the virtue of international comparability since it is calculated for a wide range of other countries.

Gross and Net Reproduction Rates for England and Wales are shown in Table VII.\*

These rates have very much the same properties as annual birth rates, and are best considered as such. The G.R.R. is superior to a crude birth rate since it relates births to the section of the population conventionally taken as responsible for them. Birth rates per 1,000 women aged 15–44, employed above, also possess this superiority, but the G.R.R. has a further advantage in that it is age standardized. The N.R.R. has both these properties, and in addition it incorporates an allowance for the wastage of mortality between birth and prospective motherhood.

The G.R.R. in 1841 was 2.237 and nearly 150 per cent above that of 1938. The close agreement between this excess and that shown in Table VI will be noted. The rate at that time was rising slowly and, after passing a peak in 1871, commenced a long decline not arrested until after 1931, by which year it had fallen to 0.922. Between 1931 and 1938 there was little movement in the

#### Table VII.—Gross and Net Reproduction Rates, 1841 to 1951, England and Wales

Year	Reproc	luction tes		to rate .938	Ratio of N.R.R. to	Year	Reprod Ra			to rate .938	Ratio o N.R.R. to G.R.R.
take	G.R.R.	N.R.R.	G.R.R.	N.R.R.	G.R.R.	use on	G.R.R.	N.R.R.	G.R.R.	N.R.R.	G.R.R.
		3-year	Averages					Single	years		
1841 1851 1861 1871 1881 1891 1901	$\begin{array}{c} 2 \cdot 237 \\ 2 \cdot 264 \\ 2 \cdot 277 \\ 2 \cdot 356 \\ 2 \cdot 252 \\ 1 \cdot 973 \\ 1 \cdot 702 \end{array}$		2:494 2:524 2:538 2:627 2:511 2:200 1:897 Years	1.676 1.716 1.773 1.877 1.877 1.701 1.538	$\begin{array}{c} 0.603\\ 0.610\\ 0.627\\ 0.641\\ 0.671\\ 0.694\\ 0.727\\ \end{array}$	$1938 \\1939 \\1940 \\1941 \\1942 \\1943 \\1944 \\1945 \\1946$	$\begin{array}{c} 0.897\\ 0.892\\ 0.850\\ 0.836\\ 0.934\\ 0.985\\ 1.089\\ 0.992\\ 1.200\\ 1.200\\ \end{array}$	$\begin{array}{c} 0.805\\ 0.807\\ 0.753\\ 0.737\\ 0.845\\ 0.893\\ 0.993\\ 0.910\\ 1.112\\ 1.214\end{array}$	$\begin{array}{c} 1 \cdot 000 \\ 0 \cdot 994 \\ 0 \cdot 948 \\ 0 \cdot 932 \\ 1 \cdot 041 \\ 1 \cdot 098 \\ 1 \cdot 214 \\ 1 \cdot 106 \\ 1 \cdot 338 \\ 1 \cdot 457 \end{array}$	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	0.897 0.905 0.886 0.882 0.905 0.907 0.912 0.917 0.927
1911 1922* 1931	1.424 1.189 0.922	1.118 0.991 0.801	1.588 1.326 1.028	1.389 1.231 0.995	0.785 0.833 0.869	1947 1948 1949 1950 1951	$ \begin{array}{c} 1.307 \\ 1.158 \\ 1.098 \\ 1.062 \\ 1.044 \end{array} $	$\begin{array}{c} 1.214 \\ 1.089 \\ 1.037 \\ 1.010 \\ 0.996 \end{array}$	1.457 1.291 1.224 1.184 1.164	1.508 1.353 1.288 1.255 1.237	0-929 0-940 0-944 0-951 0-954

\* 1922 has been selected since, as the aftermath of the First World War, conditions in 1921 were abnormal.

rate. The G.R.R. fluctuated widely in the next 11 years, as did more conventional birth rates, its average for the period 1939–49 being 1.031. Its value in 1950 was 1.062 and in 1951 was 1.044, suggesting the approach of relative stability as war disturbances receded.

The introduction of the mortality element in the N.R.R. throws more light on the long term changes. The N.R.R. in 1841 was 1.349, little more than one half of the G.R.R. and only 68 per cent above the 1938 rate, showing that the contemporary high mortality losses between birth and attainment of reproductive ages were such that a much higher birth rate was required to replace the mothers of that time than was required in 1938. After 1841 the N.R.R. followed a course similar to that of the G.R.R., but with the rate of decline much retarded by the improving mortality. By 1931 the N.R.R. had fallen to 0.801, and in 1938 it was not significantly different at 0.805. The average N.R.R. for 1939–49 during which war disturbances occurred in the rate was 0.945. In 1950 the rate was 1.010 and, in 1951, 0.996.

It is interesting to note the effect of mortality improvement since 1938. The average G.R.R. for 1939–49 was 15 per cent above 1938 whilst the average N.R.R. was 17 per cent. above 1938. In recent years the disparity has been even greater. In 1950 the G.R.R. was 18 per cent above the 1938 level and the N.R.R. 25 per cent above. In 1951 the percentages were 16 per cent and 24 per cent respectively. Thus, in addition to the improvement in fertility rates since 1938 (shown by the G.R.R.), the value of current girl-births as potential mothers is better by half as much again as a result of reduction in the mortality wastage between birth and reproductive ages.

The last column in each half of Table VII shows the ratio of the N.R.R. to the G.R.R., an index of the changes in mortality wastage discussed above. In 1841 nearly 40 per cent of the reproductive potential of girls was lost by their premature death. By the turn of the century, that is, 60 years later, the loss was over 25 per cent. In the next 30 years, the loss was halved, falling from over 25 per cent to under 15. By 1938 the loss had been brought even lower to 10 per cent. Notwithstanding the plausibility of arguments concerning the "hard-core of unpreventable mortality," and in spite of the low level of mortality already attained by 1938, still further improvement in the following 13 years halved the losses again to under 5 per cent in 1951. Without resort to pessimism regarding future medical advances, it can be seen that further gains

<sup>\*</sup> These are based on fertility rates of girl-babies per woman. It is hoped at some future date to attempt the construction of the complementary reproduction rates based on boy-babies per man.

from mortality can be but slight, since the losses which can be removed are so small. Were mortality to be entirely eradicated in women under 45, the relative gain to the N.R.R. would only be 5 per cent. Thus, whilst the mortality gains in the last hundred years have contributed much to maintaining replacement, little help can be expected in the future from this source, and another decline in fertility rates, such as that in the early years of this century could not take place without causing a decline in the N.R.R. to a level substantially below par. However, the fertility decline from the post-war peak has been shown to have been virtually arrested with the N.R.R. in the region of unity, and it remains for the records of the next few years to reveal the true post-war trend. Minor fluctuations from year to year are only to be expected and far-reaching conclusions may not be drawn from such variations.

It should be borne in mind that fertility indices however statistically refined are only measures of results and reveal nothing of causes. For fertility is affected by many social, economic, and physiological factors the nature of which is not fully revealed by registration statistics even though these statistics measure their effects.

#### Tabulation Design

Owing to the complexity of tabulations involving identification of legitimacy, age of mother, duration of marriage, number of previous children and various combinations of those factors, it has not been deemed feasible to provide completely parallel classifications of both births and maternities. The course followed has been to provide full analyses by the two factors of legitimacy and mother's age for both births and maternities (Part II, Tables AA to HH and YY), but to restrict the analyses in the main to maternities for legitimate fertility tabulations involving duration of marriage or number of previous children (Tables II to SS). Maternities are slightly greater in number than the corresponding number of live births (stillbirths included in the former being in excess of the plural births excluded), but the excess is small and the maternity tabulations can be converted to live birth tabulations with sufficient accuracy for most purposes by the application of the appropriate live birth-maternity ratios. Such ratios for 1938 to 1945 were shown in the 1940-45 Civil Text in Table XXXII on page 76, for 1946 to 1950 in the 1946-50 Civil Text in Table XLVII on page 88, and for 1951 are shown below in Table VIII.

#### Table VIII.—Ratio of Legitimate Live Births to Legitimate Maternities by Mother's Age at Maternity, 1951, England and Wales

Calendar year			Mother's	Age at Ma	aternity		
	All ages	Under 20	20-	25-	30-	35-	40 & over
1951	0.990	0.987	0.992	<i>,</i> 0·994	0.993	0.985	0.962

A further difficulty encountered in endeavouring to follow the course of legitimate fertility arises from the fact that the records of successive years have been subject to varying degrees of incompleteness through the occasional failure to obtain at birth registration a record of the mother's age, her duration of marriage, or the number of her previous children. The proportion of "not stated" cases of various types in the records for the year 1938, the first of the series, and for the years 1945 to 1951 are given in Table IX.

Table IX.—	"Not Stated " cases per 10,000 Total Legitimate Maternities	
	1938 and 1945 to 1951, England and Wales	

Type of information not stated	1938	1945	1946	1947	1948	1949	1950	1951
Age only	21	20	20	19	17	19	18	16
Age and duration Age and children	5	3	3	3	2	2	2	2
Age, duration and children	25	11	10	13	8	6	6	6
Duration only	89	40	41	34	27	22	20	24
Children only	44	32	25	30	27	24	20	19
Duration and children	7	6	7	3	3	4	3	3
Total, all types	190	112	106	102	84	77	70	70
All age types	51	34	33	35	27	28	26	24
All duration types	125	60	61	53	39	34	31	35
All children types	76	50	42	46	38	34	29	28

In 1938, the first year of the operation of the Population (Statistics) Act, the additional information required by that Act was deficient in one form or another in 1.9 per cent of total legitimate registrations, but by 1951 the deficiency had fallen to 0.7 per cent. The date of marriage, from which the duration of marriage is obtained, has been the most frequent item of information omitted but such omissions have become much less frequent of recent years, falling from 125 per 10,000 legitimate maternities in 1938 to only 35 per 10,000 in 1951.

The number of previous children was omitted for 76 per 10,000 legitimate maternities in 1938, but the proportion had fallen to 28 in 1951. The frequency of omission of mother's age was 51 per 10,000 in 1938, but only 24 in 1951.

The usual practice of identifying the "not stated" items in the published tables of the annual Parts II has been continued in 1951.

There is no reason to suppose that the omissions were generally intentional or prejudiced and therefore it is justifiable to produce tables incorporating a proportional distribution of the "not stated" amongst the "stated" cases as being from the user's point of view, the more convenient form of presentation. It would not be practicable to treat all the analyses in this manner but Table SS which deals with the three fertility characteristics, mother's age, duration of marriage and number of previous children in combination, has been selected for an orderly distribution of the "not stated" cases, omissions of each type being dealt with separately, thus providing "Controls" to which any of the other tables can be adjusted as required. Table SS for 1951 thus modified is shown in Appendix B, Table 6. Comparable tables for 1938 to 1945 were published in the 1940–45 Civil Text in Appendix I, Table VI, on pages 176 to 191, and for 1946 to 1950 in the 1946–50 Civil Text in Appendix II, Table 7, on pages 200–209.

#### Illegitimate Births and Pre-marital Conceptions

Of the 677,529 live births which occurred in 1951, 32,771 or  $4\cdot 8$  per cent, were registered as illegitimate compared with  $6\cdot 6$ ,  $5\cdot 3$ ,  $5\cdot 4$ ,  $5\cdot 1$  and  $5\cdot 1$  per cent in the individual post-war years from 1946 to 1950, an average of  $6\cdot 2$  per cent over the war period 1939–45, and  $4\cdot 2$ ,  $4\cdot 1$ ,  $4\cdot 2$  and  $4\cdot 2$  per cent in the pre-war years from 1935 to 1938. It is thus seen that the proportion of births that were illegitimate

which was stable before the war, rose during the war to some 50 per cent above the pre-war level. Since the war the proportion has declined, but in 1951 it was still 14 per cent above the pre-war figure.

In terms of the numbers of single, widowed and divorced women aged 15 to 44 in the population, the illegitimate birth rates, which had fallen from over 18 per 1,000 related women in the middle of the nineteenth century to 8.4 in 1901–05 and 5.5 in 1931–35, rose from the outbreak of war to a peak of 16.1 in 1945. It has declined since to 10.3 in 1950 and 9.8 in 1951. Expressed in this form, the incidence of illegitimacy in 1951 was nearly 80 per cent above that of pre-war years. The reason for the wide discrepancy between the courses of these two alternative measures is that the high marriage rates of recent years have depleted the population of the non-married. The incidence of illegitimate births relative to legitimate births should therefore have fallen sharply, and that it has not done so implies a much increased rate of illegitimate births per 1,000 non-married. Women. The choice of measure has to be decided on grounds of convenience. Neither can be strictly justified since illegitimacy is not necessarily geared to legitimate fertility or related to *all* non-married women.

The numbers of illegitimate births registered from 1851 are published in Table B of Part II and rates in Table C.

Attention has been drawn in previous commentaries on the subject—in the 1940–45 Civil Text on pages 78–83 and the 1946–50 Civil Text on pages 89–93—to the fact that legitimate but pre-maritally conceived births and illegitimate births are complementary from the aspect of extra-marital sexual behaviour,

#### Table X.—Illegitimate Maternities and Pre-maritally conceived legitimate maternities, 1938 to 1951, England and Wales

acesta i.e Sitella	ntindi Ri ari Mi Sil	Illegitimate	Pre-maritally conceived	Total maternities conceived extra-maritally		Percentage of extra-mari- tally conceived maternities	
Ye	ar Maintz Kongradi	maternities	legitimate maternities	Numbers	Per cent of all maternities	legitimated by marriage of parents before birth of child	
1	<u> </u>	2	3	4	5	6	
1938 1939		$28,160 \\ 26,569$	66,221 60,346	94,381 86,915	$\frac{14\cdot 6}{13\cdot 8}$	70·2 69·4	
1940 1941 1942 1943 1944 1945 1946		26,57432,17937,59744,88156,47764,74355,13847,491	$56,644 \\ 43,362 \\ 40,705 \\ 37,271 \\ 37,746 \\ 38,176 \\ 43,488 \\ 59,633 \\ 59,633 \\ 10000000000000000000000000000000000$	$83,218 \\ 75,541 \\ 78,302 \\ 82,152 \\ 94,223 \\ 102,919 \\ 98,626 \\ 107,124 \\$	$13.7 \\ 12.7 \\ 11.8 \\ 12.3 \\ 14.9 \\ 11.8 \\ 12.3 \\ 14.9 \\ 11.8 \\ 12.0 \\ $	68.157.452.045.440.137.144.155.7	
1947 1948 1949 1950		47,491 42,402 37,554 35,816	62,304 59,185 54,188	104,706 96,739 90,004	$     \begin{array}{r}       13.4 \\       13.1 \\       12.8     \end{array} $	$59.5 \\ 61.2 \\ 60.2$	
1951		33,444	50,477	83,921	12.3	60.1	

and should be considered together. Tabulations of legitimate births by duration of marriage are not made, but tabulations of maternities are and provide an equally good medium for analysis for this purpose. The number of maternities occurring within  $8\frac{1}{2}$  months of marriage is taken to indicate the number premaritally conceived, on the grounds that the number of post-maritally conceived maternities occurring within  $8\frac{1}{2}$  months of marriage thus wrongly included will balance with the number of pre-maritally conceived maternities occurring after  $8\frac{1}{2}$  months which are wrongly excluded.

Table X shows the numbers of illegitimate and pre-maritally conceived maternities for each year from 1938 (when tabulations by duration of marriage were first made) to 1951.

It has been pointed out in previous commentaries that, as the incidence of illegitimate maternities increased at the onset of war (shown in column (2) of the table), the incidence of pre-maritally conceived legitimate maternities decreased (shown in column (3)), and the sum of the two (shown in column (4)) suffered far less fluctuation than either of its components. The explanation that has been advanced to account for these complementary changes, namely the apparent shift of a substantial number of pre-maritally conceived maternities from the legitimate to the illegitimate category, during war and immediate post-war years, is that physical separation and other disturbances of the war prevented or militated against the marriage of the couple after conception but before the birth. It seemed reasonable to expect that, when the war-time conditions passed, a return would be made to the pre-war pattern. From column (6), which shows the proportion of extra-marital conceptions followed by the marriage of the parents before the birth of the child, it may be seen that the proportion was steady at 70 per cent before the war, and that after the war-time disturbance had passed it settled in 1948 at 60 per cent. This decline is not evenly spread over all ages, as may be seen from the following statement showing the proportions (per cent) in each age group in 1939 and in 1951:

1.1-61	16-19	20-24	25-29	30-34	35-39	40-44
1939 1951	 $74.9 \\ 74.6$	78.7 71.7	$\begin{array}{c} 64 \cdot 9 \\ 47 \cdot 0 \end{array}$	$rac{46\cdot 3}{32\cdot 1}$	$30.3 \\ 24.0$	$22.5 \\ 19.2$

No significant decline is seen at age 16–19. All other ages show a decline, which is smaller at the extreme ages and greater from 25 to 34, where the decline is substantial.

Extra-maritally conceived maternities related to the population are shown in Table XI with distinction of mother's age.

The highest rates are for women aged 20-24 and 25-29. Before the war the highest rate was clearly that of the 20-24 age group, but since the war the difference between this and the succeeding age group has narrowed considerably, indeed in 1946 and 1947 the rate was actually higher in the older of the two groups. This change in the relative rates of these two age groups is part of a general tendency for the rates at the higher ages to increase more than those at the lower ages. This is demonstrated by the following statement showing the rate of 1938, taken as 100:

Age	0105	00,00,00	191.00	15-	20-	25-	30-	35-	40-
Ratio	aii. m	out sail	oo <b>i</b> .o	121	20 - 116	142	194	162	136

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Age of mother	1938	1939	1940–1945 Average	1946	1947	1948	1949	1950	1951
15- 20-	$12.0 \\ 37.1$	$\frac{12 \cdot 1}{36 \cdot 5}$	$11.1 \\ 36.5$	$11.4 \\ 42.3$	$12.6 \\ 49.7$	$14.3 \\ 50.8$	$15.5 \\ 47.4$	$15.2 \\ 44.7$	$14.5 \\ 42.9$
25- 30-	$27.6 \\ 16.0$	$26.6 \\ 15.8$	$35.0 \\ 23.5$	$     \begin{array}{c}       44 \cdot 3 \\       33 \cdot 6     \end{array} $	$50.6 \\ 35.3$	47.5 33.4	40.9 32.7	$41.4 \\ 29.7 \\ 17.6$	$39.3 \\ 31.1 \\ 17.2$
35– 40–44	$10.6 \\ 4.2$	$     \begin{array}{c}       10.0 \\       4.0     \end{array} $	$\begin{array}{c}13 \cdot 0\\5 \cdot 2\end{array}$	$\begin{array}{c} 17.9 \\ 6.0 \end{array}$	18·9 6·2	18·5 6·0	18·1 5·8	5.4	5.7
15-44	19.8	19.0	20.9	25.0	28.1	28.3	26.8	25.6	24.7
Ratio to 1938: Crude Standardized	$1.00 \\ 1.00$	0.96 0.98	$1.05 \\ 1.07$	$1.26 \\ 1.27$	$1.41 \\ 1.44$	$1.42 \\ 1.45$	1.35 1.38	$1.29 \\ 1.33$	$1.25 \\ 1.29$

# Table XI.—Extra-maritally conceived maternities per 1,000 unmarried females, 1938 to 1951, England and Wales

The increases in the rates at ages over 30, although striking, are not as important, from the point of view of the resulting increase in the numbers of extra-maritally conceived maternities, as the much smaller increases at the younger ages, the assumed population at risk at ages over 30 being only some 25 per cent of the total aged 15–44. (As has been remarked earlier the population actually at risk depends on factors other than age and marital condition.) The proportions of the total extra-maritally conceived maternities in each group in 1951, distinguishing illegitimate and legitimate maternities were :

			Age	of mothe	er		
41.08 90-10 man 41	15-19	20-24	25-29	30-34	35-39	40-44	15-44
Illegitimate Legitimate (pre-marital con- ceptions)	14·7 28·7	29·2 49·1	23·7 13·9	$\frac{17.0}{5.3}$	$\frac{11\cdot0}{2\cdot3}$	4·4 0·7	100 100
Combined	23.1	41.2	17.8	10.0	5.7	2.2	100

Sixty-eight per cent of the illegitimate and 92 per cent of the legitimate extra-marital maternities, i.e. a total of 82 per cent of all pre-marital conceptions, related to mothers under the age of 30.

#### Legitimate Births and Fertility

Of the total live births which occurred in 1951, 644,758 were registered as legitimate, compared with 766,800, 834,423, 733,732, 693,611 and 661,847 in the post-war years 1946 to 1950 respectively, and 594,825 in the last pre-war year, 1938. Since the post-war peak year of 1947, the annual number of legitimate live births has declined, but by a progressively decreasing amount each year. The legitimate live births in 1948 numbered 101,000 less than those in the previous year, in 1949 they were 40,000 less, in 1950 32,000 less and in 1951 17,000 less. It is thus seen that the inevitable decline from the artificially

inflated birth incidence of 1947 has been virtually completed and a period of relative stability seems likely to ensue.

The purpose of this section however is not merely to confirm the broad trend of fertility, which has been indicated in earlier paragraphs, but to bring into relief some features of fertility experience which are relevant only to married women and for whom alone the essential statistics are available. Nevertheless it may be necessary to emphasize that, at this stage, too much should not be read into the apparent stabilization of the annual number of legitimate live births above that of 1938, since there have been sharp changes of a probably non-recurring character in the associated population at risk to which reference has already been made and which must again be taken into account here.

It is customary to relate child-bearing to women of ages 15-44, and legitimate births to the married women in this age group. Owing to the unprecedented high marriage rates of the last 15 years, to which attention is drawn in the marriage section of this commentary, the number of married women aged 15-44 in the population is higher than ever before, although the number of women of all marital conditions of these ages has been declining, as the following summary statement shows :

	Women enumera	ated aged 15-44	
Printer of dealers of the first	All marital conditions (thousands)	Married (thousands)	Proportion married
1931 Census	9,825	4,917	50 per cent
1951 Census 1 per cent Sample	9,499	6,156	65 per cent

Thus the current legitimate live birth experience, when related to the number of married women at risk, as in the following statement, extracted from Table C of Part II, compares less favourably with similar rates for the pre-war period.

Year	1938	1946	1947	1948	1949	1950	1951
Legitimate live birth rate per 1,000 married women aged 15-44	110.0	128.7	139.7	121.7	114.4	108.6	105.2

The rate, though recently falling more slowly than immediately after the peak year of 1947, has nevertheless declined to below the level of 1938.

Whilst relating legitimate live births to married women aged 15–44 does achieve broad correspondence between the births and the population producing them, precise measurement of legitimate fertility must take account of differences in birth rates of women of different ages (within the range 15–44) and of different durations of marriage. Table XII shows the legitimate live birth rate per 1,000 married women aged 15–44 and three comparisons of the annual rate with that of 1938, using a crude rate, an age-standardized rate and a rate standardized for both age and duration of marriage.

Before examining in detail the trends in fertility rates shown in columns (4), (5) and (6) of the table, it is useful to consider the differences between these

Table XIILegitimate Live Births; Rate per 1,000	0 Married Women
aged 15-44 and crude, age standardized	and age and dura-
tion standardized rates compared with	that of 1938; 1938,
1939-49 and 1946 to 1951, England and	Wales

encenta da 19	nataciary e	T	Ratio to 1	938 Rate taken	as 1,000 of :
Period	Legitimate live births (thousands)	Rate per 1,000 mar- ried women aged 15-44	Crude rate of column (3)	Rate of column (3) standard- ized for age	Rate of column (3) standard- ized for age and duration of marriage
(1)	(2)	(3)	(4)	(5)	(6)
1938	594·8	110.0	1,000	1,000	1,000
1939–49*	663.5	112.5	1,023	992	1,009
1946	766.8	128.7	1,170	1,143	1,177
1947	834.4	139.7	1,270	1,246	1,282
1948	733.7	121.7	1,106	1,076	1,105
1949	693.6	114.4	1,040	1,007	1,035
1950	661.8	108.6	987	960	989
1951	644.8	105.2	956	933	963

#### \* Annual averages.

columns, the reasons for these differences and the light which this throws on the structure of the population of married women of reproductive ages. First, to examine age structure, columns (4) and (5) may be compared. Without exception the ratio of column (5) is less than that of column (4), showing that married women under the age of 45 have been on the average younger since 1938, though the population of all women aged 15–44 (without distinction of marital condition) has been ageing during this period. This ageing of the population in general arises from the rapid decline in fertility in earlier years. The adolescent girls of to-day represent smaller generations than their mothers. The youthfulness shown in the married population means therefore that these younger generations are marrying at higher rates which more than counterbalance their smaller numbers in determining the replenishment of the population of married women.

It would be reasonable to expect that, if recent high marriage rates have created a relative preponderance of young married women, their present duration of marriage will also be relatively short, so that standardizing for duration of marriage would still further reduce the rate. It would appear from Table XII that this is not so, since the ratios of column (6) are higher than those of column (5). The reason is that, whilst the recent marriages have produced substantial numbers at short durations, most of these married women are not at shorter marriage durations than would be implied by their attained age. Standardizing for age alone has already taken full account of the fact that young women by virtue of their youth can only have been married for a short time. Thus the additional correction for duration after age standardization has been achieved is only allowing for the earlier age at marriage of those of a particular attained age. The result of the recent decline in ages at marriage has been that at present ages the married women of to-day have been married longer than in 1938, and hence the ratios in column (6) of Table XII are higher than those of column (5).

Thus, to reiterate, column (5) is obtained by adjusting column (4) for the

recent high incidence of marriages, in so far as this weights the population of married women aged 15–44 with young women of correspondingly short durations, but it over-corrects in view of the recent lowering of age at marriage and consequent expansion of marriage duration. The over-correction is removed to derive column (6).

The mean crude rate of the war and post-war period as a whole—1939-49 was 2·3 per cent above the corresponding rate for 1938, but the decline from the 1947 peak had already more than removed this excess by 1950, and in 1951 the rate was 4·4 per cent lower than in 1938.

After standardizing for age and duration (column (6)), however, a slightly more favourable picture is obtained of a rate in 1951 only 3.7 per cent below that of 1938. On the whole the difference between column (4) and column (6) is small, a fact which serves to demonstrate that the sharp changes in marriage experience have not produced any temporary artificial inflation of the birth rate such as is sometimes alleged to have occurred. In fact the excess of column (6) after correcting for this factor indicates that the reverse is true and that the crude rate has been slightly deflated.

Chance fluctuations from year to year are a normal feature of birth rates and no significance need be attached to them so that the events so far depicted are not inconsistent with the probability of an approach to stability at the 1938 level, but the future is still uncertain.

What we are discussing here is essentially the building of families, and a permanent decline in legitimate fertility would inevitably imply a decline in family size. The population may be maintained by smaller families if more women marry, so that there are more families, but already marriage rates are so high in England and Wales that there is little possibility of further increase. In effect therefore any palliative to a decline in legitimate fertility has already been applied, and a further decline in fertility could not be tolerated if the population is to be maintained. We have seen earlier (page 23) that in 1951 births were approximately at replacement level. Family size is considered later in this commentary.

#### Legitimate Fertility by Mother's Age and Duration of Marriage

Legitimate maternities at successive marriage durations are classified by individual ages of the mother in Table OO of Part II of each year. As there published, the records are subject to a degree of incompleteness, by the inclusion of cases in which the age of the mother or her date of marriage (from which duration is calculated) were not recorded. With the object of presenting the serial record in a consistent and complete form, the "not stated" cases have been distributed as described on page 25 and the maternities so adjusted are shown for the year 1951 by quinary groups of age in Table 3 of Appendix B. The corresponding maternities for 1938-45 were shown in Table IV of Appendix I on page 188 of the 1940-45 Civil Text, and for 1946-50 in Table 4 of Appendix II on page 188 of the 1946-50 Civil Text.

Annual Rates corresponding to the adjusted maternities are shown in Table 4 of Appendix B and have been obtained by relating them to the estimated years of married life exposed to risk, the calculation of which was described in Appendix II of the 1940–45 Civil Text. Similar annual rates for 1938–45 appeared in Table V of Appendix I on page 172 of the 1940–45 Civil Text and for 1946–50 in Table 5 of Appendix II on page 192 of the 1946–50 Civil Text. It should be noted that a maternity rate expressed per year of married life may be regarded as equivalent to the annual rate per married woman. The

rates shown are maternity rates and to obtain equivalent birth rates they should be multiplied by the appropriate ratios of births to maternities.

Analysis by Age.—Table XIII shows the numbers of legitimate maternities by mothers' age at maternity, for the pre-war year 1938, the average annual numbers for the period 1939–49 covering the war-time disturbance and post-war recovery, and for each individual year from 1946 to 1951. In the lower part of the table is shown the distribution of these maternities per thousand total over the six quinary age groups of mothers between 15 and 45 (the few cases at ages over 45 being included in the final group).

Table XIII.—Distribution	Legitimate Maternities	by Mothers' Age,
1938 to	51, England and Wales	d) 2201 hotels

Mothers' age	1938	Average 1939–49	1946	1947	1948	1949	1950	1951
13.60-970	14 10 4 9 A 0	Total nur	nber of m	aternities	i (in hund	reds)	rane (a) e doute (	action of the
th rates and depicted are	610,7	674,7	777,6	844,0	741,5	700,5	668,3	651,0
at its 1938	tability	Age	distribut	ion per 1,	000 total	it ditta De la cui	maintent	ioni ter of leve
15          20          25          30          35          40 and over	$36 \\ 233 \\ 324 \\ 237 \\ 126 \\ 44$	$\begin{array}{r} 31 \\ 248 \\ 309 \\ 232 \\ 135 \\ 45 \end{array}$	$23 \\ 231 \\ 304 \\ 253 \\ 146 \\ 43$	$27 \\ 255 \\ 321 \\ 225 \\ 132 \\ 40$	$34 \\ 268 \\ 325 \\ 204 \\ 128 \\ 41$	$38 \\ 274 \\ 338 \\ 190 \\ 121 \\ 39$	$39 \\ 272 \\ 332 \\ 199 \\ 120 \\ 38$	38 275 327 208 115 37

Throughout the period the largest proportion (about one-third) of maternities occurred to mothers between the ages of 25 and 30, but the distributions are not sharply peaked and proportions not very much smaller in size were associated with mothers in the immediately older (one-fifth) and younger (just over a quarter) age groups. Altogether the maternities between ages 20 and 35 have accounted for almost exactly 80 per cent of the total in each period shown in the table. During the war and immediate post-war years there were two main changes in the distribution—a shift to the older mothers, whose lives were less disturbed by the war, and a rise in the proportion at age 20-24 following the large increase in numbers of young brides in 1939 and 1940. Latterly, there has been a complementary and temporary shift to the younger ages, where the greater degree of war separation implied postponed births. The continued high incidence of marriages at young ages, a more permanent feature of the statistics, is tending to maintain the preponderance at the younger ages, and the post-war pattern which is emerging, indicates an average age of mothers younger than in 1938.

In the top half of Table XIV these maternities are related to the women at risk in the form of rates per 1,000 married women at each age in each calendar year, extracted from Table 4 of Appendix B of the present volume, Table 5 of Appendix I of the 1940–45 Civil Text and Table 5 of Appendix II of the 1946–50 Civil Text. In the lower half of the table each rate is compared with that of 1938. Fertility varies with duration of marriage independently of age and to eliminate the duration factor, the comparisons are shown in Table XIV in a standardized form, representing the percentage ratio which the maternities actually recorded at each age bear to those which would have emerged had the married women been subject to the 1938 age-duration specific rates.

Mothers' age		1938	1939–40	1946	1947	1948	1949	1950	1951
			Maternity	rates p	er 1,000 m	arried wo	men	DAT	
15		550	1 371 H	348	) 469	468	472	461	424
20	02.01	272	246	252	310	284	270	255	254
25		175	176	210	228	191	182	173	169
30		112	116	143	142	119	109	106	104
35		61	67	81	79	67	60	57	53
40		23	23	26	26	23	20	19	17

-----

Ratio to 1938 rate taken as 100 (Duration standardized)

								a second s	
15		100	68	64	85	1 86	88	1 86	79
20		100	91	94	116	106	101	95	95
25		100	104	126	137	115	109	104	102
30		100	107	134	134	111	102	99	96
35		100	110	133	130	110	98	93	88
40		100	101	111	112	99	86	80	74
15-44*	188	100	100	116	126	109	102	97	95
		100	100	110	120	100	104	91	90

\* Standardized for age and duration.

In every period shown in the table, the rates decline with age, at first sharply and thereafter more slowly.

The crude maternity rates in 1951 are lower than those of 1938 at every age though much less so at the central ages where most of the maternities are concentrated than at the extremes. Where the comparison is made on the basis of duration-standardized rates it is even more evident that between the ages 20 and 35, there is very little difference between the rates for 1938 and 1951, the decline being mainly confined to the very young or to the much older women.

As far as the older women are concerned, women over age 35 will in general have been married for several years. The rates they had experienced on average in 1939–49, when some 5 to 10 years younger than their 1951 age, may be seen to have been above the 1938 rates. Thus the subsequent decline does not necessarily suggest that they will ultimately have smaller families than generations of some 10 to 15 years earlier.

The decline at the youngest age group may seem more serious, even though this group contributes only 4 per cent of all maternities. However the decrease in the rate does not represent a decline in fertility as normally understood. In 1938, of 21,878 legitimate maternities to mothers under age 20, 15,513 or 70·9 per cent had been premaritally conceived. The similar figures for 1951 were 14,460 out of 24,608 or only 58·8 per cent. If the post-maritally conceived element in 1951 had remained the same (10,148) but the premaritally conceived element had increased to form the same proportion of the whole as in 1938, there would have been an additional 10,265 maternities to this age group in 1951, increasing the maternity rate to 112 per cent of the 1938 rate. A similar adjustment to the rates for ages 20–24 and 25–29 would raise them to 106 and 105 per cent of the 1938 rates, but the older age groups would get no advantage from this correction. Thus post-maritally conceived maternity rates up to age 30 have increased, not declined, since 1938 and the decline in the total rates is due to a reduction in pre-marital conceptions. Analysis by Duration of Marriage.—The distribution of legitimate maternities according to marriage duration\* is shown for 1938, 1939–49, and the individual years 1946 to 1951 in Table XV.

Table XV.—Distribution of Legitimate Maternities by Marriage Duration, 1938 to 1951, England and Wales

Marriage duratio	on   1	938	Aver- age 1939–49	1946	1947	1948	1949	1950	1951
Pre-marital	lly cond	eivec	l per 1,00	0 total l	egitimat	e matern	ities of e	ach year	10-50 A
$0-8\frac{1}{2}$ months		106	73	56	71	84	84	81	78
$\begin{array}{rrrr} 8\frac{1}{2} - 11\frac{1}{2} \text{ months} \\ 1 - \text{ year } & \ddots \\ 2 - \text{ years } & \ddots \\ 3 - \text{ years } & \ddots \end{array}$		60 154 122 104 88	$ \begin{array}{c c} 000 \text{ total} \\ 60 \\ 149 \\ 112 \\ 96 \\ 85 \\ \end{array} $	conceive 61 123 78 77 89	ed after 1 69 152 95 73 77	narriage 74 159 120 86 65	in each 63 167 125 107 77	year 62 155 127 109 96	$\begin{array}{r} 60 \\ 150 \\ 122 \\ 114 \\ 99 \end{array}$
4- years 5-6 years 7-9 years 10 years and over		88 131 138 203	146 152 200	197     169     206	166 180 188	135 177 184	$     119 \\     166 \\     176   $	$     \begin{array}{r}       117 \\       146 \\       188     \end{array} $	141 124 190

The most striking change shown by this arrangement of the data is that for the first duration identified, namely  $0-8\frac{1}{2}$  months, the duration adopted as representing the incidence of premaritally conceived maternities. In 1938 these maternities accounted for 106 per 1,000 of the total legitimate maternities recorded. During the war the rate fell rapidly and then rose but it has never regained its pre-war value, and indeed has been falling in recent years, both the 1950 and 1951 proportions of 81 and 78 per 1,000 being less than the previous year's proportions, though only by a small amount.

To avoid the influence of these premarital conceptions upon the distributions of later durations, the proportions for the latter are shown per 1,000 conceived after marriage in the lower part of Table XV. War conditions encourage the postponement of births and so in a distribution of maternities by duration of marriage neither the aggregation of the experiences of the war and immediate post-war years nor any other simple expedient can eliminate or even effectively mitigate the abnormality of the period as has been done in the previous sections, because the postponement is not merely to a later year but to a later duration. A second factor influencing the incidence of maternities by duration has been the wide fluctuations in marriage rates, leading to corresponding fluctuations in the numbers of mothers at risk at the various durations ; and the effects of this second factor have not yet been exhausted. Thus the fact that a shift of weight from very short durations to those of three years or more may be seen from Table XV to be the current trend, must not be taken to be an indication of a change in family spacing ; it is attributable to a parallel shift in weight of the married women at risk. The effect of the changing distribution of the numbers at risk is removed in Table XVI where the numbers of maternities at each marriage duration are expressed as a rate per 1,000 married women aged 15-44 passing through the duration specified.

Disregarding the rate at under  $8\frac{1}{2}$  months duration, associated with premarital conceptions, and remembering that each married woman is only

#### Table XVI.—Legitimate Maternity Rates by Duration of Marriage, 1938 to 1951, England and Wales

and there are th	1938	Average 1939–49	1946	1947	1948	1949	1950	1951
Rates	per 1,00	0 Married V	Women a	ged 15-4	14 at eac	h durati	on	
)-81 months	187	135	117	159	162	164	158	151
84-114 months	98	104	120	151	130	110	109	108
l vear	244	258	283	332	295	283	266	266
2 years	203	200	213	242	230	222	209	209
3 ,,	177	175	194	218	193	197	189	186
1 ,,	156	160	189	213	173	167	172	171
5 ,,	138	147	182	196	162	148	143	149
6 ,,	119	136	175	176	143	146	123	120
7 ,, 1	105	120	154	155	126	118	114	103
8 ,,	94	103	132	132	111	95	98	94
9	81	91	115	114	96	87	84	81
10 years and over	46	48	57	55	46	41	40	38
All durations	113	115	131	141	123	116	110	106
All durations from	POL 129			Liberton (C		110	105	100
$8\frac{1}{2}$ months	106	111	129	137	118	110	105	102
Ire shown in Table	Ratio to	1938 rate t	aken as	100 (age	standar	dized)		
0-81 months	100	66	60	83	83	82	78	1. 73
	100	106	123	157	135	114	113	111
$8\frac{1}{2}$ - 11 $\frac{1}{2}$ months 1 year	100	104	113	135	121	115	108	107
$2 \text{ years } \dots \dots$	100	96	102	116	112	108	102	101
0	100	96	104	118	105	109	105	10:
the state of the second second	100	101	117	131	107	103	108	108
PILLING CRAFTERING AN	100	105	130	137	112	102	99	104
A State of the second s	100	113	145	145	115	116	98	9'
6 ,,	100	114	148	146	116	106	102	93
-	100	109	142	140	114	95	96	95
7,		113	144	142	117	104	100	9:
7 ,, 8 ,,	100	113		OFF	100	89	84	8
7,	100 100	113	123	119	100	09	04	ALC: NO
7 ,, 8 ,, 9 ,,			123 116	119	100	102	97	9

\* Standardized for age and duration.

exposed for a quarter of a year to the risk of maternity at durations  $8\frac{1}{2}-11\frac{1}{2}$  months, it may be seen that in every period considered the rates decline with lengthening duration, at first steeply and thereafter more gradually.

From the lower half of the table, showing the age standardized ratio of the rates to those of 1938, it may be seen that the rate in 1951 at durations under  $8\frac{1}{2}$  months is exceptional, being 27 per cent *below* the corresponding 1938 rate whilst the rate for the remainder of the first year of marriage is 11 per cent *above* its 1938 counterpart; the rates for the next 5 years of duration are all in excess of the corresponding rates in 1938. The special features of maternity rates at durations under  $8\frac{1}{2}$  months, conventionally associated with premarital conceptions, have already been discussed and need not be taken into account further here. Disregarding therefore this exceptional case, the percentage ratios of the 1951 to 1938 rates show a decline with increasing duration from an 11 per cent excess at duration  $8\frac{1}{2}-11\frac{1}{2}$  months to a deficiency of 7 per cent at 9 years, and further to a deficiency of 20 per cent at durations over 10 years.

<sup>\*</sup> Durations shown in years, e.g. 1-, 2-, etc., should be read as strictly meaning  $11\frac{1}{2}$  months-1 year  $11\frac{1}{2}$  months, 1 year  $11\frac{1}{2}$  months-2 years  $11\frac{1}{2}$  months, etc.

In general the 1951 rates show a small decline from those of 1950, which in turn were below the 1949 rates. The All Durations rate in 1951, standardized for both age and duration, represented 97 per cent of the 1938 rate, the 1948 to 1950 values having been 112, 104 and 99. Thus the decline from the post-war peak in 1947, when the rate was 32 per cent above that of 1938, has not been entirely arrested though movement has become very slow and there are the same indications of approaching stability as have been seen in earlier sections.

Analysis by Age and Duration Combined .- The analyses so far examined show that fertility declines with advancing age of mother and also with lengthening duration of marriage when these factors are considered separately, but to what extent either or both are responsible for the decline is not clear, since the shorter durations tend to be associated with the younger mothers and the longer durations with the older mothers, and arrangements of the data by either factor alone automatically reflect the influence of the other. For an appreciation of the separate and independent effects of these factors, tabulations of birth or maternity rates are required in which distinction is made simultaneously of age of mother and duration of marriage. Such tabulations of maternity rates for each year from 1938 to 1945 were shown in Table V of Appendix I of the Civil Text for 1940-45 on pages 172-174; for each year from 1946 to 1950 in Table 5 of Appendix II of the Civil Text for 1946-50 on pages 192-194; and for 1951 are shown in Table 4 of Appendix B of the present volume. Rates for 1951 and a comparison of the 1950 and 1951 rates with those of 1938 have been extracted from these sources and are shown in Table XVII.

It should be noted that the rates in the Appendix Tables are expressed as per year of exposure to risk and those in Table XVII as per married women. The two sets of rates differ only at durations of marriage under one year, the important difference being that the numerically lower rates at duration  $8\frac{1}{2}-11\frac{1}{2}$  months in Table XVII merely reflect the shortness of the period—only a quarter of a year—in which the women concerned could experience a maternity to count in this duration.

With a few minor exceptions, the rates for 1951 may be seen from the Appendix Tables to conform to the general pattern of those of earlier years. At each duration the rates decline more or less consistently with increasing age of mother, and at each age of mother they decline with lengthening duration of marriage after rising to a maximum in the second year of marriage. It should be noted that the first year of marriage is peculiar in that it includes a substantial period during which the births must be the result of premarital conceptions.

The rates at durations under  $8\frac{1}{2}$  months, conventionally attributed to premarital conceptions, may be seen to share with those at other durations the property mentioned above, of declining with age. The decline from the rate for mothers under age 20 to that of the next older group aged 20–24, is very steep, the latter rate being only some 40 per cent of the former, but thereafter the decline continues more gradually. The ratio of the rates at this duration in 1950 and 1951 to those in 1938, show that at practically all ages the rates in 1950 and 1951 were below those of 1938 ; at older ages they were substantially below the 1938 rates, and at younger ages even further below. Further, a comparison of the 1950 and 1951 ratios shows that these rates are still declining at all ages. The examination of maternity rates at this duration in greater detail appears on page 39.

Excluding premarital conceptions the rates of 1951 in the first two years of marriage were generally higher than those in 1938, and slightly lower than those in 1950. At longer durations, the 1951 rates for the central age groups were

#### Table XVII.—Legitimate Maternity Rates per Married Woman distinguishing both Age and Duration of Marriage, 1951 Rates, and 1950 and 1951 Rates compared with 1938 Rates taken as 100, England and Wales

Age	All				I	Duration	ns (Year	rs from	1–)				
nge	Dura- tions	$\begin{array}{c} 0-8\frac{1}{2}\\ \text{mths.} \end{array}$	$8\frac{1}{2}-11\frac{1}{2}$ mths.	1–	2-	3-	4-	5-	6-	7-	8-	9-	10 and over
	111 (2.15) - 31 					:	1951 Ra	ites		an a			
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	· · ·424 · · 254 · · 169 · · 104 · · 053 · · 017 · · 106	·353 ·147 ·101 ·098 ·071 ·032 ·151	·112 ·118 ·110 ·100 ·059 ·019 ·108	·328 ·299 ·258 ·232 ·168 ·061 ·266	·303 ·244 ·209 ·182 ·123 ·051 ·209	·288 ·229 ·195 ·160 ·108 ·040 ·186	·208 ·188 ·157 ·102 ·038 ·171	·197 ·164 ·139 ·097 ·036 ·149	$\begin{array}{c c} - & - & - & - & - & - & - & - & - & - $	·179 ·121 ·100 ·073 ·025 ·103	·243 ·114 ·095 ·067 ·024 ·094	·110 ·085 ·059 ·023 ·081	·117 ·073 ·042 ·015 ·038
		121 C		1950 F	l Rate cor	 npared	with 19	  38 Rat	l e taken	as 100	1	1	L.S. S.
20- 25- 30- 35-	. 84 . 94 . 99 . 95 . 93 . 83	74 74 99 103 90 82	$ \begin{array}{c c} 117\\ 115\\ 118\\ 99\\ 92\\ 78\\ \end{array} $	$116 \\ 105 \\ 114 \\ 110 \\ 106 \\ 94$	96 98 110 103 90 94	89 95 113 111 104 87	$ \begin{array}{c c} - & - \\ 96 \\ 113 \\ 114 \\ 110 \\ 98 \\ \end{array} $	$ \begin{array}{c c}  & & & \\  & & 84 \\  & 101 \\  & 108 \\  & 105 \\  & 89 \\ \end{array} $	$ \begin{array}{c c}$	79 97 114 105 91	$     \begin{array}{r}             \overline{74} \\             90 \\             104 \\             102 \\             87         \end{array}     $	91 102 110 92	76 84 88 76
15-44	. 97	84	112	109	103	107	110	104	103	109	104	104	87
	in the			1951 1	Rate co	mpared	with 1	938 Rat	e taken	as 100			
20-	. 77 . 93 . 97 . 93 . 87 . 74	67 70 91 97 83 79	$     \begin{array}{ c c c c c c c c c c c c c c c c c c c$	$106 \\ 106 \\ 111 \\ 108 \\ 105 \\ 95$	$\begin{array}{c c} 92\\99\\106\\103\\92\\102\end{array}$	93 97 110 105 96 85	95 115 114 97 88	93 106 113 103 97	$ \begin{array}{c c}     75 \\     96 \\     106 \\     101 \\     83 \end{array} $	72 89 102 99 78	$ \begin{array}{c} \overline{69} \\ 84 \\ 101 \\ 102 \\ 80 \end{array} $	87 98 97 88	75 82 82 71
15-44	. 94	81	110	109	103	105	110	108	101	98	100	100	83

alone in excess of their 1938 counterparts, and no clear-cut trend from 1950 to 1951 is visible, about half the rates rising and the other half falling by a small amount. If anything the rates for the longest durations of all tend to show a falling trend. This is consistent with the suggestion that there is a current tendency to concentrate family building in the early years of married life to a greater degree than formerly.

Legitimate Fertility in the First Two Years of Marriage.-In the Supplement to Table IV of Appendix I of the 1940-45 Civil Text, legitimate maternities occurring within the first two years of marriage during the period 1938 to 1945 were analysed by quarter years of marriage duration. Corresponding analyses for the years 1946 to 1950 appeared in the Supplement to Table 4 of Appendix II of the 1946-50 Civil Text on page 190, and for 1951 appear in the present volume in Table 3 of Appendix B. These analyses are summarized in Table XVIII with an additional section showing approximate conception rates in the first five quarters of marriage (corresponding to births in the fourth to eighth quarter) related not to all married women passing through the marriage duration, but restricted to those not pregnant at the beginning of each quarter. In 1938, for example, the maternity rates per 1,000 married women in the first three columns of Table XVIII show that 187 out of 1,000 women were already pregnant at the date of their marriage, so that the 98 maternities per 1,000 married women shown for duration 81-111 months were conceived by the 813 women not pregnant at the date of marriage, which gives a conception rate of 121 in the first quarter of marriage per 1,000 women not already pregnant at the beginning of the quarter. The rates for the succeeding quarters have been obtained similarly by dividing the maternity

rate for the appropriate quarter by 1,000 minus the sum of the maternity rates in the three preceding quarters and multiplying by 1,000.

Table XVIII.—Legitimate	Maternitie	s within 1	the f	first t	wo	years o	f
Marriage, 193	38 to 1951,	England a	nd V	Vales			

		Ma	aternity			0 Married Durations	t the follo	wing	Rate follo wom	espond es* in wing n en not the be ter.	the five narriage alread	y preg	rters ongst nant	
		$0-2\frac{1}{2}$	$2\frac{1}{2}-5\frac{1}{2}$	$5\frac{1}{2}-8\frac{1}{2}$	$8\frac{1}{2}$ -11 $\frac{1}{2}$	$11\frac{1}{2}-14\frac{1}{2}$	$14\frac{1}{2}-17\frac{1}{2}$	$17\frac{1}{2}-20\frac{1}{2}$	$20\frac{1}{2}-23\frac{1}{2}$	1st Qr.	2nd Qr.	3rd Qr.	4th Qr.	5th Qr.
					All Ages	(15–44) H	Rates in S	uccessive	Periods	Stephene 1970-	Lois Aller			
Perio 1938		20	81	86	98	97	63	43	42	121	132	88	58	53
1939-49 average		13	50	71	105	88	66	55	50	121	114	90	74	63
1946 1947 1948 1949 1950 1951		$     \begin{array}{r}       11 \\       15 \\       16 \\       16 \\       14 \\       15 \\       15 \\       \end{array} $	$39 \\ 54 \\ 57 \\ 61 \\ 60 \\ 56$	65 92 89 87 83 80	$120 \\ 151 \\ 130 \\ 110 \\ 109 \\ 108$	$90 \\ 110 \\ 96 \\ 96 \\ 85 \\ 84$	70 82 72 68 66 66	60 72 64 60 59 60	57 69 62 59 56 58	$136 \\ 180 \\ 155 \\ 132 \\ 129 \\ 127$	$     \begin{array}{r}       116 \\       156 \\       131 \\       129 \\       114 \\       111     \end{array} $	97 127 105 96 91 91	83 110 91 83 80 81	73 94 81 76 71 73
Nomi Age† Marri	at			00	1.4.1	A	nnual Ag	e Rates –J	1938	- 315 	11.58			
5- 0- 5- 5- 5-		$63 \\ 19 \\ 11 \\ 12 \\ 15 \\ 8$	$243 \\ 88 \\ 44 \\ 40 \\ 32 \\ 15$	$226 \\ 98 \\ 53 \\ 46 \\ 35 \\ 15$	$104 \\ 102 \\ 97 \\ 98 \\ 65 \\ 24$	$ \begin{array}{c c} 107 \\ 106 \\ 92 \\ 82 \\ 53 \\ 20 \\ \end{array} $	81 68 59 52 36 12	52 49 38 33 23 8	$     \begin{array}{r}       34 \\       44 \\       44 \\       38 \\       24 \\       7     \end{array} $	$\begin{array}{c} 222 \\ 128 \\ 109 \\ 109 \\ 71 \\ 25 \end{array}$	$\begin{array}{ c c c c } 251 \\ 149 \\ 114 \\ 100 \\ 61 \\ 21 \end{array}$	$\begin{vmatrix} 144 \\ 98 \\ 78 \\ 67 \\ 43 \\ 13 \end{vmatrix}$	73 68 51 43 27 8	45 57 54 46 27 7
5-44		20	81	86	98	97	63	43	. 42	121	132	88	58	53
	198.974 61						19	50						
5- 0- 5- 5- 5-	··· ··· ···	$32 \\ 11 \\ 12 \\ 15 \\ 12 \\ 8 \\ 8$	$156 \\ 56 \\ 38 \\ 34 \\ 26 \\ 12$	204 82 58 52 34 11	$120 \\ 118 \\ 112 \\ 96 \\ 59 \\ 18$	90 92 86 78 48 15	$     \begin{array}{r}             85 \\             71 \\             64 \\             55 \\             36 \\             12 \\         \end{array}     $	83 64 56 47 30 10	$     \begin{array}{r}       81 \\       61 \\       54 \\       44 \\       27 \\       8     \end{array} $	197 139 126 107 64 19	$\begin{array}{ c c c } 173 \\ 124 \\ 109 \\ 95 \\ 54 \\ 16 \end{array}$	$  \begin{array}{c} 145 \\ 100 \\ 86 \\ 71 \\ 42 \\ 13 \\ \end{array} \\   \begin{array}{c} \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\$	118 89 76 61 35 10	$     \begin{array}{ } 109 \\       79 \\       68 \\       54 \\       30 \\       8     \end{array} $
5-44	314	14	60	83	109	85	66	59	56	129	114	91	80	71
							19	51						
5- 0- 5- 0- 5- 0-	··· ·· ··	29 12 12 15 12 9	$     \begin{array}{r}       145 \\       52 \\       34 \\       30 \\       22 \\       12     \end{array} $	188 78 52 48 32 10	$     \begin{array}{r}       112 \\       117 \\       109 \\       94 \\       53 \\       16     \end{array} $	86 91 83 71 47 15	76 71 63 55 38 12	78 64 55 48 30 10	78 62 54 44 26 8	$176 \\ 136 \\ 121 \\ 104 \\ 57 \\ 17$	$155 \\ 121 \\ 103 \\ 86 \\ 53 \\ 16$	$     124 \\     99 \\     83 \\     70 \\     44 \\     13     $	$     \begin{array}{r}       107 \\       89 \\       74 \\       62 \\       35 \\       10     \end{array} $	$\begin{vmatrix} 103 \\ 80 \\ 68 \\ 53 \\ 29 \\ 8 \end{vmatrix}$
5-44	Serve 1	15	56	80	108	84	66	60	58	127	111	91	81	73

\* The rates refer to conceptions which result in childbirth. † Actual age at duration 0-21 months.

The rates in this section are of special interest since the children born within two years of marriage represent a substantial proportion of all legitimate births (30 per cent in 1938 and 27 per cent in 1951) and of these between one quarter and one third were represented by children conceived before but born after marriage.

The uppermost section of Table XVIII shows rates for all ages 15-44 combined. From this section it may be seen that in 1938 the highest maternity rate was experienced at duration  $8\frac{1}{2}$ -11 $\frac{1}{2}$  months, followed very closely by the next longer duration group,  $11\frac{1}{2}$ -14 $\frac{1}{2}$  months. At longer durations the rate falls, at first sharply and thereafter more gently. At the shorter durations, corresponding to premarital conceptions, the maternity rate rises from very low values at extremely short durations to a value at  $5\frac{1}{2}-8\frac{1}{2}$  months duration (86 maternities per 1,000 married women) not far below the rate at  $8\frac{1}{2}-11\frac{1}{2}$  months (98 per thousand).

After the fluctuations experienced in the war years, the maternity rates of 1946 followed a very different pattern from that of 1938. At durations under  $8\frac{1}{2}$  months the rates were far lower than in 1938, whilst those at over  $8\frac{1}{2}$  months were generally higher. Further, at durations over  $8\frac{1}{2}$  months, the previous pattern in which the rates of the first two quarters of post-maritally conceived maternities  $(8\frac{1}{2}-11\frac{1}{2} \text{ months and } 11\frac{1}{2}-14\frac{1}{2} \text{ months})$  were much higher than those of the next 3 quarters was replaced by a pattern in which the rate for the first quarter (81-111 months) alone was substantially higher and the rates thereafter declined sharply. Since 1946 rates of post-maritally conceived maternities have reflected the post-war boom in births, relative stability being reached by 1951 with rates on the whole somewhat above those of 1938. Premaritally conceived maternity rates have also stabilized, but were somewhat below those of 1938. The relationship between the rates in the different quarters has since 1946 moved to a pattern intermediate between that of 1938 and that of 1946. This is illustrated in the following statement showing the rates in quarters from  $2\frac{1}{2}$  to 141 months expressed as a percentage of the rate at  $8\frac{1}{2}$ -111 months duration :

		on ei po	2 <del>1</del> _5 <del>1</del>	$5\frac{1}{2}-8\frac{1}{2}$	$8\frac{1}{2}$ -11 $\frac{1}{2}$	$11\frac{1}{2}-14\frac{1}{2}$
1938	tinan do a		83	88	100	99
1939–45	•••	10 · · · 01	53	71	100	90
1946	0.019	ow by	32 36	54 61	$\frac{100}{100}$	75 73
$\begin{array}{c} 1947 \\ 1948 \end{array}$	•••		44	68	100	74
$1949 \\ 1950$	•••		55 55	79 76	$\frac{100}{100}$	87 78
1950	•••		52	74	100	78

The lower section of Table XVIII shows maternity rates with corresponding conception rates, at quinary groups of mother's age at marriage, for 1938, 1950 and 1951. The rates for the premaritally conceived maternities at ages under 20 at durations  $2\frac{1}{2}-8\frac{1}{2}$  months are substantially higher than those at  $8\frac{1}{2}-11\frac{1}{2}$  months but at higher ages the differences are increasingly in the opposite direction. For the younger mothers the rates at  $11\frac{1}{2}-14\frac{1}{2}$  months were little different from those at  $8\frac{1}{2}-11\frac{1}{2}$  months in 1938 but for the older mothers they were from 15 to 20 per cent lower. In 1950 and 1951, as has been demonstrated for all ages combined, the rates for durations  $11\frac{1}{2}-14\frac{1}{2}$  months became generally lower than at  $8\frac{1}{2}-11\frac{1}{2}$  months, the deficiency being 20-25 per cent at the younger ages where there had previously been a slight excess. This can be seen from the following statement which shows the rates at  $11\frac{1}{2}-14\frac{1}{2}$  months expressed as percentages of those at  $8\frac{1}{2}-11\frac{1}{2}$  months :

	15-19	20-24	25-29	30-34	35-39	40-44
1938	103	104	95	84	82	83
1950	75	78	77	81	81	83
1951	77	78	76	76	89	94

#### The deficiency at older ages is not now so large.

An examination of the conception rates shown in the lower part of Table XVIII on the right-hand side, shows substantial changes since 1938. At ages under 20 in 1938, a conception rate of 222 per 1,000 married women was recorded for the 1st quarter, rising to 251 for the 2nd quarter and thereafter declining sharply to 45 in the 5th quarter. In 1951 the rate was 176 in the 1st quarter, somewhat lower than in 1938; the rate in the 2nd quarter at 155 was lower, not higher, than in the 1st quarter and the gentle decline that followed maintained the rate at as high as 103 in the 5th quarter, more than double the 1938 rate in this quarter. The rates at ages 20–24 and 25–29 showed similar though less striking contrasts between the pre-war and the current experience. At higher ages in 1938 the rate for the 2nd quarter was below that for the 1st quarter, but recent experience still shows a much slower decline in the rates with increasing duration than in 1938.

These changes have led to anomalies in general comparisons between rates in 1938 and 1951. The rates in 1951 in the 1st quarter are below those in 1938 except for ages from 20 to 30. In the 2nd quarter they are substantially lower than in 1938. However, in the 3rd to 5th quarters the 1951 rates are generally above those of 1938.

The 1951 rates are slightly below those of 1950, but there is no evidence yet of a permanent trend.

**Cohort Analysis.**—In considering replacement, the total ultimate size of family produced by each married woman is of more interest than the rate at which she may be building her family at any particular time. Maternity rates may be calculated each year and aggregated from year to year to show the average total number of maternities experienced by married women over the whole of various durations of marriage, i.e. effectively to trace their family building as they pass through their reproductive married lives.

During her married life a woman passes not only through successive durations of marriage, but simultaneously through successive ages. Thus, for example, the maternity rates in 1946 at duration 0- at maternal age 20-24, and in 1947 at duration 1- and age 21-25 both belong to the same marriage cohort\*-a somewhat theoretical cohort-and they may be aggregated to show the average number of maternities experienced by the cohort by the end of its second year of married life. Similarly the maternity rate in 1948 at duration 2- and age 22-26 may be added to the previous total to bring it up to the end of the third year of married life, and so on. Maternity rates by advancing ages with durations as required for this procedure have been calculated and the results of their aggregation in the manner described above are shown in Table 5 of Appendix B. In view of the abnormal character of fertility rates at durations under 81 months, which has been referred to on several occasions in the commentary, a second aggregation is included in the table in which the influence of premarital conceptions has been removed by excluding the rate at durations under 84 months, and inflating the rate for  $8\frac{1}{2}-11\frac{1}{2}$  months by excluding from the denominator the women who had already borne a child at under 81 months duration on the grounds that they could not so soon bear a second child.

Table XIX shows the total maternities per married woman, the counterpart of Table 5 of Appendix B without distinction of age at marriage, the maternities for each cohort at successive durations being expressed as a ratio per 1,000 to that of the 1937–38 cohort at the same duration. This cohort was the first whose maternities could be aggregated, since the necessary data were not collected until 1938.

#### Table XIX.—Total Maternities per Woman Married under age 45, experienced by successive Marriage Cohorts, expressed as a ratio to those of the 1937–38 Cohort taken as 1,000, by duration of marriage, England and Wales. (See Text.)

(a) Each cohort associated with two calendar years represents the number of married women exposed to risk at durations under one year in the second of the associated years.
(b) The durations 1 year, 2 years, etc., are more precisely 11<sup>1</sup>/<sub>2</sub> months, 1 year 11<sup>1</sup>/<sub>2</sub> months, etc.

Original Cohort	asque				Durati	on of Ma	arriage		(1) <sup>0</sup> ["		
of New Marriages	$\frac{8\frac{1}{2}}{\text{mths}}$ ,	1 yr.	2 yrs.	3 yrs.	4 yrs.	5 yrs.	6 yrs.	7 yrs.	8 yrs.	9 yrs.	10 yrs
and Wales	etter filler			Total	materni	ties (rati	o to 193'	7–38)			
1937–38 1938–39	1,000 877	1,000 898	1,000 924	1,000 923	1,000 968	1,000 979	1,000 995	1,000 984	1,000 1,014	1,000 1,013	1,000 1,002
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	626 583 588 663 717 604	698 660 663 740 842 793	776 780 799 898 93,4 966	840 833 858 916 990 1,055	894 894 892 989 1,079 1,104	923 899 948 1,054 1,090 1,106	923 946 1,001 1,064 1,083 1,093	958 980 1,002 1,060 1,060 1,067	993 991 1,006 1,056 1,048	980 968 983 1,027	966 953 965
1945-46           1946-47           1947-48           1947-48           1948-49           1948-50           1950-51	626 850 866 877 845 807	832 1,088 1,025 961 937 909	1,080 1,148 1,089 1,025 1,009	1,122 1,162 1,098 1,051	1,165 1,188 1,131	1,163 1,180	1,148				
	Г	`otal mat	ernities,	excludin	g the effe f the first				ons on tl	he mater	nities
1937–38 1938–39		1,000 909	1,000 939	1,000 932	1,000 987	1,000 996	1,000 1,012	1,000 997	1,000 1,031	1,000 1,028	1,000 1,014
1939-40           1940-41           1941-42           1942-43           1943-44           1943-45		769 736 736 818 1,008 1,050	835 860 884 994 1,030 1,129	898 901 932 985 1,071 1,190	$953 \\ 964 \\ 959 \\ 1,062 \\ 1,164 \\ 1,224$	$977 \\ 957 \\ 1,014 \\ 1,127 \\ 1,163 \\ 1,205$	969 1,004 1,067 1,128 1,145 1,176	1,005 1,035 1,060 1,116 1,111 1,136	1,039 1,043 1,059 1,107 1,093	1,021 1,013 1,029 1,069	1,002 992 1,005
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	1.1.87 (T. 20,16)	1,124 1,488 1,281 1,091 1,066 1,050	1,289 1,309 1,204 1,096 1,085	1,274 1,272 1,177 1,106	1,297 1,282 1,202	1,271 1,256	1,237				1

In the top half of the table it may be seen that the ratio for premaritally conceived maternities, which for the cohorts married during the war was a little more than half that of the 1937–38 cohort, has fluctuated in the post-war cohorts between 80 and 90 per cent of the 1937–38 cohort. The current trend would appear to be downward.

In the bottom half of the table, in which the effect of premarital conceptions has been removed, the cohorts of women married in the early war years show a smaller number of maternities than the 1937–38 cohort at shorter durations but, in general, they more than made good the deficiency at later durations in the immediate post-war years and, to date, have experienced a greater total of maternities than the 1937–38 cohort at the same duration. The women married in the latter half of the war and immediately after the war, have been more fertile than the 1937–38 cohort, but the excess of maternities declines with increasing duration. The outstanding cohort, that of 1946–47, had, by the end

<sup>\*</sup> The term cohort is used for convenience to refer to women married during the same interval of time.

of its first year of marriage, nearly 50 per cent more maternities per woman than the 1937-38 cohort, but this excess had fallen to barely 25 per cent by the end of the 5th year of marriage. More recent cohorts have been showing progressively lower fertility but their excess maternities over the 1937-38 cohort has increased slightly with duration. This may be attributed rather to the depression of the 1937-38 cohort's fertility by the intervention of war, than to a rising fertility with duration in recent cohorts.

Distinction of age at marriage is made in Table XX derived from Table 5 of Appendix B but restricted to the maternities at 5 and 10 years duration of marriage.

Table XX.—Total Maternities per Married Woman experienced during the first 5 and 10 years of marriage by successive Marriage Cohorts, expressed as a ratio to those of the 1937–38 Cohort taken as 1,000, by age at marriage, England and Wales. (See Text.)

(a) Each cohort associated with two calendar years represents the number of married women exposed to risk at durations under one year in the second of the associated years.

(b) The periods involved are more precisely 4 years  $11\frac{1}{2}$  months and 9 years  $11\frac{1}{2}$  months.

			Total Ma	aternities	5			l Matern nuptial C of the	onceptic		e Materi	
Original Cohort of New		Non	ninal Age	at Marr	iage			Non	ninal Age	at Marr	iage	landina. Geografia
Marriages	All ages under 45	Under 25	25–29	30-34	35-39	40-44	All ages under 45	Under 25	25–29	30-34	35-39 1,000 991 979 1,005 1,009 1,121 1,093 1,152	40-44
BS CTUDER					I I	Duration	: 5 Year	'S				
1937-38 1938-39	1,000 979	1,000 963	1,000 1,002	1,000 996	1,000 974	1,000 960	1,000 996	1,000 984	1,000 1,018	1,000 1,004		1,000 964
1939-40 1940-41 1941-42 1942-43 1943-44 1944-45	923 899 948 1,054 1,090 1,106	878 843 880 979 1,014 1,023	960 961 1,018 1,142 1,187 1,235	968 978 1,012 1,089 1,145 1,174	947 968 978 1,085 1,067 1,101	873 967 913 1,053 1,047 1,040	977 957 1,014 1,127 1,163 1,205	941 912 963 1,073 1,110 1,142	996 995 1,054 1,177 1,224 1,298	999 1,004 1,036 1,112 1,163 1,216	1,005 1,009 1,121 1,093	937 1,018 964 1,045 1,027 1,108
1945–46 1946–47	1,163 1,180	1,090 1,135	1,313 1,331	1,215 1,166	1,115 1,059	993 1,027	1,271 1,256	1,219 1,237	1,376 1,361	1,264 1,183		1,081 1,081
		<u> </u>				10 3	ears?	1.5 NG			Sec. Sec.	1.000 Q 1.000 Q 1.000 Q
1937–38 1938–39	$1,000 \\ 1,002$	1,000 987	1,000   1,020	1,000 1,013	1,000 985	1,000 968	1,000 1,014	1,000   1,002	1,000 1,030	1,000 1,019	1,000 1,000	1,000 974
1939–40 1940–41 1941–42	966 953 965	935 920 922	978 972 978	973 965 961	957 977 970	884 974 929	1,002 992 1,005	978 970 975	999 991 996	993 981 972	985 1,008 994	948 1,026 983

For as far as the records extend the fertility of the cohorts of women married at the various ages, shown in Table XX follows the same pattern as that discussed above for all married women without distinction of age, viz. a sharp but temporary reduction in the fertility of cohorts married in the early war years, and an increase in fertility of the marriages of the late war years and just after the war. Even at 5 years duration the subsequent decline is not visible, and at 10 years' duration the records are as yet available for only the earlier cohorts. Looking across the row relating to maternities for the 1946–47 cohort at 5 years duration, it may be seen that, for total maternities the maximum excess over that of the 1937–38 cohort is shown for those married at ages 25–29. For younger and older ages the margins are much smaller. Reference has already been made to the substantial decline in premaritally conceived fertility at the younger ages, and it is not therefore unexpected that the right-hand side of the table shows a somewhat different picture after the premaritally conceived component has been removed. Women married at 25–29 still show the maximum excess of 36·1 per cent (previously 33·1), but those married at ages under 25 have an excess of 23·7 per cent. (previously 13·5). The smaller margins of older marriage ages are not appreciably increased.

These analyses materially assist understanding of current fertility trends, but they suffer from serious defects. The data from which they are prepared did not become available until 1938, and almost immediately the impact of the Second World War imparted such abnormal influences on the ensuing fertility as to invalidate the experience as a yardstick of normality against which current trends could be measured. In the above tables, the cohort 1937–38 has been used as a standard, merely as the first cohort of the series. It must be recognized however that this cohort had but two years or so of normal family building before the war. It could even be suggested that the international tension immediately prior to the commencement of hostilities affected these women from the outset of their marriages. Certainly their maternity experience after 5 or 10 years of marriage cannot be deemed to constitute a fair standard.

It may be that the families of current marriages will be built up more normally, but it will be some time before these families will be sufficiently nearly complete to have revealed their size, and further time must elapse for the families of succeeding cohorts to be built before any firm trend can be determined. Thus it is in the future rather than the present that the vital statistics accumulated under the Population (Statistics) Act of 1938 may be expected to begin to show the trend of fertility with any clarity.

### Maternities by Number of Previous Children

Legitimate maternities occurring in the calendar year are classified for various ages of mothers at the time of the maternities, according to the size of the existing families to which the new children were born and are published in Tables II, KK and MM of the successive Parts II. The types of analysis provided by these tables are as follows :

Table II.—The number of previous children (surviving, dead or stillborn) by the present and any previous husband.

Table KK.—The number of surviving previous children by the present and any previous husband.

Table MM.—The number of previous children (surviving, dead or stillborn) by the present husband only.

An additional analysis of the information in Table MM by the duration of the present marriage is provided in Table SS (Part II). The object of these analyses is to show how families are growing by ascertaining the frequencies at which first, second, third, etc., children are being born to mothers of different ages, and thus to throw light on the family building habits of the community, though an adequate statistical examination of this aspect must await knowledge of the size distribution of the existing families of all married women (and not only those experiencing maternities) to which the new maternities can be related. From the maternity analyses alone, however, a broad conspectus of the experience of the years 1938 to 1939 and 1946 to 1951 is provided by the summary of the information in Tables II, KK and MM for mothers of all ages shown in Table XXI.

Table	XXI.—Average Size of existing families to which children were
	born to Mothers of all Ages and Durations of Marriage,
	1938 to 1939 and 1946 to 1951, England and Wales

Type of family	Average size of family to which children were born in :											
measurement	1938	1939	1946	1947	1948	1949	1950	1951				
All children by all	705.16	gnibrie	ersbalt	TRUMP!	Alaines.	ut ese	Dak 9	oitT				
husbands (II) Surviving children by	1.441	1.417	1.185	1.114	1.182	1.199	1.244	1.261				
all husbands (KK) All children by present	1.242	1.228	1.066	1.009	1.070	1.093	1.140	1.160				
husband (MM) Children by previous	1.413	1.393	1.163	1.089	1.150	1.165	1.209	1.226				
husband (II-MM). Stillborn or dead chil-	0.028	0.024	0.022	0.025	0.032	0.034	0.035	0.035				
dren (II-KK)	0.199	0.189	0.119	0.105	0.112	0.106	0.104	0.101				

The high incidence of new marriages in the early years of the war followed by the secondary wave in the immediate post-war years, added to the population of married women abnormally large numbers with no previous children. As a result the average size of families to which children were being added, which was 1·441 in 1938, was reduced in 1946 to only 1·185 and declined still further to 1·114 in 1947. Thereafter the recovery in family building after the war was reflected in additions to the families of those recently married, and the average number of previous children rose to 1·261 in 1951. The rate of increase is so slow that a return to the pre-war average seems unlikely. However the interpretation of these average family sizes, restricted as they are to those families to which additions were being made, is not an easy matter. It is possible and indeed probable, that completed family sizes can be maintained even though the average size of families under construction as envisaged above may not regain previous values. This matter is discussed in more detail later in this section.

The last two lines of Table XXI show the average number of children by former husbands, and of stillborn or dead children, of women who gave birth to children in the years shown. The number of children by former husbands declined slightly from 0.028 in 1938 to 0.022 in 1946, conforming to the downward trend of all the average family sizes shown in the table, but subsequently the number rose sharply and seems to have become stabilized at 0.035. Undoubtedly this rise may be attributed to the substantial increase in divorce incidence since the war. The last line, which shows the average proportion of the total previous children who were stillborn or dead, is of considerable interest and significance. The surviving families to which children were born in 1938 averaged 1.242 out of a total of 1.441, or 86-2 per cent. By 1946 the proportion surviving had risen to 90.0 per cent, and by 1951 to 92.0 per cent. This improvement reflects the remarkable decline in feetal, infant, and child mortality which has taken place in recent years.

The general distribution of the legitimate maternities of 1938 to 1951 according to the number of previous children is shown in Table XXII, which is based on the data of Table MM in the successive Parts II.

In 1938 81.1 per cent of the maternities were to the smaller existing families of two previous children or less. By 1951 this proportion had risen to 85.8 per cent. If this group is divided by family size, it is found that the increase is

#### Table XXII.—Legitimate Maternities distributed according to the number of Mothers' previous children by Present Husband, 1938 to 1951, England and Wales

Number of previous Children	1938	Average 1939–49	1946	1947	1948	1949	1950	1951
r <del>of women</del> be average	ndamin a 1 madi .	Numl	per of Ma	ternities	hundreds		proviou	bed of
0	257,5	1 291.4	333,3	381,8	314.7	286,4	1 261.8	251.9
	154,8	189,9	231.0	245.2	225,6	221,2	211.6	201,9
$\frac{1}{2}$	78,9	89,8	104,8	109,3	101.5	99,1	100.8	101,6
3	42,3	43.0	46,9	47,2	44.4	42,6	44.0	44.9
4	25,3	23.1	24,0	23,4	21.7	20.4	20,7	21,4
5-6	27,5	22,2	21,4	20,9	19.2	17,9	17,4	17,0
7-9	15,4	11,3	10,4	9,8	9,2	8,3	8,0	7,4
10-14	4,2	3,0	2,5	2,4	2,3	2,1	2,0	1,8
15 and over	1	1	. 1	1	inter 1 a	1	1	1 man
Not stated	4,7	2,8	3,3	4,0	2,8	2,4	1,9	1,8
Fotal Stated	606,0	673,8	774,4	840,1	738,7	698,1	666,4	649,1
the additial get and the	na vizen Stratur	Data and D	istributi	on per 1,0	00 Stated	p age an	nortage tec by t	i ani inter
0	425	432	431	454	426	410	393	388
man I door	256	282	298	292	306	317	318	313
2	130	133	135	130	138	142	151	157
3	70	64	61	56	60	61	66	69
4	42	34	31	28	29	29	31	33
	45	33	28	25	26	26	26	26
5-6		17	13	12	12 3	12	12	
7-9	25	E 1					A CONTRACTOR OF A CONTRACTOR OFTA A CONTRA	
	7	5	3	3				0

not spread evenly over the three family sizes involved. Most of this increase is concentrated in families with one previous child, to which accrued 5.7 per cent more of the 1951 maternities. Families with two previous children increased their share of all legitimate maternities by only 2.7 per cent, though relative to their original share this represents a very similar increase to that of the families with one previous child. The proportion of maternities in 1951 in which there had been no previous child, however, was less by 3.7 per cent (of total maternities) than in 1938. A comparison of the whole range of uncompleted families to which additions were made in 1951 with that of 1938 shows that maternities are accruing rather more than formerly to families with one or two previous children, and less to those with no previous children or with three or more previous children.

It should be reiterated that these figures do not relate to all families but are restricted to families to which additions were made in the year; and the conclusion that in the latter families, middle sizes are relatively more numerous is not evidence that completed families will be similarly affected. It does however suggest that this may be happening, and it is interesting and useful to examine the implications of such a hypothesis.

If the distribution of families by completed size experiences a change by a diminution of the proportion at the largest sizes, it seems self evident, and may

in fact be demonstrated mathematically,\* that not only the average completed size of all families will decline, but so also will the average size of families to which additions are made in any year. What is not clear is that if there is a complementary decline in the proportion of families ultimately remaining at the smallest size, so that overall the average ultimate size of families experiences no change, there will be no similar complementary increase in the average size of families to which additions were made in the year. A simple example will illustrate this point. If, after family building had stabilized, a number of women who had previously had no children each bore one child, then the average *ultimate* or *completed* size of families to which additions were being made, the change would introduce a number of families with no previous children, and would thus *decrease* the average size of such families.

Thus the observed decrease in the average number of previous children of families to which additions are being made does not provide evidence that the average ultimate size of families is decreasing. It is in fact consistent with the suggestion that the average ultimate size may not be changing very much, though the distribution of sizes is tending to concentrate more closely about the average.

The size of family is influenced by both the age of the mother and the duration of her marriage. Table SS of the successive Parts II analyses the annual maternities by the age of mother, duration of her present marriage and the number of previous children surviving, dead, or stillborn, by her present husband. A comparison of the average number of previous children of mothers according to mother's age and the duration of her marriage for 1939, 1950 and 1951 is shown in Table XXIII.

From the distribution of the previous children shown in Table SS, it is clear that they could not all have been born within the period of the present marriage. The question asked of the informant at the registration of the birth was "the number of previous children by the mother's present husband" and the answer could therefore include any children, by the husband, born before marriage. An indication of the effect of the inclusion of such children can be inferred from the average number of previous children at duration under 1 year, since practically all such children must have been born before marriage, and there is no reason to suppose that the number of children born before marriage included at durations of one year or over were substantially different from those shown for durations under one year.

The average number of previous children increases progressively with duration of marriage for each age group, since the groups of mothers concerned at later durations have not only been married longer but were married at younger ages—the larger the duration at current ages, the younger the marriage age. Thus at the older ages (40 and over) in 1939, the difference between the 8.87average number of previous children at durations 25-29 years and the 6.89 at durations 20-24, represents virtually the difference in average ultimate family size of women married at ages under 20 and 20-24, when the averages in each

\* If in a stable state the number of families of ultimate size *i* is  $n_{i_j}$  then the average number of previous children recorded at birth registration is given by :

A/B (say) =  $\sum_{i}^{c} \frac{(i-1)}{2} \cdot i \cdot n_{i} \div \sum_{i}^{c} i \cdot n_{i}$ . If there is a shift of D families from size j to k, the average number of previous children becomes :

 $[A + D/2 \quad (k-j) \quad (k+j+1)] \div [B + D \quad (k-j)]$ . This is less than A/B if k < j and (k+j+1)/2 > A/B or if k > j and (k+j+1)/2 < A/B, that is to say if there is either a downward shift in family size at the large end of the range, or an upward shift at the small end.

#### Table XXIII.—Average Number of Previous Children (surviving, dead or stillborn) by Present Husband, of 1939, 1950 and 1951 Mothers, distinguishing Age of Mother and Duration of Marriage, England and Wales

					Dura	ation o	f Mari	riage (	years)	del T	Ta'm	ST 1	gars?	- ANT S	Sol .
All Durns.*	0-	1-	2-	3-	4-	5-	6-	7-	8-	9-	10–14	5-19	20-24	25-29	30 and over
					A	bsolut	e Size	-1939							
1.39	·02	18	51	•78	1.05	1.28	1.54	1.80	2.07	2.35	3.12	5.05	6.87	8.87	10.62
·13		·38			1.42	1.77	2.08	2.43	2.52		I				
.94	.02	.12	•40	.68	1.00	1.30	$1.66 \\ 1.30$			2·83 2·23	3.13 3.23	4.82	-	=	-
2.90	.11	·18	.54	.79	1.01	1.22	1.44	1.62	1.81	$2.03 \\ 2.43$	$2.98 \\ 3.11$	$5.07 \\ 5.05$	6-76 6-89	8.87	10.62
4.04	10	20	00										AVE SI	1	Contraction of the second seco
							-195	50						No.	an gas
1.24	·02	·20	•59	·88	1.11	1.30	1.48	1.61	1.69	1.84	2.51	4.10	5.77	7.38	9.67
·12 ·46	·00 ·01	·34 ·20	·88 ·64	$1.26 \\ .99$	1.28	1.53	1.85	2.15	2.18	1	-	-	-	=	=
·91	.03	·17 ·20	·54 ·57	·84 ·84	$1.08 \\ 1.07$	$1.28 \\ 1.24$	1.42	1.52	1.59	1.75	2.58	4.42	_	-	-
2.43	.08	·21	·56 ·50	·86 ·72	1·10 ·96	$1.33 \\ 1.23$	$1.48 \\ 1.44$	$1.56 \\ 1.79$	1.65 1.74	$1.74 \\ 1.73$	$2.39 \\ 2.48$	4·17 3·88		7.38	9.67
T there a	<u>1 /</u>	No.	1			a particular		1000000							
				07	1.12	11.24			11.82	1.91	1 2.50	4.05	15.79	7.13	7.0
Para Secolar Ba	100 - 00	a la casa			1.17	1.94	1-54	1							
•47	.01	·19	·64	.97	1.31	1.61	1.86	2.25	2.27	2.17	2.73	-	-	-	-
1.52	.05	·20	.55	·85	1.07	1.27	1.44	1.61	1.74	1.84	2.55				-
3.69	06	·18	.53	•78	1.03	1.25	1.47	1.64			2.43	3.78	5.79	7.13	7.0
THERE IS	112 3	anton	al-		Sizer	elative	e to 19	39 tak	en as	100 -1	950	in De			
89	97	110	116	113	106	102	96	89			80	81	84	83	91
92	68	89	99	99	-	-			- 97		-			-	
97	126	139	135	124	108	98	90	81	76	75	88		1 1	-	· 10
84	70	118	104	109	109	109	103	96	81	86	80	82			91
80	70	88	85	78	83	90	88	90	1 "	'	0	1.11	04		
						-	1951								
90	89	106	114	112	107	105	99	95	88	81	80	80	84	80	67
92				102	- 02	91	89	93	90		1	-	-		
98	121	128	133	119	108	102	92	88	81		87 79	90			
92 84	55					109	106	102	97	88	81		85		$\frac{-}{67}$
	Durns.*  1.39 .13 .49 .194 1.65 2.90 4.64  1.24 .12 .46 .91 1.50 2.43 3.73  1.25 .12 .47 .92 1.52 2.45 3.69  89 92 92 94 4.80  90 92 92 92 92 92 92 92 92 92 92 92 92 92	Durns.*         0 <sup>-</sup> 1:39         -02           -13         -01           -49         -01           -94         -02           1:65         -06           2:90         -11           -12         -00           -13         -01           -94         -02           -12         -00           -11         -03           1:50         -06           2:43         -08           3:73         -10           1:25         -02           -12         -01           -92         -03           1:52         -05           -92         -03           1:52         -05           3:69         -06           94         89           97         2:45           94         89           97         2:6           98         97           92         68           94         89           97         2:6           90         89           91         90           89         97           90	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Durns.*         0-         1-         2-           1.39         .01         .38         .89           .49         .01         .21         .64           .94         .02         .12         .64           .94         .02         .12         .64           .94         .02         .12         .64           .94         .02         .12         .64           .94         .02         .12         .64           .94         .02         .20         .59           .12         .00         .44         .52           .90         .11         .18         .50           1.22         .00         .48         .88           .46         .12         .06         .20         .59           .12         .00         .66         .20         .55           .46         .01         .12         .66         .92           .120         .01         .18         .50           1.25         .02         .20         .58           .12         .01         .35         .90           .47         .01         .19         .64 <t< td=""><td>Durns.*         0         1         2         3         3           1:39         -01         -38         -80         1-27           -13         -01         -38         -80         1-27           -49         -01         -21         -64         1-02           94         -02         -12         -14         1-06           2-90         -11         18         54         -79           -12         -00         -14         42         -66           -200         -11         18         54         -79           -12         -00         -34         -88         1-26           -01         -20         -59         -88         -92           -12         -00         -34         -88         1-26           -64         -15         -00         -34         -88         1-26           -12         -00         -34         -88         1-26         -86           -50         -62         -57         -84         -74         -89           -12         -01         -55         -60         1-90         -72           1-25         -62         -20</td><td><math display="block">\begin{array}{c c c c c c c c c c c c c c c c c c c </math></td><td><math display="block">\begin{array}{c c c c c c c c c c c c c c c c c c c </math></td><td><math display="block">\begin{array}{c c c c c c c c c c c c c c c c c c c </math></td><td><math display="block">\begin{array}{c c c c c c c c c c c c c c c c c c c </math></td><td><math display="block">\begin{array}{ c c c c c c c c c c c c c c c c c c c</math></td><td><math display="block">\begin{array}{ c c c c c c c c c c c c c c c c c c c</math></td><td><math display="block">\begin{array}{c c c c c c c c c c c c c c c c c c c </math></td><td>All Durns.*         0         1         2         3         4         5         6         7         8         9         10-14         15-19           Absolute Size -1939           1:39         02         18         51         78         105         128         154     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207         2-35         3-12         5-05         6-87         8-87           -13         01         -88         80         1-27         -10         10-10         160         2-30         2-35         3-12         5-05         6-87         8-87           -145         -66         -17         100         128         120         206         2-14         2-33         3-33         4-32         -1-35</td></t<>	Durns.*         0         1         2         3         3           1:39         -01         -38         -80         1-27           -13         -01         -38         -80         1-27           -49         -01         -21         -64         1-02           94         -02         -12         -14         1-06           2-90         -11         18         54         -79           -12         -00         -14         42         -66           -200         -11         18         54         -79           -12         -00         -34         -88         1-26           -01         -20         -59         -88         -92           -12         -00         -34         -88         1-26           -64         -15         -00         -34         -88         1-26           -12         -00         -34         -88         1-26         -86           -50         -62         -57         -84         -74         -89           -12         -01         -55         -60         1-90         -72           1-25         -62         -20	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	All Durns.*         0         1         2         3         4         5         6         7         8         9         10-14         15-19           Absolute Size -1939           1:39         02         18         51         78         105         128         154         180         207         235         312         505           '13         01         38         59         127         7         208         243         252         -	All Durns.*         0         1         2         3         4         5         6         7         8         9         10-14         15-10         20-24           Absolute Size -1939           1:39         02         18         51         78         105         128         154         180         207         235         3:12         5:05         6:87           :40         01         23         68         127         142         177         2:08         2:43         5:52         -1	All Durns.*         0-         1-         2-         3-         4-         5-         6-         7-         8-         9-         10-14         15-19         20-24         25-29           Absolute Size -1939           1-39         02         18         51         78         105         128         154         150         207         2-35         3-12         5-05         6-87         8-87           -13         01         -88         80         1-27         -10         10-10         160         2-30         2-35         3-12         5-05         6-87         8-87           -145         -66         -17         100         128         120         206         2-14         2-33         3-33         4-32         -1-35

Standardized to the 1939 distribution of mothers by age and excluding duration not stated.
 † Standardized to the 1939 distribution of mothers by duration and excluding age not stated.

case are not extended over all women marrying at these ages, but are restricted to those continuing their family building to the end of their reproductive lives.

When the figures for 1939 are read down the columns of the upper part of Table XXIII, comparisons, at each duration in turn, of the previous children of women married at different ages, show that after an initial decline with increasing marriage age the numbers increase at the older ages. The same feature is seen in 1950 and 1951 but is restricted to the longer durations. The families included in this table are only those to which additions were made in the year,

but it was shown in the Civi. Text for 1946-50 in Table LXV on page 118 that, extending the average over all families except only the childless, the same initial decline and subsequent rise is seen at many durations. One factor contributing to this feature is the larger number of premaritally born children recorded with the rest of their family by women married at the older ages.

In the lower part of Table XXIII the average family size of the mothers of 1950 and 1951 are compared with those of 1939. The All Ages ratio, standardized for duration, was below par at durations under one year in both 1950 and 1951, suggesting a decline in premaritally born children as well as in those premaritally conceived, to which frequent reference has already been made in this text. At longer durations up to the sixth year, the mothers of 1950 and 1951 had had more previous children than those of 1939, the largest relative excess in each year being located in the third year of marriage at 16 per cent and 14 per cent respectively above the 1939 level. The rates then decline with duration until by the seventh year of marriage there is a deficiency compared with 1939. This deficiency is greatest at durations associated with the marriages of the beginning of the war, in respect of which family building will have been interrupted by the war more than that of any other marriages whether earlier or later. Thus the trough located at about 10 years duration, and indeed the decline to it from 5 years duration reflects no more than temporary war-time disturbances.

After the war the increase in birth incidence was partly due to births postponed by war conditions, i.e. either the separation of those married before or during the war, or the actual postponement of marriages. Thus these purely temporary influences extend also into shorter durations than 5 years. It has been mentioned already that for all ages combined the ratio to 1939 was highest in the third year of marriage in both 1950 and 1951. But if the separate ages are examined at that duration, bare parity, or even deficiency, is found in all age groups except 25–34 where, in both years, an excess over 1939 of more than 30 per cent is recorded ; and a similar concentration of high ratios at these ages is found in most other durations under six years. This relates to women aged 20 to 30 at the end of the war whose marriages were perhaps most likely to have been delayed by the war and supports the suggestion that even at the shorter marriage durations, corresponding to post-war marriages, a distorting aftereffect of the war is present.

As compared with 1950, the 1951 ratios are seen in general to be nearer par. Where the 1950 ratio was above par, in general the 1951 ratio was lower; where the 1950 ratio was below par the 1951 ratio was higher. This too suggests that distortion is present, but that the ratios are moving towards stability.

In any event, as has already been pointed out, a decline in the average size of families to which children are added in a year, does not necessarily imply a decline in the average ultimate size of families, and it could be caused by the distribution of families by size tending to concentrate more around the average size at the expense of the two extremes of very large and very small families. There is a further point in this connection which may be made. The largest families-of ten or more children-are capable of very considerable reduction to bring them down to the average of 2 or 3; each family could be reduced by 8 or more children. But the smallest families are so near to average that at most they could add 2 children per family or, in the extreme case, a childless couple could increase their family size by 3. It might be thought therefore that the probable gains in the small families would be more than offset by greater losses in the large families. This argument is fallacious because it ignores the possible expansion in the number of small families, as compared with large families, which can outweigh losses in gain per family. A simple example will suffice.

The 1951 Census One per cent Sample Table X.3 shows the following distribution by family size of married women aged 45–49 in England and Wales (i.e. those with, for all practical purposes, completed families).

abrequent doctine, apparently	N	Jumber of L	ive-born childrer	in a post
the various age groups as in	0-2	3-4	5 and over	Total
Number of married women	8,487	2,426	1,121	12,034
Number of their children	8,916	8,115	7,352	24,383

If all the 1,121 married women with families of 5 or more children had had just 4 children each, that is a total of 4,484 instead of 7,352, the generation would have lost 2,868 children (7,352-4,484). But if, in addition, only one-third of the 8,487 married women with less than 3 children had had, not 3 children each, but just one more child, the 2,829 (8,487  $\div$  3) children gained would have compensated almost entirely for the loss of 2,868 from the curtailment of the largest families.

It is not to be expected that actual events will follow such a simple pattern, but this does demonstrate that quite a modest increase in the family size at the lower end of the scale can compensate for a substantial decrease in the numbers of the largest family sizes.

#### First Maternities (Legitimate)

Of the 650,963 total legitimate maternities of 1951, the modified version of Table SS in Appendix B, Table 6, shows that the mothers in respect of 252,658 or 38.8 per cent had not had a previous live or stillborn child by their present husbands. The proportion was 42.9 per cent in 1938. After the decline in the war years, the proportion rose to a peak of 45.4 per cent in 1947 and has declined more or less steadily since.

The incidence of first born children is naturally at a maximum for recent marriages and thus the proportion of first maternities among all legitimate maternities will be raised immediately following a year of abnormally high marriage incidence. If distinction is made of mothers' ages the proportion of first maternities will be highest at the youngest ages, again because their marriages will be comparatively recent. The rapid decline with advance in mother's age and a comparison of the pre-war and post-war experience, and that of the disturbed period 1939–49 taken as a whole, are shown in Table XXIV.

Table XXIV.—First Maternities to existing marriages per 1,000 total legitimate maternities at each age, 1938 to 1951, England and Wales

Mothers' age	1938	Average 1939–49	1946	1947	1948	1949	1950	1951
All Ages	429	433	431	454	426	410	393	388
Under 20 20 25 30 35 40 and over	$890 \\ 644 \\ 469 \\ 296 \\ 166 \\ 95$	$900 \\ 683 \\ 450 \\ 285 \\ 182 \\ 119$	$913 \\701 \\464 \\287 \\194 \\130$	912 710 470 293 202 143	$898 \\ 666 \\ 414 \\ 259 \\ 186 \\ 142$	$\begin{array}{r} 885\\ 635\\ 382\\ 243\\ 181\\ 140\\ \end{array}$	868 613 362 234 170 136	861 609 358 228 163 137

The decline since 1947 in the proportion of first maternities amongst legitimate maternities of mothers of all ages, may be seen in the first line of the table. The rate of decline is being slowed, the proportions in 1950 and 1951 being very similar. In the separate age groups, also, a similar pattern is seen in general, with a peak in 1947 above the 1938 level and a subsequent decline, apparently nearly exhausted, to below the 1938 level. The relationship between the 1951 and 1938 proportions is not the same at each of the various age groups, as the following statement shows.

	All ages	Under 20	20-24	25-29	30-34	35-39	40 and over
1951 proportions as a percent- age of those of 1938	90	97	95	76	77	98	144

The low proportions at 25–34 are outstanding compared with substantially higher values at the neighbouring ages. The explanation may be that this group of women, who were 20 to 30 when the war ended, not only had their family building interrupted by the war, but were, and are, sufficiently youthful to permit them to continue for some years attempting to make up deficiencies. If this explanation is correct, this feature is only temporary and will eventually disappear.

There have been other and permanent changes in marriage and family building habits which should eventually be reflected in the index under discussion—the proportion of first maternities. One such change is the lowering of the age at marriage, which should lower the proportion at each age, and may in fact be the major cause of the proportions in 1951 being generally lower than in 1938. A second change is that discussed in the previous section, namely the tendency for a decrease on the one hand in childlessness and on the other hand in the proportion of families of the larger sizes. The evidence was far from conclusive but, if this latter change does occur, it will tend to counteract the decline in the proportions of first maternities arising from the lowering of age at marriage. Other changes may be occurring, for instance in family spacing, which may influence these proportions, but it would be most difficult to measure either such a change, or its effect.

Family building tends to be concentrated in the few years immediately after marriage and the concentration will necessarily be accentuated when consideration is confined to first births or maternities. The extent of this concentration may be seen from Table XXV showing the numbers and distribution of first legitimate maternities by duration of marriage.

From the lower part of the table it may be seen that over three-quarters of first births are in the first three years of marriage; 76.7 per cent in 1938, 78.1 per cent in 1950 and 76.8 per cent in 1951. Although these three proportions are very similar in magnitude, an examination of their constituent parts shows a difference to which attention has already been drawn in earlier sections, namely the decline since 1938 at durations under  $8\frac{1}{2}$  months, conventionally associated with premarital conceptions. In 1938 these accounted for nearly a quarter of all first legitimate maternities and in 1951 for less than one fifth. This matter has been discussed in detail elsewhere in this text, and no further comment is necessary here, except that this decline is not of a piece with the

## Table XXV.—Numbers and Distribution by Duration of Marriage of First Maternities by existing husbands to married women of all ages, 1938 to 1951, England and Wales

Calendar					Dur	ation of	Marria	age*					data ya
Year	$0-8\frac{1}{2}$ mths.	81-111 mths.	1- year	2- years	3- years	4- years	5- years	6- years	7– years	8– years	9– years	10+ years	All Duration:
	of Sto					Numl	pers (hu	indreds)	pinit.	irst	1,Y	XXX	slant
1938 1939–49†	63,2 48,3	32,0 37,3	70,6 80,7	35,4 40,1	21,7 25,1	13,5 17,7	8,0 13,0	5,3 9,6	3,6 6,4	2,7 4,2	1,8 2,9	4,1 6,5	261,9 291,8
1946 1947 1948 1949	43,0 58,9 61,2	44,6 53,2 49,3	81,4 106,4 90,6	34,2 44,0 40,4	26,2 24,4 20,6	27,9 23,0 11,4	24,9 22,2 9,8	22,2 17,7 9,2	9,8 14,0 7,6	6,3 6,2 6,1	4,7 4,2 2,9	9,7 9,6 6,9	334,8 383,6 315,9
1949 1950 1951	58,1 53,5 49,9	39,7 37,5 35,4	88,9 77,3 73,6	37,6 36,8 35,0	21,4 19,8 21,6	$\begin{array}{c} 11,4\\ 12,2\\ 12,7 \end{array}$	6,4 6,7 7,9	5,8 3,9 4,4	5,1 3,4 2,4	3,9 3,3 2,3	3,5 2,6 2,2	5,7 5,6 5,3	287,4 262,6 252,7
- Winderson						Distrib	ution pe	er 1,000	total				
1938 1939–49 1950 1951	241 165 204 198	$122 \\ 128 \\ 143 \\ 140$	269 277 294 291	135 137 140 139	83 86 75 85	$52 \\ 61 \\ 46 \\ 50$	$31 \\ 45 \\ 26 \\ 31$	20 33 15 17				$     \begin{array}{c c}       16 \\       22 \\       21 \\       21     \end{array}   $	1,000 1,000 1,000 1,000

• Durations 1- year, 2- years, etc., are more correctly 11½ months-1 year 11½ months, 1 year 11½ months-2 year 11½ months, etc. ↑ Annual average.

other changes in the distribution at longer durations and it is therefore better to remove its influence by restricting the distribution to durations over  $8\frac{1}{2}$  months, as in the following statement.

	Duration of Marriage											
Period	All Dura- tions over 8½ months	81/2-111/2 months	years 1–	2-	3-	4-	5-	6-	7-	8-	9-	10+
1938 1939–49 1950 1951	1,000 1,000 1,000 1,000	$161 \\ 153 \\ 179 \\ 174$	355 331 370 363	178 165 176 173	$     \begin{array}{r}       109 \\       103 \\       95 \\       106     \end{array} $	68 73 58 63	40 53 32 39	27 40 19 22	18 26 16 12	14 17 16 11	9 12 12 12 11	21 27 27 26

The underlying tendency in the war and immediate post-war years to postpone births is clearly seen by the shift from shorter to longer durations in the distribution for 1939–49, as compared with the periods before and after. To a much less extent, a comparison of the distributions of 1950 and 1951 with that of 1938 shows the opposite effect, namely a shift from longer to shorter durations, that is to durations under two years. There are exceptions to the excess of the 1938 proportions at the longer durations over those of 1950 and 1951, namely at durations over 8 years in 1950 and over 9 years in 1951. In the case of the 1938 experience, these durations are affected by the abnormally low marriage incidence associated with the years of economic depression. In the case of both the 1950 and 1951 experiences they relate to the marriages of 1942 and earlier, the years of high marriage incidence associated with the outbreak of war. This suggests that the higher proportions at these durations in 1950 and 1951 are not attributable to a higher intensity per married woman at risk, but to greater numbers at risk.

In fact the incidence of marriage in the years since the outbreak of war has been subjected to such wide fluctuations that, not only at the durations to which attention is drawn above, but to some extent over the whole range of durations, the comparison of pre-war and current distributions of first maternities is liable to be distorted by fortuitous differences in the numbers of married women at risk. A more enlightening analysis, and one freed from this effect, is provided by determining the proportion of each marriage cohort who have borne a first child at successive durations of marriage, and such an analysis is shown in Table XXVI.

Table XXVI.—First Maternities per 1,000 Married Women of Success	15
Marriade Cohorts, of women marrying at ages under	10,
not pregnant at date of marriage, England and Wales	1921

Mariana	2,0				Durat	ion of N	larriage	<b>3</b> ,00			1948
Marriage Cohort	0.0	81-111	1-	2-	3-	4-	5-	6-	7-	8-	9-
The second second	1.5.	mths.	yr.	yrs.	yrs.	yrs.	yrs.	yrs.	yrs.	yrs.	yrs.
AND STREET		(a) Occ	urring	Within	the Ma	rried D	uration	Specifi	led		
DOR. C. MAR			247	120	65	63	49	36	22	24	17
937–38 938–39		$\frac{118}{108}$	232	112	93	69	48	31	35	23	11
000 40	11.751	92	210	140	96	66	42	56	36	16	9
939-40	••	89	226	136	90	55	73	53	24	12	8
940-41	••	88	237	135	76	89	72	30	- 17	11	8
941-42	••	98	269	121	101	91	40	24	14	10	
942-43	••	121	259	146	107	51	29	17	12	gnado	nadije
943-44 944-45	•••	121	288	159	75	43	25	17	ts mi	nove 1	51.01
<b>JH</b> 10				100	69	40	26	w.olla	adt a	18, 25,	11)00/11
945-46		135	335	128		40	. 20				
946-47		179	295	124	65 69	42		And and the second second	-		and the second second second
947-48		154	279	117	09	1		A CONT		E TEL MAN	17 232
948-49		129	259	118	Part and the second	1.0	1. Carto	1.1.1.1.1.1.1	A STATISTICS	1 Looking	1020
949-50		128	258	THE REAL PROPERTY.	TRACE OF STREET	Cilian Edd	1111 51	1	N. M. K.	99	21
1950-51		125	a sa di sa	. Brack	and the second	and the le	a di tanàn di	20%			
		1				Cthe M	orrigge	Durat	ion Spe	cified	
(b	) Ac	cumulat	ed Tota	l to the					1011 Ope		1 761
1937-38	1.	118	365	485	550	613	662	698			762
1938-39		108	340	452	545	614	662	693	120	101	10-
1990-99		ALL AND	88 1 2	60.	-1.前常和	10.53	0.10	=00	738	754	76:
1939-40		92	302	442	538	604	646	702			
1939 - 40 1940 - 41		89	315	451	541	596	669	722			
1940-41 1941-42		88	325	460	536	625	697	727			
1941-42 1942-43	••	98	367	488	589	680	720				4002
1942 - 43 1943 - 44	1	191	380	526	633		713				. India
1943 - 44 1944 - 45		196	414	573	648	691	716	733	a far the	132 13 132 134	-
1944-40	•••		e orole	1 2501	ne per	a dia	=00	0100 8	日【记书》	es en ca	000001
1945-46		135	470					a osta	COTIN	13 . 3 . 6103 3	<b>119-855</b>
1946 - 47		170	474				arrien	Anothe	-	the do	enrori
1940-47	ond	154	433			a part of the	and subserved and		Same	endianan	th of a
	289	100	388	506	1 119.0	IS IN I	12821	Great 2	ALLER C	and and Deale	
			386		1	acinst	GUND	10hget	911:01	S HELEO ES	100010
1948 - 49 1949 - 50	12	128									

In the upper half of the table are shown the proportions of women in each marriage cohort bearing a first child at each year of marriage up to the tenth. In the lower half these proportions have been accumulated from the left, and thus show the proportion of women in each cohort who have borne a first child by the end of the duration indentified. Thus 11.8 per cent of the 1937–38 cohort of marriage, 36.5 per cent by the end of the second year, 61.3 per cent by the end of the fifth year and 76.1 per cent by the end of the tenth year.

The building of a complete family is a process covering several or perhaps many years. A complete or partial interruption of this process for, say, six years will set back family building to an extent which cannot be made good for some years, if ever. Thus in Appendix B, Table 5, in which the average number of maternities per woman is shown for marriage cohorts, the impact of the war was seen to produce large shortfalls which are being repaired but slowly. The alternative measure of the proportion of married women who have borne a first child, employed in Table  $\dot{X}X\dot{V}I$ , is one from which the influence of war is eradicated more quickly. The effect of the war on the 1937-38 cohort will have been less upon the proportion of women who had borne a first child (the criterion of Table XXVI) than upon the average number of maternities per woman (the criterion of Table XIX). The 1942-43 cohort achieved parity with the 1937-38 cohort after only two years in Table XXVI compared with four years in the comparable (lower) section of Table XIX. After 9 years of marriage, 76.8 per cent of the 1942-43 cohort had borne a first child, a proportion slightly higher than that after 10 years of marriage of any earlier cohort for which records are available. The proportions were lower for the next two cohorts, but the 1945-46 cohort which, it has been suggested, contained a proportion of postponed marriages, recorded a proportion of 76.3 per cent who had borne a first child after only 6 years of marriage, almost as high as the proportion after 9 years of marriage of the 1942-43 cohort. This high fertility is hardly consistent with any hypothesis other than that the structure of this cohort is abnormal and little significance therefore attaches to the lower fertility of later cohorts.

It is too early yet to draw any conclusions about the final state at which this index of fertility will stabilize, but the decline from the peak proportions recorded by the 1945–46 cohort has almost been arrested with sufficient margin over the comparable fertility of the 1937–38 cohort to cover any further trivial fall. For example, 43·3 per cent of the 1947–48 cohort had borne a first child by the end of their second year of marriage. For the 1948–49 and 1949–50 cohorts the proportions were 38·8 and 38·6 per cent. The latter proportion was still substantially more than the comparable 36·5 per cent of the 1937–38 cohort.

# Birth Occurrences and Registration Time Lag

The statutory period allowed for registration of either a live birth or a stillbirth is 42 days and as a consequence there has always been an appreciable time lag between the occurrence of a birth and its subsequent appearance in the registration records. In the past the time lag has been found to decrease markedly after the introduction of an incentive to register earlier, for example by the association of the issue of food ration books and Family Allowances with birth registration. Conversely registration has become more tardy when these incentives have been removed or have become less powerful.

The registration time lag at the beginning of each month is determined from a "sample," consisting of the first entries in that month in a fixed group of registration districts, selected haphazardly but constrained to cover the various regions of the country and both urban and rural districts. The figures shown below are the unweighted means of the time lags in days in the selected entries and refer to the beginning of the periods shown :

$1914 \\ 36.0$	$1915 \\ 33.3$		1916 30·8	First 1917 31·1	World War 1918 30·5	191 21-		1920 24·3	1921 31·6
				Second	World War				
C greater		1939	1940 - 45	1946	1947	1948	1949	1950	1951
1st Quarter	1.01	32.6	17.2	12.0	9.3	8.0	8.2	8.7	10.9
2nd ,,	dein	31.7	15.6	9.0	8.2	8.0	7.5	8.3	9.6
3rd ,, 4th	••	31.3	14.2	9.0	8.4	7.0	7.5	9.2	9.5
4m ,,		27.6	13.3	8.7	7.3	7.1	7.8	9.0	9.4

The method of calculation of these time lags is such that they may provide a biased estimator of the average national time lag at any particular time, but to show the relative changes from quarter to quarter—the purpose for which they were originally intended—the retention of the original areas has some merit, and it seems reasonable to suppose that the broad changes shown do reflect the true national experience.

In the First World War period, the decrease in the time lag as a consequence of food rationing was relatively slight and was more accentuated after the war had ended. Further, by 1921, three years after the war, the pre-war lag had been practically restored. The shortening of the interval in the Second World War was much greater and occurred more quickly but the lowest averages were again recorded after the war, in 1948, when food rationing became more stringent. The increase since 1948 has been slow and, although the incentive of food rationing will disappear, the continued association of birth registration and Family Allowances makes a return to pre-war practice unlikely.

The importance of these time lags arises from their influence on the difference between the number of births registered in a period and the number occurring in that period. Occurrences are usually the more appropriate statistics for fertility measurement but registrations are available sooner. The difference between the two is influenced by the time lag in two ways. A difference will occur, even though the time lag be constant, if birth incidence is changing ; and also, even though birth incidence be constant, if the time lag is changing. In practice both factors operate. The combined effect of these factors may be measured by the ratio of occurrences to registrations, as follows :

Year	Ratio	Year	Ratio
1939	·992	1946	$1.001 \\ .993$
$     1940 \dots \dots \dots \\     1941 \dots \dots \dots $	·972 ·986	$     1947 \dots \\     1948 \dots \\     1040 $	·993 ·998 ·999
$   1942 \dots \dots \\   1943 \dots \dots \\   \dots $		$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	1.008
$1944 \dots \dots 1945 \dots \dots$	1.009 .992	1951	.991

#### Seasonal Incidence of Births

The pre-war incidence of legitimate live births followed a regular annual cycle with a minimum in the fourth quarter (corresponding to conceptions in the first quarter) and a maximum in the second quarter (corresponding to conceptions in the previous third quarter). Table XXVII shows the quarterly distribution in 1939, a typical year. The war disturbances including sharp fluctuations in the birth rate distorted this pattern, but the table shows that by 1951 a return had been made to the seasonal periodicity of pre-war years.

The incidence of illegitimate births, less influenced by the war disturbances, has a minimum and maximum in the fourth and second quarters, like legitimate births, but differs in that the periodicity moves through a larger amplitude, and that the births of the first quarter (corresponding to the previous second quarter conceptions) markedly exceed those of the third quarter (corresponding to the previous fourth quarter conceptions).

Variations in the incidence of legitimate stillbirths are due to the combined effect of two factors, the seasonal incidence of all legitimate births, live and still, and seasonal variations in stillbirth rates, the former having the greater influence. Thus there is a strong tendency for the distribution to follow that of live births, but the effect of the generally higher stillbirth risk in winter months can be seen.

# Table XXVII.—Ratio of Quarterly Births to Average Quarterly Births taken as 100, 1939 and 1946 to 1951, England and Wales

Period				Year			
AUEST AUDITEZERY E	1939	1946	1947	1948	1949	1950	1951
n September (corre-			Legitir	nate Live	Births	n anilan	10001 A
1st Quarter	99	86	109	105	100	1 104	
2nd ,,	106	99	105	103	$     102 \\     105   $	104	103
3rd ,,	101	105	97	99		104	107
4th ,,	94	110	88	93	100	98	99
	01	110	00	95	93	94	91
Year	400	400	400	400	400	400	400
lst Quarter 2nd ,, 3rd ,, 4th ,,	105 107 100 88	$     \begin{array}{r}       107 \\       110 \\       95 \\       88     \end{array} $	Illegitin 110 108 98 84	mate Live   107   109   96   88	Births 105 106 99 90	106 107 96 91	104 109 96 91
Year	400	400	400	400	400	400	400
a mothers' age was			Legitin	nate Stillb	irths		d light
1st Quarter	104	91	115	109	104	104	107
2nd ,,	104	99	105	102	104	104	107
3rd ,,	98	101	93	96	97	97	103 95
4th ,,	94	109	87	93	94	95	95 95
Year	400	400	400	400	400	400	400

Since 1938, tabulations of births by month of occurrence have been shown in Table YY of Part II and permit a closer study of the seasonal incidence of births. The length of calendar months varies, and therefore to allow for this, Table XXVIII shows daily averages.

# Table XXVIII.—Relative 'Birth Incidence in Calendar Months, 1939, 1950 and 1951, England and Wales

Month of	Ratio	of Mont	hly Daily	y Averag	to tha 1,000	t of the (	Calendar	Year, ta	aken as
Occurrence	Legitin	nate Liv	e Births	Illegiti	mate Liv	ve Births	Legitin	mate Sti	llbirths
stit at succes	1939	1950	1951	1939	1950	1951	1939	1950	1951
January February March April May June	980 995 1,041 1,073 1,078 1,043	$1,022 \\ 1,044 \\ 1,085 \\ 1,065 \\ 1,049 \\ 1,025$	$1,005 \\ 1,041 \\ 1,076 \\ 1,076 \\ 1,084 \\ 1,057$	$1,076 \\ 1,041 \\ 1,080 \\ 1,046 \\ 1,138 \\ 1,044$	$1,051 \\ 1,059 \\ 1,107 \\ 1,068 \\ 1,076 \\ 1,075$	982 1,071 1,098 1,111 1,117 1,061	$1,043 \\ 1,045 \\ 1,078 \\ 1,068 \\ 1,060 \\ 1,002$	1,038 1,098 1,043 1,081 1,023 1,015	1,036 1,115 1,119 1,059 1,058
July August September October November December	1,025 985 1,004 939 914 927	969 960 1,002 941 917 926	1,016 968 973 892 882 936	1,038 960 969 859 853 898	948 931 984 912 873 920	1,011 919 938 869 870 957	984 972 963 938 932 917	$     \begin{array}{r}       1,015 \\       937 \\       964 \\       995 \\       916 \\       958 \\       944 \\     \end{array} $	977 968 935 908 931 944 954
Year	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000

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The figures must be accepted with some slight reserve since the daily average is a sensitive index and there has not yet been a period of stable conditions (the annual birth incidence is still changing) to permit a clear pattern to emerge.

For legitimate live births, the table shows that in 1951, as in 1939, the daily average rose sharply until March, and then more slowly, a maximum being reached in May at some 8 per cent above the annual daily average. Thereafter a steep decline occurred interrupted only by a minor peak in September (corresponding to conceptions at Christmas when there is a concentration of new marriages). After a trough in November below the annual daily average by 9 per cent in 1939 and 12 per cent in 1951 the rising phase commences and continues into the following year as the cycle repeats itself.

The course of illegitimate births in both years exhibits the same features as that for legitimate births, including the minor upward fluctuation in September, but the amplitude of the cycle is greater. The peak is higher, the trough deeper and the connecting slopes steeper, so that a greater rise from January to February (from April to May conceptions) is recorded and a greater fall from June to July (from September to October conceptions).

A comparison of the ratio shown in Table XXVIII for legitimate stillbirths and live births shows the same general similarity as was indicated by the quarterly table, the higher stillbirth rates of the winter months exercising a perceptible influence.

Commentary on the differential seasonal incidence with mothers' age was included in the 1940-45 Civil Text on pages 106-108.

#### Sex Ratio at Birth

In 1951 there were 1,060 male live births per 1,000 female live births. This ratio was almost the same as in the previous year and indeed in each year since 1945.

During the nineteenth century, the proportion of males to females in recorded live births declined from 1,049 per 1,000 for 1841–50, the first full decennium for which records are available, to 1,036 for 1891–1900. However various estimates\* which have been made of the extent of birth under-registration all show a greater degree of under-registration of births of girls than of boys. In these circumstances, if the true sex ratio remained constant, an apparent decline in the proportion of males to females would be shown as registration became more complete. It cannot be claimed that estimates of differential underregistration completely account for the apparent decline in the sex-ratio of live births, but sufficient grounds exist for the suggestion that the sex-ratio of all live births (registered and unregistered) did not undergo much change in the nineteenth century and was probably in the region of 1,035 to 1,040 males per 1,000 females, as deduced from records at the end of the century when registration was virtually complete.

There has been an upward but irregular trend in the present century with three distinct periods when the sex ratio was temporarily lifted above the long term trend. The first occasion was in the years 1919 to 1922, the second between 1934 and 1937 (approximately) and the third from 1942 to 1944. It has been suggested that the first and third of these increases are in some way attributable to the two World Wars and the second to the abnormal economic conditions of the 1930's, but no clear-cut chain of causation has been established. It might be conjectured that these three periods were alike in containing an

\* E.g. Farr, W., 1871 Census of England and Wales, Vol. IV, p. 55; Glass, D. V., Population Studies, Vol. V, No. 1. July 1951. undue proportion of first births to young mothers, in the marriage booms after the First World War, after the recovery from the economic depression and with a delayed sequence in births perhaps attributable to war conditions—at the onset of the Second World War, but these suggestions are, at best, plausible. Attempts to produce convincing evidence have so far failed. For example it may be shown that the proportion of male births is higher for younger than older mothers, but the average age of mothers in 1942 to 1944 (the ages were not recorded until after 1938) was not sufficiently low to explain the increased sex ratio in that period.\*

Far more convincing arguments can be produced to explain the generally rising trend in the sex-ratio in the present century. Biologically sex is determined, not at birth, but at conception, and losses from abortion and stillbirths intervene between conception and live birth. Thus, since abortion and stillbirth rates are known to be higher for males, the sex ratio of live births will differ from that of conceptions. Further, reductions in abortion and stillbirth rates would produce increases in the sex ratio of live births, although the sexratio at conceptions might remain constant.

Period	INTUI') DaL	egitimate	Births	Illegitimate Births					
	Live	Still	Live and Still	Live	Still	Live and Still			
1928-30	1,044	1,231	1,051	1,037	1,280	1,049			
1931-35	1,051	1,207	1,057	1,044	1,153	1,049			
1936-40	1,054	1,183	1,059	1,050	1,117	1,054			
						1,078 1,061			
1941–45 1946–50 1951	1,061 1,061 1,060	1,158 1,169 1,179	1,064 1,063 1,062	1,074 1,056 1.060	1,173 1,238 1,277	n n			

# Table XXIX.—Male Births per 1,000 Female Births distinguishing<br/>Legitimacy and whether Live or Still, Quinquennia from<br/>1928 to 1950 and 1951, England and Wales

From Table XXIX, which shows masculinity for live and stillbirths in both legitimate and illegitimate sections, it may be seen that the proportion of boys is consistently higher amongst stillbirths than live births, and this implies that stillbirth losses are greater for boys than girls. The effect of these losses may be removed by considering the sex ratio for live and stillbirths combined, shown in the table. From 1928–30 to 1951, the masculinity of live births rose from 1,044 to 1,060, that is by 16 points, while for live and stillbirths combined it rose from 1,051 to 1,062, that is by only 11 points. There may have been omissions of stillbirths when registration was introduced, with a sex differential similar to that of live births earlier when live birth registration commenced, and the first period 1928–30 ought not perhaps to be regarded as providing reliable statistics. However, between 1931–35 and 1951 masculinity rose by 9 points for live births, but by only 5 for live and stillbirths combined.

Statistics of abortions, similar to those for stillbirths, are not available, so that full correction for losses between conception and live birth cannot be made. It seems reasonable to assume, however, that if such correction could be made it would have the same type of effect as the correction for stillbirths, that is to say it would increase the masculinity, but by relatively more in earlier years of the century than in later years. It would tend still further to reduce the

<sup>\*</sup> See also Martin, W. J., The Sex Ratio, The Medical Officer, 10th April, 1948.

gradient. It is probable that little, if any, long-term change has occurred in the sex-ratio at conception.

Turning again to the nineteenth century, stillbirths were not recorded at that time, but stillbirth and infant mortality rates are highly correlated. For both 1841–50 and 1891–1900 the infant mortality rate was 153 per thousand, and it is probable that stillbirth rates may also have remained steady or at least changed but little. In these circumstances no mortality influence would be imparted to the masculinity of live births. The suggestion that true masculinity of live births may have remained constant in the nineteenth century is not therefore invalidated by these mortality considerations.

Masculinity varies with mother's age. A single year's births are not, however, adequate for analyses such as these, because the picture is blurred by chance fluctuations in the smaller numbers involved, but attention is drawn to the 1946–50 Civil Text, pages 134–136 where masculinity by mother's age is shown for the periods 1938–45 and 1946–50.

#### **Multiple Births**

During 1951 there were 693,514 births (live and still) from 684,407 maternities, the excess of 9,107 being the additional children born in multiple births. Tables CC and DD of 1951 Part II give details of the 9,005 maternities with multiple births and show that 8,905 produced twins, 98 triplets and 2 quadruplets, a total of 17,147 live and 865 stillborn children.

The frequencies of multiple maternities and births in the current year compared with the whole period since 1938 when the data were first tabulated are summarized as follows :

91937 - Lan 1972 - L	All Mi	ıltiple	Tw	ins	Triplets		
	1938-50	1951	1938-50	1951	1938-50	1951	
Multiple Maternities* per 1,000 : Total maternities	12.30	13.16	12.19	13.01	0.105	0.143	
Multiple births per 1,000 : Total births Live born children Stillborn children	$24 \cdot 40$ $23 \cdot 57$ $52 \cdot 47$	$26.12 \\ 25.31 \\ 60.37$	$24.08 \\ 23.27 \\ 51.39$	$25.68 \\ 24.89 \\ 58.99$	$\begin{array}{c} 0.312 \\ 0.290 \\ 1.061 \end{array}$	$0.424 \\ 0.403 \\ 1.314$	

\* A maternity is treated as multiple whether or not the children involved are live or stillborn.

The probabilities of a multiple event occurring will be the reciprocals of the rates shown above so that taking mothers of all ages together the chance of a multiple maternity was 1 in 81 in 1938–50 and 1 in 76 in 1951. Likewise 2 out of every 82 children born in 1938–50 were twins, triplets or quadruplets and 2 out of every 77 in 1951, the proportion being about twice as great amongst stillborn children as amongst live born.

The study of multiple births is restricted by the paucity of data since the number of such births is but a small proportion of the whole, and ratios and rates based on these small numbers are subject to considerable chance fluctuation from the underlying probabilities. When the commentary of pages 116– 125 of the 1940–45 Civil Text was prepared, detailed statistics collected by virtue of the Population (Statistics) Act, 1938, had been collected in respect of over seven years, and this was the first time that so much information had been available in this country. It was therefore possible to study the variation of multiple birth rates with maternal age, to distinguish monozygotic and dizygotic twin rates, and within monozygotic twins to study sex differentials. The addition of the data for 1946–50, available when the Civil Text for that period was prepared, was insufficient to permit more detailed analyses, and the commentary appearing on pages 136–139 of that text does no more than underline the more outstanding features of the previous analyses, so far as they were evident in the period 1946–50. The data of the single year 1951 do not allow the story to be carried any further.

### Birth Rates in Different Parts of the Country

The birth rates of individual administrative areas in 1951 are given in Tables 12 and E. They are summarized in Table XXX, which shows, for each standard region, conurbation and density aggregate, live birth rates (separately for all births and for illegitimate births) and the ratio of the local to the national rate. In Table XXXI these rates are ranked in order of size.

#### Table XXX.—Birth Rates by Standard Regions, Conurbations and Density Aggregates, 1951

(All the ratios were calculated before rounding off the rates).

	and -	A	ll Live Birt	hs			nate Live rths
Area	Crude Rate per 1,000 Home	Areal Compar- ability	Adjusted Birth	Ratio of Local t National Rate		Crude Rate per 1,000 Home	Ratio of Local to Nationa
	popula- tion	Factor	Rate	Crude	Adjusted	Popula- tion	Rate
ENGLAND AND WALES	15.5	1.00	15.5	1.00	1.00	0.75	1.00
Regions and Conurbations :	Barri Bress		the all success		1019-500		month from
Northern	17.3	1.02	17.6	1.12	1.14	0.70	0.93
Tyneside Conurbation	17.3	0.98	16.9	1.12	1.09	0.68	0.91
Remainder of Northern	17.3	1.04	18.0	1.12	1.16	0.71	0.94
East and West Ridings	15.8	1.01	15.9	1.02	1.03	0.50	1.04
West Yorkshire Conurbation	15.5	1.00	15.5	1.02	1.03	0.78	1.04
Remainder of East and West		a state and a state	Rent Barris	1.00	1.00	0.89	1.18
Ridings	16.0	1.02	16.3	1.03	1.05	0.70	0.94
North Western	15.9	1.00	15.9	1.03	1.03	0.78	1.04
South East Lancashire Conurba-	a second	CER ALCORDER	Contraction of the				here was a start
tion	15.7	0.97	15.2	1.01	0.98	0.87	1.17
Merseyside Conurbation	18.6	0.98	18.2	1.20	1.18	0.94	0.26
Remainder of North Western	14.6	1.03	15.0	0.94	0.97	0.60	0.81
North Midland	15.9	1.02	16.2	1.03	1.05	0.79	1.06
Midland	16.2	0.99	16.0	1.04	1.03	0.71	0.96
West Midland Conurbation	16.3	0.97	15.8	1.05	1.02	0.69	0.92
Remainder of Midland	16.0	1.02	16.3	1.04	1.06	0.74	0.99
Eastern	15.2	1.04	15.8	0.98	1.02	0.74	0.98
London and South Eastern	14.3	0.95	13.6	0.92	0.88	0.75	1.00
Greater London	14.4	0.92	13.3	0.93	0.86	0.76	1.00
Remainder of South Eastern	13.9	1.06	14.7	0.90	0.95	0.72	0.96
Could and Tale Second and Sile	NUTEL 17000194	1 502302 1	111322 (1993)	1.000000	e sa a sitesula	1 44163 1	ALC: STREET
Southern	15.4	1.04	16.0	1.00	1.04	0.85	1.13
South Western	14.9	1.05	15.7	0.97	1.01	0.73	0.98
Wales	16.0	1.03	16.4	1.03	1.06	0.60	100
III -I T	16.2	1.02	16.5	1.05	1.00		0.81
Wales I	15.4	1.07	16.4	0.99	1.06	0.55 0.73	0.73
Density Aggregates :	GUNDUM.	rd aba	12:26 723	a mea	tauths s	D.S. COLLEGE	GULL IT
Conurbations	15.4	0.95	14.7	1.00	0.95	0.79	1.06
Areas outside the conurbations :				100	0.00	010	1.00
Urban areas with populations	No. 19 States	23. 4 A & C & C	14年1月11日11日	L A Contraction	TOPNA 4		12. 13.3
of 100,000 and over	15.8	1.00	15.8	1.02	1.02	0.81	1.08
Urban areas with populations of				and provide and		Participant Conf.	and the second
50,000 and under 100,000	15.3	1.02	15.6	.99	1.01	0.81	1.09
Urban areas with populations	Marsh Street	Contra and		TAN LOUGH	a strange and		and the second
under 50,000	15.5	1.03	15.9	1.00	1.03	0.68	0.91
Rural Areas	15.4	1.08	16.6	0.99	1.07	0.67	0.90

Area		Births	Illegitimate Live Births		
	ude	Adjusted	Crude	Adjusted (see text)	

## Table XXXI.—Ranking Comparison of Birth Rates in Regions, Conurbations and Density Aggregates, 1951\*

#### Conurbations and Remainders of Regions

THE LUBBLE CONSTRUCT TO A THE PARTY OF	222	M. S. L. S. L. M.		<u>90.6.V90.1</u>	<u></u>
Tyneside Conurbation		$2\frac{1}{2}$ $2\frac{1}{2}$	$\frac{3}{2}$	$\begin{array}{c} 15\\12\end{array}$	15 11
West Yorkshire Conurbation Remainder of East and West Ridings		10 7	13 7	$\frac{2}{13}$	1 9
South-East Lancashire Conurbation		9	14	3	2 7 <del>1</del>
Merseyside Conurbation		1	1		16
Remainder of North Western Region	•••	15	15	16	10
North Midland Region		8	8	5	3
West Midland Conurbation		4	101	14	13
Remainder of Midland Region	•••	6	6	7	5
Eastern Region		13	$10\frac{1}{2}$	8	6
Greater London		16	17	6	14
Remainder of South Eastern Region		17	16	ARJAN CIA	12
Southern Region		11	.9	4	4
South Western Region		14	12	9 <u>1</u>	7 <del>1</del> /2
	394	5	4	17	17
Wales, Region I Wales, Region II		12	5	91	10

Density Aggregates

Conurbations	3 1 5 2	5 3 4 2 1	3 2 1 4 5	3 $1$ $2$ $5$ $4$
Rural	4	1	5	4

\* In accordance with the usual convention, ties are given the mean of the ranks in question; thus where two areas have equal rates which are the highest but one, they are both given rank  $2\frac{1}{2}$  (the mean of 2 and 3), and the next area rank 4.

Comparisons of the crude rates between different areas are not strictly valid, since they take no account of the varying sex-age composition of the population of the different areas. To overcome this difficulty in the case of all live births an approximate adjustment may be made by multiplying the rates by the areal comparability factors (A.C.F.s) introduced in 1949 and described in the Civil Text volume for 1946-50. The nature of this correction has to be kept in mind in interpreting the adjusted rates. The A.C.F. simply allows for the varying proportion of women of child-bearing age in the aggregate local population, but not for any other factors, e.g. the proportion of these women who are married, which may have some bearing on whatever problem is being considered. The adjustment is thus not applicable to legitimate or illegitimate birth rates taken separately. However, 1951 being a year for which census information is available, it is possible to get a comparable measure of illegitimate birth incidence by relating the number of illegitimate live births in each of the areas in Table XXXI to the number of unmarried (single, widowed or divorced) women aged 15–44 in that area as given by the Census one per cent Sample. The ranks of these rates are shown in the last column of the table.

All Live Births.—The Merseyside Conurbation has the highest rates among the regions, both crude and adjusted, while Greater London and the Remainder of the South Eastern Region have the lowest. But the relatively low crude rate of Wales II (North and Central Wales) and the relatively high one of the West Midland Conurbation are both due to the peculiar sex-age structure of their populations; adjustment raises the former from twelfth to fourth place and lowers the ranking of the latter from 4 to  $10\frac{1}{2}$ .\* That for the South-East Lancashire Conurbation is reduced from 9 to 14.

Among density aggregates the crude rate is highest for the urban areas (outside conurbations) with a population of 100,000 or more, and lowest for those with 50,000 to 100,000 ; but the adjusted rates are roughly in reverse order of urbanization, the rural districts having the highest and the conurbations the lowest rate.

**Illegitimate Live Births.**—Among the regions Wales I retains its place as that with the lowest illegitimacy rate whether crude rates are used or the population structure taken into account, and the West Yorkshire Conurbation is near the top, the adjustment raising it from second to first place. The rank of the Merseyside Conurbation, however, is reduced from 1 for the crude to  $7\frac{1}{2}$  for the adjusted rate, and that of Greater London from 6 to 14.

Among density aggregates the adjustment makes little difference. The rates for the smaller urban and the rural areas are very similar and are the lowest, while those for the larger urban areas outside conurbations are the highest.

#### Stillbirths

The registration of stillbirths in England and Wales began on 1st July, 1927, when the Births and Deaths Registration Act, 1926, came into operation. The Statistical Reviews, Part II, show numbers of stillbirths in England and Wales as a whole annually by sex and legitimacy (Table B), and quarterly in total (Table D), from 1927. Table E1 gives annual totals of stillbirths for the main regions, density aggregates, metropolitan and county boroughs and administrative counties, and starting in 1949, Table E gives the same information for all county districts.

Under the Population (Statistics) Act, 1938, additional information has been collected at the registration of births, including stillbirths, and detailed tabulations of stillbirths by legitimacy, mother's age, and order of birth appear in the Fertility Analyses of the Annual Reviews, Part II.

The secular trend of stillbirth rates and their geographical variation are both discussed in that part of this Text which deals with mortality (pages 110–114). The effects of multiple maternities, age of mother and birth order were amply discussed in the Civil Text for 1946–50 pages 141–144 ; treatment of such aspects as these requires the provision of data for several years in order that the numbers should be sufficiently large to justify analysis. The statistics for 1951 do not increase the available data to an extent justifying a fresh analysis and a few years must elapse before these topics can be profitably discussed again.

\* The West Midland Conurbation and the Eastern Region tie for 10th and 11th place.

# Table XXXIII.—Marriage Rates per 1,000 Population of all ages and<br/>per 1,000 non-married population aged 15 and over by<br/>sex 1938, 1939-49, 1950 and 1951, England and Wales

#### MARRIAGES

During 1951 there were 360,624 marriages registered in England and Wales. This compares with 358,490 marriages in 1950, 361,768 in 1938 and 359,160 in 1937. As a result of the special influences of the war of 1939–45 the annual average number of marriages in the period 1939–49 was 384,039.

In relation to the total population, of all ages and marital conditions, the experience of 1951 represents a rate of 16·4 persons married per 1,000 population compared with 16·3 in 1950, 18·1 in 1939–49, 17·6 in 1938 and 17·5 in 1937. The numbers of marriages and rates per 1,000 population for calendar years are given in serial form in Tables B and C of Part II and in Table D for calendar quarters. The figures for each year from 1936 to 1951 have been extracted from these tables and are shown in Table XXXII, from which it may be seen

Table XXXII.—Marriages	and	Marriage	Rates,	1936	to	1951,	England
	a	nd Wales					

adirection ourbation The cant			er of Ma thousau	arriages nds)		Persons married per 1,000 populatio (in the form of annual rates)					
trat offer the	Year	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	Year	lst Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	
1936 1937* 1938 1939–45*	355 359 362 381	$50 \\ 71 \\ 52 \\ 75$	101 80 102 99	$115 \\ 121 \\ 117 \\ 110$	89 87 91 97	$     \begin{array}{r}       17.4 \\       17.5 \\       17.6 \\       18.1     \end{array} $	$9.8 \\ 14.0 \\ 10.3 \\ 14.6$	$     \begin{array}{r}       19.8 \\       15.7 \\       19.9 \\       18.8     \end{array} $	22.5 23.5 22.4 20.7	17.3 16.8 17.5 18.3	
1946 1947 1948* 1949 1950 1951*	386 401 397 375 358 361	78 75 95 82 87 110	$     \begin{array}{r}       101 \\       109 \\       93 \\       96 \\       81 \\       66     \end{array} $	$     \begin{array}{r}       110\\       119\\       123\\       114\\       115\\       111     \end{array} $	96 97 85 83 76 73	$     \begin{array}{r}       18.0 \\       18.6 \\       18.2 \\       17.1 \\       16.3 \\       16.4 \\     \end{array} $	$14.8 \\ 14.2 \\ 17.6 \\ 15.1 \\ 16.0 \\ 20.3$	$ \begin{array}{c} 19.0 \\ 20.3 \\ 17.2 \\ 17.5 \\ 14.7 \\ 12.1 \end{array} $	$\begin{array}{c} 20 \cdot 4 \\ 22 \cdot 0 \\ 22 \cdot 5 \\ 20 \cdot 7 \\ 20 \cdot 7 \\ 20 \cdot 2 \end{array}$	$     \begin{array}{r}       17.9 \\       18.0 \\       15.6 \\       15.1 \\       13.7 \\       13.3 \\     \end{array} $	

\* In years so marked, Easter fell in the first quarter. During the years 1939 to 1945, Easter fell in the first quarter in 1940 only.

that in the post-war period, a peak was reached in 1947 with a rate of 18.6 persons married per 1,000 population after which the rate declined to 16.3 in 1950 and the rate of 16.4 for 1951 is not significantly different from this.

Marriage rates were rising before the Second World War and were maintained at a high average level during the war and immediate post-war years. The high incidence of marriage extending over such a long period has tended to deplete the non-married component of the population. It is to the latter the population available for marriage—that marriages should be related and in Table XXXII a comparison is made between marriage rates based on the total population of all ages and on the non-married population aged 15 and over extracted from Table C of Part II.

The marriage rate in 1951 per 1,000 population of all ages was virtually the same as in 1950 both rates being 7 per cent below that of 1938. In contrast

A cherat		000 Population f all ages	Per 1,000 Non-married Population aged 15 and over							
Daniad	Period	Ratio to 1938	Endord	Males	Females					
Period Rate	rate taken as 100	Rate	Ratio to 1938 rate taken as 100	Rate	Ratio to 1938 rate taken as 100					
1938 1939–49*	17.6	100 103	$61.2 \\ 68.8$	100 112	$47.8 \\ 53.0$	100 111				
1950 1951	$     \begin{array}{c}       16.3 \\       16.4     \end{array} $	93 93	$66.1 \\ 69.5$	108 114	51.7 52.3	108 109				

\* Annual averages.

the rate in 1951 when related to the marriageable population was for males, 6 per cent above that of 1950 and 14 per cent above that of 1938, and for females was 1 per cent above that of 1950 and 9 per cent above that of 1938. It will be shown later that some decline from these high rates which have been maintained for so prolonged a period must be expected, but the decline had not begun in 1951.

#### Marriage Analyses by Sex, Age, etc.

The marriage rates considered in the preceding paragraphs have taken no account of the ages at which the marriages took place nor of the prior marital condition of those who were married. Crude marriage rates based on the total population serve many administrative and social needs and have the sanction of custom derived from the fact that they are readily ascertained and are in some circumstances the only rates available. Rates based on the number of non-married males and females over 15 years of age provide, as already explained, a more direct measure of marriage trends but, in order adequately to measure the changing incidence of marriage, further analyses are required to distinguish sex, age and prior marital condition differentials involved. Estimates of the population by sex, age and marital condition have been made annually and the marriages by single years of age for each sex and condition are given in Table G of successive Parts II. Marriage rates for each sex and age, distinguishing first marriages from remarriages, are shown in Table XXXIV.

From this table it may be seen that the rise in marriage rates (per 1,000 at all ages over 15) from 1950 to 1951, as shown in Table XXXIII, does not apply equally at each age and for each marital condition. At the younger ages, remarriage rates for both sexes have declined, but this is not unexpected. Following the spate of divorces in 1947, re-marriage rates at the younger ages soared to a peak in 1947–48 and have since declined towards a more stable level. It will be noted that first marriage rates have not only increased at each age and for both sexes but the rates have increased relatively more at younger ages than at older ages.

Lower marriage rates than those experienced in 1951 could maintain in the population the currently high proportion who have been married. The persistence of the marriage incidence of 1951 would therefore appear to imply a further increase in the proportion married; and a further lowering of the

Table XXXIV.-Annual Marriage Rates per 1,000 Bachelors, Widowers and Divorced Men, Spinsters and Widows and Divorced Women respectively, in each of several age periods, 1931, 1938, 1939-1949, 1950 and 1951, England and Wales

Year	Annı	ial marr	iage rate age gr		)00 in e:	ach	Marriage rate per 1,000 population over 15 in	Ratio to corresponding rate for 1938 taken	Marriage rate which would have resulted had the 1938 age	Ratio of actual marriage rate (col. 8) to rate in
1038	15-	20-	25-	35-	45-	55 and over	each class	as 1,000	rates been in operation	previous column (10)
(1)	(2)	(3)	(4)	(5)	. (6)	(7)	(8)	(9)	(10)	(11)
			2		SOL -	BA	CHELORS			
1931 1938	3·2 3·2	72·6 87·0	141·3 160·6	49·8 57·0	$     \begin{array}{r}       16.3 \\       18.5     \end{array} $	5.5 4.8	56·0 64·8	864 1,000	65·0 64·8	862 1,000
1939-49	6.5	112-3	160.0	62·2	21.0	5.1	71.4	1,102	63.1	1,132
1950 1951	5.6 6.2	113·8 126·4	$148.2 \\ 154.2$	$51.6 \\ 52.5$	$   \begin{array}{r}     19.5 \\     20.0   \end{array} $	4·9 5·0	67·6 71·6	1,043 1,105	62·7 61·9	1,078 1,157
Tankere				v	VIDOWI	ERS A	ND DIVORCE	D MEN		
1931 1938	_	131.7 153.6	185·9 219·8	133-5 152-6	67·3 79·1	15·0 15·9	35·9 38·1	942 1,000	40.6 38.1	884 1,000
1939-49		187.9	341.5	207.6	105.0	17.6	49.5	1,299	37.8	1,310
1950 1951	d_ii	431·0 320·0	415·7 401·2	$242.5 \\ 244.2$	$118.6 \\ 124.0$	18·1 19·4	58·2 58·0	1,528 1,522	39·2 38·4	1,485 1,510
						S	PINSTERS			
1931 1938	17·0 22·6	106·4 147·9	96·6 117·9	$21.3 \\ 22.0$	7.8	2·2 2·0	51·6 61·4	840 1,000	67·2 61·4	768 1,000
1939-49	36.7	190-9	118.7	29.0	10.2	2.0	69.5	1,132	56.3	1,234
1950 1951	39·3 40·8	208-9 219-9	123·7 127·0	29·2 30·7	10·3 10·6	2·1 2·2	69·4 71·7	1,130 1,168	52·1 51·4	1,332 1,395
	ie sau				WIDOW	VS AN	D DIVORCED	WOMEN		
1931 1938	0 <u>-0</u> 0	121·9 197·1	107·0 131·2	36·5 50·1	14·1 14·7	2.2	9·8 10·2	961 1,000	11·9 10·2	824 1,000
1939-49	lo <u>z</u> ej	277-6	199.5	70.6	21.3	2.7	15.3	1,500	10.7	1,430
1950 1951		336·8 328·5	229·3 233·1	83·6 84·6	27·2 28·5	2·9 3·0	18·1 17·0	1,775 1,667	11·1 10·2	1,631 1,667

average age at first marriage must accompany the concentration of recent increases at the lower ages, which may be seen more clearly in Table XXXV.

A summary of the changes in marriage rates in the various age groups is shown in column (9) of Table XXXIV in the form of a comparison of the crude all-ages rate with that of 1938 and in column (11) as a similar but age standardized comparison.

The crude first marriage rate in that table for bachelors was in 1950 4.3 per cent above and in 1951 10.5 per cent above that of 1938, while the spinster rate was in 1950 13.0 per cent above and in 1951 16.8 per cent above that of 1938. The age standardized comparison, however, shows greater excesses in 1950 and 1951, namely 7.8 per cent and 15.7 per cent for bachelors and 33.2 per cent and 39.5 per cent for spinsters. This greater movement of the age standardized rates arises from a relative lack of young bachelors and spinsters in the population in 1950 and 1951 compared with 1938 resulting from their depletion by the high bachelor and spinster marriage rates of the intervening period, despite continual replenishment by the new generations attaining marriageable age.

#### Table XXXV.-Ratio of Marriage Rates for Bachelors, Widowers and Divorced Men, Spinsters, Widows and Divorced Women, to those of 1938 taken as 100, by age, 1931, 1939-1949, 1950 and 1951, England and Wales

15-	20-	25-	35-	45-	55 and over	All Ages*	Period	15-	20-†	25-	35-	45-	55 and over	All
		E	BACHE	LORS			1 Set	17 .	WIDOW	ERS A	AND D	IVOR	ED MEI	N
100 100	83 100	88 100	87 100	88 100	115 100	86 100	1931 1938	Ξ	=	85 100	87 100	85 100	94 100	88 100
203	129	100	109	114	106	113	1939-49	-	-	155	136	133	111	131
175 194	131 145	92 96	91 92	105 108	102 104	108 116	1950 1951	-	=	189 183	159 160	150 157	114 122	149 151
1.51	1. 39.1.	1.939	SPINS	TERS		111 201		and .	WIDOV	VS AN	D DIV	ORCEI	D WOME	EN
75 100	72 100	82 100	97 100	91 100	110 100	77 100	1931 1938		62 100	82 100	73 100	96 100	88 100	82 100
162	129	101	132	119	100	123	1939-49		141	152	141	145	108	143
174 181	141 149	105 108	133 140	120 123	105 110	133 140	1950 1951	E	171 167	175 178	167 169	185 194	116 120	163 167

Age standardised.
Based on small numbers.

This feature is more marked for spinsters than for bachelors. It is more evident in 1951 than in 1950, indicating that it is a continuing movement.

Re-marriage rates of the widowed and divorced taken together are weighted means of the separate rates for widowed and divorced, the weighting depending upon the relative numbers of each class. As a consequence of the quadrupling of the incidence of divorce since the war, as compared with pre-war experience, the remarriage rates of the divorced are exerting a much stronger influence upon the combined rate, particularly at the younger ages. Since the remarriage rates of the divorced are also several times greater than those of the widowed, this is leading to a considerable inflation of remarriage rates of the divorced and widowed when combined. This is the significance to be attached to the substantial increase in these rates since 1938; the crude comparison gives increases in 1950 and 1951 of 52.8 per cent and 52.2 per cent for widowers and divorced men and 77.5 per cent and 66.7 per cent for widows and divorced women ; the age standardized comparison gives 48.5 per cent and 51.0 per cent for widowers and divorced men and 63.1 per cent and 66.7 per cent for widows and divorced women for the two years.

The percentage increases for age-standardized rates are below those of crude rates indicating that the related population at risk is comparatively youthful. This may be attributed to the large growth in numbers of divorced persons since the war, not all of whom have remarried. However these differences in percentages are not so marked in 1951 as in 1950 (in fact for females age standardization does not reduce the percentage increase since 1938) and this is evidence of depletion of the younger groups by remarriage, and natural ageing of the remainder.

#### **Marriages of Minors**

Of the total marriages registered in 1951, those of 22,401 males and 92,422 females related to minors. These figures compare with 20,391 males and 88.624 females in 1950 and 12,164 males and 59,268 females in 1938. There was a normal excess of females in 1951; they outnumbered males by 4.1 to 1,

compared with 4.3 to 1 in 1950 and 4.9 to 1 in 1938. The increase in the marriage of male minors during the war lowered the proportion over the period 1939-49 to 3.6 to 1.

The bridegroom was a minor in 6.2 per cent of all marriages in 1951, greater than the proportion of 5.7 per cent in 1950 and well above the 1938 figure of 3.4 per cent, but below the 1939–49 proportion of 6.8 per cent. The corresponding proportions for brides were: 1951 25.6 per cent; 1950 24.7 per cent; 1938 16.4 per cent; and 1939-49 24.2 per cent. In the case of both bridegrooms and brides, therefore, the 1951 proportions are larger than those of 1950.

These proportions and also marriage rates for minors are given in Table XXXVI, which shows, in columns (6) and (7), that marriage rates of minors in 1951 were 125 per cent and 96 per cent above those of 1938 for males and females respectively. These are much greater increases in marriage rates than those associated with adult ages during the same period.

#### Table XXXVI.-Marriages of Minors. Proportions to all Marriages Marriage Rates, and the Ratio of these Rates to that for 1931, 1938, 1939-49, 1950 and 1951, England and Wales. 1938

Year	per 1,000	of Minors marriages l ages	1,000 no	n-married aged 15–20	Ratio of Marriage rates in Cols. (4) and (5) to corresponding rate in 1938 taken as 100		
houbien	Males	Females	Males	Females	Males	Females	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	
1931 1938	$43.5 \\ 33.6$	$158.5 \\ 163.8$	6.7 6.0	$24.8 \\ 30.5$	$\begin{array}{c} 112\\ 100 \end{array}$	81 100	
1939–1949	68.1	242.1	13.9	54.2	232	178	
1950 1951	$56.9 \\ 62.1$	$247.2 \\ 256.3$	$     \begin{array}{c}       12 \cdot 2 \\       13 \cdot 5     \end{array} $	58·5 59·7	$\begin{array}{c} 203\\225\end{array}$	192 196	

#### Marriage Incidence at Reproductive Ages

The enhanced importance of the study of population growth lends special interest to the influence of the marriage rate movement upon fertility. The Population (Statistics) Act of 1938 enabled the births of all children after 30th June, 1938, to be related to the ages and dates of marriage of their mothers. In the Text of the Review for 1938-39, the first dealing with the new records, a brief review was made of the nature of this influence of marriage incidence and of the changes that had taken place prior to 1939, both in the female marriage rates and in the proportion of married females in the community, at different ages within the reproductive age period. In that Text, the basic data, comprising the numbers of married and non-married women between the ages of 15 and 49, the proportions married, the numbers of women marrying and their relation to the non-married class, were assembled in the form of individual years' records back to 1911, together with earlier records at decennial census periods back to 1851, the first census year at which the marital conditions of the population were distinguished. In the Civil Text for 1940-45 these records for females were continued up to the end of 1945 and at the same time similar records were added for males, in decennial form between 1851 and 1931, and thereafter in individual years until 1945. In the Civil Text for 1946-50

records for both sexes for those years were included and in the present text in Appendix B are the similar records for 1951.

Marriage Rates.—It was customary before 1946 to base the main discussion of the marriage trends at the reproductive ages on all marriages, whether first or remarriages. What is of primary interest, however, is the establishment of additional marriages, that is to say first marriages, since remarriages do no more than mitigate the effect of earlier disruptive forces, whether mortality or divorce. It was shown in the 1946-50 Civil Text that the earlier practice, in which remarriages were included, was justified in that not only the changes from year to year, but the actual marriage rates for the whole non-married female population were, at the reproductive ages, negligibly different from those for spinsters alone.

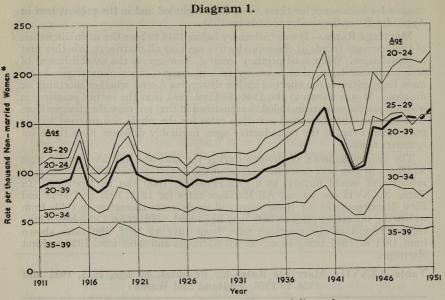
The rising incidence of divorce during the war and the abnormally high incidence in post-war years has increased the distortion which the inclusion of remarriages would impart, to a greater extent than can be tolerated. In Table XXXVII are set out All Marriage rates for 1911, 1931 and 1938 and First Marriage rates for these years and single years thereafter to 1951, from which the distortion prior to 1938 may be judged. Diagram 1 displays a continuous record of age marriage rates from 1911 to 1951, the rates shown from 1911 to 1937 being based on All Marriages and those from 1938 on First Marriages.

#### Table XXXVII.-Marriage Rates for Females, by age, 1911, 1931 and 1938 to 1951, England and Wales

Period				Age			un appartante	Aggre	egates
anit antes	15–19	20-24	25-29	30-34	35-39	40-44	45-49	20-39	15-49
espectally	Al	l Marriage	es per 1,0	00 Spins	ters, Wid	lows and	Divorce	d Wome	n ja
1911	11.2	95.9	109.8	62.6	35.5	22.0	14.8	86.9	54.0
$\begin{array}{c}1931\\1938\end{array}$	$16.9 \\ 22.6$	$106.5 \\ 148.1$	$119.8 \\ 154.4$	$59.6 \\ 69.9$	$   \begin{array}{c c}     31.0 \\     37.9   \end{array} $	$   \begin{array}{c}     18.0 \\     21.5   \end{array} $	$     \begin{array}{c}       12.6 \\       13.8     \end{array} $	$   \begin{array}{c c}     92.8 \\     119.0   \end{array} $	57·8 71·2
i elemento de 19 desembros	<u>2600 m</u>	that in becaute	for que s	terr ten El moder	tent add	nodw t when t	19091 o	II babar	the second
00.3838.58			First	Marriage	es per 1,0	00 Spins	sters.		
1911	11.2	97.1	109.8	59.2	29.2	16.2	10.4	88.7	54.6
1931	17.1	106.8	119.1	57.2	27.0	14.5	9.6	93.6	59.3
1938	22.6	147.9	154.0	67.2	33.1	16.8	10.6	119.7	72.7
1939	32.0	197.6	188.7	78.4	37.2	18.6	11.5	150.8	90.3
1940	38.4	222.8	198.8	84.7	39.1	20.9	12.0	164.8	100.4
1941	36.3	188.9	155.1	70.3	35.1	20.6	12.1	136.5	85.0
1942	38.9	187.4	133.2	63.0	33.7	20.2	12.3	129.8	82.3
1943	34.2	141.2	101.7	54.0	28.1	17.6	11.7	100.6	65.6
1944	33.1	143.1	109.9	53.5	27.9	17.1	11.3	104.3	67.1
1945	40.0	200.6	155.6	71.4	35.4	20.2	13.0	144.4	89.9
1946	33.9	189.0	150.7	84.5	42.3	22.9	14.4	142.5	86.4
1947	36.7	205.5	157.7	85.1	42.5	22.8	13.6	152.1	91.1
1948	39.4	212.5	158.1	81.3	42.7	22.6	13.4	156.0	92.9
1949	40.5	212.0	145.6	81.8	40.4	21.3	13.1	153.9	91.3
1939-49*	36.7	191.0	150.5	73.5	36.8	20.4	12.6	139.6	85.7
1950	39.3	208.9	156.0	72.9	38.7	20.3	12.7	152.5	89.4
1951	40.8	219.9	157.7	78.3	40.5	21.7	12.9	160.9	93.3

\* Annual Averages.

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\* 1911-37 : All marriages per 1,000 spinsters, widows, and divorced women. 1938-51 : First marriages per 1,000 spinsters.

# Marriage Rates\* for Women, by age, 1911 to 1951, England and Wales. (See Text.)

Before considering particularly the experience of the current year, the opportunity may be taken to draw attention again to the salient features of the past, which the graphical representation of Diagram 1 demonstrates especially clearly. The history of marriage rates for women before 1911, when the diagram commences, is, briefly, that a long and more or less steady decline brought the rates down from 1873, when the highest rate in the 19th century was recorded, to 1909, when the lowest rate up to that time was recorded. Rates rose slightly from 1909 to 1914, when the trend became obscure owing to the wide fluctuations associated with the First World War. After the war no clear trend was observed until 1932, when a steady improvement began and was continued until 1938. At this point judging by the fragmentary evidence available, a full recovery had been made to the 1873 peak. The fluctuations of war again intervened to obscure the trend but, as may be seen from Table XXXVII, the annual average rates over the disturbed period of 1939-49 were, at the aggregated ages, substantially in excess of those for 1938, indeed for almost every individual age group the 1939-49 average rates exceed those for 1938. Generally the 1950 rates, whilst above the 1939-49 averages, were below those of 1949, indicating that, although very high, the rates were still declining from the post-war peak. The 1951 rates, however, show a slight rise above those of 1950, suggesting that this decline has been halted.

The marriage history of recent years is remarkable in that for nearly 15 years marriage rates on average have been maintained above the highest level ever reached in the 19th century, even for a single year. This maintenance of high marriage rates over a long period produces important changes. Under such circumstances the population is depleted more and more of its non-married element, and consequently persons whose inclinations or health do not favour marriage form an increasing proportion of those remaining nominally at risk. Even the maintenance of constant marriage rates by those more appropriately regarded as at risk would not in the face of this inflation of the denominator of the rates prevent a decline in the rates calculated on the basis of all non-married of marriageable age. For this reason a decline in nominal marriage rates was expected and indeed still is; the rise in the rates in 1951 is all the more significant.

During the nineteenth century the marriage rate for the age group 20-24 always exceeded that for the next older group 25-29. In 1901 this position was reversed, the older group recording a higher rate for the first time. Diagram 1 shows that the younger women regained their earlier lead in 1939 and have retained it. As the majority of brides' ages lie between 20 and 30, changes in the relative marriage incidence in the two quinary age groups making up this range, 20-24 and 25-29, are indications of changes in the average age at marriage, which has an influence of some importance on the ultimate size of families. After 1939 the younger age group increased its lead over the older, and a wide gap opened up between them so rapidly that some part must be attributed to abnormal conditions associated with the war. However, at least one of the forces which has enabled girls to marry earlier—the changing relationships between the numbers of males and females—may be assumed to be of a persistent nature, and is associated with the maintenance, and even widening, of the gap.

**Factors influencing Marriage.**—The nature and the probable future course of factors leading to the rise in marriage rates were discussed in the Civil Text Volumes of 1940–45 on pages 38–40 and 1946–50 on pages 40–42. It was shown that, while the ratio of males to females at ages 15–44 in the total population had been rising continuously since 1921, it has risen still more in the non-married section of the population at these ages. The following statement, based on census populations, shows the changes in sex ratio since 1871.

Males per 1,000 females :---

	1871	1901	1911	1921	1931	1951
Total population, 15-44	927	923	926	876	915	965
Non-married population, 15-44	967	950	959	875	945	1,106

The abnormally low ratio in 1921, and sharp rise since that year are the striking features of this statement. It will be noted that in 1951 among the non-married aged 15–44, males exceeded females for the first time even though the sex ratio is based on census populations which exclude the predominantly male armed forces stationed abroad.

The main factors influencing these changes in the sex ratio are generally understood. The proportion of males to females at birth has increased (1911– 15, 1,038 per thousand; 1931–35, 1,051 per thousand; 1946–50, 1,061 per thousand) and improvements in infant and child mortality have raised the ratio of male to female survivors. In the early years of the century there was heavy emigration with a male preponderance, and the losses in the First World War fell particularly heavily on young males. On the other hand such male losses as there were in the Second World War were in part offset by the heavy post-war emigration of the wives of Allied Servicemen. Apart from migration and special factors associated with war, it seems likely that the factors producing the current high sex ratio will persist, and a further increase in the ratio may be expected.

The numerical superiority of males over females in non-married persons aged 15–44 is not spread evenly over all ages, but is particularly concentrated at the younger ages where marriage rates are highest, as the following statement shows :

Non-married males per 1,000 non-married females :---

erate for the are	1911	1931	1951
Age 20–24	1,016	1,097	1,376
,, 25–34	968	960	1,349

Thus, for females, there is certainly no lack of partners to choose from at the younger ages and, in so far as this factor may influence marriage rates, there is every prospect of the maintenance of high proportions married amongst the female population.

**Total Married Women of Reproductive Age.**—Illegitimacy being comparatively low in this country the fertility of the community is determined largely by the total number of married women of reproductive age in the population, that is by the survivors of earlier marriages who have not yet passed out of the child-bearing ages. New marriages will continually replenish this number. The annual addition of new marriages in relation to the total married

Table XXXVIII.—Married Women per 1,000 total Female Population at each age and Ratio of proportion to that of 1938 taken as 100. 1911, 1931, 1938 and 1946 to 1951, England and Wales

	re conti			Age				Aggre	egates
Year		1			<u>                                     </u>				
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	20-39	15-49
2092	8147 M	Marrie	d Women	per 1,000	) total Fe	male Pop	oulation.	matulat	log liste
1911	12	242	558	711	752	755	729	552	502
1931	18	257	587	733	755	749	733	572	529
1938	23	328	643	733	771	768	736	623	566
1946	35	436	696	800	797	784	762	686	626
1947	33	445	714	802	807	785	763	697	635
1948	38	457	730	807	816	791	763	707	643
1949	41	467	736	823	822	795	768	716	651
1950	40	473	762	814	826	801	770	724	657
1951	42	475	772	830	835	813	780	734	666
	imesopor 13. mari	Rati	o of prop	ortion to	that of 19	38 taken	as 100.	T. bee start	14.1963 14.1963
1911	52	74	87	97	98	98	99	89	89
1931	78	78	91	100	98	98	100	92	94
1938	100	100	100	100	100	100	100	100	100
1946	152	133	108	109	103	102	104	110	111
1947	143	136	111	109	105	102	104	112	112
1948	165	139	114	110	106	103	104	113	114
1949	178	142	114	112	107	104	104	115	115
1950	174	144	119	111	107	104	105	116	116
1951	183	145	120	113	108	106	106	118	118

population represents only a small fraction of the order of 6 per cent, so that changes in the marriage rates will have a correspondingly reduced effect upon the total proportions of married women in the population. The proportions of married women are shown by quinary age-groups up to age 50 for selected years in Table XXXVIII.

Throughout the period covered by the table the proportions have increased at each age group and these increases have been outstanding at ages under 25. The proportion in 1951 exceeded that of 1938 by no less than 83 per cent at age 15–19 and 45 per cent at age 20–24, and the increase of 20 per cent at age 25–29 is less striking but hardly less significant, applying as it does to larger proportions married. At the younger ages the major part of the increase occurred between 1938 and 1946, and though an upward trend continues the pace is very much diminished.

The remarkable rise in the proportions at the younger ages and the much more modest increases at the older ages bring into relief two important changes —more women are marrying, and they are marrying at younger ages.

In any particular year the proportions increase with advancing age, at first very rapidly and then more slowly, to a maximum between ages 35 and 40. They then decline slowly as new marriages are increasingly offset by widowhoods but the total reduction in the proportion up to age 50 is relatively small.

The last two columns of Table XXXVIII show the proportion of married women in the reproductive ages 15–49 and in the more critical age group 20–39, at which 90 per cent of births occur. The proportions represent fractions of the reproductive years which on average fall within the married lives of women. From 1911 to 1931 the proportion in the age-group 15–49 rose slightly from  $50\cdot2$  to  $52\cdot9$  and it rose more rapidly between 1931 and 1938 to  $56\cdot6$ . By 1946 it had reached 62·6 and by 1951 66·6. In the age group 20–39, the proportion has risen from  $55\cdot2$  in 1911 to  $73\cdot4$  in 1951.

The contrast between the proportions in the periods compared is exaggerated by the ageing of the population in the 15–49 group since 1911, which tends to increase the relative number of women at the older ages within the group where the proportion married is greater. To remove this distortion, a marriage index for the year can be calculated by expressing the actual number of married as a ratio to the number which would have emerged as married, if the populations in the component quinary age-groups had been subject to standard proportions married in those age groups, viz. : those for 1911. The difference of this ratio from unity thus indicates changes in the proportions married, apart from that due to ageing.

Marriage indices standardized on 1911 proportions married within successive quinary age-groups from 15 to 50, with the corresponding unstandardized figures, are shown below :—

60.4 77 AU	1911	1931	1938	1946	1947	1948	1949	1950	1951
Standardized	1.000	1.022	1.067	1.146	1.154	1.168	1.180	1.188	1.203
Unstandardized	1.000	1.054	1.127	1.247	1.265	1.281	1.297	1.309	1.327

The correction for the ageing factor shows that the true increase in the proportion married among women aged 15–49 between 1911 and 1951 was 20·3 per cent instead of the 32·7 per cent suggested by the crude proportions, over

one-third of the latter increase being due to the ageing of the population and unrelated to the incidence of marriage itself. If comparison is confined to the narrower age-group 20-39 where clearly the effect of ageing is correspondingly restricted standardization only reduces the excess of 1951 over 1911 from 33.0 per cent to 28.0 per cent.

The fact that such a high proportion married has been attained is important. There is no sign of any recession in the proportion, and on the contrary it would not be necessary for the high rates of new marriages to be maintained at the level recently experienced to achieve further increases in the proportion of married women in the population aged 15–49. The marriage rates experienced before the war would not however suffice for this purpose.

#### Seasonal Incidence of Marriage

Table D of Part II, 1951, shows the number of marriages registered in England and Wales and the rates per 1,000 population in each quarter in serial form for decennial periods from 1841 and for each year 1941 to 1951. In the same volume the monthly incidence for marriages is shown for each year 1947 to 1951 in Table N.

Throughout the nineteenth century the highest marriage rates occurred consistently in the December quarter and the lowest in the March quarter. Between the two World Wars a new pattern emerged and almost without exception the two summer quarters became the highest and the two winter quarters the lowest. The March quarter has generally been that of lowest marriage incidence, but the incidence rises and relatively is disturbed when Easter happens to fall within that quarter.

Taking the average number of marriages in a quarter of any one year as 100, the following statement compares the quarterly incidence in years when Easter fell in the March with those when Easter fell in the June quarter.

	E	aster in	March	Quart	er	contov	Easter in June Quarter					
Years	1st Qtr	2nd 3rd 4th Year Y Qtr Qtr Qtr	Years	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Year				
1932	81	. 90	124	105	400	1938	58	113	129	100	400	
1937	79	89	135	97	400	1946	81	105	114	100	400	
1940	93	99	112	96	400	1947	75	109	119	97	400	
1948	96	94	124	86	400	1949	87	102	122	89	400	
1951	122	74	123	81	400	1950	97	90	128	85	400	

Since the Second World War, in addition to the temporary shift from the June to March quarters in the years when Easter fell in the March quarter, there has also been a transference of marriages from the June to March quarters of a more permanent and progressive character. The fortuitous disturbance of two March Easters in this short period obscures this trend and an approximate removal of this disturbance is desirable to clarify the picture.

Disregarding war years, the previous two March Easters occurred in 1932 and 1937. The incidence of marriages in the March and June quarters in these years and in those immediately preceding and succeeding them, related to a quarterly average of 100 as in the above statement, was as follows :—

Year	March Qtr.	June Qtr.	Year	March Qtr.	June Qtr.
1931	60	109	1936	56	114
1932	81	90	1937	79	89
1933	56	108	1938	58	113

According to those data, a March Easter leads to a transfer of an average of 22 from the June to the March quarter index. This adjustment has been made to the figures for 1948 and 1951 (when Easter fell in the March quarter), to provide the following set of figures from 1946 to 1951, comparable in the sense that they have been freed from Easter disturbance.

Year	1946	1947	1948	1949	1950	1951
March Quarter	81	75	74	87	97	100
June Quarter	105	109	116	102	90	96

The possible weakness of the assumption on which the 1948 and 1951 figures have been adjusted, namely that the effect of a March Easter in these years was the same as in 1932 and 1937, renders it dangerous to try to draw too precise conclusions. Nevertheless it is evident that a persistent change has been taking place since 1947 or 1948. The monthly incidence of marriages, available for the years from 1947, throws some further light on this. Account must however be taken of the varying lengths of months by calculating daily averages, and Table XXXIX shows the daily average of marriages registered in England and Wales

#### Table XXXIX.—Comparison of Marriage Incidence by calendar months, 1947 to 1951, England and Wales

area) from 1950, area) from 1950, would include records To		aily Ave arriages				Ratio of Daily Average for the month to daily average for the year taken as 1,000						
e nationalizate	1947	1948	1949	1950	1951	1947	1948	1949	1950	1951		
January February March April June July August September October November December	$\begin{array}{c} 641 \\ 798 \\ 1,065 \\ 1,387 \\ 890 \\ 1,332 \\ 1,174 \\ 1,396 \\ 1,325 \\ 912 \\ 913 \\ 1,346 \end{array}$	741 711 1,673* 858 857 1,351 1,492 1,140 1,386 911 671 1,196	696 796 1,223 1,308 527 1,332 1,364 1,064 1,304 864 598 1,244	$\begin{array}{r} 497\\773\\1,608\\1,047\\591\\1,033\\1,204\\1,134\\1,412\\700\\563\\1,208\end{array}$	$\begin{array}{r} 464\\ 639\\ 2,493*\\ 475\\ 567\\ 1,152\\ 1,065\\ 1,139\\ 1,432\\ 681\\ 525\\ 1,177\end{array}$	$583 \\ 726 \\ 969 \\ 1,262 \\ 810 \\ 1,212 \\ 1,068 \\ 1,270 \\ 1,206 \\ 830 \\ 831 \\ 1,225$	$\begin{array}{c} 684\\ 656\\ 1,543*\\ 792\\ 791\\ 1,246\\ 1,376\\ 1,052\\ 1,279\\ 840\\ 619\\ 1,103\\ \end{array}$	$\begin{array}{c} 677\\ 774\\ 1,190\\ 1,272\\ 513\\ 1,296\\ 1,327\\ 1,035\\ 1,268\\ 840\\ 582\\ 1,210\\ \end{array}$	506 787 1,637 1,066 602 1,052 1,226 1,155 1,438 713 573 1,230	$\begin{array}{r} 470\\ 647\\ 2,523^{*}\\ 481\\ 574\\ 1,166\\ 1,078\\ 1,153\\ 1,449\\ 689\\ 531\\ 1,191\end{array}$		
Year	1,099	1,084	1,028	982	988	1,000	1,000	1,000	1,000	1,000		

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\* Easter fell in March in 1948 and 1951.

in each month and the ratio of the daily average for the month to the daily average for the year from 1947 to 1951.

By comparing 1947 and 1950 for instance, two years in which Easter fell in April, or 1948 and 1951 when Easter fell in March, it may be seen from this table that all the increase in the March quarter is concentrated in the month of March, while the complementary decrease in the June quarter is spread from April to June. This lends credence to the popular explanation of the shift, which has received comment in the national press in the last few years, namely that it is attributable to the system by which the Inland Revenue calculate a wife's allowance in income tax assessment. This system favours marriage before, rather than after, the beginning of the financial year very early in April. This advantage apparently attracts many of those who would otherwise have married early in the financial year and up to as late as June.

Apart from this feature the influence of Easter and Christmas is also clearly discernible in March (or April) and December. In 1950 and 1951, however, the holiday month of September recorded a higher relative incidence than either April or December. The relative incidence is naturally high in the other holiday months, June to August.

#### Marriage Incidence in different parts of the Country

The number of marriages and the marriage rates in regions, counties and county boroughs for each year are published in Table F of the successive issues of Part II. Up to 1949 classification was by Geographical Regions and from 1950 by Standard Regions, but Appendix F to Part II for 1946 to 1949 provides an additional tabulation by Standard Regions.

It has frequently been stressed in previous Reviews that the significance of differences in local marriage rates is reduced by the fact that the district in which the marriage is registered is often the district of residence of only one of the parties and sometimes of neither, though this weakness would be less in comparisons between large sections of the country than between small local areas. Another difficulty arises from the fact that marriage rates for local areas were calculated upon civilian populations up to 1949, and upon home populations (that is including the armed forces stationed in the area) from 1950, though in these and other years the parties to the marriage would include members of the armed forces, whether stationed at home or abroad. To minimize distortion from this source, ratios of local rates to the national rate for each year may be considered, as shown in Table XL.

The attraction of London for marriage has always been reflected in the statistics. In the years immediately preceding the war about  $12\frac{1}{2}$  per cent of the total marriages of the country were registered in London, giving it a marriage rate about 25 per cent higher than that of the country as a whole. Since the war, when many people were evacuated from London, the population has remained much below the pre-war level, so that although only  $9\frac{1}{2}$  per cent of all marriages are registered in London, the marriage rate is still about 25 per cent above the national level.

Table XL shows the ratio of marriage rates in Standard Regions to the national rate in the years from 1946 to 1951.

The unique position of London dependent, as it is, in part upon the attraction of a London wedding for those resident elsewhere is an outstanding feature of

#### Table XL.—Ratio of Marriage Rates in Standard Regions of England and Wales to that of the whole country : 1946 to 1951

Region	Ratio of Regional to National Rate taken as 1,000						Ranking of Ratio					
Courses in the	1946	1947	1948	1949	1950	1951	1946	1947	1948	1949	1950	195
England and Wales	1,000	1,000	1,000	1,000	1,000	1,000	Dex 8		esina 19	national Isloval	set th	sim
Regional Summary		seil ?	pai be	NEROE	833.6 1	(Bib) (	Denso		SCIENCE	aug s	that said	1339)
Northern.	1,054	1,016	1,018	1,033	1,032	1,031	1	3 2	3 2	21	23	2
East and West Ridings	1,047	1,029	1,026	1,037	1,024	1,030		2	2	1	3	2 3 5 7 4
North Western	1,023	1,015	1,006	1,017	1,009	1,002	5	4	7	6	6	5
North Midland	1,004	1,005	1,013	1,016	1,019	997	6	57	4	4	5	
	978 868	967 872	1,010	1,021 859	1,021	1,027 851	11	11	11	11	11	11
London and South Eastern		1.057	1.040	1,028	1,041	1.054	4	1	1	3	1	1
County of London	1,231	1,280	1,247	1,225	1,237	1,253	inal <sup>T</sup> al	200	10/17 1	m ot	MARK	2017
Southern.	965	952	961	950	932	942	8	8	8	8	8	89
South Western	928	935	931	922	926	917	9	10	9	9	10	9
Wales I	1,025	989	1,012	1,018	999	998	3	6	5	5	7	6
Wales II	927	945	906	913	930	915	10	9	10	10	9	10

the table. The rate in the Eastern region, some 12 to 15 per cent below the national average, is also notable. Other rural regions-South Western and Wales-also show low rates, nearly 10 per cent below the average. There are no other important differences, but it may be seen from the ranking orders on the right-hand side of the table that the regions do tend to maintain their relative positions from year to year.

#### Buildings in which Marriages may be Solemnized

At the end of the year 1951 the numbers of churches or chapels of the Established Church and of the Church in Wales and of registered buildings of other religious denominations in which marriages could legally be solemnized were as follows :---

2,418 2,210 50-0	Number at	Increase or	Increase per
2,251 - 9,2069-1	the end of	decrease (—)	cent since
5,020 2,375 -77	1951	in 1951	1921
Established Church and Church in Wales	16,825 23,526 <b>40,351</b>		

By the Places of Religious Worship Certifying Act, 1852, provision was made for places of religious worship of Protestants, other than churches or chapels of the Established Church, to be certified as such to the Registrar General instead of to the Diocesan authorities or the local Justices as required by earlier Acts. This Act was replaced in 1855 by the Places of Worship Registration Act, which extended the privilege to other religious bodies. Such certification is a necessary preliminary to the registration of a building for the solemnization of marriages.

The Marriage Act, 1836, enacted that any separate building which had been certified as a place of religious worship could, if registered by the Registrar 75

General, be used for the solemnization of marriages in the presence of a registrar. The provision is now contained in the Marriage Act, 1949.

The numbers of places of meeting for religious worship on the official register on the 31st December, 1951, and the numbers of buildings registered for the solemnization of marriages are shown in Table XLI.

The Marriage Act, 1898, provided that, under certain conditions, marriages might be solemnized in a registered building, without the presence of a registrar but in the presence of a person duly authorized for the purpose by the governing body of the building and certified as such to the Registrar General. The governing bodies of some of the registered buildings have made use of this provision, which was re-enacted in the Marriage Act, 1949. At the end of the year 1951 the respective numbers of buildings where a duly authorized person was able to act were as follows :—

Methodist Church				 5,359	
Congregationalists				 1,242	
Baptists				 962	
Calvinistic Methodists			• •	 195	
Other Denominations	and	Unsect	arians	 791	
adian of al autos				the second second	
All Denominations				 8,549	

#### Table XLI.—Buildings\* certified as places for Worship and registered for Marriages, 1951, England and Wales

Denomina	tion		tes a solo solo solo solo solo	Buildings certified to the Registrar General as meeting places for religious worship	Buildings registered for the solemnization of marriages	Increase or decrease () per cent since 1921 in the number of buildings certified for religious worship
Roman Catholics	o			2,418	2,216	55.0
Methodist Church	C	••		13,251	9,256	-5.1
Congregationalists				3,623	3,375	7.7
Baptists				3,601	3,290	13.0
Calvinistic Methodists				1,419	1,219	9.2
Presbyterians				463	452	3.3
Unitarians				195	200	6.0
New Church				61	64	11.0
Catholic Apostolic Chur	rch		12.2.0	53	44	-24.3
Countess of Huntingdo		nexio	n	43	39	-8.5
Salvation Army				1,573	584	38.5
Society of Friends				421	+	-2.3
Tews		in 1 a		427	+	64.9
Other Denominations				7,623	2,787	128.6
All Denominations		1901 01.01	done done tani	35,171	23,526	19.9

\* 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 number so certified to the Registrar General shown above.

† 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 increase of 110 which took place in 1951 in the numbers of buildings certified as meeting places for religious worship under the heading "other denominations" in Table XLI is made up as follows :---

Apostolic Church								3
Assemblies of God	inn	1.17	CTT N A		>->×1			13
Brethren			1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1					9
Calvary Holiness Miss	sion				· · · · · · · · ·			hlints(T
Christadelphians				• • • ·				5
Christians			•••				••	2
Christians-not other	wise de	esignate	ed			0.9900	s	15 10000
Christian Scientists		· • • • • • *		•••	· • (16)	TOTAL	·••) 0	6 on or ot
Christian Spiritualists	bandly r			••			a strike	9
Elim Foursquare Gos	pel All	iance			••	the bea	hinner	03
Fellowship of Indepen	ndent l	Evangel	lical Ch	urches	••	••	••	
Jehovah's Witnesses		· · · / //				••	(1.00%)	11
Latter Day Saints				•••	• [10]		10 · 6 8	0
Pentecostal Mission	10 T T T	it is a	· · .	simon		1.0	T. ould	1
Seventh Day Advent	ists		••	et et an		·······	· instant	19
Others-not specified	••	••	••	••	••	••		19
			Total					110
			Total	•••		•••	O KY	110

calls, particularly for ages under 30. Table XLT shows the " not states reportions for moles for the years 1938 and 1945 to 1951.

Deceased Man 1978 and 1919 in 1941 Fadand and Walses

From 1933 to 1945 there was a more or less general and steady decrease the percentage "not stated." If may be seen from Table XLII that since 194 there has been a tendency for the percentage to continue decreasing at agrowar 45, but to increase at ages under 30, and in 1951 at ages 20–24 and 25–2 the percentage exceeded that originally recorded in 1938. Failure to indicat marital condition is more likely for bachelors than for maried men whos widows are commonly, the informants. If this is so proportional allocation or the "not stated "cases will lead to some bias, and to this extent the rates to make given later must be accepted with some caution at the volumer aves

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## WIDOWHOOD AND WIDOWERHOOD

Detailed commentary on widowhood and widowerhood was included in the 1940–45 Civil Text, pages 47–52, to which reference should be made for an introductory discussion on the peculiarities of these statistics with special reference to the alternative classes of "not stated" cases which may arise, and such sources of information as there are on these cases. In that commentary the concept of widowhood rates (defined as "The number of widows in a given age group, produced by the death of a husband in the current year, expressed as a proportion of all wives of that age") was introduced, and it is retained in the present commentary. A similar concept applies to widowerhood. Further commentary was contained in the 1946–50 Civil Text on pages 51 to 53.

In Table XX of Part II the number of marriages terminated by the death of a partner are given by joint ages of the deceased and the surviving partner. Only cases in which marital condition was stated are included in the table, but the proportion of "not stated" to "stated" marital condition is given for each age of deceased. It has been a feature of these statistics, since they were first collected in 1938, that this "not stated" proportion has been very low for female deaths, a small fraction of 1 per cent, but has been substantial for male deaths, particularly for ages under 30. Table XLII shows the "not stated" proportions for males for the years 1938 and 1945 to 1951.

Table XLII.—Percentage "Not Stated	1" to "Stated" marital condition
-Deceased Men, 1938 and 1945	to 1951, England and Wales

Age of Deceased	1938	1945	1946	1947	1948	1949	1950	1951
All ages	8.2	5.4	5.5	5.5	5.4	5.0	4.9	4.9
15	22.7	13.8	15.3	13.8	10.8	12.8	19.6	14.8
20	40.4	15.0	20.7	28.8	27.7	28.9	40.4	47.2
25	31.5	14.1	21.2	24.6	22.8	24.8	28.6	35.1
30	28.6	16.0	20.5	20.3	20.0	19.7	19.7	21.7
35	22.2	14.7	16.2	16.3	16.4	16.2	14.8	16.3
40	17.4	12.2	13.7	14.7	13.1	12.6	12.4	12.0
15	16.5	10.1	9.9	11.0	9.7	9.8	9.5	9.3
50	12.6	8.3	8.2	8.2	8.5	7.3	6.8	7.0
55	10.3	7.1	6.6	6.7	6.8	5.9	5.7	5.3
30	8.3	5.8	6.0	5.9	5.6	5.0	4.8	4.9
35	6.2	5.0	4.6	4.9	4.6	4.0	3.9	4.0
70	5.2	4.5	4.4	4.3	3.9	3.5	3.4	3.5
75 and over	4.3	4.1	4.0	3.8	3.5	3.4	3.4	3.2

From 1938 to 1945 there was a more or less general and steady decrease in the percentage "not stated." It may be seen from Table XLII that since 1945 there has been a tendency for the percentage to continue decreasing at ages over 45, but to increase at ages under 30, and in 1951 at ages 20–24 and 25–29 the percentage exceeded that originally recorded in 1938. Failure to indicate marital condition is more likely for bachelors than for married men whose widows are commonly the informants. If this is so proportional allocation of the "not stated" cases will lead to some bias, and to this extent the rates for males given later must be accepted with some caution at the younger ages.

#### Table XLIII.—Widowerhoods per 1,000 Married Men and Widowhoods per 1,000 Married Women, in each age group, 1939, 1946–49, 1950 and 1951, England and Wales

Age of Surviving Spouse	1939	1946-49	1950	1951	1939	1946-49	1950	1951		
Elizan Militar	Widow Mer	erhoods pe 1.	er 1,000 N	Iarried	Widowhoods per 1,000 Married Women.*					
All Ages	8.7	7.5	7.5	7.8	14.3	13.4	13.8	14.8		
Under 25	$2 \cdot 1$	1.5	1.0	.8	1.8	1.2	1.0	1.0		
25	2.3	1.5	1.1	.9	2.0	1.7	1.4	1.3		
30	2.3	1.6	1.3	1.1	2.8	2.2	1.9	1.9		
35	2.8	2.0	1.6	1.5	4.4	3.3	3.0	3.0		
10	3.6	2.5	2.2	2.2	6.6	5.3	4.9	5.0		
10- 15-	4.9	3.9	3.6	3.4	10.3	9.1	8.7	8.8		
50	7.4	5.8	5.4	5.4	16.0	14.3	14.2	15.4		
55	10.5	8.7	8.4	8.6	22.9	21.1	21.6	23.3		
30	16.5	13.8	13.2	13.8	35.0	32.9	33.6	38.1		
35	24.8	21.0	21.1	22.0	49.6	46.6	49.1	54.9		
70	37.3	32.6	34.2	36.4	72.1	69.3	71.7	72.0		
75 and over	73.3	57.9	61.0	65.9	126.4	92.5	106.5	119.2		

\* Non-civilian casualties were not classified by marital condition before 1950. An approximate allowance has been made for them by rateable allocation in earlier years.

Table XLIV shows widowhood and widowerhood rates by age for selected periods from 1939 to 1951. These rates are different in character from published death rates because they derive solely from the deaths of married persons and the latter represent selected lives in that they exclude persons whose health denies them the opportunity of marriage. Nevertheless these rates reflect in general the sex and age distribution and annual changes of mortality rates and much of the commentary on mortality rates contained in the medical part of this Review is relevant to them.

For demographic purposes, however, it is not the nature of small differentials within the main structure of widowhood and widowerhood rates that is important, but the general level of these rates. It is clear that the current level of mortality at ages under 45, is so low that the termination of marriages by the death of one or other of the partners is not significantly depleting the younger married population or, in particular, the population of married women in the reproductive ages.



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Table XLIII.— Widowerhoods per 1,000 Married Men and Widowhoods per 1,000 Married Women, in each age group, 1939, 1945–49, 1959 and 1951, England and Wales

# DIVORCES AND REMARRIAGE OF DIVORCED PERSONS

#### Divorce

Divorce statistics were shown in Tables O and P in Part II up to 1949, and more detailed statistics have been shown in Tables O and P1 to P4 since 1950. A detailed analysis of and commentary on divorce statistics was included in the 1946–50 Civil Text on pages 54–67.

The immediate interest in divorce statistics is in the numbers currently occurring and in the pace and direction of their trend. For such a study it is better to examine the annual incidence of petitions filed, rather than of decrees absolute granted, since apart from the fact that the latter are liable to disturbance from purely administrative changes in procedure, changes in the numbers of couples seeking divorce precede in time the actual effects upon divorce incidence.

During the period 1938–1950 the annual incidence of petitions for divorce underwent violent fluctuations, mainly due to the stresses of the 1939–45 war. By 1950 it seemed that these effects were exhausted and that, in the absence of further disturbing factors, 1951 would see the completion of post-war readjustment and a resumption of the more normal long-term trend. However, a

# Table XLIV.—Petitioning for Divorce and Decrees Absolute granted, 1918 to 1930 and 1945 to 1951, England and Wales

Year	Divorce Petitions filed (dis- solution and nullity)	Decrees Absolute granted (dissolu- tion and nullity)	Year	Divorce Petitions filed (dis- solution and nullity)	Decrees Absolute granted (dissolu- tion and nullity)
(End of First World War) 1918 1919 1920 1921 1922 1923 1924 1925 (Poor Persons	2,362 5,184 4,565 2,907 2,468 2,833 2,978 3,054	1,111 1,654 3,090 3,522 2,588 2,667 2,286 2,605	(End of Second World War) 1945 1946 1947 1948 1949 1950 (Legal Aid and Advice Act, 1949)† 1951	25,711 43,163 48,501 37,919 35,191 29,729 38,382	15,634 29,829 60,254 43,698 34,856 30,870 28,767
Rules, 1925)* 1926 1927 1928 1929 1930	3,631 4,294 4,050 3,997 4,288	2,622 3,190 4,018 3,396 3,563	ten da lina general Gaussimo dress Tra Gaussimo dress Tra Gaussimo de labol a	and eteed o XLLI 0 nite dester	

\* Came into operation on 6th April, 1926.

† Came into operation on 2nd October, 1950.

disturbing factor was introduced on 2nd October, 1950, by the Legal Aid and Advice Act, 1949, which extended the facilities for divorce of persons of limited means. The incidence of divorce in 1951 and the preceding period may therefore be compared on the one hand with the experience in the years following the First World War, and on the other hand with that in the years around 1926 when the Poor Persons Rules 1925 came into operation—Rules which produced a sharp rise in divorce petitions in a manner similar to that which has arisen from the operation of the Legal Aid and Advice Act, 1949.In Table XLIV is shown the number of petitions filed and decrees absolute granted in each year from 1918 to 1930 and from 1945 to 1951.

After the First World War, the incidence of divorce petitioning rose steeply to a peak in 1919 and then steeply declined to a trough three years later, in 1922. The numbers then increased more or less steadily each year, but on a gentler slope, until the introduction of the Poor Persons Rules 1925 intervened. After the Second World War the numbers of petitions occurring each year was about ten times as great as after the First War, but, so far as has yet been revealed, the pattern followed has been somewhat similar. After a steep rise a peak was reached of over 48,000 petitions in 1947, and a steep decline had brought the figure down to 30,000 by 1950. It does not seem unreasonable to assume that, in the absence of the Legal Aid and Advice Act, 1949, or any other disturbing factor, a figure slightly in excess of 30,000 might have been recorded in 1951.

Whereas the Legal Aid and Advice Act, 1949, positively increased the facilities for divorce available to persons of limited means, the Poor Persons Rules, 1925, merely altered the procedure by which the then existing facilities were made available. Nevertheless it is thought that their influence may have been similar in some respects since, as a result of publicity, they enhanced existing facilities by making those requiring help aware of its availability. An examination of the petitions filed in the years from 1925 to 1930 in Table XLIV will show that the introduction of the Rules led to a steeper rise in the annual incidence of divorce petitioning than that shown from 1922 to 1925, though this was far less steep than that immediately following the war. After a minor peak, a trough was reached in 1929, and a gently rising trend was again resumed. A close similarity to this experience must not necessarily be expected in the years following 1951, for one thing the two procedures were introduced in widely different months-April and October, but at least a sharp rise and a subsidence, followed by the resumption of the normal gradually rising trend may be expected in the absence of further disturbing factors.

The difficulty, to which attention was drawn above, in following the pressure of divorce from the incidence of decrees absolute may be seen from Table XLIV. The peak in divorce petitioning after the First World War was reached in 1919, the peak in the granting of decrees absolute was not reached until two years later. Following the introduction of the Poor Persons Rules, 1925, a peak in petitioning was reached in 1927, but not until the next year was the peak reached in the granting of decrees absolute. Since the Second World War a number of changes have been made in the procedure for obtaining a decree absolute and their influence may be seen from the violent fluctuations in the incidence of decrees absolute in the period 1945 to 1951. A more detailed discussion of these events was included in the 1946–50 Civil Text on pages 59 and 60.

A detailed analysis and commentary on divorce rates by current ages of husband and wife in combination, by current age of wife and duration of marriage, by age of wife at marriage and duration of marriage and by current age of wife and size of family was included in the 1946–50 Civil Text on pages 62 to 67.

#### Remarriage of Divorced Persons

One aspect of divorce which is of concern is its threat to reduce the number of married persons in the population and consequently the incidence of legitimate births. In this connection, however, it is necessary to examine together the incidence of divorce and of remarriage of divorced persons since only the excess of the former over the latter actually reduces the married population.

The general trend of the numbers of married persons who were divorced and of divorced persons who remarried is shown in Table XLV.

#### Table XLV.—Annual Number of Persons Divorced and of Divorced Persons who Re-married, 1926 to 1951, England and Wales.

	Number	al on a	Number of	f divorced p	ersons who r	e-married in	the period		
Period	of persons divorced in the period	Persons	Men	Women	Divorced men marrying spinsters	Divorced men marrying widows	Divorced men and women inter- marrying	women	Divorced women marrying widowers
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1926–30 s 1931–35 s 1936–40 t 1941–45 × 1946–50 ¥	6,716 8,022 12,361 20,778 79,803	3,917 5,154 8,558 12,548 48,898	2,128 2,777 4,580 7,093 26,273	$1,789 \\ 2,377 \\ 3,978 \\ 5,455 \\ 22,625$	1,662 2,179 3,641 5,453 17,767	270 302 464 874 3,303	$392 \\ 592 \\ 949 \\ 1,532 \\ 10,406$	1,225 1,597 2,746 3,587 14,271	368 484 758 1,102 3,151
1936 1937 1938 1939 1940	8,114 9,772 12,500 15,910 15,510	6,468 6,988 8,179 10,698 10,458	3,507 3,759 4,404 5,715 5,514	2,961 3,229 3,775 4,983 4,944	$2,788 \\ 2,964 \\ 3,467 \\ 4,558 \\ 4,430$	354 374 471 550 571	730 842 932 1,214 1,026	2,009 2,192 2,576 3,480 3,474	587 616 733 896 957
1941 1942 1943 1944 1945	$\begin{array}{c} 12,736 \\ 15,236 \\ 20,024 \\ 24,624 \\ 31,268 \end{array}$	9,378 9,706 11,049 13,728 18,879	5,091 5,437 6,157 7,914 10,867	4,287 4,269 4,892 5,814 8,012	4,028 4,214 4,712 6,009 8,303	575 664 797 981 1,355	976 1,118 1,296 1,848 2,418	2,900 2,815 3,237 3,693 5,292	899 895 1,007 1,197 1,511
1946 1947 1948 1949 1950	59,658 120,508 87,396 69,712 61,740	29,636 56,945 58,728 51,494 47,687	16,479 30,751 31,201 27,645 25,290	$13,157 \\ 26,194 \\ 27,527 \\ 23,849 \\ 22,397$	11,781 21,272 21,072 18,150 16,558	2,287 3,980 3,812 3,400 3,038	$\begin{array}{r} 4,822\\ 10,998\\ 12,634\\ 12,190\\ 11,388\end{array}$	8,596 17,277 17,541 14,435 13,503	2,150 3,418 3,669 3,319 3,200
1951	57,534	44,171	23,110	21,061	14,809	2,880	10,842	12,524	3,116

Expressed as percentages of the number of persons divorced in the same period the averages for the five quinquennial periods 1926–30 to 1946–50 and the single years 1947 to 1951 of remarriages of divorced persons (columns (2) and (3) of Table XLV) were :—

Period	1926-30	1931-35	1936-40	1941-45	1946-50
Percentage of divorced who remarried	58.3	64.2	69.2	60.4	61.3
to 1921. A more detailed	ELFE bori	in the pa	ormoeda e	of decree	incidence
Period	1947	1948	1949	1950	1951
Percentage of divorced who remarried	47.3	67.2	73.9	77.2	76.8

Divorced persons who remarry during any period are not confined to those granted a decree absolute during the same period, so that the above figures do not precisely represent the proportion of divorced persons who ultimately remarry. Most of these figures will understate the true proportion, though perhaps not by a substantial amount when the rate of increase of divorces was slow. Some of the figures for single years after the abrupt peak in divorce incidence in 1947 may, however, overstate the position. The decline in the proportion from 1950 to 1951 suggests that this distortion is now on the wane and more stable figures—continuing the trend shown from 1926 to 1940—may soon be recorded. The figures suggest that the proportion of divorced persons who ultimately remarry is rising, and is perhaps in the region of two-thirds to three-quarters, so that the net loss to the married population is only a small fraction of the total number divorced.

Throughout the period covered by Table XLV the number of divorced men who remarried exceeded that of divorced women, the latter being about 84 per 100 men. The percentage ratios of divorced women to divorced men remarrying rose slightly between 1926–30 and 1936–40 from 84·1 to 86·9, fell to 76·9 in 1941–45 and rose to 86·1 in 1946–50 and 91·1 in 1951.

The divergence from the general trend in 1941–45 is shown in detail in the following statement :—

1938 85·7	1939 87·2	1940 89·7	$\begin{array}{c} 1941 \\ 84 \cdot 2 \end{array}$	1942 78·5	$1943 \\ 79.5$	$1944 \\ 73.5$
1945 73.7	$1946 \\ 79.8$	1947 85·2	1948 88·2	$\begin{array}{c} 1949 \\ 86\cdot 3 \end{array}$	1950 88·6	1951 91·1

The sharp rise in 1939 and 1940 might be attributable to the operation of the Matrimonial Causes Act, 1937. After 1940 the ratios fell to a trough in 1944 and 1945 and then recovered each year so that the average for the period 1941 to 1951 as a whole was 85.0 per cent, indicating that the higher proportion of divorced women remarrying in the years 1948 to 1951 almost compensated for the lower values in the period 1941 to 1946. It may be also that the high percentages recorded since 1947 indicate that changed population conditions are leading to a fundamental increase in the ratio. The change in the sex ratio amongst the non-married population, referred to on page 13, might be a contributory factor.

A more detailed analysis and discussion of the remarriage of divorced persons was included in the 1946-50 Civil Text on pages 67 to 73.

Death rates in sex and age-groups represent the number of death registered of persons in each excapegroup per housend or per million of the estimated number of persons in that sex-age-group alive at the middle of the year. I veoptions ho the use of estimated populations is denominators are the veotous rate of infant manulity, which are based on the appropriate number of live blucks and gentin death naiss connected with child bearing which are based on the appropriate numbers of five and stillburths. Usuch rates aron

\* The estimates of home population given in Tables J, 2 and 12 of Part 1 complise the division perputation together with members of British. Commonwealth and foreign armed forces stationed in the century, but excluding those stationed abroad.

# GENERAL MORTALITY

## Number of Deaths

In 1951 a total of 549,380 deaths were registered in England and Wales, 281,724 being of males and 267,656 being of females. As in 1950 deaths of non-civilians are included in these figures, their separate identification in the tables having been discontinued. The number of deaths in 1951 was 8 per cent higher than in the previous year, the increase being almost entirely accounted for by a severe influenza epidemic in the March quarter.

# Mortality Rates and Ratios-Definitions

The crude death rates, and the rates and ratios standardized for age which have been developed and are variously used for comparative purposes, have been fully discussed in previous reports. Brief definitions of the main functions used in discussing differentials over time or between different sex-age-sections of the population of the country as a whole, and differentials between local areas, are given below.

**Crude death rates** represent the total number of deaths from all causes registered during the year per thousand or per million of the home\* population at the middle of the year. In calculating these rates for local areas the deaths are corrected for transfers to the place of residence of the deceased. Use of the mid-year populations as denominators involves the assumption, tenable at the present time, that the population resident in a local area was either stationary or changing at a uniform rate throughout the year. The annual crude death rates are given in Table 3 (Part I) for England and Wales for all persons and each sex separately from 1841 to 1951 (except for years affected by the two world wars, for which civilian death rates were calculated instead), and in Table 12 (Part I) for local authority areas, without distinction of sex for 1951.

**Civilian death rates** for all persons and each sex separately represent the total numbers of deaths of civilians from all causes per thousand or per million of the corresponding estimated civilian population at risk. They were used for many tabulations instead of crude death rates relating to the total home population in the periods 1915–20 and 1939–49, but are no longer calculated.

**Death rates from particular causes** represent the number of deaths from each cause registered during the year per thousand or per million of the resident or home population at the middle of the year. The main tabulation of death rates from particular causes is given in Table 8 (Part I) for all persons and each sex separately.

**Death rates in sex and age-groups** represent the number of deaths registered of persons in each sex-age-group per thousand or per million of the estimated number of persons in that sex-age-group alive at the middle of the year. Exceptions to the use of estimated populations as denominators are the various rates of infant mortality, which are based on the appropriate numbers of live births, and certain death rates connected with child-bearing which are based on the appropriate numbers of live and stillbirths. Death rates from

all causes in sex and age-groups are given in Table 4 (Part I) for England and Wales from 1841–1951. Deaths from all causes and from separate causes are given in sex and age-groups in Tables 17–19 (Part I) for 1951 for England and Wales, Standard Regions, and national density aggregates, and can be used with the corresponding mid-year populations given in Tables 1 and 2 to derive sex-age-rates for particular causes for these areas.

Comparative Mortality Index (C.M.I.) .- This index has replaced the standardized death rate which was used formerly for the purpose of measuring the trend of mortality from all causes (or from a particular cause) over a period of time. The methods of calculation and a discussion of its advantages over the standardized death rate may be found on pages 6-11 of the Medical Text volume for 1940–45. Whereas the rate previously used had been standardized by a "direct" method of referring current age-rates to a standard population age-structure, the C.M.I. referred it to a hypothetical age-structure depending partly on a standard age-structure and partly on the current age-structure. It represents the ratio between adjusted death rates of the year in question and of a base year (at present the year 1938), each calculated by weighting the death rates for the various sex-age groups by the mean of the corresponding proportions of the population living in the two years. If the death rate experienced by an age group in the year to which the index relates is denoted by m, and the corresponding rate in 1938 by m', and if r and r' are the fractions of the populations of all ages falling within that age group then

$$C.M.I. = \Sigma m (r + r') / \Sigma m' (r + r')$$

where  $\Sigma$  denotes summation over all the age groups. The C.M.I.'s for all causes of death are shown in Table 3 (Part I) for all persons and each sex separately from 1841 to 1951. For separate causes of death C.M.I's are given in Table 9 for each sex in each of the last eleven years. The corresponding table in the 1943 Review takes this record back to 1933. For certain important causes Table 6 gives the indices for years or periods of years extending as far back as the records allow. In all these tables, the Index for the year 1938 is taken as unity.

The adjusted ratios of male to female mortality shown in Table 3 (Part I) give a measure applicable to a particular year derived by the same formula as the C.M.I's, but interpreting m' and r' as referring to females and m and r as referring to males, each in the year to which the ratio applies.

The mortality ratios for each year or period of years, shown for each sex and for both sexes in Table 4 (Part I), are the ratios between the C.M.I. of the period specified and that of the period immediately preceding it. The cumulative product of the mortality ratios proceeding forwards from 1938 thus produces the successive C.M.I.'s of the years 1939 to 1950 ; and the cumulative product of the reciprocals of the mortality ratios proceeding backwards from 1938 likewise produces the successive C.M.I's for years prior to 1938. The mortality ratios are not to be confused with the standardized mortality ratios (S.M.R.), for definition of which see below.

The equivalent average death rate is the arithmetic mean of the rates for quinary age-groups up to some convenient limit such as 65, this being equivalent to calculating a standardized death rate at ages under 65 based upon a population uniformly distributed over the 13 age groups. This type of rate provides an adequate standardization by age for many purposes of comparison between areas or between causes and is very easily calculated from the various tables of deaths by age given in the Review.

<sup>\*</sup> The estimates of home population given in Tables 1, 2 and 12 of Part I comprise the civilian population together with members of British, Commonwealth and foreign armed forces stationed in the country, but excluding those stationed abroad.

Standardized Mortality Ratio (S.M.R.).—This index enables comparisons to be made between the mortality rates of different sections of the population in a given period. It is constructed by an "indirect" method of standardization (i.e. by the application of standard age death rates to populations with varying age-structures). S.M.R.'s have been used in particular in studies made by the General Register Office of mortality among persons in different occupations, and the following definition of the S.M.R. as so used in respect of adult males, taken from the Registrar General's Decennial Supplement, 1951, Occupational Mortality, Part I,\* sufficiently explains the concept : "The number of deaths occurring among men aged 20–64 in a given occupation, expressed as a percentage of the number of deaths which might have been expected to occur if the given occupation had experienced within each age-group the same death rate as that of a standard population consisting either of all males or of all occupied and retired males only."

**Comparative Mortality Figure** (C.M.F.).—This is another index which has been used in occupational mortality studies made by the General Register Office. In contrast to the S.M.R., the C.M.F. is constructed by a "direct" method of standardization (i.e. by the application of variable age-death rates to a population with a standard age-structure). C.M.F.'s relating to the mortality of males in different occupations are also described in the Decennial Supplement referred to above, being defined in the following terms : "The number of deaths that would occur in a given occupation if the population engaged in that occupation were the same in numbers and age-distribution as a standard population in which occurred 1,000 deaths. The standard population would either consist of all males aged 20–64 or only of all occupied and retired males at those ages."

Life-table functions of mortality provide other types of measure of mortality from all causes which are not influenced by the age-distribution of the population in the year of measurement. Two of the most important functions are shown in Tables XLVIII and XLIX of this report, viz. :

- survivors to age x (l<sub>x</sub>) i.e. the numbers who would survive to exact age x out of 10,000 born who were subject throughout their lives to the death probabilities indicated by the death records of a given period.
- expectation of life  $(e_x^{o})$  i.e. the average future lifetime which would be lived by persons aged exactly x, if subject to the death probabilities indicated by the death records of a given period.

Area Comparability Factors (A.C.F.) are given in Table 12 (Part I) for local authority areas to enable allowance to be made for differences in the sex and age composition of local populations when comparing mortality rates of different areas in the same year. In deriving the A.C.F. of a local area a hypothetical local death rate is first calculated, for a base period for which appropriate information is available about the sex-age structure of local populations, by applying national death rates of this period by sex and age to the local populations in the corresponding sex-age groups. The A.C.F. is the ratio of the mean crude death rate of England and Wales for this base period (which may be of 2 or 3 years duration) to the corresponding hypothetical local rate. A.C.F.'s were first published in the 1934 Statistical Review (Part II, Table E) based on local age-structures as given in the 1931 census and national death rates based on deaths of the three years 1930-32. These factors were used until 1939, except for adjustments made to take account of boundary changes, and were appropriate for use in respect of earlier years around 1931 for those areas whose boundaries were the same as in 1934. The series was

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\* H.M.S.O., price 7s. 6d., by post, 7s. 9d.

discontinued during the war and immediate post-war years, being resumed in 1949 with a new set of factors based on the December 1947 counts of local civilian populations by sex and age, and deaths of 1947 and 1948, adjusted where significant to include estimated allowances for Armed Forces stationed in the areas, as well as for boundary changes. These factors will in turn be replaced by A.C.F.'s based on 1951 census data as soon as the relevant information is available. For a few areas with rapidly expanding populations, whose age-structures may be changing in a manner different from that of the national population, A.C.F.'s of this kind, based for a number of successive years on the conditions of a fixed base date, may increasingly fail to reflect their peculiar sex-age features, as the interval from the base date becomes longer.

Local adjusted death rates are obtained by multiplying the local crude death rate by the corresponding A.C.F. This provides a valid basis of comparison between areas of mortality rates relating to deaths from all causes within the same year, except for areas whose A.C.F. may be unreliable for certain years. Local adjusted death rates are not valid in respect of deaths from particular causes.

**Standardized time-comparisons** may be constructed for a local area to show the extent to which the pace and direction of trend of its death rates, after adjustment for differences between its sex and age composition and that of the country as a whole, differ from the trend of the national death rate. An index number appropriate for this purpose may be formed for each year by multiplying the ratio of the local adjusted death rate to the national rate, by the national C.M.I. Since this index incorporates the A.C.F. its validity in the case of a few areas whose population sex-age structures are changing rapidly is questionable.

#### The General Trend of Mortality

Table XLVI (page 96) shows, for each sex (a) the crude death rate for all causes and (b) the Comparative Mortality Index for all causes. Both the crude rate and the C.M.I. were appreciably higher in 1951 than 1950. The crude rates, both for males and females, were higher than for any year since 1941 and higher than during the inter-war period, as represented by the mean rates for 1921-30 and 1931-40. Bearing in mind the severity of the influenza epidemic early in 1951 the rise between 1950 and 1951 in the C.M.I.'s does not afford any evidence of significant departure from the levels of mortality prevailing since the end of the war. Unlike the crude death rates, the C.M.I.'s are, however, appreciably lower than before the war. Changes in the agestructure of the population are shown in Table XLVII (page 97) and the 1950 Medical Text contains a discussion of their effect on the crude death rates, which would in the absence of such changes have fallen faster in the present century up to 1930, and would have continued to fall thereafter, given the same course of the mortality rates at separate ages. The fall in the C.M.I. between the 1841-50 decade and the 1941-50 decade, amounting to 57 per cent for males and 64 per cent for females, gives a better indication than the crude rate of the reduction in mortality which has taken place in the last hundred years.

# Life-table Survival Factors and Expectations of Life

Abridged life-tables, relating to the mortality experience of each calendar year are published annually in the Registrar General's Quarterly Return of Births and Deaths\* (usually the issue for the December quarter). They

<sup>\*</sup> H.M.S.O., price 2s. net, by post 2s. 11d.

illustrate other aspects of the effect of mortality on the population. Table XLVIII (page 97) represents certain functions of an abridged life-table based on the mean death rates of the three years 1950–52. In contrast to those based on one year's experience it illustrates current mortality divested to a large extent of short-term fluctuations as, for example, the increase in mortality in 1951 associated with the influenza epidemic. The fact that this table relates to civilian population and civilian deaths is of no material consequence.

Life-table functions derived from deaths in a given calendar period display conditions which are hypothetical in that the figures in them relating to persons of a given age would only represent the actual experience of the group of persons of that age in the population of the country if the mortality rates in the lifetable applied throughout the life-time of that age-group. To the extent that mortality rates are decreasing with time a life-table based on current experience will not represent, for example, the mortality conditions to which persons now aged 60 have been subject since the age of 40, since at the age of 40 such people will have been subject to the higher mortality of twenty years ago. It is in this sense that a life-table is a representation of the mortality conditions of a given period : the figures for lx for males aged 40 and 60 in Table XLVIII show that of 10,000 male children born and hypothetically subject throughout their lives to the mortality rates of 1950-52, 9,198 would survive to the age of 40 and 7,604 to the age of 60. Likewise the e<sup>o</sup> column shows that males now aged 40 might expect on average to live another thirty-one years if mortality rates now current apply to them throughout the remainder of their lives. To the extent that there are further declines in mortality rates of males in age-groups over 40, in the years ahead, those now aged 40 will, on average, live longer than thirty-one more years.

Table XLVIII exhibits the comparatively heavy losses through death of infants in the first year of life, implied in current mortality, and the comparatively small rates of loss thereafter up to age 40 or 50.  $3\cdot26$  per cent of male children born would be lost through death in the first year of life, but only a further 4.76 (96.74–91.98) per cent during the whole of the following thirty-nine years. The corresponding figures for females are 2.51 and 3.73 respectively. In the case of males over 90 per cent of those born would survive to age 45; in the case of females over 90 per cent would survive to age 50. It is only at ages over 50 that losses to the population through death become serious, but at age 65 nearly two-thirds of the male children born and more than three-quarters of the female children born would be still alive. By age 80, however, the male population would be reduced to about a third of its numbers at age 65, and the female population aged 65 would be halved, the numbers at age 80 being 21 per cent and 36 per cent respectively of the numbers born.

The life-table demonstrates conveniently that, with current mortality, about 96 per cent of boys born and 97 per cent of girls born would survive to go to school and enter the working age-group at age 15. Of the male population of working age more than two-thirds of those who enter at age 15 might expect to survive to retiring age at 65. In the case of women 87 per cent of those aged 15 would expect to survive to age 60, and 80 per cent to age 65.

The table also shows in the  $e_x^\circ$  column, that on 1950–52 mortality the expectation of life at birth is 66.47 years for males and 71.48 years for females. At age 1 the expectations are slightly higher, being the expectations of infants who have survived the comparatively critical first year of life. After age 1 the expectations decline as age advances, at first slowly but at later ages more rapidly. At age 15, males would expect a further 54.44 years of life and females 58.93. At the customary retiring ages males at age 65 would expect nearly twelve more years of life; females at age 60 would expect eighteen years, and at age 65 would expect more than fourteen years.

The table demonstrates the more severe impact of mortality on males as compared with females. At every age both the survival function  $(l_x)$  and the expectation of life  $(e_x^\circ)$  is higher for females. There is a difference of four or five years between the male and female expectations of life at all ages up to 50. Thereafter differences still persist but are smaller.

As it stands, the life-table does not provide information about the ratio of males to females at given ages in a hypothetical population in which the number of children born annually, and the age death rates, remain constant. If it is to demonstrate sex ratios which would accrue under these hypothetical conditions an assumption must also be made about the ratio of male to female births. In 1951 there were 9,435 female live births per 10,000 male live births. Although the  $l_x$  life-table function is not the most appropriate one with which to demonstrate sex-ratios it may be noted that if the figures in the  $l_x$  column for females are multiplied by the ratio 9,435/10,000 the resulting figures will be smaller than the figures on the same line in the  $l_x$  column for males, for all ages shown up to and including 55. Thereafter an excess of females is shown which grows proportionately larger as age advances. The figures are as follows :--

Age x	$l_x$ males	$l_{x} \text{ females} $ $x \frac{9,435}{10,000}$	Col. (2) as per cent of col. (1)
cures are obtained	(1)	(2)	(3)
	10,000	9,435	94
15	9,561	9,115	95
30	9,383	8,992	96
45	9,042	8,731	97
50	8,768	8,553	98
55	8,311	8,287	100
60	7,604	7,893	104
65	6,583	7,299	111
70	5,256	6,396	122
75	3,713	5,103	137
80	2,126	3,426	161
85	880	1,712	195
at many harden best alle in some	and the the part in a		I share have been been been been been been been be

It is clear that the excess of male over female births accounts for an excess of males in this hypothetical population at ages up to 55, at which point the higher mortality of males outweighs the advantage of the more numerous male births.

Table XLIX (page 98) demonstrates the increase in expectations of life inherent in the gradually decreasing mortality rates of the last hundred years. The expectation of life at birth for males has increased from 40 in 1838–44 to 66 in 1950–52, and for females from 42 to 71 in the same period. Improvement has thus been rather greater for females than for males. In this period the expectations of life at age 1 year have increased from 47 to 68 for males and from 47 to 72 for females. With the considerable reduction in infant mortality which has taken place in this period the difference between expectations of life at age 0 and at age 1 has been reduced. The bulk of the improvement in expectations of life has taken place during the present century.

# Quarterly Deaths and Death Rates

Numbers of deaths registered in England and Wales and death rates (excluding deaths of non-civilians between September, 1939, and December, 1949) for each calendar quarter, are given in Table 5 (Part I) by decennial periods from 1841 and by single years from 1941. Earlier Reviews carry the annual rates further back. Table L (page 98) gives quarterly rates by single years from 1931, the rate in each quarter being also shown as a percentage of the annual rate. The rate of 19·1 for the March quarter of 1951 is the highest rate shown for this quarter in the last twenty-one years with the exception of 1940. In both these years the excess numbers of deaths in the March quarter were largely from influenza, pneumonia and bronchitis. The exceptional experience was not in 1940 so narrowly confined to its first quarter, the ratio of the March rate to the yearly rate being smaller than in 1951.

In contrast to the exceptional severity of mortality in the first quarter of 1951, the rates for both the third and fourth quarters were the lowest of any in the twenty-one years shown.

#### Death Rates by Sex and Age

Table LI (page 99) gives death rates for each sex at separate ages for periods from 1841 to 1951. The substantial improvement over the whole period, which has been much greater among young people than among the elderly, and which has been more pronounced for females than for males, was discussed at some length in the Review for 1950.

The figures for the single year 1951 in this table are mainly of interest in demonstrating which sex-age groups are responsible for the abnormal characteristics of 1951 mortality. Expressing the rates for 1951 as a percentage of the corresponding mean rates for 1946–50, the following figures are obtained :--

Death rates in 1951 per cent of mean rates for 1946-50

	All Ages	0-	5-	15–	25-	45-	65-	85 and over
Males	110	70	77	80	89	103	116	132
Females	108	70	69	60	84	100	111	126

Whereas the crude death rate for all ages in 1951 was some 10 per cent higher for each sex than the mean rate for 1946–50, the rates for children under 5 were 30 per cent lower, and those for the highest age-group shown, 85 and over, were about 30 per cent higher. The steady upward progression of these ratios, with advancement of age, indicates that the abnormal circumstances of 1951 impinged the more heavily the older the persons concerned. This is further illustrated in Table LIII (page 102) which shows deaths by selected causes in 1939, 1950 and 1951.

# Comparative Mortality in Different Parts of England and Wales

Table 12 (Part I) is the basic table which provides the statistics of deaths and the estimates of mid-year home population for local authority areas and the usual aggregates by region and density. It also sets out for each such area the crude death rate, the area comparability factor (A.C.F.), and the ratio to the rate for England and Wales of the death rate adjusted for the varying agestructures of local populations by means of the A.C.F. Infant and neonatal deaths and stillbirths and infant mortality rates are also given in this table.

The variations in mortality in areas affected by different climatic and social conditions, and with different industrial environments, are well demonstrated

in the classification of areas by regions, conurbations and density aggregates. Table LII (page 100) supplements the crude and standardized rates given in Table 12 by providing more detailed analysis by sex and age for the regions, conurbations and density aggregates in each of five regional groups\* which broadly represent the North of England, the Midlands and East, Greater London, other parts of the South, and Wales. The local adjusted death rates which can be derived from Table 12 show that variations in age-structure do not account for the comparatively high death rates of the North of England and of Wales, nor for the comparatively low death rates of Greater London. Table LII supplements this evidence by showing that these variations are to be found in every sex and age group and must therefore be attributed to real differences in the mortality risks to which persons of the same age living in different parts of the country are exposed. The differences are, however, more pronounced at some ages than others in different parts of the country. Expressing the sex-age rates for these five groups of regions as ratios of the corresponding rate for England and Wales provides the following figures :---

# Ratio of sex-age death rate of each regional group to the corresponding rate for England and Wales

Regional group	Males						Females					
for the four-deser-	0-	5-	15-	45-	65 & over	All	0-	5-	15-	45-	65 & over	Allages
North of England Midlands and Eastern regions	1·19 0·97	1·03	1·17 0·95	1·13 0·91	1.07	1·09 0·93	1·14 1·00	1.02 0.98	1·15 0·97	1.12	1:09 0:98	1.06
Greater London South of England Wales	$0.76 \\ 0.88 \\ 1.24$	$     \begin{array}{r}       0.82 \\       1.00 \\       1.25     \end{array} $	0.89 0.85 1.18	0.97 0.89 1.13	0.98 0.94 1.07	0.98 0.98 1.14	$ \begin{array}{c} 0.80 \\ 0.87 \\ 1.29 \end{array} $	$     \begin{array}{r}       1 \cdot 02 \\       0 \cdot 95 \\       1 \cdot 27     \end{array} $	0.88 0.89 1.20	$ \begin{array}{c} 0.90 \\ 0.91 \\ 1.13 \end{array} $	$ \begin{array}{c} 0.93 \\ 0.93 \\ 1.09 \end{array} $	0·90 1·05 1·07
England and Wales	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

It is to be expected that the variation between areas in these ratios should be greater for the younger age-groups which are more sensitive to accidents. infections and other environmental risks and less to the effects of organic disease which are the predominant causes of death of the elderly. The differences between these regional groups are most pronounced for the three agegroups 0-4, 5-14 and 15-44. For the North of England, the high levels of the age-death rates for age-groups 0-4 and 15-44, and for Wales the high levels in all three age-groups under age 45, by comparison with England and Wales, are more pronounced than elsewhere in the age-range. For Greater London and the South of England, again with exceptions in respect of the 5-14 age-group, the lower levels, by comparison with England and Wales are more pronounced in these age-groups. For the North of England and in Wales the ratios for the three age-groups 15-44, 45-64 and 65 and over respectively are in descending order; for Greater London they are in ascending order. It is clear that the mortality differentials between these broad regions are not the same as between one age-group and another.

The differences by conurbation and density aggregate shown in Table LII are on the whole less pronounced than the differences by region, and they are smaller for females than males. Comparison between this part of the

<sup>\*</sup> The composition of the four English groups is as follows : North of England : Northern, East and West Ridings and North Western Regions ; Midlands and East : North Midland, Midland and Eastern Regions ; Greater London : Greater London Conurbation ; South of England : remainder of South East, Southern and South Western Regions.

table and the corresponding analysis in the Medical Text for 1950 gives some indication of the extent to which these variations may be due to factors of variable local significance like the weather and the geographical incidence of epidemics. The table shows that, over and above fluctuations of this sort, death rates for areas outside the conurbations are, on average, appreciably higher in urban than rural areas, and that this is true for all age-groups. Among these areas the figures suggest a gradient by density aggregate which is seen best in the rates for males in the age-group 45–64. The corresponding but less pronounced gradient for the 0-4 age-group for males was less clearly defined in 1950 when the rates for urban areas of 50-100,000 population and of those under 50,000 were higher than that for the aggregate of the largest towns outside the conurbations. The rates for the two age-groups 5-14 and 15-44 are too small and too variable from one period to another for any gradient or lack of gradient to be discernible from these figures, as may be seen by comparing the corresponding 1950 and 1951 figures; the gradients suggested by the 1951 figures for both males and females aged 15-44 were not shown in 1950. The fact that the figures for the middle-sized towns for age-group 65 and over, for either sex, are out of step with such a gradient is not of significance as it stands, since small differences of this sort might be due to differences of age-composition of population within the 65-and-over age-group, but a measure of standardization accentuates the difference between the rates for this middle group of urban areas and the higher rates for the other two groups.

The fact that a definite gradient is discernible in the rates for the four classes of area outside the conurbations in the 45-64 age-group for males suggests an association between health and environmental conditions of work. This evidence may be considered with that relating to Greater London and the five provincial conurbations. Much of the population of Greater London lives in modern suburban conditions, which may be responsible to a large extent for the fact that its mortality rates, particularly in the younger age-groups, are considerably lower than those of the country as a whole. The West Midland conurbation also contains a good deal of modern suburban development and its death rates, though higher than those of England and Wales, are not very different from those of the group of largest towns outside the conurbations, and are much lower than those of the other conurbations in the older industrial centres further north. Brief reference was made in the 1950 Text to housing and socio-economic characteristics of areas which the one per cent sample tables\* of the 1951 census of population illuminates. These factors will be analysed in more detail, and correlated with mortality rates, in a future report when the full census information for local areas is available.

In the following table use has been made of the comparative mortality indices (C.M.I.) to give a summary indication of the differences between 1951 and previous years in the mortality rates which are shown in Table LII for 1951 and have been discussed above. It gives, for England and Wales, Greater London and the density aggregates in 1934, 1938, 1948, 1950 and 1951 :---

- (a) crude death rates ;
- (b) ratios of local adjusted death rates to national death rate;
- (c) those ratios multiplied by C.M.I.'s to combine the area comparisons with comparisons of the overall trends of mortality (after correction for population changes). The final ratios express the local adjusted mortality in relation to the national mortality in 1938.

\* Census, 1951, Great Britain, One Per Cent Sample Tables, Parts I and II. H.M.S.O., price 17s. 6d. and 40s. net respectively.

no	italucp	tite pr	ions of	3020 <sup>3</sup> 2 30255	England and Wales	Greater London		unty oughs	Ur	her ban eas	Rural District
(a)	Crude	death ra	atos		sad sibw a			gasit	તે હતા	(E) VI	Deaths
(4)	1934			D case	11.8	11.0	15	2.3	11	.8	11.8
	1938	N SERVICE	1000	1.12.00	11.6	10.2		2.3		.8	11.7
	1948	0.06.040	bi ()		11.0	9.9	11	l·5	11	.3	10.6
					BA DWITHOUT		τ	Jrban	Areas	*	
					is to inso a		1	2	3	4	Rural Areas
	1950	ng naha			11.6	10.4	11.3	11.8	12.3	12.3	11.3
	1951	10	160.10	9.0	12.5	11.4	12.4	12.9	13.0	13.2	11.8
(b)	to nat same y		al''adj ates in	usted the		and an adde	ene ser claus	n di		0 260 1865 C	
	1934 1938	and a	•••		1.00	0.97		10		99	0.90
	1938	001001	6000	••	$1.00 \\ 1.00$	0.91	$1.12 \\ 1.10$		1.		0.90
	1540	SILC. 20	100 <b>••</b> 000	•••	1.00	0.94	Urban .		SD DTO	01	0.90
					frommarcol				Areas	*	Rural
					Ingial and Po		1	2	3		Areas
	1950	1 10	194.od		1.00	0.92	1.02	1.05	1.02	1.01	0.92
200	1951	•.•.7.1	•••	•••	1.00	0.94	1.04	1.06	1.00	1.00	0.89
(c)	Ratios mortal base)	adjusted ity tren	ltonat d (193	ional 8 as					10, 00 10, 00 10, 00		
	1934				1.07	1.04	1.	18	1.	06	0.96
	1938				1.00	0.91		12	1.		0.90
	1948	ine". I	sei 'ro		0.80	0.75	0.	88	0.	81	0.72
					high as in		τ	Jrban	Areas	*	
					LAGI mi		1	2	3	4	Rural Areas
	1950	in	00		0.84	0.77	0.86	0.88	0.86	0.85	0.77
	1951	1			0.90	0.85	0.94	0.95	0.90	0.90	0.80

Urban areas outside conurbations with populations of 100,000 and over.

" 50,000 and under 100,000. ,, ,, ,, .. ,,

,, under 50,000.

It is clear that the general pattern of differentials between the classes of area shown in this table is similar in 1950 and 1951. The higher level of mortality in 1951 has, however, affected Greater London and the other conurbations more seriously than the rural areas. Standardized mortality as expressed in the ratios given in (c) above has increased between 1950 and 1951 by 10 per cent for Greater London, 9 per cent for the aggregate of the other conurbations, 8, 5 and 6 per cent respectively for the three groups of urban areas outside the conurbations, and only 4 per cent. for rural areas.

#### Principal Causes of Death at Different Ages

Table LIII (page 102) shows death rates by cause according to a summary classification derived from the Registrar General's Abridged List (see Table 20 of Part I), by sex and broad age-groups for 1939, 1950 and 1951. Notwithstanding the changes in classification of causes of death which have been made since 1939, comparability is sufficient, for the cause-groups listed, to demonstrate the broad changes that have taken place since before the war. Comparison between 1950 and 1951 gives some indication of the sections of the population most affected by the 1951 influenza epidemic.

Deaths by cause for separate age-groups were analysed in some detail in the 1948–1949 Medical Text, mainly for the period between 1936 and 1949. In the 1950 Text the secular trend from the middle of the last century was discussed in terms of rates relating to three periods 1848–72, 1901–10 and 1950. In both these studies the analysis by cause was designed separately for each age-group discussed. The present table analyses each age-group in terms of the same list of cause-groups, covering about 90 per cent of all deaths (more than 75 per cent for any age-group) in the groups exclusive of the remainder group. It thus enables the varying impact of a particular group of causes in different parts of the age-range to be seen, in addition to showing which are the predominant causes of death in each age-group.

At ages 1–4, out of a total of 1,448 male deaths in 1951 per million males living, 343 were from tuberculosis and other infective and parasitic diseases, 303 were from accidents, 176 from pneumonia and 106 from congenital malformations. Of 1,260 female deaths per million 327 were from tuberculosis and other infective and parasitic diseases, 209 from accidents, 188 from pneumonia and 93 from congenital malformations. The higher figure for accidents for male children accounts for half the difference between the sexes in the death rate for all causes. There were no substantial differences between the rates for 1950 and 1951, but the death rates from all causes are now less than half as high as in 1939, those for infective and parasitic diseases other than tuberculosis, and for pneumonia, having fallen to about a quarter of their 1939 levels.

Death rates in the 5–14 age-group (614 per million for males and 412 for females in 1951) were less than half as high as in the 1–4 group, the most important causes for males being accidents which accounted for over a third of all the deaths in this sex-age-group in 1951. Deaths of females from accidents were comparatively few, the difference between males and females accounting for most of the difference between the sexes in the death rate from all causes in this age-group. Although death rates from all causes in this age-group declined for males by 55 per cent and for females by 64 per cent between 1939 and 1951, the death rate of males from accidents declined by only 29 per cent. The rate for infective and parasitic diseases including tuberculosis, however, which in 1939 was 406 per million for males and 414 for females, had been reduced by 1951 to 77 and 80 respectively.

At ages 15–24 death rates from non-accidental causes were still so small that in 1951 accidents were the predominant cause of death of males and largely accounted for the difference between the death rates from all causes of males and females. The rate of 449 per million for accidents was higher than for any other age-group of persons under age 65, and was the only age-group in which motor vehicle accidents accounted for more male deaths than other kinds of accident. In this age-group respiratory tuberculosis begins to assume importance as a cause of death: the death rate in 1951 from this cause, though small (111 per million for males and 196 for females), accounted for nearly 10 per cent of all male deaths and more than a quarter of all female deaths. It represents, however, considerable improvement over the position in 1939, when the corresponding rates were 510 for males and 762 for females. The improvement in this age-group since 1939 for females, for whom the disease is more serious, has not been as great as for males. At ages 25–44 organic diseases predominate over accidents as causes of death, and cancer and circulatory diseases assume importance as well as respiratory tuberculosis. Deaths from accidents are still important for males, but with rates lower than in the 15–24 age-group, and deaths from accident account for only 15 per cent of all male deaths. The death rate from all causes for this age-group has fallen from 3,520 per million in 1939 to 2,292 in 1951 for males, and from 2,970 to 1,822 for females. A serious cause of death in this age-group is cancer, both from the point of view of its numerical incidence in 1951 and because the death rate from this cause is increasing. Excluding leukæmia, malignant neoplasms accounted in 1951 for 363 deaths per million of females. For males this represents a considerable increase over the 1939 rate and the same is true also for the older age-groups. Expressing the rates for 1951 as per cent of the rates for 1939 in this and following age-groups gives the following comparison :—

Age-group	Males	Females
25-44	118	100
45-64	113	90
65-74	110	92
75 and over	112	101

The death rate from diseases of the circulatory system in the 25–44 agegroup, at 383 per million for males, shows little change from 1939, but that of 279 for females in 1951 is considerably lower than in 1939. The death rates from respiratory tuberculosis, 328 for males and 291 for females, are each less than half their 1939 levels. Altogether cancer, tuberculosis and diseases of the circulatory system accounted in 1951 for 47 per cent of male deaths and 55 per cent of female deaths in this age-group.

At ages 45-64 the impact of physical deterioration and lessening resistance to disease begins to make itself felt, and the superior longevity of women is much in evidence. Death rates from all causes were 15,016 per million males in 1951 and 8,810 per million females. These figures represent rates for males six times as high and for females nearly five times as high as for the 25-44 age-group. As for the 25-44 age-group cancer and diseases of the circulatory system are the predominant causes of death but the rates for age-group 45-64 are for cancer 9 times as high as in the 25-44 age-group for males and 6 times as high for females, and for diseases of the circulatory system nearly 12 times as high for males and 8 times as high for females. For respiratory tuberculosis on the other hand the rate for females is less than for the previous age-group. In the 45-64 age-group respiratory diseases and vascular lesions of the central nervous system become important, the former accounting for 2,601 deaths per million for males and 898 for females, the latter accounting for 1,133 deaths per million for males and 1,189 for females. Cardio-vascular diseases as a whole account for more than a third of all deaths. The rates for respiratory diseases as a whole are very similar to those for 1939, being appreciably higher than in 1950. The advantage gained from the reduction in numbers of pneumonia deaths was in 1951 offset by the effects of the influenza epidemic.

At ages 65–74 the death-rates from all causes, 59,056 per million for males and 36,980 for females, were about four times as high as in the 45–64 age-group. More than half the deaths in this age-group in 1951 were from cardio-vascular diseases, including cerebral vascular lesions which accounted for nearly 30,000 deaths per million males and more than 20,000 deaths per million females. Cancer accounted for 10,486 deaths per million males and 6,395 per million females; respiratory diseases for 10,201 male deaths per million but only 4,905 female deaths per million. These three groups of causes accounted for over 85 per cent of all the deaths of either sex in 1951 in this age-group. Rates for influenza were 1,668 for males in 1951 compared with 722 in 1939 and 1,329 for females in 1951 compared with 646 in 1939. The rates for pneumonia were not very different in these two years but for bronchitis, which has a higher death rate for males than for females in this age-group, the rate for 1951 for males was substantially higher than in 1939.

As for the previous age-group the predominant causes of death of persons over 75 years of age, whether male or female, are the cardio-vascular diseases, cancer, and respiratory diseases, which together account for almost the same proportion (85 per cent) of all deaths as for age-group 65–74. Cardio-vascular diseases are, for the 75 and over age-group, relatively more important and cancer is relatively less important than for the previous age-group. The death rates for influenza of 4,447 per million for males and 4,411 for females were about twice as high in 1951 as in 1939, and nearly three times as high for this age-group as for the 65–74 age-group. For this broad age-group the smaller differences between the death rates of males and females are not very illuminating because of the different age-composition of its male and female sections. A measure of standardization, however, confirms the substantially lower death rates of females as compared with males for each of these three predominant groups of causes.

Table XLVI.—Crude death rates per 1,000 living and comparative mortality indices 1841–1950 and 1941 to 1951

Period	Crude dea 1,000	ath rate per living	Comparative M (1938	Comparative Mortality Index (1938 base)						
Spirit an assessment in	М	F	M	F						
in make six time	estat insestion	21.6	2.12	2.44						
841-50	23.1	21.0	2.09	2.37						
851-60	23·1 23·7	21.4	2.14	2.37						
861-70	23.7	20.1	2.09	2.27						
871-80	A CONTRACTOR OF	18.1	1.93	2.10						
881-90	20.3	17.1	1.87	2.01						
891-1900	19.3	14.4	1.60	1.69						
901–10	16.4	13.0	1.45	1.49						
911–20	15.1	13.0	1.16	1.22						
921-30	12.9	11.4	1.07	1.10						
931-40	13.0	11.5	0.92	0.89						
941-50	14.1	11.0	0.02	t reats system						
arrively and the total	A Samidan mana m	11.8	1.10	1.04						
941	14.0		0.97	0.92						
942	12.5	10.5	0.98	0.94						
943	12.7	11.1	0.95	0.89						
944	12.6	10.7	0.93	0.88						
945	12.3	10.7	0.89	0.88						
946	12.2	10.9	0.89	0.89						
947	12.9	11.2	0.92	0.79						
948	11.5	10.1		0.85						
949	12.3	11.1	0.86	0.83						
950	12.3	11.0	0.85	0.88						
951	13.4	11.8	0.92	0.00						

\* Based upon civilian mortality only during the periods 1914-18 and 1939-49.

Table XLVII.—Population of persons in England and Wales by ages, per 10,000 at all ages, 1901, 1911, 1921, 1931, 1939 and 1951

Age last birthd	ay	1901 Census	1911 Census	1921 Census	1931 Census	1939 Mid-year	1951 Census*
0		1,143	1,069	877	749	690	858
5		2,099	1,995	1,895	1,635	1,415	1,392
15		1,958	1,805	1,756	1,734	1,592	1,296
25		1,616	1,651	1,520	1,605	1,671	1,442
35		1,228	1,344	1,411	1,368	1,465	1,527
45		892	978	1,167	1,235	1,244	1,362
55		597	637	769	932	1,026	1,037
65		331	377	434	536	643	737
75		121	126	151	182	225	306
85 and over		15	18	20	24	29	43
All ages		10,000	10,000	10,000	10,000	10,000	10,000

\* One per cent sample.

# Table XLVIII.—Abridged Life Table 1950–52, England and Wales. Civilian population

		Male	S	Females								
Age :	r											
		l <sub>x</sub>	o <sup>e</sup> <sub>x</sub>	l	0 <sup>e</sup> x							
		NO X IT	x	x	x							
-			13 11 1									
0		10,000	66.47	10,000	71.48							
		and the second		10,000	11 10							
1		9,674	67.70	9,749	72.32							
2 3	12.01	9,651	66.86	9,728	71.47							
	•••	9,637	65.96	9,717	70.55							
4		9,627	65.03	9,708	69.62							
5	••	9,619	64.08	9,702	68.66							
10	ES Des	9,587	59.28	9,680	63.81							
15		9,561	54.44	9,661.	58.93							
20	•••	9,517	49.68	9,630	54.11							
25		9,452	45.00	9,586	49.35							
30		9,383	40.32	9,530	44.63							
35		9,303	35.64	9,463	39.92							
40	•••	9,198	31.02	9,376	35.27							
45		9,042	26.51	9,254	30.70							
50		8,768	22.26	9,065	26.29							
55		8,311	18.35	0 709	20.29 22.05							
60		7,604	14.82	8,366	18.03							
65		6,583	11.73		939 1 151 1 989							
70	••	5,256	9.06	7,736	14.29							
75	••	3,713	$9.06 \\ 6.79$	6,779	10.96							
80	••	2,126	$     \begin{array}{r}             6.79 \\             4.99         \end{array}     $	5,409	8.10							
		2,120	4.99	3,631	5.84							
85		880	3.53	1,815	4.19							
	1	1.6 8.8		9.7								

The column headed  $l_x$  shows the numbers who would survive to exact age x out of 10,000 born who were subject throughout their lives to the death probabilities indicated by the 1950-52 death records. Column  $o_x^e$  is the "expectation of life," that is the average future lifetime which would be lived by persons aged exactly x, if likewise subject to these death probabilities.

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all 1020 1020	21-11 1- FSR	Expectation of life at										
Life Table	Year	` Biı	rth	Age 1 year								
100 10092 10 1296 100 10011 10 14 A41 100 1001 100 1.527		Male	Female	Male	Female							
English Life Table :	Annaha Wala	97.8	-802	and the second	·							
No. 2	1838-44	40	42	47	47							
3	1838-54	40	42	47	47							
4	1871-80	41	45	48	50							
5	1881-90	44	47	51	53							
6	1891-1900	44	48	52	55							
7	1901–10	49	52	56	58							
8	1910-12	52	55	58	60							
9	1920-22	56	60	60	63							
10	1930-32	59	63	62	65							
Abridged Life Table	1950-52	66	71	68	72							
From annual	1943	62	67	64	- 69							
Abridged Life Tables	1944	62	68	64	70							
ibildged Life Tubieb	1945	63	69	65	71							
	1946	65	69	67	71							
	1947	64	69	67	71							
	1948	66	71	68	72							
	1949	66	71	68	72							
	1950	67	71	68	72							
	1951	66	71	67	72							
	1952	67	72	68	73							

# Table XLIX.—Expectation of life at birth and at age 1 year, 1838–1932, 1950–1952 and 1943 to 1952, England and Wales

Table L.—Quarterly	death	rates	in	each	year	1931	to	1951,	with
	tio to y								

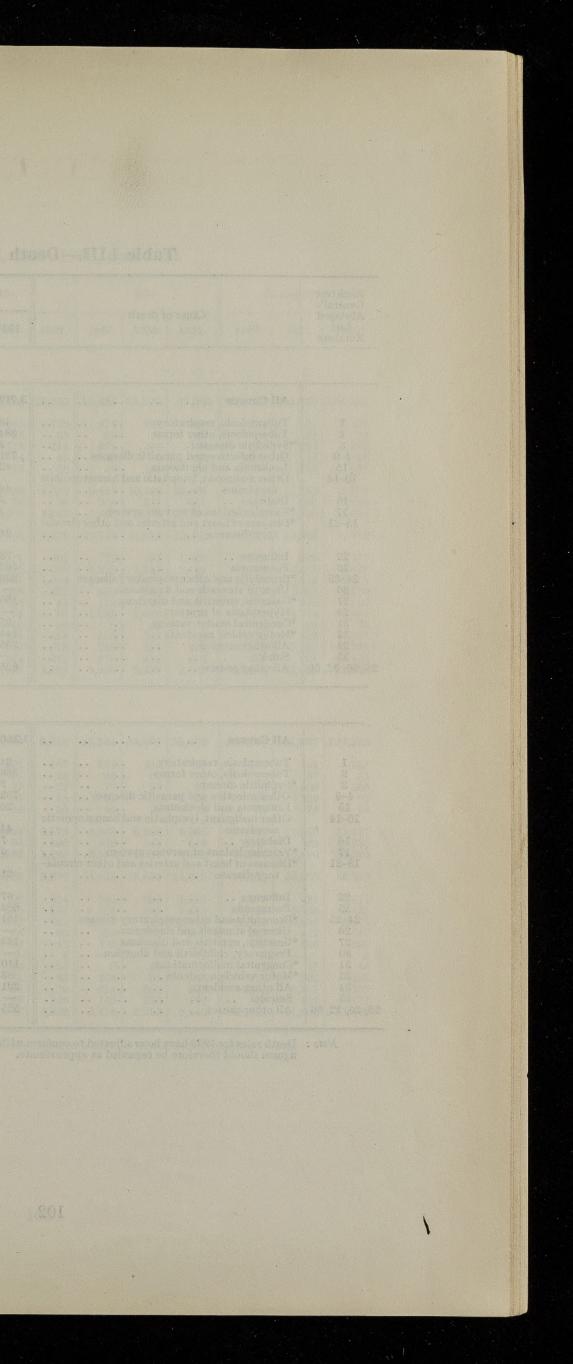
	Dea	ath rate j	per 1,000 liv	ing	Ratio to yearly rate taken as 100										
Year	March	June	September	December	March	June	September	December							
1931	16.5	11.5	9.6	11.7	134	93	78	95							
1932	15.4	11.6	9.7	11.5	128	97	81	96							
1933	17.1	10.8	9.4	12.0	139	88	76	98							
1934	14.6	11.8	9.6	11.2	124	100	81	95							
1935	13.2	12.0	9.8	12.0	113	103	84	103							
1936	15.1	11.8	9.7	12.0	125	98	80	99							
1937	16.2	11.6	9.7	12.3	131	94	78	99							
1938	13.6	11.6	9.9	11.5	117	100	85	99							
1939	15.1	11.7	9.9	11.8	125	97	82	98							
1940	20.6	11.9	10.8	14.1	143	83	75	98							
1941	18.4	14.2	10.1	11.5	136	105	75	85							
1942	15.8	12.0	9.8	11.6	128	98	80	94							
1943	14.5	11.7	10.1	15.7	112	90	78	121							
1944	15.3	12.0	11.0	12.7	120	94	87	100							
1945	16.5	11.5	10.0	12.6	131	91	79	100							
1946	15.4	11.2	9.7	11.9	128	93	81	99							
1947	17.6	11.3	9.2	11.4	143	92	75	93							
1948	12.4	10.3	9.4	11.7	113	94	85	106							
1949	15.2	11.2	9.3	11.8	129	95	79	100							
1950	14.0	11.1	9.3	12.3	120	95	80	106							
1951	19.1	11.1	9.1	11.0	152	88	73	88							

1-110 1-110				Ma	ales			1.1	Females							
1.22 0.22 0.42 0.42 0.42 0.42 0.42 0.42 0.42	All ages	0-	5-	15-	25-	45-	65-	85 and over	Allages	0-	5-	15-	25-	45–	65-	85 and over
1841–1850 1851–1860 1861–1870	$23.1 \\ 23.1 \\ 23.7$	71.372.773.5	7·24 6·79 6·43	$8.23 \\ 7.71 \\ 7.26$	$11 \cdot 2 \\ 10 \cdot 9 \\ 11 \cdot 5$	23.6 23.2 24.8	89.6 86.8 87.7	$312 \cdot 3$ $308 \cdot 3$ $315 \cdot 0$	21.6 21.4 21.4	$ \begin{array}{c} 61 \cdot 2 \\ 63 \cdot 0 \\ 63 \cdot 7 \end{array} $	7.27 6.84 6.25	8.50 7.98 7.30	$11.6 \\ 10.9 \\ 10.7$	$21 \cdot 1$ $20 \cdot 1$ $20 \cdot 6$	82·4 80·0 79·8	293·2 289·0 285·0
1871–1880 1881–1890 1891–1900	$22 \cdot 7$ $20 \cdot 3$ $19 \cdot 3$	$68.4 \\ 61.6 \\ 62.7$	$5.29 \\ 4.20 \\ 3.40$	$6.24 \\ 4.97 \\ 4.38$	$11.3 \\ 9.79 \\ 8.82$	$26.1 \\ 25.5 \\ 25.2$	90·2 89·4 89·4	$327.4 \\ 306.0 \\ 286.7$	$20.1 \\ 18.1 \\ 17.1$	$58.3 \\ 51.9 \\ 52.8$	$5.05 \\ 4.23 \\ 3.49$	$6.12 \\ 4.97 \\ 4.06$	9.92 8.76 7.58	$21.0 \\ 20.6 \\ 20.3$	$80.9 \\ 78.9 \\ 79.5$	296·4 271·0 261·3
1901–1905 1906–1910 1911–1915 1916–1920	$17.1 \\ 15.6 \\ 15.5 \\ 14.9$	$54.7 \\ 45.4 \\ 40.9 \\ 34.4$	$2.93 \\ 2.67 \\ 2.75 \\ 3.11$	3.77 3.45 3.69 4.85	7.596.766.767.61	$\begin{array}{c} 23 \cdot 0 \\ 21 \cdot 7 \\ 21 \cdot 0 \\ 19 \cdot 5 \end{array}$	$ \begin{array}{c c} 83.4 \\ 82.0 \\ 81.7 \\ 81.1 \end{array} $	$\begin{array}{c} 274.6 \\ 283.0 \\ 281.6 \\ 267.8 \end{array}$	$15.0 \\ 13.8 \\ 13.3 \\ 12.8$	45·8 38·0 34·0 28·4	3.03 2.78 2.75 3.18	3.34 3.05 3.00 4.06	$6.34 \\ 5.60 \\ 5.17 \\ 5.91$	$18.1 \\ 16.9 \\ 16.0 \\ 14.4$	72.570.869.565.9	$\begin{array}{c c} 249 \cdot 4 \\ 250 \cdot 9 \\ 245 \cdot 4 \\ 241 \cdot 9 \end{array}$
1921–1925 1926–1930 1931–1935 1936–1940	$     \begin{array}{r}       12 \cdot 9 \\       12 \cdot 9 \\       12 \cdot 7 \\       13 \cdot 3     \end{array}   $	27.0 23.1 20.1 17.5	2.10 2.06 1.84 1.60	3.06 2.93 2.81 2.64	5.24 4.84 4.23 3.95	$16.9 \\ 17.0 \\ 16.6 \\ 17.3$	$76.2 \\ 76.3 \\ 75.1 \\ 76.2$	$\begin{array}{c} 272 \cdot 7 \\ 298 \cdot 1 \\ 278 \cdot 9 \\ 286 \cdot 9 \end{array}$	$11.4 \\ 11.4 \\ 11.4 \\ 11.6$	$21.8 \\ 18.5 \\ 16.0 \\ 13.7$	$2.05 \\ 1.90 \\ 1.71 \\ 1.40$	2.832.672.512.17	$4 \cdot 26 \\ 3 \cdot 97 \\ 3 \cdot 67 \\ 3 \cdot 22$	$12.8 \\ 12.4 \\ 11.9 \\ 11.5$	$64.0 \\ 62.5 \\ 61.0 \\ 60.1$	$\begin{array}{c c} 241 \cdot 2 \\ 254 \cdot 4 \\ 245 \cdot 0 \\ 253 \cdot 0 \end{array}$
1941–1945 1946–1950	$12.8 \\ 12.2$	$15.5 \\ 10.5$	1·44 0·79	$2.99 \\ 1.42$	3·72 2·58	$15.7 \\ 14.5$	$69.0 \\ 69.9$	$227.0 \\ 241.6$	$\begin{array}{c} 10 \cdot 9 \\ 10 \cdot 9 \end{array}$	$\begin{array}{c} 12 \cdot 3 \\ 8 \cdot 14 \end{array}$	$1.13 \\ 0.59$	$1.98 \\ 1.29$	$2.84 \\ 2.17$	9·86 8·79	$52 \cdot 6 \\ 52 \cdot 1$	207·0 208·9
1951	13.4	7.36	0.61	1.14	2.29	15.0	81.2	318-2	11.8	5.68	0.41	0.77	1.82	8.81	57.7	264.2

# Table LI.—Death rates per 1,000 living by sex and age, 1841–1951

Table LIL-All Cause	: Death rates per 1,000 living by sex and ag	e in
regions	d population density aggregates, 1951	

	-	10 M	Ma	ales	8.0.0	10-10-10-10-10-10-10-10-10-10-10-10-10-1	and and		Fema	ales	les			
	0-	5-	15-	45-	65 and over	All ages	0-	5-	15-	45-	65 and over	Allages		
ENGLAND AND WALES	7·36 7·07	0.61 0.57	$1.95 \\ 1.99$	$15.0 \\ 16.1$	$88.3 \\ 91.9$	$13.4 \\ 13.4$	5·68 5·55	0·41 0·43	$1.50 \\ 1.52$	8·81 8·95	67·5 68·6	11.8 11.5		
Areas outside conurbations: Urban areas with populations of 100,000	7.79	0.66	2.06	16.2	93.2	14.0	5.82	0.43	1.64	9.06	69.2	11.9		
and over Urban areas with populations of 50,000 and under 100,000	7.67	0.61	1.95	15.3	87.8	13.7	5.66	0.39	1.51	8.88	67.3	12.3		
Urban areas with populations under 50,000 Rural areas	7·50 7·38	0.60 0.69	$1.93 \\ 1.84$	$14.9 \\ 12.0$	88·3 79·8	$14.1 \\ 12.2$	$5.94 \\ 5.59$	0·40 0·40	$1.50 \\ 1.37$	8·96 8·09	67·5 64·2	12·3 11·4		
NORTH OF ENGLAND Regions:				10.04	c) m	-1-1					70.0	11 0		
Northern	9·54 8·23 8·68 8·75	$0.64 \\ 0.63 \\ 0.62 \\ 0.63$	2.43 2.14 2.29 2.28	$   \begin{array}{r}     16.5 \\     15.6 \\     18.0 \\     17.0   \end{array} $	$     \begin{array}{r}       88.2 \\       93.5 \\       98.1 \\       94.4     \end{array} $	$ \begin{array}{c c} 13.9\\ 14.1\\ 15.2\\ 14.6 \end{array} $	$7.15 \\ 5.99 \\ 6.41 \\ 6.46$	$\begin{array}{c} 0.42 \\ 0.42 \\ 0.41 \\ 0.42 \end{array}$	1.72 1.52 1.84 1.72	9.77 9.41 10.2 9.88	$   \begin{array}{r}     70.6 \\     71.6 \\     75.7 \\     73.4   \end{array} $	$ \begin{array}{c} 11 \cdot 5 \\ 12 \cdot 1 \\ 13 \cdot 2 \\ 12 \cdot 5 \end{array} $		
Conurbations: Tyneside	9.21	0.62	2.60	17.3	90.1	$14.3 \\ 15.5$	$7.41 \\ 6.07$	0·35 0·44	1.76 1.45	9.81 9.82	$71.8 \\ 73.9$	11·4 13·4		
West Yorkshire South East Lancashire Merseyside Total	8.28 8.38 9.41 8.71	$0.68 \\ 0.60 \\ 0.50 \\ 0.60$	2.12 2.13 2.59 2.29	16·9 18·3 20·0 18·1	98·4 98·6 103·2 98·2	15.5 15.2 14.6 15.0	$6.23 \\ 7.17 \\ 6.57$	$0.36 \\ 0.44 \\ 0.40$	$1.86 \\ 2.00 \\ 1.77$	10.6 9.98 10.2	76·2 77·0 75·2	$     \begin{array}{c}       13 \cdot 4 \\       12 \cdot 1 \\       12 \cdot 9     \end{array} $		
Areas outside conurbations: Urban areas with populations of 100,000			1.00		05.0	1.0	0.50	0.50	1.90	9.77	73.4	12.3		
and over	8.79	0.64	2.43	17.1	95.6	14.6	6·79 6·80	0·50 0·53	1·80 1·70	10.1	75.2	12.		
and under 100,000	9·37 8·26	0.65 0.60	2·21 2·28	18·2 16·6	92·5 95·9	14·9 14·7	6.28	0.41	1.63	9.78	74.3	12.4		
Rural areas	9.16	0.72	2.06	13.6	82.2	12.5	6.15	0.35	1.52	8.68	67.0	11.		
MIDLANDS AND EASTERN         Regions :         North Midland          Midland          Eastern          Total	6·97 7·92 6·10 7·12	$0.63 \\ 0.64 \\ 0.62 \\ 0.63$	1.84 2.03 1.63 1.86	$13.2 \\ 15.3 \\ 11.9 \\ 13.7$	83.5 90.6 81.2 85.3	$12.4 \\ 12.5 \\ 12.3 \\ 12.4$	5.58 6.08 5.20 5.68	$0.34 \\ 0.46 \\ 0.36 \\ 0.40$	1.53 1.54 1.21 1.45	$8 \cdot 31$ 9 \cdot 03 7 \cdot 86 8 \cdot 46	$65 \cdot 9$ 70 \cdot 1 $62 \cdot 0$ $66 \cdot 2$	11.0 10.9 11.3 11.0		
Conurbation : West Midland	7.46	0.67	2.12	16.3	93.8	12.5	6.05	0.54	1.58	9.27	70.5	10.		
Areas outside conurbation : Urban areas with populations of 100,000 and over	7.00	0.63	1.87	15.8	89.1	13.0	5.89	0.32	1.51	8.58	66.8	11.		
Urban areas with populations of 50,000 and under 100,000	6.73	0.51	1.86	14.1	87.2	12.0	5.48	0.33	1.38	8.30	62.0	10.		
Urban areas with populations under 50,000	$7.13 \\ 6.95$	0·56 0·68	$1.70 \\ 1.82$	$13.4 \\ 10.9$	87·5 76·6	$13.1 \\ 11.8$	$5.84 \\ 5.38$	0·36 0·38	$1.38 \\ 1.35$	8·51 7·79	$68.7 \\ 63.2$	11· 11·		
Rural areas            GREATER LONDON	5.62	0.50	1.73	14.6	86.6	12.4	4.56	0.42	1.32	7.96	63-2	10.		
SOUTH OF ENGLAND					and the second second		1							
Regions :       Remainder of South East          Southern           South Western           Total	$6.40 \\ 6.23 \\ 6.77 \\ 6.48$	$0.71 \\ 0.55 \\ 0.59 \\ 0.61$	1.67 1.53 1.78 1.66	$13.0 \\ 12.8 \\ 13.8 \\ 13.3$	80.6 81.7 85.3 82.6	$\begin{array}{c} 13.7 \\ 12.2 \\ 13.5 \\ 13.1 \end{array}$	$4.57 \\ 4.97 \\ 5.16 \\ 4.92$	$0.43 \\ 0.37 \\ 0.36 \\ 0.39$	$1.30 \\ 1.25 \\ 1.41 \\ 1.33$	7.82 7.64 8.47 8.00	$     \begin{array}{r}       60 \cdot 3 \\       62 \cdot 2 \\       66 \cdot 5 \\       63 \cdot 1     \end{array} $	$ \begin{array}{c} 12 \\ 11 \\ 12 \\ 12 \\ 12 \\ \end{array} $		
Urban areas with populations of 100,000	7.30	0.64	1.72	14.5	89.3	13.8	4.74	0.42	1.61	8.37	67.9	12.		
Urban areas with populations of 50,000 and under 100,000	6.51	0.59	1.72	14.7	83.3	14.2	4.43	0.32	1.35	8.60	64.9	13.		
Urban areas with populations under 50,000 Rural areas	6·47 6·38	0·58 0·67	$1.65 \\ 1.66$	$13.6 \\ 11.8$	86·6 79·2	$14.0 \\ 12.2$	5·44 4·89	$\begin{array}{c} 0.41 \\ 0.38 \end{array}$	$1.31 \\ 1.18$	8·00 7·61	$\begin{array}{c} 62 \cdot 6 \\ 61 \cdot 1 \end{array}$	$\begin{vmatrix} 12 \cdot \\ 11 \cdot \end{vmatrix}$		
VALES Regions : Wales Land II	9.11	0.76	2.30	16.9	94.6	15.3	7.31	0.52	1.80	9.93	73.5	12.		
Wales I and II	8.65	0.79	2.42	19.4	97.3	15.2	6.64	0.59	1.77	10.2	68.7	11.		
Urban areas with populations of 50,000 and under 100,000	10.0	1.09	2.23		137.0	17.7	7.20	0.25	2.30	11.4	72.6	12.		
Urban areas with populations under 50,000	9·12 9·18	0·75 0·77	2·28 2·19	17·4 14·4	95.1	15·7 14·5	7·80 7·58	0·45 0·62	1.86 1.70	9·98 9·52	73·1 76·6	12· 12·		



		1-			5-			15-			25-			45-		Chief-EPC)	65-		71	5 and over	r
Cause of death	1939	1950	1951	1939	1950	1951	1939	1950	1951	1939	1950	1951	1939	1950	1951	1939	1950	1951	1939	1950	1951
			43 1 A.S.B.	and a						o este talita	Males	sina a	e overce was th	o etta. Sie	diaid.	अन्तर्भ । अन्तर्भ ।	anan Malanti Malanti	4 TOLD TENIÓ L	n ann 11 - Miles	01000 141- di	onted L'Ytiler
All Causes	3,719	1,424	1,44		657	614	2,230	1,213	1,142	3,520	2,322	2,292	16,669	14,241	15,016	55,556	53,328	59,056	153,980	136,757	154,636
Tuberculosis, respiratory	48 384 <i>4</i> 731 42	29 134 	28 127 <i>1</i> 187 49	23 114 2 267 18	8 42 0 63 24	7 35 35 31	510 127 10 64 16	157 44 1 46 25	111 39 3 26 22	786 78 43 54 16	$\begin{array}{c c} 412 \\ 34 \\ 12 \\ 46 \\ 22 \end{array}$	328 33 11 27 27	1,164 69 298 88 41	865 38 118 54 73	- State State	123 76	49 278 76 141	$958 \\ 42 \\ 313 \\ 63 \\ 152$	214 40 255 187 37	$\begin{array}{c} 411 \\ 31 \\ 233 \\ 149 \\ 125 \end{array}$	465 38 292 138 131
neoplasms Diabetes *Vascular lesions of nervous system	49 3 1	65 2 $\cdot$ $6$	63 3 3	$32 \\ 11 \\ 2$	5	4 5	18 6	75 6 11	70 5 14	308 24 59	347 12 59	363 14 71	2,995 122 1,307	3,339 53 1,080	58 1,133	588 7,207	10,183 314 7,025	10,486 311 7,294	14,549 1,025 18,530	15,695 687 19,290	$\begin{array}{r} 16,281 \\ 648 \\ 21,465 \end{array}$
tory diseases	24	10	8	77	28	16		82	65	388	372	383	4,215	4,469	States :		and the state	22,482	63,278	63,793	69,902
Influenza	$ \begin{array}{r} 73\\ 762\\ 209\\\\ 160\\\\ 95\\ 144\\ 365\\ \end{array} $	$   \begin{array}{r}     206 \\     73 \\     1 \\     50 \\     - \\     83 \\     101 \\     169   \end{array} $	$     \begin{array}{r}       176 \\       76 \\       \\       41 \\       \\       106 \\       128 \\       175 \\     \end{array} $	$     \begin{array}{r}       15 \\       72 \\       42 \\       \\       16 \\       \\       19 \\       156 \\       158 \\       158 \\     \end{array} $		$ \begin{array}{r} 23\\17\\0\\4\\\\34\\105\\117\end{array}$	85 63 18 10 	$ \begin{array}{c} 29 \\ 17 \\ 6 \\ 5 \\ \\ 35 \\ 230 \\ 187 \end{array} $	$ \begin{array}{c c} 28 \\ 15 \\ 10 \\ 4 \\ \\ 32 \\ 247 \\ 202 \\ \end{array} $	$ \begin{array}{c c} 191 \\ 139 \\ 123 \\ 24 \\ 0 \\ 17 \\ 221 \\ 276 \\ \end{array} $	$ \begin{array}{c c} 63 \\ 92 \\ 58 \\ 15 \\ \\ 32 \\ 134 \\ 181 \\ \end{array} $	$\begin{array}{c} & 66 \\ & 91 \\ & 58 \\ & 12 \\ & 0 \\ & 30 \\ & 142 \\ & 201 \end{array}$	867 1,373 483 84 154 16 291 461	$\begin{array}{r} 405\\ 1,361\\ 356\\ 44\\ 74\\ 48\\ 124\\ 269\end{array}$	$516 \\ 1,684 \\ 367 \\ 44 \\ 60 \\ 50 \\ 134 \\ 278$	$\begin{array}{c c} 1,929\\ 4,463\\ 620\\ 174\\ 1,641\\ 6\\ 563\\ 745\\ \end{array}$	$ \begin{array}{c} 1,555\\ 4,899\\ 826\\ 115\\ 1,080\\ 48\\ 242\\ 434 \end{array} $	2,184 6,349 966 138 1,059 41 232 471	4,491 14,746 678 475 5,711 13 1,052 2,499	$\begin{array}{r} 4,467\\ 10,318\\ 1005\\ 330\\ 4,774\\ 28\\ 439\\ 1,580\end{array}$	$\begin{array}{r} 4,447\\ 6,331\\ 13,515\\ 1,229\\ 352\\ 4,664\\ 63\\ 507\\ 1,764\end{array}$
Suicide	625	233	253	331	145	130	450	46 200 ·	39 190	136 563	97 313	99 298	359 1,985	264 1,096	248 1,125	470 5,886	416 3,389	412 3,435	451 23,682	421 12,045	478 11,926
											Females	ni sta ti	(10) 200 U-12-161	Part	viite	aron a san	eand	"III"	ilipazetan	α	<u> </u>
All Causes	3,260	1,273	1,260	1,135	471	412	1,923	946	771	2,970	1,897	1,822	10,988	8,578	8,810	40,586	34,697	36,980	125,145	114,797	127,233
Tuberculosis, respiratory Tuberculosis, other forms *Syphilitic disease Other infective and parasitic diseases Leukæmia and aleukæmia	34 336 2 782 26	$22 \\ 137 \\ 1 \\ 169 \\ 43$	20 126 	54 106 <i>1</i> 253 14	11 38 1 45 24	11 39 0 30 21	762 116 15 47 12	319 54 <i>1</i> 41 16	$196 \\ 44 \\ 2 \\ 18 \\ 15$	595 56 17 42 14	356 22 5 34 20	291 21 5 24 23	329 39 74 61 32	221 27 37 38 48	187 28 37 38 55	237 43 77 82 56	212 30 93 60 96	$198 \\ 33 \\ 81 \\ 56 \\ 104$	145 46 70 161 52	144 37 100 129 78	137 41 103 96 93
neoplasms Diabetes *Vascular lesions of nervous system *Diseases of heart and arteries and other circula-	44 7 5	56 4 3	58 4 5	22 14 3	7 1	27 5 5	18 4	44 9 11	51 12 8	432 26 59	428 15 70	433 14 71	2,862 213 1,251	2,642 98 1,152	2,572 100 1,189	6,980 832 6,359	Participante del	6,395 518 6,452	11,067 1,047 16,858	11,230 793 19,590	11,127 830 20,835
tory disease	21	3	5					77	70	442	287	279	2,639	2,260		Carlos Martin			52,683	55,903	59,819
Influenza	$ \begin{array}{c}     67 \\     683 \\     161 \\     \\     143 \\     \\     110 \\     83 \\     231 \\     \\     525 \\   \end{array} $	$ \begin{array}{r} 15\\ 207\\ 58\\\\ 36\\\\ 105\\ 74\\ 121\\\\ 219\\ \end{array} $	$ \begin{array}{c} 26\\ 188\\ 62\\ -\\ 30\\ -\\ 93\\ 78\\ 131\\ -\\ 203\\ \end{array} $	$ \begin{array}{c} 18\\ 73\\ 23\\ 0\\ 12\\ -\\ 21\\ 61\\ 55\\ 0\\ 334\\ \end{array} $	$ \begin{array}{c}             6 \\             27 \\             17 \\             0 \\             2 \\           $	$ \begin{array}{c}                                     $	$\begin{array}{c} 31 \\ 75 \\ 26 \\ 3 \\ 15 \\ 103 \\ 15 \\ 57 \\ 41 \\ 22 \\ 324 \end{array}$	15 24 17 1 8 38 28 34 26 17 166	14 18 18 35 23 42 26 15 155	68 130 45 18 28 244 12 33 41 78 590	54 44 10 18 74 28 18 26 55	$     50 \\     50 \\     10 \\     16 \\     29 \\     21 \\     29 \\     53   $	409 410 97 70 4 19 70 145 159	$\begin{array}{c} 68\\ 215\\ 312\\ 64\\ 39\\ 3\\ 43\\ 41\\ 84\\ 139\\ 1.047\\ \end{array}$	254 420 62 43 4 50 43 79 146	$ \begin{array}{c c} 1,336\\ 2,571\\ 205\\ 196\\ -\\ 9\\ 206\\ 614\\ 145\\ \end{array} $	946 719 208 155  43 84 363 153	1,281 2,295 230 154 1 47 101 378 167	$\begin{array}{c} 3,725\\ 10,516\\ 287\\ 467\\ -\\ 12\\ 329\\ 3055\\ 107\\ \end{array}$	931 3,793 6,837 421 396 - 41 200 2,377 115	8,875 517 398 2 46 201 2,537 107
	All Causes	All Causes       3,719         Tuberculosis, respiratory       48         *Syphilitic disease.       731         Uetre infective and parasitic diseases.       731         Leukæmia and aleukæmia       42         Other malignant, lymphatic and hæmatopoietic neoplasms       49         Diabetes       3         *Vascular lesions of nervous system       1         *Ury diseases       733         Pneumonia       762         *Bronchitis and other respiratory disease       209         Ulcer of stomach and duodenum       762         *Motor vehicle accidents       762         *Motor vehicle accidents       365         Suicide       365         Suicide       782         Other rangignant, lymphatic and hæmatopoietic neoplasms       762         *Motor vehicle accidents       365         Suicide       365         Suicide       722         Other malignant, lymphatic and hæmatopoietic neoplasms       782         *Vascular lesions of nervous system       <	Cause of death         1939         1950           All Causes         3,719         1,424           Tuberculosis, respiratory         48         29           Tuberculosis, other forms         384         134           "Syphilitic diseases         731         1939           Leukamia and aleukamia         42         50           Other infective and parasitic diseases         731         193           Leukamia and aleukamia         42         50           Other malignant, lymphatic and hæmatopoietic neoplasms         49         65           Niseases of heart and arteries and other circula- tory diseases         73         19           Pneumonia         73         19         73           Ulcer of stomach and duodenum         762         206           Hyperplasia of prostate         762         209           *Ongenital malformations         95         83           *Motor vehicle accidents         144         101           All other causes         29         7           Tuberculosis, respiratory         34         22           Tuberculosis, other forms         782         169           Suicide         26         43         17           *Congenital malforma	Cause of death         1939       1950       1951         All Causes       3,719       1,424       1,444         Tuberculosis, cespiratory       48       29       28         Tuberculosis, other forms       34       134       127         *Syphiltic disease.       74       193       187         Other infective and parasitic diseases       71       193       187         Other malignant, lymphatic and haematopoietic neoplasms       49       65       63         Plabetes       1       6       3       2       3         *Vascular lesions of nervous system       78       19       24       76         Pneumonia       73       19       24       76       76         Ulcer of stomach and duodenum       76       206       176       76         Ulcer of stomach and duodenum       73       19       24         Hyperplasia of prostate       73       16       50       41         Hyperplasia of prostate       73       16       176       116         Motor vehicle accidents       336       137       126       141         Hyperplasia of prostate       72       7       7       14 <td>Cause of death       1939       1950       1951       1939         All Causes        3,719       1,424       1,44       1         Tuberculosis, respiratory        384       134       127       114         *Syphilitic disease.         384       134       127       114         *Syphilitic disease.         42       500       49       65       63       32         Other indignant, iympatic and hamatopoleito  <t< td=""><td>Cause of death         1939         1950         1951         1939         1950           All Causes          3,719         1,424         1,44         657           Tuberculosis, respiratory          384         134         127         114         677           Syphilitic disease.          4          4          63         2         6           Other infective and parasitic diseases          731         193         18         24           Other malignant, lymphatic and hematopoletic neoplasms          2         5         41         73         19         24         10         8         77         28           Influenza            73         19         24         10         8         77         28           Influenza             762         206         176         72         3           Hyperplasi of prostate             100         50         41         16         3           Hyperplasi of prostate          </td><td>Cause of death         <math>1939</math> <math>1950</math> <math>1950</math> <math>1950</math> <math>1950</math> <math>1950</math> <math>1950</math> <math>1950</math> <math>1951</math>           All Causes          <math>3,719</math> <math>1,424</math> <math>1,44</math> <math>657</math> <math>614</math>           Tuberulosis, respiratory          <math>344</math> <math>127</math> <math>114</math> <math>42</math> <math>35</math>           Tuberulosis, contribution and manatopoietic         <math>344</math> <math>134</math> <math>127</math> <math>114</math> <math>42</math> <math>3187</math>           Other infective and parasitic diseases          <math>32</math> <math>3</math> <math>12</math> <math>3</math> <math>42</math> <math>50</math> <math>49</math> <math>18</math> <math>24</math> <math>31</math> <math>34</math> <math>42</math> <math>50</math> <math>49</math> <math>18</math> <math>24</math> <math>31</math> <math>34</math> <math>42</math> <math>50</math> <math>49</math> <math>165</math> <math>32</math> <math>31</math> <math>34</math> <math>42</math> <math>50</math> <math>49</math> <math>165</math> <math>32</math> <math>31</math> <math>34</math> <math>42</math> <math>50</math> <math>49</math> <math>165</math> <math>32</math> <math>31</math> <math>42</math> <math>31</math> <math>42</math> <math>31</math> <math>42</math> <math>31</math> <math>42</math> <math>31</math> <math>42</math> <math>31</math> <math>42</math> <t< td=""><td>Cause of death         1939         1950         1951         1939         1950         1951         1939         1950         1951         1939           All Causes           3,719         1,424         1,44         657         614         2,230           Tubercolosis, respiratory          48         29         28         23         8         7         510           Other indicative and parasitic diseases           42         50         49         18         24         31         166           Other indiguant, lymphatic and harmatopoietic             49         65         63         32         35         43         166           Tubercolosis, nes or nervois system             762         23         11         35         4         182           Aubeits             772         24         16         132           Influenza              772         24         16         132           Influenza</td><td><math display="block"> \begin{array}{c c c c c c c c c c c c c c c c c c c </math></td><td><math display="block"> \begin{array}{c c c c c c c c c c c c c c c c c c c </math></td><td><math display="block"> \begin{array}{c c c c c c c c c c c c c c c c c c c </math></td><td><math display="block"> \begin{array}{ c c c c c c c c c c c c c c c c c c c</math></td><td>Cause of death         1939         1950         1951         1939         1950         1951           Tuberculosis, respiratory         48         324         134         127         147         43         353         141         152         221         16         222         16         225         16         225         16         222         16         225         16         225         16         225         16         225         16         225         16         225         16         225         16         225         17         150         125         16         15         150         16         157         17</td><td>Cause of death         1930         1950</td><td>Cause of death         1000         1050</td><td><math display="block"> \begin{array}{c c c c c c c c c c c c c c c c c c c </math></td><td>Cause of death         1939         1950         1951         1939         1950         1951         1951         1951         1952</td><td><math display="block"> \begin{array}{ c c c c c c c c c c c c c c c c c c c</math></td><td><math display="block"> \begin{array}{ c c c c c c c c c c c c c c c c c c c</math></td><td>Cause of death         1930         1950</td><td><math display="block"> \begin{array}{ c c c c c c c c c c c c c c c c c c c</math></td></t<></td></t<></td>	Cause of death       1939       1950       1951       1939         All Causes        3,719       1,424       1,44       1         Tuberculosis, respiratory        384       134       127       114         *Syphilitic disease.         384       134       127       114         *Syphilitic disease.         42       500       49       65       63       32         Other indignant, iympatic and hamatopoleito <t< td=""><td>Cause of death         1939         1950         1951         1939         1950           All Causes          3,719         1,424         1,44         657           Tuberculosis, respiratory          384         134         127         114         677           Syphilitic disease.          4          4          63         2         6           Other infective and parasitic diseases          731         193         18         24           Other malignant, lymphatic and hematopoletic neoplasms          2         5         41         73         19         24         10         8         77         28           Influenza            73         19         24         10         8         77         28           Influenza             762         206         176         72         3           Hyperplasi of prostate             100         50         41         16         3           Hyperplasi of prostate          </td><td>Cause of death         <math>1939</math> <math>1950</math> <math>1950</math> <math>1950</math> <math>1950</math> <math>1950</math> <math>1950</math> <math>1950</math> <math>1951</math>           All Causes          <math>3,719</math> <math>1,424</math> <math>1,44</math> <math>657</math> <math>614</math>           Tuberulosis, respiratory          <math>344</math> <math>127</math> <math>114</math> <math>42</math> <math>35</math>           Tuberulosis, contribution and manatopoietic         <math>344</math> <math>134</math> <math>127</math> <math>114</math> <math>42</math> <math>3187</math>           Other infective and parasitic diseases          <math>32</math> <math>3</math> <math>12</math> <math>3</math> <math>42</math> <math>50</math> <math>49</math> <math>18</math> <math>24</math> <math>31</math> <math>34</math> <math>42</math> <math>50</math> <math>49</math> <math>18</math> <math>24</math> <math>31</math> <math>34</math> <math>42</math> <math>50</math> <math>49</math> <math>165</math> <math>32</math> <math>31</math> <math>34</math> <math>42</math> <math>50</math> <math>49</math> <math>165</math> <math>32</math> <math>31</math> <math>34</math> <math>42</math> <math>50</math> <math>49</math> <math>165</math> <math>32</math> <math>31</math> <math>42</math> <math>31</math> <math>42</math> <math>31</math> <math>42</math> <math>31</math> <math>42</math> <math>31</math> <math>42</math> <math>31</math> <math>42</math> <t< td=""><td>Cause of death         1939         1950         1951         1939         1950         1951         1939         1950         1951         1939           All Causes           3,719         1,424         1,44         657         614         2,230           Tubercolosis, respiratory          48         29         28         23         8         7         510           Other indicative and parasitic diseases           42         50         49         18         24         31         166           Other indiguant, lymphatic and harmatopoietic             49         65         63         32         35         43         166           Tubercolosis, nes or nervois system             762         23         11         35         4         182           Aubeits             772         24         16         132           Influenza              772         24         16         132           Influenza</td><td><math display="block"> \begin{array}{c c c c c c c c c c c c c c c c c c c </math></td><td><math display="block"> \begin{array}{c c c c c c c c c c c c c c c c c c c </math></td><td><math display="block"> \begin{array}{c c c c c c c c c c c c c c c c c c c </math></td><td><math display="block"> \begin{array}{ c c c c c c c c c c c c c c c c c c c</math></td><td>Cause of death         1939         1950         1951         1939         1950         1951           Tuberculosis, respiratory         48         324         134         127         147         43         353         141         152         221         16         222         16         225         16         225         16         222         16         225         16         225         16         225         16         225         16         225         16         225         16         225         16         225         17         150         125         16         15         150         16         157         17</td><td>Cause of death         1930         1950</td><td>Cause of death         1000         1050</td><td><math display="block"> \begin{array}{c c c c c c c c c c c c c c c c c c c </math></td><td>Cause of death         1939         1950         1951         1939         1950         1951         1951         1951         1952</td><td><math display="block"> \begin{array}{ c c c c c c c c c c c c c c c c c c c</math></td><td><math display="block"> \begin{array}{ c c c c c c c c c c c c c c c c c c c</math></td><td>Cause of death         1930         1950</td><td><math display="block"> \begin{array}{ c c c c c c c c c c c c c c c c c c c</math></td></t<></td></t<>	Cause of death         1939         1950         1951         1939         1950           All Causes          3,719         1,424         1,44         657           Tuberculosis, respiratory          384         134         127         114         677           Syphilitic disease.          4          4          63         2         6           Other infective and parasitic diseases          731         193         18         24           Other malignant, lymphatic and hematopoletic neoplasms          2         5         41         73         19         24         10         8         77         28           Influenza            73         19         24         10         8         77         28           Influenza             762         206         176         72         3           Hyperplasi of prostate             100         50         41         16         3           Hyperplasi of prostate	Cause of death $1939$ $1950$ $1950$ $1950$ $1950$ $1950$ $1950$ $1950$ $1951$ All Causes $3,719$ $1,424$ $1,44$ $657$ $614$ Tuberulosis, respiratory $344$ $127$ $114$ $42$ $35$ Tuberulosis, contribution and manatopoietic $344$ $134$ $127$ $114$ $42$ $3187$ Other infective and parasitic diseases $32$ $3$ $12$ $3$ $42$ $50$ $49$ $18$ $24$ $31$ $34$ $42$ $50$ $49$ $18$ $24$ $31$ $34$ $42$ $50$ $49$ $165$ $32$ $31$ $34$ $42$ $50$ $49$ $165$ $32$ $31$ $34$ $42$ $50$ $49$ $165$ $32$ $31$ $42$ $31$ $42$ $31$ $42$ $31$ $42$ $31$ $42$ $31$ $42$ <t< td=""><td>Cause of death         1939         1950         1951         1939         1950         1951         1939         1950         1951         1939           All Causes           3,719         1,424         1,44         657         614         2,230           Tubercolosis, respiratory          48         29         28         23         8         7         510           Other indicative and parasitic diseases           42         50         49         18         24         31         166           Other indiguant, lymphatic and harmatopoietic             49         65         63         32         35         43         166           Tubercolosis, nes or nervois system             762         23         11         35         4         182           Aubeits             772         24         16         132           Influenza              772         24         16         132           Influenza</td><td><math display="block"> \begin{array}{c c c c c c c c c c c c c c c c c c c </math></td><td><math display="block"> \begin{array}{c c c c c c c c c c c c c c c c c c c </math></td><td><math display="block"> \begin{array}{c c c c c c c c c c c c c c c c c c c </math></td><td><math display="block"> \begin{array}{ c c c c c c c c c c c c c c c c c c c</math></td><td>Cause of death         1939         1950         1951         1939         1950         1951           Tuberculosis, respiratory         48         324         134         127         147         43         353         141         152         221         16         222         16         225         16         225         16         222         16         225         16         225         16         225         16         225         16         225         16         225         16         225         16         225         17         150         125         16         15         150         16         157         17</td><td>Cause of death         1930         1950</td><td>Cause of death         1000         1050</td><td><math display="block"> \begin{array}{c c c c c c c c c c c c c c c c c c c </math></td><td>Cause of death         1939         1950         1951         1939         1950         1951         1951         1951         1952</td><td><math display="block"> \begin{array}{ c c c c c c c c c c c c c c c c c c c</math></td><td><math display="block"> \begin{array}{ c c c c c c c c c c c c c c c c c c c</math></td><td>Cause of death         1930         1950</td><td><math display="block"> \begin{array}{ c c c c c c c c c c c c c c c c c c c</math></td></t<>	Cause of death         1939         1950         1951         1939         1950         1951         1939         1950         1951         1939           All Causes           3,719         1,424         1,44         657         614         2,230           Tubercolosis, respiratory          48         29         28         23         8         7         510           Other indicative and parasitic diseases           42         50         49         18         24         31         166           Other indiguant, lymphatic and harmatopoietic             49         65         63         32         35         43         166           Tubercolosis, nes or nervois system             762         23         11         35         4         182           Aubeits             772         24         16         132           Influenza              772         24         16         132           Influenza	$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	Cause of death         1939         1950         1951         1939         1950         1951           Tuberculosis, respiratory         48         324         134         127         147         43         353         141         152         221         16         222         16         225         16         225         16         222         16         225         16         225         16         225         16         225         16         225         16         225         16         225         16         225         17         150         125         16         15         150         16         157         17	Cause of death         1930         1950	Cause of death         1000         1050	$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Cause of death         1939         1950         1951         1939         1950         1951         1951         1951         1952	$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	Cause of death         1930         1950	$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$

# Table LIII.—Death rates per million living at ages

over one year, by sex and cause, 1939, 1950, and 1951

Note: Death rates for 1939 have been adjusted to conform with the 6th Revision of the International Classification. figures should therefore be regarded as approximate.

For those causes of death marked \* adjustment has necessitated a certain amount of estimation and the

# INFANT MORTALITY AND STILLBIRTH

# Introduction

In the course of fifty years infant mortality has been reduced more than fourfold. During the decennium 1891–1990 between 1 in 6 and 1 in 7 liveborn babies died in infancy within twelve months of birth ; at this level of mortality—153 deaths in every 1,000 live births—it was the rule rather than the exception for poorer families in large cities to lose one or more of their babies by death. Fifty years later, during the corresponding ten-year period 1941–50, only about 1 in every 23 babies died before the first birthday. By 1951, the year under review, the chance of a liveborn baby dying before the first birthday had been further reduced to about 1 in 33.

A life-table prepared for 1891–1900 showed that the average expectation of life at birth would have increased by about seven years if all deaths then occurring in infancy could have been prevented. The life-table for 1950–52 (page 97) shows, however, that there is still room for improvement; by abolishing the present risks of death in the first year, one and a half years could be added to the contemporary average life expectancy.

The reduction in infant mortality between 1841–50 and 1941–50 has taken place entirely within the last fifty years, as is shown by the following table :—

Decenniu	m	Infa	nt mort rate	ality	Per o	1841-5			
841-50	029;AI	1 2 million 2 1	153	018.2	8,878,8	100	1,322	1,897	
851-60			154		1.03	101			
861-70			154		122	101			
871-80			149		132	97			
881-90			142		122	93			
891-1900			153			100			
901-10			128		12249,227	84			
911-20			100		Sale -	65			
921-30			72			47			
931-40	1.1.1		59		088,2	39			
941-50			43		885	28			
	Ist.I				632				

It was pointed out in the 1950 Medical Text that while the *general* trend of infant mortality has been consistently downward since the turn of the century, over 90 per cent of the decline between 1906 and 1939 took place among infants who had already survived one week, the annual mortality rate in the *first* week of life remaining about the same from 1920 until during the Second World War. From 1928, when stillbirths were first registered, the stillbirth rate followed a similar pattern. In contrast, there was a marked decline in both rates between 1940 and 1944 and between 1947 and 1948, but the tendency since 1948, remarked on in the 1950 Text, for stillbirth and first week mortality rates to lag consistently behind those relating to the rest of the first year has continued. The size of the infant mortality rate in future years will increasingly depend on the trend of mortality in the first week, which accounted for 52 per cent of all infant deaths in 1951.

#### The neonatal period-a historical note

It is now traditional among obstetricians, and the compilers of vital statistics, to distinguish the first four weeks of infancy, which is generally known as the "Neonatal Period." At the present time, when interest is chiefly centred on deaths within the *first* week of life, it is useful to recall the circumstances which led the Registrar General to distinguish the "neonatal" period from the rest of the first twelve months in his annual tabulations.

In the early years of the General Register Office, from 1839 to 1846, infant deaths under 1 month were distinguished in the tabulations along with five other age periods, viz. : 0- (under 1 month), 1-, 2-, 3-, 6-, 9- (9 months or over but under 12 months). The 2nd Annual Report stated that "in cases of death under 1 year of age the number of months, and often the number of days, is stated with precision." For these years mortality under 1 month per 1,000 live births can be derived for certain local areas of England and Wales and for certain causes. There is an interesting table in the 38th Annual Report (1875) which shows infant mortality per 1,000 live births in each month of age throughout the eight years 1839-46 for sixty-three "healthy districts" and for Liverpool—the worst district. The following is an extract :—

tus tegistered in a given your	Infant de	aths per 1,000 1	ive births
the year does not, however, because these may be delay	Sixty-three healthy districts 1839–46	Liverpool 1839–46	Per cent excess mortality in Liverpool
Under one month Rest of first year of infancy .	=10	53·4 175·5	+ 36 per cent +146 ,,
Under one year	. 110.5	228.9	+107 per cent

But in 1847, and subsequently until 1906\*, the first two of these age periods, i.e., under 1 month, and 1–2 months, were amalgamated, so that the trend of mortality in the neonatal age period cannot be shown for a space of fifty-nine years.

Dr. Tatham pointed out in his "Letter to the Registrar General" for 1905 what is evident from the table on page 104 ; "although the fact that infants . . . perish as rapidly now as they did half a century ago . . . has been kept steadily before the public in the Registrar General's reports . . . it is only in recent times that public interest has been thoroughly awakened." Dr. Tatham was referring to steps taken about this time by the Medical Officer of the Local Government Board, following an official conference on the subject, " to procure periodically" special returns of infant mortality from Medical Officers of Health. The Registrar General decided that the annual tabulations should provide for a more " minute examination " of infant mortality by the General Register Office and the 1905 Statistical Review accordingly showed the number of infant deaths in each of the first four weeks after birth and in each successive month from the 1st to the 12th. In these tables (which have continued to the

<sup>\*</sup> When a cause analysis was introduced for deaths from "Violence" in the 30th Annual Report (1867) the first year of life was split into "under one month" and "over one month." Deaths from "violence" in the neonatal period are, therefore, available from 1867 onwards and they are also available retrospectively from 1863 to 1866.

present time) the first four weeks were separately distinguished but their aggregate was titled "under 1 month." In practice "under 1 month" appeared to mean the same as "under 4 weeks." Indeed, one report contains two tables in which the identical total appears in the first under the title "deaths under 4 weeks" and in the other under the title "deaths under 1 month." Infant mortality "under 1 month" was analysed by Social Class in 1911, and the title "under 1 month" continued in use until 1917. The 1916 report has stressed the difference between the trend of mortality in the *first* fortnight of life and the *second* fortnight (the trend for the latter following the pattern characteristic of the months after the first) and probably for this reason as much as for any other "Under 4 weeks" replaced "Under 1 month" in the table headings of the Annual Report for 1917 and subsequent years.

The phrase "neonatal" does not appear to have been used by the writers of the Annual Reviews to describe this particular age period prior to 1936, when it was defined (though not explicitly) in terms of the first 4 weeks of life.

# Definitions of the rates employed : problems of measurement

A simple definition of an Infant Mortality Rate is the number of deaths among liveborn infants at ages under 12 months registered in a given year per 1,000 live births registered during the same year.

The number of live births registered during the year does not, however, necessarily give the true infant population at risk, because there may be delay between the actual time of birth and the time when the birth is registered, and some of the infants dying in any year will have been born the previous year and should properly be related to live births occurring at that time. The Medical Text Volumes for 1940–45 (pages 27–29) and 1946–47 (pages 15–17) discuss an adjustment which takes both these factors into account. Infant mortality rates have been calculated per 1,000 " related live birth occurrences " regularly since those for 1941; the phrase is abbreviated in the table legends to " related live births." The following table shows the infant mortality rates in terms of " registered " and in terms of " related " live births respectively for each of the last five years, and sets out the differences between them. The largest difference was in 1946, and amounted to 2.0 per 1,000. The difference in 1951 was almost negligible.

	1945	1946	1947	1948	1949	1950	1951
(a) Infant mortality per 1,000 " registered " live births	46.6	40·9	41.6	34.4	32.7	30.1	29.8
(b) Infant mortality per 1,000 " related " live births	<b>46</b> ·0	42.9	41.4	33.9	32.4	29.6	29.7
Difference $(b)-(a)$	-0.6	+2.0	-0.2	-0.5	-0.3	-0.5	-0.1

The 1940–45 Medical Text shows how to compute " related " infant mortality rates by sex, legitimacy and quarters of the year, and for regional areas. The necessary data from which the infant mortality rates per 1,000 related live births during 1951 were calculated are given in Table 26 of Part I and Table YY of Part II of the Annual Review. Deaths in any period of the first year of life (for example, during the first week, the first 4 weeks or from the fourth week to the end of the twelfth month) are traditionally expressed in terms of the total number of related live births rather than the number of survivors at the beginning of each period. Where the part of the year concerned does not start at birth, the quotient obtained by this procedure is not the probability of dying during that part of the year among those alive at its start (i.e. those who survived the earlier period). It was pointed out in the 1950 Text that the difference between a rate per 1,000 live births and one per 1,000 surviving live births tends to be negligible when the number of live births is large relative to the number of deaths, and the former rate may be used in place of the latter without appreciable error. The postneonatal rate for 1951 per 1,000 live birth occurrences was 11.0. When those dying during the neonatal period are subtracted from the denominator, the rate per 1,000 remaining is 11.2.

The rates exhibited in the present series of tables all relate to the calendar year unless otherwise specified, and conform to the following definitions :

Infant Mortality Rate.—Deaths among liveborn infants at ages under 1 year per 1,000 related live births.

*Neonatal Mortality Rate.*—Deaths among liveborn infants under 4 weeks of age per 1,000 related live births.

- (a) Early Neonatal Mortality.—Deaths among liveborn infants under 1 week of age per 1,000 related live births ;
- (b) Late Neonatal Mortality.—Deaths among liveborn infants aged 1 week or over but under 4 weeks per 1,000 related live births.

Post-neonatal Mortality Rate.—Deaths among liveborn infants aged four weeks or over but under 1 year of age per 1,000 related live births. ("Post-neonatal" is preferred as the descriptive adjective for this age period because it is self-explanatory in relation to the well-established term "neonatal." The adjective "post-natal" is best employed in its literal meaning of "after birth," irrespective of the time period.)

Stillbirth Rate (Late Fætal Mortality Rate).—Births at or over 28 weeks gestation which are not liveborn, per 1,000 births (live and still).

*Perinatal Mortality.*—This term has come into use in recent years and was used in the 1950 Text to describe a combination of stillbirths with early neonatal deaths (deaths under 1 week) per 1,000 total births; it appears in several of the tables in the present Text with total births (live plus still) as the denominator. (Stillbirths combined with all neonatal deaths are also shown.)

#### Causes of deaths among infants in relation to age

Table LV (page 118) gives mortality rates by sex and selected cause groups at various periods in the first year. Infant deaths are classified in greater detail of cause and age in Table 27 of Part I ; the majority of causes separately specified in the International Classification are shown, and a complete analysis by cause is provided in respect of congenital malformations and diseases of early infancy.

Certain causes of death are associated with particular age periods in the first year. In the present Text tables, underlying causes as given by the attending practitioners have been arranged in broad ætiological groupings according to whether they are primarily determined by factors operating before or at birth, or operating after birth. The title "Prenatal and Natal Causes" is given to the former grouping, which includes congenital malformations as a sub-group, and to the latter grouping the title "Postnatal Causes." The "remaining causes" are those which for one reason or another do not readily fit into either of these two broad groupings.

The distribution by cause per 1,000 total infant deaths within each age group displayed in Table LIV (page 116) clearly shows that :—

- (a) Mortality in the Early Neonatal period, i.e. in the first week of life, is dominated by the conditions here designated as "Prenatal and Natal"; they account for 93 per cent of the deaths in the first week of life, "immaturity" being the most prominent condition among them.
- (b) Over 70 per cent of the causes of death in the post-neonatal period from the fourth week to the end of the first year—are infections (accounting for at least 60 per cent) or accidents (less than 10 per cent) which the new-born encounter for the first time in the post-natal environment which surrounds them from birth onwards; the proportion of "Prenatal and Natal" causes in this series is under 20 per cent and the majority of these are congenital malformations.
- (c) The Late Neonatal Period occupies an intermediate position between the other two; broadly speaking just under two-thirds of the deaths therein are attributable to "Prenatal and Natal" causes (of which congenital malformations account for about half) and one third to "Post-natal" causes.

The Early Neonatal Mortality Rate is thus a convenient measure of infant mortality from Prenatal and Natal causes due to general factors in the maternal environment, past or present, as well as from specific "obstetrical" causes which are directly under the control of the obstetrician. On the other hand, the Post-neonatal Mortality Rate is an index of infant mortality from postnatal causes due to environmental factors in more immediate relationship to the infant, such as respiratory infection in members of the household, or unhygienic handling of his food.

Clearly, many infants whose deaths are attributed to "Post-natal" causes will be immature or malformed, or victims of birth injury or some other condition determined by prenatal or natal factors; such infants may be particularly prone to die from infection or accidents acquired after birth. It is nevertheless likely that these deaths might be reduced, or possibly prevented altogether, if the infection or accident responsible for the fatal illness could be avoided or successfully treated.

The form of stillbirth certificate used in England and Wales does not ask for the practitioner's opinion as to cause. This question has appeared on the Scottish form since 1938, and the Registrar General for Scotland regularly publishes an analysis of stillbirths by cause. From these and other reports and studies it appears that the causes of death in the early neonatal period are more closely allied with those which determine stillbirth than with those operating in the post-neonatal period, so that stillbirths and early neonatal deaths in combination—" perinatal" deaths—are therefore more representative of factors associated with the genotype, the mother, the maternal environment and the quality of obstetric care (" Prenatal and Natal" factors) than the stillbirth and early neonatal mortality rates considered separately.

#### Immaturity

Table LV also shows a combined "immaturity" rate in respect of deaths from "certain diseases of early infancy" (rubrics 760-776) which is derived

from Table 27, Part I, mentioned above. This rate comprises all deaths classed to members of this group with mention of immaturity, in addition to deaths attributed to immaturity alone or with a cause other than the "diseases of early infancy" subsidiary to it ("immaturity alone or primary," etc.).

Coding for mention of immaturity is limited at present to certificates on which appear one or other of the causes listed in rubrics 760–776 of the International Classification. These rubrics contain 86 per cent of early neonatal deaths and 81 per cent of neonatal deaths; congenital malformations, bronchitis and meningitis are the only important cause groups omitted which may often be associated with immaturity.

The following table shows the frequency with which practitioners mentioned immaturity in association with one or other of the causes in the group "diseases of early infancy." The proportions in 1951 in respect of each cause closely parallel those in 1950, but there is a 9 per cent rise in the proportion of deaths from "other birth injury" in which immaturity was mentioned, and smaller rises in respect of "erythroblastosis" and "sepsis of newborn." (It should be noted that certificates in which the underlying cause is given as antepartum maternal hæmorrhage are assigned to rubric 761, "other birth injury".)

Int.	Cause of death		onatal Period r 1 week)		al Period 4 weeks)
classn. No.	Cause of death	Number of deaths	Per cent with immaturity	Number of deaths	Per cent with immaturity
760 761 762	Intracranial and spinal injury at birth Other birth injury (including maternal antepartum hg'e.). Post-natal asphyxia and	1,400 387	32 49	1,518 397	31 49
$763 \\ 764 \\ 765 - 768 \\ 769$	atelectasis Pneumonia of newborn Diarrhœa of newborn Sepsis of newborn Attributed to maternal toxæmia	2,195 380 6 14 240	$ \begin{array}{r} 55\\37\\-\\21\\86\end{array} $	2,364 946 92 55 255	$54 \\ 33 \\ 21 \\ 24 \\ 87$
770 771 772 773	Erythroblastosis Hæmorrhagic disease Nutritional maladjustment Ill-defined diseases		17 27 50 85		18 28 33 82
774, 776	Immaturity mentioned alone or with other cause subsidiary to it	3,497	100	3,788	100
760–776	All deaths coded to section "diseases of early infancy"	8,983	67	10,395	64
All rubrics	All deaths in neonatal period	10,502	57	12,788	52

In all, 6,018 early neonatal deaths (57 per cent) and 6,684 neonatal deaths (52 per cent) had immaturity coded as a primary, subsidiary, or contributory cause. The number of registered neonatal deaths in which there is mention of immaturity is not strictly comparable with the number of neonatal deaths among notified births weighing  $5\frac{1}{2}$  lb. or less. Coding for "immaturity" according to the International Classification is not confined to birth weight alone but comprises *any* evidence of immaturity on the death certificate such

as mention of a gestation period of 37 weeks or less, mention of prematurity (immaturity), or mention of multiple birth.

#### Seasonal variations in stillbirth and infant mortality

Table LVI (page 120) displays the rates in each quarter of the year for stillbirths, and for infant deaths by age and according to selected causes. The quarterly rates are also shown as percentages of the annual rates. Stillbirth and early neonatal mortality rates usually show the least seasonal variation; the largest component of seasonal variation in the post-neonatal period is contributed by "pneumonia and bronchitis."

#### Social class variations in stillbirth and infant mortality

Stillbirth and infant mortality rates for England and Wales by social class are not tabulated annually. The latest available figures are those for 1949 and 1950 (Table XXI, Medical Text for 1948–49, and the Decennial Supplement for 1951, Occupational Mortality, Part I). They show that infant mortality was about two and a half times as great in Social Class V (unskilled workers) as in Social Class I (professional workers); that the gradient was more marked at the later age periods of infancy than among stillbirths and neonatal deaths; and that it was particularly marked in the North of England and in Wales.

#### Comparisons between different areas in England and Wales

#### (a) Variations by age-period

Table LVII (page 122) shows stillbirth and infant mortality rates during 1951 in each of the standard regions and in the conurbations within the regions.

Among the standard regions it is usual to find Wales and the Northern and North Western regions with the worst rates at almost every age-period, while the London and South Eastern region returns the most favourable experience. The regional differences are greater in the later periods of infancy. The following table shows the variation of each rate in each of the standard regions during 1951 from the corresponding rate for England and Wales as a whole:—

The Hard Real	Per cent ex	cess over rate	e for England	1 and Wales
Region Groups and Standard Regions	Stillbirth rate	Early Neonatal rate	Late Neonatal rate	Post- neonatal rate
Wales	+ 15	+ 12	+ 33	+ 31
North of England	+ 8 + 7 + 5 + 10	+ 8 + 15 + 2 + 10	+ 12 + 15 0 + 18	+ 27 + 42 + 27 + 19
Midlands and East          North Midland          Midland          Eastern	$\begin{array}{r} + & 0 \cdot 4 \\ + & 0 \cdot 4 \\ + & 4 \\ - & 5 \end{array}$	$ \begin{array}{rrrr} - & 3 \\ - & 7 \\ + & 6 \\ - & 10 \end{array} $	+ 3 - 3 + 15 - 15	- 4 + 2 + 4 - 21
South of England London and South Eastern Southern South Western	$ \begin{array}{rrrr} - & 9 \\ - & 10 \\ - & 16 \\ - & 3 \end{array} $	$ \begin{array}{cccc} - & 9 \\ - & 9 \\ - & 12 \\ - & 3 \end{array} $	-15 -21 0 -3	$ \begin{array}{r} - 28 \\ - 32 \\ - 24 \\ - 24 \\ - 24 \\ \end{array} $

The standard regions in England can be amalgamated into three large groups, as in the table above, so as to form population areas sufficiently large for a detailed analysis by age and cause covering only one year's experience. These groups represent a broad threefold division of England; on many occasions it is desirable to compare, for example, Scotland and Northern Ireland with the North of England rather than with England and Wales as a whole or with any one of the smaller standard regions.

Table LVIII (page 124) shows the stillbirth and infant mortality rates within England and Wales, Wales and each of the three groups formed from the standard regions in England for aggregates of urban districts by population density and for aggregates of rural districts. There are considerable variations in the regional rates within the same population density grouping. The extent of these variations in the density rates is summarized in the following table :---

er vent excess over raise for England			rresponding p England and	
Population Density Aggregates within Standard Region Groups	Stillbirth rate	Early Neonatal rate	Late Neonatal rate	Post- neonatal rate
Conurbations : North of England Midlands and East South of England	+ 8 + 2 - 9	+ 8 + 5 - 8	+ 19 + 3 - 22	+ 34 + 7 - 32
Other urban areas with popula- tions of 100,000 and over :         Wales          North of England          Midlands and East          South of England	+ 16 + 6 - 3 - 11	+ 13 + 9 - 2 - 16	$\begin{array}{c} - 21 \\ 0 \\ + 8 \\ - 5 \end{array}$	+ 18 + 22 - 14 - 17
Jrban areas with populations of 50,000-100,000 : Wales North of England Midlands and East South of England	+ 38 + 9 - 2 - 11	+ 36 + 6 - 5 - 5	-69 + 19 - 0 - 22	+ 74 + 34 - 11 - 31
Jrban areas with populations of under 50,000 :         Wales          North of England          Midlands and East          South of England	+ 3 + 7 + 2 - 10	+ 12 + 4 - 7 - 3	$+ 44 \\ 0 \\ - 18 \\ - 3$	+ 23 + 15 - 1 - 25
Rural areas :	+ 23 + 9 - 2 - 9	+ 7 + 19 - 3 - 10	+ 43 + 11 - 3 - 17	+ 50 + 22 - 5 - 22

The numbers of live births, stillbirths, neonatal deaths and infant deaths, together with the infant mortality rate, are given in Table 12, Part I for each county, county borough, urban district, and rural district throughout England and Wales. Local authorities can compare their rates not only with those of England and Wales but with the average experience in their own region or region-group, or in the appropriate population density aggregate within the region-group.

#### (b) Variations by cause of death

Table LIX (page 126) gives infant mortality by cause (including an overall immaturity rate) for Wales and three standard region groups in England; the regional rates are also shown as percentages of the national average. The percentages by which the 1951 infant mortality rates for each of the broad cause groupings in the four standard region groups differed from those experienced by England and Wales as a whole were as follows :—

	England and Wales	Per cent	excess ove and V		England
Neomatal Moonalai neonatai tata	rates	Wales	North of England	Midlands and East	
Infant Mortality (All Causes)	29.7	+ 22	+ 16	- 2	- 17
Congenital malformations	4.2	+ 24	+ 5	0	- 10
Other prenatal and natal causes	14.1	+ 15	+ 10	- 3	- 11
Post-natal causes	9.9	+ 23	+ 29	- 2	- 28
Unclassified (remaining causes)	1.5	+ 60	+ 7	- 7	- 20
Immoturity or with montion	- 26			one of the	H912.74
Immaturity, or with mention of immaturity Immaturity alone, or primary to	10.1	+ 18	+ 10	- 4	- 12
dis. other than of early infancy	5.7	+ 26	+ 16	- 5	- 16
Immaturity associated with diseases of early infancy	4.4	+ 7	+ 2	- 2	- 7

The rate for immaturity alone or primary etc., was highest in Wales and the North of England and lowest in the South of England, while the rate for immaturity associated with "diseases of early infancy" (rubrics 760-773), though still keeping the same general trend, showed a more uniform distribution. The coding convention enjoined at present by the International Classification insists that, whenever immaturity and one of the other "diseases of early infancy" are mentioned together on the death certificate, the latter shall be coded as the primary cause even if the certifying practitioner entered "immaturity" as the underlying cause. This is an important exception to the general rule that selection from two or more causes entered on a certificate is in accordance with the practitioner's own indication as to which was the underlying cause. The following table confirms the suggestion made in the 1950 Text that certifying practitioners in the South and Midlands of England may more often mention one or other of the specific diseases of early infancy along with immaturity on the certificate, whereas a greater number of practitioners in the North of England and in Wales—perhaps because post-mortems are less frequently held—write immaturity alone.

atal civitus have been computed hoatal mortality, which is given such year since 1928; along with	England and Wales	Wales	North of England	Midlands and East	South of England
(a) Immaturity or with mention of immaturity (per 1,000 live births)	10.1	11.9	11.1	9.7	8.9
(b) Immaturity alone or primary to diseases other than of early infancy (per 1,000 live births)	5.7	7.2	6.6	5.4	4.8
(b) as percentage of $(a)$	56	61	59	56	54

There may also be a tendency among practitioners to avoid putting "immaturity" as the underlying cause of death where a definite explanation can be given in terms of infant pathology, e.g. atelectasis, intracranial hæmorrhage. When there is a post-mortem on an immature infant dying in hospital, the certifying practitioner may therefore prefer to assign the principal pathological finding as the underlying cause which led directly to death and put immaturity as a subsidiary or contributory condition. An increase in the post-mortem rate on immature infants, together with the rules for assignment already mentioned, would tend to bring about an artificial decline in the rate for "immaturity alone." This would be compensated in large measure, however, by a parallel rise in the "associated immaturity" rate.

Compared with 1950, the death rate in England and Wales from " immaturity alone or primary to diseases other than of early infancy " has gone down but the rate from " immaturity associated with diseases of early infancy " has increased.

dent between 1944 and nediately obvious. It is	Immaturity a diseases of e	ssociated with arly infancy	Immaturity ald to diseases ot early in	her than of
bus children) significantly (A) (Civil Text, 1940–45, acces in the early neonatal	Rate in 1951	Per cent of 1950	Rate in 1951	Per cent of 1950
England and Wales	4.4	93	5.7	105
Wales North of England Midlands and East South of England	4.7 4.5 4.3 4.1	85 96 98 90	7.2 6.6 5.4 4.8	104 106 106 102

## Secular trend of stillbirth and infant mortality

#### (a) Trend at different age-periods in England and Wales

Table LX (page 128) shows the trend of infant mortality and early neonatal, late neonatal and post-neonatal mortality since 1906, and the trend of stillbirths (late foctal mortality) since 1928. The annual rates at different ages in the post-neonatal period are also shown.

Late fœtal deaths (stillbirths) and early neonatal deaths have been combined to form the numerator for a rate measuring perinatal mortality, which is given in terms of total births, i.e. live plus still, for each year since 1928, along with other rates based on total births.

The differential trends exhibited by the rates for the selected age-periods have already been mentioned (page 110). The trend of early neonatal mortality has followed on the whole a course parallel to the trend of stillbirths, whereas the trend of mortality in the late neonatal period has shown greater affinity with the post-neonatal trend than with the early neonatal trend. Table LIV (page 116) suggests why this should be the case : about 4 per cent of the deaths in the first week are primarily due to infections of all kinds, but 35 per cent of deaths in the late neonatal period are so attributed.

The following table demonstrates the differential trends. Stillbirth, early neonatal, late neonatal and post-neonatal death rates from 1940 onwards are displayed as percentages of the averaged rates for each group in the years 1936-39.

	Averaged annual		19414	Ann	ual rat	tes per	cent	of aver	age fo	r 1936	-39		
ar in heatrai. the	rates 1936–39	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951
Stillbirth rate (late fœtal mortality)	38-8	96	90	86	78	71	71	70	62	60	59	58	59
Early neonatal mortality	21.6	99	96	91	85	81	83	82	76	72	72	70	72
Late neonatal mortality	.7.6	109	109	101	91	91	89	88	82	54	49	43	43
Post-neonatal mortality	25.8	105	121	91	93	82	83	71	72	55	50	43	42

The stillbirth (late foetal death) rate expressed as a percentage of the averaged rates for 1936-39 has declined between 1948 and 1951 by only 1 per cent, while the early neonatal rate has remained unchanged. In contrast to this, late neonatal mortality has declined over the same period by 11 per cent and post-neonatal mortality by 13 per cent.

This lag in "perinatal" mortality was also evident between 1944 and 1946, and the reasons for its appearance are not immediately obvious. It is known that maternal age and parity (number of previous children) significantly influence the likelihood of stillbirth (late fœtal death) (Civil Text, 1940-45, pages 129-132) and they may also be important influences in the early neonatal period. The 1946-50 Civil Text (pages 143-145) shows, however, that standardization of the stillbirth (late fœtal death) rates over the period 1939-51 for age and parity in terms of the 1939 rates does not materially alter the shape of the trend.

## (b) Trend at different age-periods in the standard regions

Table LXII (page 130) displays the stillbirth rate (late foetal death rate), the neonatal death rate, and the post-neonatal death rate in each of the years 1947 to 1951. The rates are shown as percentages of the 1947 rates to indicate the relative rates of decline.

A space of five years is not long enough to demonstrate significant differences between regional trends but the table makes it evident that the lag in stillbirth rates and neonatal mortality during 1950 and 1951 is a feature common to most of the regions.

		NU         1         1         1         1         1         1           1         1         1         1         1         1         1         1           1         1         1         1         1         1         1         1           1         1         1         1         1         1         1         1           1         1         1         1         1         1         1         1           1         1         1         1         1         1         1         1         1           1         1         1         1         1         1         1         1         1           1	NU         10         10         10         10         10           11         1         1         0         1         0         1           11         1         0         1         0         0         1         1           11         1         0         1         0         0         0         1           11         1         0         1         0         1         0         1           11         0         1         0         1         0         1         1           10         1         1         1         1         1         1         1         1         1         1           10         1				2,845				10 855,05		
		10 <sup>1</sup> 10 <sup>1</sup> 10 <sup>1</sup> 10 <sup>1</sup> 10         10         10         10           10         10         10         10           11         10         10         10           11         10         10         10           11         10         10         10           11         10         10         10           11         10         10         10           11         10         10         10           11         10         10         10           11         10         10         10           11         10         10         10           11         10         10         10           11         10         10         10           11         10         10         10           11         10         10         10           11         10         10         10           11         10         10         10           11         10         10         10           11         10         10         10           11         10	101         101         101         101           101         101         101         101           101         101         101         101           101         101         101         101           101         101         101         101           101         101         101         101           101         101         101         101           101         101         101         101           101         101         101         101           101         101         101         101           101         101         101         101           101         101         101         101           101         101         101         101           101         101         101         101           101         101         101         101           101         101         101         101           101         101         101         101           101         101         101         101           101         101         101         101           101         101         101         101										
	antipa	109. 119. 119. 119. 129. 129. 129. 129. 12	110. 111 228 111 228 111 229 1111 1129 1129 1129 1129 1129 1										
					14								
1         1         30         200           1         1         1         80         200           1155         20         20         20         20           1155         20         20         20         20           115         10         10         20         20           116         12         21         4         20           200         20         20         20         20           210         20         20         20         20           210         20         20         20         20           210         20         20         20         20           210         20         20         20         20           210         20         20         20         20           210         20         20         20         20           210         200         200         200         200           200         200         200         200         200           200         200         200         200         200           200         200         200         200         200         200	1200 230 240 250 250 250 250 250 250 250 250 250 25	110 110 110 111 111 111 111 111											

Table LIV.—Principal Causes of Death Under One Year, arranged in ætiological groups: (a) Age-group distribution per cent of all deaths assigned to each cause ; (b) Cause distribution per 1,000 total deaths in each agegroup. England and Wales, 1951

	A SACE SEA		Age d	istribution p assigne	er cent of t ed to each c	otal infant d ause	leaths	Cause o	listribution j e	per 1,000 to ach age-gro	otal infant de oup	aths in
Ætiological	Cause of Death	Number of infant		Neor	natal mortal	lity	Post-	Tefant	Ne	onatal mort	ality	Post- neonatal
Group	(and International Classification numbers)	deaths (under 1 year)	Infant mortality (under 1 year)	(Under 4 weeks)	Early (under 1 week)	Late (1 week and under 4 weeks)	neonatal mortality (4 weeks and under 1 year)	Infant mortality (under 1 year)	Under 4 weeks	Early (under 1 week)	Late (1 week and under 4 weeks)	mortality (4 weeks and under 1 year)
ALL CAUSES	All causes	20,223	100	63	52	11	37	1,000	1,000	1,000	1,000	1,000
	Congenital malformations (750-759)	2,864	100	63	41	22	37	142	142	113	278	141
	Total causes mainly of prenatal and natal origin other than congenital mal- formations	9,595	100	97	89	8	3	474	727	817	314	40
116	Immaturity alone, or primary to diseases other than of early infancy (774, 776)	3,886	100	97	90	7	3	191	295	333	126	14
Prenatal and Natal	Attributed to maternal toxæmia (769)	257	100	99	93	· 6	1	13	20	23	7	0
Group (including	Ill-defined diseases of early infancy (773)	332	100	84	73	11	16	16	22	23	17	7
congenital malforma-	Postnatal asphyxia and atelectasis (762).	2,441	100	97	90	7	3	121	185	209	74	10
tions)	Intracranial and spinal injury at birth (760)	1,556	100	98	90	8	2	77	119	133	52	5
	Other birth injury (including maternal antepartum hæmorrhage) (761)	397	100	100	- 97	3	-	20	31	37	4	-
		FOF	100	96	87	9	4	25	38	42	20	3
	Erythroblastosis (770)		100	97	83	14	3	11	17	17	14	1
	Total causes mainly of postnatal origin	6,777	100	21	9	12	79	335	112	55	370	720
	Gastro-enteritis (including diarrhœa of newborn) (571, 764)	831	100	11	1	10	89	41	7	1	38	99
	Pneumonia and bronchitis (490–493, 763 500–502)		100	25	10	15	75	196	77	37	259	396

	Managements dispuse of neuriprin (771)										6.66	
Postnatal Group	Causes classified as infective (001-138) : others mainly infective in origin*	1,254	100	13	3	10	87	62	13	4	54	146
	Whooping cough; measles (056, 085)	371	100	1		1	99	18	0			
	Acute upper respiratory infections and	an An	0.63	0.69	0.00	0.03		0.15	0.45	1000	1	49
	influenza (470–475; 480–483)	211	100	9	1	8	91	10	2	0	7	26
	Otitis media and mastoiditis; empyema; pleurisy (391-393; 518, 519)	133	100	10.00	3-92	052F	(40P)	1-10	3,03	10.9		6.0
	The first and the stand of a sector rate (2001	199	100	11	2	9	89	7	11	0	5	16
	Septicæmia; skin and subcutaneous tis- sue infections; sepsis of newborn (053, 690-698, 765-768)	108	100	63	14	49	37	5	5	2	23	5
	Tuberculosis other than tuberculous	14	i in	692	6.52		A STATE	1.14	H.T.	0.00		
	meningitis (001-008; 011-019)	43	100	2	2	(trade	98	2	0	0	-	6
	Tuberculous meningitis (010)	56	100		<del>,</del>	0-03	100	3		(	( بنين	8
	Meningococcal infections and non- meningococcal meningitis (057; 340)	250	700	10	2.00-	0.10	0.12	12/24	2.54	0-13		0.6
	The second s	200	100	18	5	13	82	12	4	1	14	28
	Causes classified as infective not specified above (remainder 001-138)	82	100	18	10	8	82	4	1.10	0.50	3	9
	Accidental mechanical suffocation from vomit, food, foreign body, or in cot	a fre	e del	a'ar	1.9	0.83	141	Nes	(1.5)3	0.00		0-35
	(E921–E925)	576	100	11	4	7	89	28	5	2	18	69
	Lack of care; neglect (including found- lings); infanticide (E926; E980-E985).	127	100	91	89	2	9	6	0	11	25.00	
	Other accidental causes (remainder E800-	Se	100	31.00	12-00	2	33	0	9	11	946 9.88	314
	E999)	65	100	11	8	3	89	3	1	0	1	8
Unclassified	Total causes remaining	987	100	25	16	9	75	49	19	15	38	99
	Neoplasms (140–239)	83	100	22		3	78	4	atal p <b>l</b> riod	2	monthing bo	9
	Other remaining causes	904	100	25	16	9	75	45	18	13	37	90

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Table LV.—Principal Causes of Death Under One Year and in the Neonatal, Post-neonatal and other Age Periods,<br/>by Sex, per 1,000 related live births. England and Wales, 1951

INCLUENTED	Other remaining causes	90-i	010	1002	Infant	Mortality pe	er 1,000 rela	ted live birt	hs at variou	s ages	nt.	00
Bas Contral	Neoplasma (130 2000 12.	82	Total Infant	Numeral	Early neonatal	Late neonatal	Post-neo- natal mor-	Early neor	atal period	Post-	neonatal per	iod
Ætiological Group	Cause of Death (and International Classification numbers)		mortality (under 1 year)	Neonatal mortality (under 4 weeks)	mortality (under 1 week)	mortality (1 week and under 4 weeks)	tality (4 weeks and under 1 year)	Under 1 day	1 day and under 1 week	4 weeks and under 3 months	3 months and under 6 months	6 months and under 1 year
ALL CAUSES	All Causes	{M. F.	33·56 25·53	21.60 15.91	17·96 12·83	3.64 3.08	11·96 9·62	8·51 6·44	9·45 6·39	4.68 3.42	3·85 3·30	3·43 2·90
	Congenital malformations (750-759)	{M. F.	4·38 4·02	2·74 2·61	1.82 1.66	0·93 0·94	1.64 1.41	0.60 0.68	1·22 0·98	0·87 0·60	0·41 0·46	0·36 0·35
118		{ <b>M</b> . F.	16·49 11·64	16.00 11.26	14.82 10.33	1·18 0·93	0·49 0·38	7.52 5.51	7·30 4·82	0·36 0·29	0·08 0·06	0.05 0.03
Prenatal and Natal Group	Immaturity alone, or primary to diseases other than of early infancy (774, 776)	{M. F.	6·45 4·90	6·30 4·76	5·90 4·36	0·40 0·42	0·15 0·14	3·36 2·40	2·54 1·96	0·13 0·14	0.01 0.00	0.01
(including congenital malforma-	Attributed to maternal toxæmia (769)	{M. F.	0·38 0·37	0·38 0·37	0·36 0·35	0·02 0·03	0.00 0.00	0·20 0·18	0·15 0·17	0.00 0.00	=	+
tions)	Ill-defined diseases of early infancy (773)	{M. F.	0.60 0.38	0.50 0.32	0·42 0·29	0·08 <i>0·03</i>	0·10 0·06	0·21 0·17	0·20 0·12	0·08 0·05	0:02 0:00	0·00 0·01
	Postnatal asphyxia and atelectasis (762)	${}^{\rm M.}_{\rm F.}$	4·14 2·98	4·03 2·88	3.78 2.66	0·26 0·23	0·11 0·10	1·93 1·45	1.85 1.21	0.07 0.05	0·03 0·04	0·01 0·01
	Intracranial and spinal injury at birth (760)	{ <sup>M.</sup> F.	2.95 1.58	2.89 1.55	2.68 1.41	0·21 0·14	0.06 0.03	1·10 0·64	1·58 0·76	0.04 0.03	0.01 0.00	0.01 0.00
	Other birth injury (including maternal ante- partum hæmorrhage) (761)	$\{^{M.}_{F.}$	0.63 0.53	0.63 0.53	0.61 0.52	0·02 0·01	-	0·45 0·43	0·17 0·10	=		( <u>11)</u>
	Erythroblastosis (770)	$\{^{M.}_{F.}$	0.91 0.56	0·87 0·53	0.80 0.48	0·08 0·05	0.04 0.03	0·23 0·18	0·57 0·30	0.02 0.01	0·01 0·01	0·01 0·01
	Hæmorrhagic disease of newborn (771)	$\{^{M.}_{F.}$	0·35 0·29	0·34 0·29	0·28 0·26	0.06 0.03	0.01 0.00	0.04 0.06	0·23 0·20	0.01 0.00	0.00	-

	Erythroblastosis (770) Hemorihagie disease of newborn (771).		8-8 2-0	014 0-8					123		100
	Total causes mainly of postnatal origin $\dots  \begin{cases} M. \\ F. \end{cases}$	11.02 8.70	2·41 1·77	1.04 0.65	1·37 1·12	8·61 6·93	0·26 0·18	0·78 0·47	3.09 2.28	3·01 2·51	2·5 2·1
congenital malformation	Gastro-enteritis (including diarrhœa of new- born) (571, 764)	1·42 1·00	0·16 0·11	0.01 0.01	0·15 0·10	1·26 0·89	0.00	0·01 0·00	0.48	0·41 0·35	0.3
Postnatal Group	Pneumonia and bronchitis (490-493, 763:500- 502)	6·37 5·10	1.69 1.19	0·72 0·42	0·96 0·76	4.68 3.91	0.05 0.03	0.67 0.39	1.82 1.35	1.66 1.46	1.2
Ston Pter	Causes classified as infective (001-138): {M. others mainly infective in origin*, {F.	1.96 1.68	0·23 0·26	0.06 0.06	0·17 0·20	1.73 1.42	0.01 0.01	0.05 0.05	0·45 0·35	0·49 0·38	0.7
	Accidental mechanical suffocation from vomit, food, foreign body, or in cot (E921-E925) {F.	0.95	0·12 0·08	0·05 0·02	0·07 0·06	0.83 0.66	0.00 0.01	0.04 0.02	0·33 0·24	0·40 0·31	0·1 0·1
	Lack of care ; neglect (including foundlings); {M. infanticide (E926, E980-E985) {F.	0·23 0·13	0·21 0·13	0·20 0·13	0.01	0.02 0.00	0·19 0·12	0.01 0.01	0.00	0.01 0.00	0.0
faut Deathe	Other accidental causes (remainder E800- {M E999) {F.	0·11 0·07	0.01 0.01	0·01 0·01	0.00 0.00	0·10 0·06	0·01 0·01	125	0.02 0.02	0.04 0.01	0.0 0.0
UNCLASSI- FIED	Total causes remaining $\dots \dots \dots \prod_{F_n} {M_n \atop F_n}$	1.69 1.18	0·45 0·28	0·28 0·19	0·17 0·09	1·24 0·90	0·13 0·08	0·14 0·12	0·37 0·25	0·35 0·26	0·5 0·3
nmaturity, o 760·5–773·l	r with mention of immaturity (774, 778;	10.08	9.85	8.86	0.99	0.23	4.62	4.25	0.21	0.01	0.0.
Immaturity	alone, or primary to disease other than of early		390	39.0	33.3	331	37.15	104	247	040	194
infancy (	774, 776) ,	5.72	5.58	5.15	0.43	0.14	2.89	2.26	0.13	0.01	0.00
Immaturity 773·5)	associated with diseases of early infancy (760.5-	4.35	4.27	3.71	0.56	0.08	1.72	1.99	0.07	0.01	0.00
l other causes	6 (760.0-773.0 and remainder)	19.59	8.99	6.61	2.38	10.60	2.89	3·72	3.86	3.57	

Table LVI.—Stillbirths per 1,000 Total Births, Infant Deaths and Deaths in the Early Neonatal, Late Neonatal and Post-neonatal Periods per 1,000 Related Live Births, and Death Rates from the Principal Causes of Infant Mortality; Comparisons of Annual and Quarterly Rates. England and Wales, 1951

		Annual Rates	(per	Quarter 1,000 live bi	ly Rates irth occurrer	nces)*	Quarte	erly Rates p Ra	er cent of A tes	nnual
Ætiological Group	Cause of Death (and International Classification numbers)	(per 1,000 related live births)	Jan. to March	April to June	July to Sept.	Oct. to Dec.	Jan. to March	April to June	July to Sept.	Oct to Dec
tillbirths (Late F	cetal Deaths, at or over 28 weeks gestation)	23.0	<b>24</b> ·0	22·3	22·1	24.0	104	97	96	104
arly Neonatal D	eaths (infant deaths at ages under 1 week)	15.5	16.5	15.4	14.0	16.2	106	99	90	105
ate Neonatal De	aths (infant deaths at ages 1 week and under 4 weeks)	3.3	4.4	3.1	2.9	3.1	133	94	88	94
	aths (infant deaths at ages 4 weeks and under 1 year)	10.9	16.9	9.4	7.0	10.4	156	87	65	2 <b>9</b> 043
nfant Deaths (to	tal under 1 year)	29.7	37.2	27.7	23.8	30.0	125	<b>93</b>	<b>80</b>	10
CALCULAR CONTROL	Congenital malformations (750–759)	4.2	4.3	4.0	3.9	4.7	102	95	93	11
a here and a second	Total causes mainly of prenatal and natal origin other than	i osr		I[0,D]	80-02	010	10:0	00.0	10.0	2.0
Statistics -	congenital malformations	14.1	15.5	13.8	12.8	14.6	110	98	91	10
Prenatal	Immaturity alone, or primary to diseases other than of early infancy (774, 776)	5.7	6.3	5.5	5.2	5.9	111	96	91	10
and Natal Group	Attributed to maternal toxæmia (769)	0.4	0.4	0.3	0.4	0.4	0-30	1-32	1.10	<u>I.</u>
(including congenital	Ill-defined diseases of early infancy (773)	0.2	0.7	0.4	0.4	0.4	00.0	0-32-	6.30	( <u>)</u>
malformations)	Postnatal asphyxia and atelectasis (762)	3.6	4.0	3.5	3.2	3.7	111	97	89	10
	Intracranial and spinal injury at birth (760)	2.3	2.3	2.4	2.0	2.5	100	104	87	10
	Other birth injury (including maternal antepartum hæmorrhage) (761)	0.6	0.6	0.2	0.6	0.7	100	83	100 .	11
	Erythroblastosis (770)	0.7	0.8	0.9	0.6	0.7	114	129	86	10
- and and a second second	Hæmorrhagic disease of newborn (771)	0.3	0.4	0.3	0.3	0.3		-	_	-

Greater London co Rest of South Eat		• •	52-8 1-87							2.2				81-6	34.9	11-4	31-
West Midland con Rest of Midland re		• •			16-1 20-9		32.5			4.0 4.1			28.9	58-9 58-8		14-8	83- 48-
S.E. Lancashire co Merseyside conuc Rest of North We	parion	* - * *	225-8 89-9 84-0			4-2 8-9 8-7	11.9 1.81			5-5 6-3		2:5 2:5	58-1 58-5 58-1	24-8 25-9		17-1 18-0 15-3	45. 45. 45.
	causes mainly		atal origin	1 <del>40</del> -5 18-3	10-3	••	9•9	15.8	8.4		5.9	9.9	160	85	0	60	100
							the state of the s					1 25	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2.2023	18.3 4.2	2.0.11	
Teneside communa	stro-enteritis (i eumonia and b				18-3	64)	1·2 5·7	1.6	1.1	D.I.	0.9	1·3 5·7	133	92	100 00 00 00 00 00 00 00 00 00 00 00 00	75	108
Postnatal Group Cau	stro-enteritis (i eumonia and b uses classified as n origin (340; 3	ronchitis s infectiv	(490–493, e (001–138	763; 500	)-502) mainly infe			8.5	8.1	2 I	11-11		01-8	54.4		10-0	108 100 89
Postnatal Group Acc b	eumonia and buuses classified au n origin (340; 3 cidental mecha body, or in cot	ronchitis s infectiv 91–393; 4 nical suf (E921–E	(490-493, e (001-138 470-483;5 focation fi 2925)	763; 500 3): others 18, 519; 6 rom vomi	)–502) mainly infe 90–698; 76 it, food, fo 	 ective 5–768) oreign 	5.7	9.5	4.7	10 10 10 10 10 10 10 10 10 10 10 10 10 1	3.2	5.7	167	82	<ul> <li>(1)</li> <li>(1)<td>56 56 56</td><td>108 100 89 111</td></li></ul>	56 56 56	108 100 89 111
Postnatal Group Cau in Acc b Lac	eumonia and buuses classified as n origin (340; 3 cidental mecha	ronchitis s infectiv 91–393; 4 nical suf (E921–E	(490-493, e (001-138 470-483;5 focation fi 2925)	763; 500 3): others 18, 519; 6 rom vomi	)–502) mainly infe 90–698; 76 it, food, fo 	 ective 5–768) oreign 	5·7 1·8	9·5 3·2	4.7		3·2 1·0	5·7 1·6	167 178	82 89	2882 29982 1998 2882 1998 2880 1978	56 56	108 100 89
Postnatal Group Acceleration Lac	eumonia and buuses classified as n origin (340; 3 cidental mecha body, or in cot ck of care; negl	ronchitis s infectiv 91–393; 4 nical suf (E921–E lect (inclu	(490-493, e (001-138 470-483;5 focation fr (925) iding foun	763; 500 3): others 18,519;6 rom vomi  dlings); in	0-502) mainly info 90-698; 76 it, food, fo  nfanticide ( 	 5-768) preign  (E926;	5·7 1·8 0·9	9·5 3·2 1·1	4·7 1·6 0·8		3·2 1·0 0·5	5·7 1·6 1·0	167 178 122	82 89	·····································	56 56 56	108 100 85 111

Immaturity, or with mention of immaturity (774; 776; 760.5–773.5)	10.1	11.4	9.4	9.4	10.3	113	93	93	102
Immaturity alone, or primary to diseases other than of early infancy (744, 776)	5.7	6.3	8 0 5.5	5.2	5.9	111	96 96	91 91	104
Immaturity associated with diseases of early infancy (760.5-773.5)	4.4	5.0	3.9	4.1	4.4	114	89	93	100
All other causes (760.0-773.0 and remainder)	19.6	25.9	18.3	14.4	19.7	132	93	73	101
* Stillbirths rates are per 1,000 total births. Inf	fant mortali	ity rates fro	m all causes	are per 1,00	0 related liv	e births.	liato lar	the Infant deaths	births

\* Stillbirths rates are per 1,000 total births. Infant mortality rates from all causes are per 1,000 related live births.

Table LVII.—Infant Mortality per 1,000 Related Live Births, and combined Stillbirth and Infant Death Rates per 1,000 Total Births, according to Age. England and Wales, Standard Regions and Conurbations, 1951

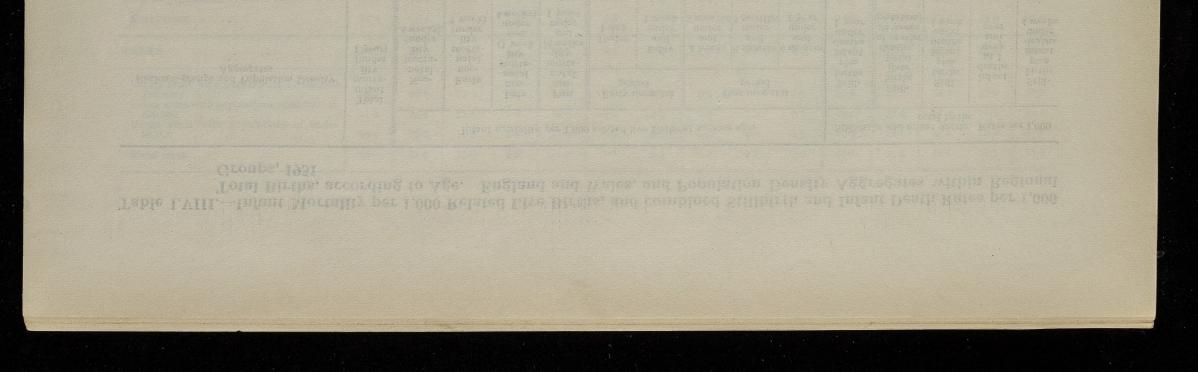
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 Table LVII.—Infant Mortality per 1,000 Related Live Births, and combined Stillbirth and Infant Death Rates per 1,000

 Total Births, according to Age.
 England and Wales, Standard Regions and Conurbations, 1951

			Infant	mortality	per 1,000	related liv	ve births a	at various	ages		Stillbirt	hs and infa to	nt deaths tal births	. Rates	per 1,000
Standard Regions and Conurbations within the standard regions	Total infant morta- lity	Neo- natal	Early neonatal		Post- neonatal morta-		ieonatal iod	P	ost-neonat period	al Geoteer to	Still- births plus	Still- births (late	Still- births plus	Infant deaths	Still- births plus
Invisionity associated with diseases of saviy in All other causes (760-0-773-0 and remainder)	(under 1 year)	morta- lity (under 4 weeks)	morta- lity (under 1 week)	lity (1 week and under 4 weeks)	lity (4 weeks and under 1 year)	Under 1 day	1 day and under 1 week	and under	3 months and under 6 months	6 months and under 1 year	infant deaths under 1 year	fœtal deaths at or over 28 weeks gestation)	infant deaths under 1 week	at 1 week and over	infant deaths under 4 weeks
ENGLAND AND WALES	29.7	18.8	15.5	3.3	10.9	7.5	8.0	4.1	3.6	3.2	52·2	23.0	38.2	14.0	41.5
Standard Regions: NORTH OF ENGLAND Northern	37·1 32·9 33·9	21.6 19.1 20.9	17·8 15·8 17·0	3·8 3·3 3·9	15·5 13·8 13·0	8·3 7·3 8·5	9·5 8·5 8·5	5·5 4·9 5·0	5·4 4·8 4·2	4·5 4·1 3·6	61·0 56·6 58·5	24·6 24·2 25·2	41·9 39·7 41·8	19·0 16·9 16·7	45.7 42.9 45.7
MIDLANDS AND EAST North Midland	28·7 31·6 25·4	17.6 20.3 16.8	14·4 16·5 14·0	3·2 3·8 2·8	11·1 11·3 8·6	7·1 8·3 6·8	7·3 8·2 7·2	$3.9 \\ 4.3 \\ 3.1$	3.8 3.7 3.0	3·4 3·3 2·3	51·3 55·0 46·9	23·1 23·9 21·9	37·1 40·0 35·6	14·2 14·9 11·2	40·4 43·7 38·4
SOUTH OF ENGLAND London and South Eastern Southern South Western	24·1 25·2 26·5	16·7 16·9 18·2	$ \begin{array}{c c} 14.1 \\ 13.6 \\ 15.0 \end{array} $	2.6 3.3 3.2	7·4 8·3 8·3	7·0 6·4 6·6	7·0 7·2 8·4	$2 \cdot 9$ $3 \cdot 1$ $3 \cdot 2$	2·3 2·6 2·7	2·2 2·5 2·5	44.6 44.3 48.4	20·8 19·4 22·3	34·6 32·8 37·0	10·0 11·5 11·4	37·2 36·1 40·1
WALES <th< td=""><td>36·1 35·8 37·2</td><td>21.8 22.2 20.8</td><td><math>     \begin{array}{r}       17\cdot 4 \\       18\cdot 3 \\       14\cdot 8     \end{array} </math></td><td>4·4 3·9 6·0</td><td>14·3 13·6 16·4</td><td>8·4 8·7 7·4</td><td>9·0 9·6 7·4</td><td>5·6 4·9 7·1</td><td>4·8 4·7 4·8</td><td>4·0 3·9 4·4</td><td>61·9 61·8 62·0</td><td>26·4 26·8 25·5</td><td>43·4 44·7 39·9</td><td>18·5 17·1 22·0</td><td>47·7 48·4 45·8</td></th<>	36·1 35·8 37·2	21.8 22.2 20.8	$     \begin{array}{r}       17\cdot 4 \\       18\cdot 3 \\       14\cdot 8     \end{array} $	4·4 3·9 6·0	14·3 13·6 16·4	8·4 8·7 7·4	9·0 9·6 7·4	5·6 4·9 7·1	4·8 4·7 4·8	4·0 3·9 4·4	61·9 61·8 62·0	26·4 26·8 25·5	43·4 44·7 39·9	18·5 17·1 22·0	47·7 48·4 45·8
Conurbations within Standard Regions: Tyneside conurbation Rest of Northern region	38·0 36·7	22·0 21·5	18·3 17·6	3·7 3·9	16·0 15·2	9·2 7·9	9·1 9·6	5·1 5·6	6·4 5·0	4·7 4·5	61·8 60·7	24·4 24·7	42·3 41·8	19·5 18·9	45·8 45·7
West Yorkshire conurbation Rest of East and West Ridings region	32·6 33·1	18·3 19·7	15·1 16·2	3·2 3·5	14·3 13·4	7·4 7·2	7·7 9·1	5·2 4·7	4·9 4·7	4·2 4·1	55·0 57·7	22·9 25·2	37·7 41·0	17·3 16·6	40·8 44·4
S.E. Lancashire conurbation	34·0 35·4 32·8	20·9 21·0 20·9	16·7 17·1 17·2	4·2 3·9 <i>3</i> ·7	13·1 14·4 <i>11·9</i>	8·3 8·6 8·5	8·4 8·5 8·7	5.5 5.5 4.2	3·8 5·0 4·2	3·9 3·8 3·4	58·2 59·5 58·1	24·8 24·8 25·9	41·1 41·5 42·7	17·1 18·0 <i>15·3</i>	45·2 45·4 46·3
West Midland conurbation	30·6 32·7	19·4 21·2	16·1 16·9	3·3 4·3	11·2 11·5	8·2 8·5	7·9 8·4	4·1 4·5	3·5 4·0	3·7 3·0	53·1 56·9	23·0 24·8	38·8 41·3	14·3 15·6	42·0 45·5
Greater London conurbation Rest of South Eastern region	23.7 25.6	16·6 16·8	14·1 14·0	2.5 2.8	7·1 8·8	7·0 7·1	7·1 6·9	2.7 3.7	$2 \cdot 2 \\ 2 \cdot 5$	2·1 2·6	44·1 46·2	20·7 21·0	34·5 34·8	9·5 11·4	37·1 37·6

Rural areas								
Attact subsia meas service 100,060 and over with populations of 100,060 and over with populations of 56,000 to 100,000 with populations of number 50,000								
Connthations (Tyneside, W. Yorks, S.L. Lance, Merreyside)								
ORTH GE PROFAMI (Northern, Jeans IV, Fillings, N. Western)					in i			
Rural areas								
		1000 1000 1000 1000 1000 1000 1000 100						
Conversions								
NGLAND AND WALLS	1811							



# Table LVIII.—Infant Mortality per 1,000 Related Live Births, and combined Stillbirth and Infant Death Rates per 1,000 Total Births, according to Age. England and Wales, and Population Density Aggregates within Regional Groups, 1951

and the second instantion			Infant	mortality	y per 1,000	related li	ve births	at various	ages		Stillbirt	hs and infa to	nt deaths otal births	. Rates p	er 1,000
Regional-groups and Population Density Aggregates	Total infant morta- lity	Neo- natal	Early neo-	Late neo- natal	Post neo- natal	Early per	eonatal od	Po	ost neonat period	al	Still- births	Still- births (late	Still- births	Infant	Still- births
	(under 1 year)	morta- lity (under 4 weeks)	natal morta- lity (under 1 week)	morta- lity (1 week and under 4 weeks)	morta- lity (4 weeks and under 1 year)	Under 1 day	1 day and under 1 week	4 weeks and under 3 months	3 months and under 6 months	and under	plus infant deaths under 1 year	fœtal deaths, at or over 28 weeks gestation)	plus infant deaths under 1 week	deaths at 1 week and over	plus infant deaths under 4 weeks
ENGLAND AND WALES	29.7	18.8	15.5	3.3	10.9	7.5	8·0	4.1	3.6	3.2	52·2	23.0	38.2	14.0	41.5
Conurbations	29.0	18.5	15.4	3.2	10.5	7.7	7.7	4.0	3.4	3.1	51.0	22.5	37.5	13.5	40.6
Other urban areas : with populations of 100,000 and over with populations of 50,000 to 100,000 with populations of under 50,000	$31.6 \\ 30.0 \\ 30.3$	19·7 18·6 19·3	$   \begin{array}{r}     15 \cdot 8 \\     15 \cdot 5 \\     15 \cdot 9   \end{array} $	3·9 3·2 3·4	12·0 11·4 11·0	7.6 6.7 7.6	8·1 8·7 8·3	4·4 4·4 4·1	3·8 3·6 3·8	3·7 3·4 3·1	54·8 53·5 53·7	23·7 24·0 24·0	$39.1 \\ 39.1 \\ 39.5$	$15.6 \\ 14.4 \\ 14.2$	42·9 42·2 42·8
Rural areas	28.8	18.5	15.0	3.2	10.3	7.3	7.7	3.8	3.5	3.0	50.7	22.3	37.0	13.6	40.5
NORTH OF ENGLAND	34.4	20.6	16.8	3.7	13.8	8.1	8.8	5.1	4.7	<b>4</b> ·0	58.5	24.8	41.2	17.3	44.9
Conurbations (Tyneside, W. Yorks., S.E. Lancs., Merseyside)	34.6	20.4	16.6	3.8	14.1	8.3	8.3	5.4	4.8	4.0	58.2	24.3	40.5	17.7	44.2
Other urban areas : with populations of 100,000 and over with populations of 50,000 to 100,000 with populations of under 50,000	35·8 35·5 32·7	21·2 20·2 20·0	$17.3 \\ 16.4 \\ 16.6$	$3.9 \\ 3.8 \\ 3.4$	$14.6 \\ 15.3 \\ 12.7$	8·1 7·0 7·8	9·2 9·4 8·8	5·2 6·1 4·3	$4.5 \\ 4.7 \\ 4.9$	4·9 4·5 3·4	60·2 61·0 57·6	25·1 26·2 25·6	42·0 42·3 41·7	18·3 18·8 15·9	45·8 46·0 45·1
Rural areas	34.3	21.7	17.9	3.9	12.6	8.4	9.5	4.6	4.2	3.8	57.9	24.2	41.7	16.2	45.5

	558, 519) Septi-senda, skih and sul	v	is classes in				6 0-2					100.	129			
]	MIDLANDS AND EAST	<b>29</b> .0	18.5	15-1	3.4	10.5	7.5	7.6	3.8	3.5	3.1	51.6	23.1	37.9	13.7	41.2
	Conurbation (West Midland)	30.6	19.4	16.1	3.3	11.2	8.2	7.9	4.1	3.5	3.7	53.1	23.0	38.8	14.3	42.0
	Other urban areas : with populations of 100,000 and over with populations of 50,000 to 100,000 with populations of under 50,000	$30.0 \\ 28.2 \\ 28.6$	19·8 18·1 17·6	$15.5 \\ 14.8 \\ 14.8$	$4 \cdot 2 \\ 3 \cdot 2 \\ 2 \cdot 8$	$     \begin{array}{c}       10.3 \\       10.1 \\       10.9     \end{array} $	8·4 6·8 7·3	7·2 8·1 7·5	3·7 3·9 3·9	3·3 3·5 3·8	3·2 2·7 3·3	52.6 51.3 52.4	$23 \cdot 1$ $23 \cdot 6$ $24 \cdot 4$	$38.3 \\ 38.1 \\ 38.8$	$14.3 \\ 13.1 \\ 13.6$	42·4 41·3 41·6
Kagnat	Rural areas	27.8	18.0	14.5	3.4	9.8	6.9	7.7	3.7	3.5	2.6	49.2	21.9	36.1	13.1	39.5
	SOUTH OF ENGLAND	24.7	17.0	14.2	2.8	7.8	6.8	7.3	3.0	2.4	2.3	45.2	20.9	34.7	10.5	37.5
12	Conurbation (Greater London)	23.7	16.6	14.1	2.5	7.1	7.0	7.1	2.7	2.2	2.1	44.1	20.7	34.5	9.5	37.1
25	Other urban areas: with populations of 100,000 and over with populations of 50,000 to 100,000 with populations of under 50,000	$26.9 \\ 25.2 \\ 26.9$	17·0 17·2 18·7	$13 \cdot 3$ $14 \cdot 8$ $15 \cdot 4$	3.7 2.5 3.3	9·9 7·9 8·3	$5.5 \\ 6.3 \\ 7.2$	7·8 8·5 8·2	$3.9 \\ 3.0 \\ 3.4$	2·9 2·3 2·4	$3.0 \\ 2.6 \\ 2.5$	$47.5 \\ 46.2 \\ 48.1$	$21 \cdot 1$ $21 \cdot 4$ $21 \cdot 6$	34·1 35·9 36·7	13·4 10·3 11·4	37·7 38·3 39·9
	Rural areas	24.4	16.4	13.5	2.9	8.0	7.0	6.5	3.0	2.8	2.3	44.2	20.2	33.4	10.8	36.3
	WALES	36.1	21.8	17.4	4.4	14.3	8·4	9.0	5.6	<b>4</b> ·8	<b>4</b> ·0	61.9	26.4	43.4	18.5	47.7
- Ar	Urban areas with populations of 100,000 and over	35.1	20.9	17.8	3.1	14.2	8.8	9.1	5.2	5.1	3.8	61.9	27.5	44.9	17.0	47.9
	Urban areas with populations of 50,000 to 100,000	41.9	22.1	21.1	1.0	19.8	8.0	13.0	6.0	7.9	5.9	73.9	33.0	53.4	20.4	54.4
	50,000	36.3	22.8	17.8	4.9	13.5	8.6	9.2	5.5	4.6	3.5	60.4	24.8	42.2	18.2	47.0
	Rural areas	36.4	21.0	16.0	5.0	15.4	7.7	8.2	5.9	4.6	4.9	63.1	27.5	43.1	20.1	48.0

Table LIX.-Principal Gauses of Death Under One Year ; Death Rates per 1,000 Relatesi Live Mirths in England and Wales and Four Regional Groups, 1951, shewing the Regional rates as Percentages of corresponding National rates Table LIX.—Principal Causes of Death Under One Year; Death Rates per 1,000 Related Live Births in England and Wales and Four Regional Groups, 1951, showing the Regional rates as Percentages of corresponding National rates

Ætiological	Cause of Death	Infant	Mortality	Rates per : births	1,000 relate	d live	Region	al Rates pe	r cent of E rate	ngland and	Wales
Group	(and International Classification numbers)	England and Wales	North of England	Midland and East	South of England	Wales	England and Wales	North of England	Midland and East	South of England	Wales
ALL CAUSES	All Causes	29.7	34.4	29.0	24.7	36.1	100	116	98	83	122
WALES	Congenital malformations (750-759) Total causes mainly of prenatal and natal origin other than	4.2	4.4	4.2	3.8	5.2	100	105	100	90	124
	congenital malformations	14.1	15.5	13.7	12.6	16.2	100	110	97	89	115
Prenatal and Natal Group (including congenital malformations)	Immaturity alone, or primary to diseases other than of early infancy (774, 776)	5.7 0.4 0.5 3.6 2.3 0.6 0.7 0.3	6.6 0.3 0.7 3.7 2.5 0.7 0.7 0.4	5·4 0·4 0·5 3·7 2·2 0·5 0·7 0·4	4·8 0·4 0·3 3·4 2·1 0·5 0·9 0·3	7·2 0·4 0·9 3·6 2·6 0·7 0·5 <i>0</i> ·3	100 100 100 100 100 100 100 100	116 75 140 103 109 117 100 133	95 100 100 103 96 83 100 133	84 100 60 94 91 83 129 100	126 100 180 100 113 117 71 100
	Total causes mainly of postnatal origin	9.9	12.8	9.7	7.1	12.2	100	129	98	72	123
	Gastro-enteritis (including diarrhœa of newborn) (571, 764) Pneumonia and bronchitis (490–493, 763; 500–502) Causes classified as infective (001–138); others mainly infective	1·2 5·7	1.7 7.5	$\begin{array}{c}1\cdot2\\5\cdot3\end{array}$	0·7 4·2	1·3 7·4	100 100	142 132	100 93	58 74	108 130
Post-Natal Group	in origin* Whooping cough: Measles (056, 085)	1.8 0.5	2·3 0·6	1·9 0·6	$1.3 \\ 0.4$	$2.4 \\ 1.1$	100 100	128 120	106 120	72 80	133 220
	Acute upper respiratory infections and influenza (470-475, 480-483) Otitis media and mastoiditis, empyema, pleurisy (391-393,	0.3	0.2	0.3	0.5	0.4	100	167	100	67	133
	Septicæmia, skin and subcutaneous tissue infections, sepsis of	0.5	0.3	0.2	0.1	0.1	100	150	100	50	50
	newborn (053, 690-698, 765-768)	0.2	0.2	0.2	0.1	0.1	100	100	100	50	50
	011-019)	0.1	0.1	0.1	0.0	0.1	100	100	100	0	100

										1374 1078 11-1					
	Tuberculous men Meningococcal in (057, 340) Causes classified	fections and no	on-meningococ			0·1 0·5	0·1 0·3	0·1 0·3	0·1 0·3	100 100	100 125	100 75	100 75	100 75	
1650 7849 7849 7844 7844 7844 7849 7859	001-138) Accidental mechan body, or in cot (1 Lack of care, negled E980-E985) Other accidental ca	ical suffocation E921-E925) ct (including for	from vomit, indlings), infa	food, foreign inticide (E926,	0·1 0·9 0·2	0·1 1·0 0·2	0·2 1·0 0·2	0·1 0·6 0·2	0·1 0·9 0·1	100 100 100	100 111 100	200 111 100	100 67 100	100 100 50	
Unclassified	Total causes remainin				0·1 	0.1	0.1	0.1	0·1 2·4	100	100	100 	100 80	100 	
<b>-1</b> 1056 1053 1846-1850	Neoplasms (140–239 Other remaining ca	9) uses		: :: ::	0·1 1·3	0·1 1·5	$0.1 \\ 1.3$	0·1 1·0	0·1 2·3	100 100	100 115	100 100	100 77	100 177	
Immaturity, or w	rith mention of immatur	ity (774; 776; 7	60.5-773.5)	· · · · · · ·	10.1	11.1	9.7	8.9	11.9	100	110	96	88	118	

Immaturity alone, or primary to dis. other than of early infancy (774, 776)	5·7	6.6	5·4	4·8	7·2	100	116	95	84	126
Immaturity associated with diseases of early infancy (760.5-773.5)	4·4	4.5	4·3	4·1	4·7	100	102	98	93	107
All other causes (760.0-773.0 and remainder)	19.6	23.3	19.4	15.7	24.2	100	119	99	80	123

\* 340, 391-393, 470-483, 518, 519, 690-698, 765-768.

	Total			Infant mo	ortality per I	L,000 live bi	irths,* at vari	ious ages			Stillbirt	hs and infai	nt deaths—R births†	Rates per 1,000 total		
Quinquennium and year	infant mortality		Early	Late	Post-	Early neo	onatal period	Pos	t-neonatal p	eriod	Chillbirtha	Stillbirths	Stillbirths		C	
	(under 1 year)	Neonatal mortality (under 4 weeks)	neonatal mortality (under 1 week)	neonatal mortality (1 week and under 4 weeks)	neonatal mortality (4 weeks and under 1 year)	Under 1 day	1 day and under 1 week	4 weeks and under 3 months	3 months and under 6 months	6 months and under 1 year	Stillbirths plus infant deaths under 1 year	(late fætal deaths, at or over 28 weeks gestation)	plus infant deaths under 1 week— "Perinatal Mortality"	Infant deaths at 1 week and over	Stillbirths plus infant deaths under 4 weeks	
1906–1910 1911–1915 1916–1920 1921–1925 1926–1930	$ \begin{array}{c} 117.1\\ 108.7\\ 90.9\\ 74.9\\ 67.6 \end{array} $	40·2 39·0 37·0 33·4 31·8	$24.5 \\ 24.1 \\ 23.4 \\ 21.7 \\ 21.8$	$15.7 \\ 14.9 \\ 13.7 \\ 11.7 \\ 9.9$	76·9 69·8 53·9 41·6 35·7	$11.5 \\ 11.4 \\ 11.0 \\ 10.4 \\ 10.3$	$13.0 \\ 12.7 \\ 12.4 \\ 11.3 \\ 11.5$	22.8 20.2 16.5 12.8 10.8	$22.0 \\ 19.6 \\ 14.6 \\ 11.3 \\ 9.5$	$\begin{array}{c} 32 \cdot 1 \\ 30 \cdot 0 \\ 22 \cdot 8 \\ 17 \cdot 5 \\ 15 \cdot 4 \end{array}$	1111	1111		11111	1111	
1931–1935 1936–1940 1941–1945 1946–1950	61·9 55·3 49·8 36·3	$\begin{array}{c} 31.4 \\ 29.2 \\ 26.0 \\ 21.1 \end{array}$	$\begin{array}{c} 22 \cdot 4 \\ 21 \cdot 5 \\ 18 \cdot 7 \\ 16 \cdot 2 \end{array}$	9.0 7.7 7.2 4.9	$\begin{array}{c} 30.5 \\ 26.0 \\ 23.8 \\ 15.2 \end{array}$	$     \begin{array}{r}       10.7 \\       10.4 \\       9.3 \\       7.9     \end{array} $	$11.7 \\ 11.2 \\ 9.5 \\ 8.4$	9·9 8·8 8·9 5·8	8·5 7·8 7·7 5·0	$12.1 \\ 9.4 \\ 7.2 \\ 4.4$						
1928 1929 9 1930	65·3 73·9 60·2	$31.1 \\ 32.8 \\ 30.9$	$21.6 \\ 22.2 \\ 22.0$	$9.5 \\ 10.5 \\ 8.9$	$34.2 \\ 41.1 \\ 29.3$	10·4 10·4 10·4	$11.2 \\ 11.9 \\ 11.6$	$     \begin{array}{r}       10.7 \\       11.5 \\       9.7     \end{array} $	9·3 10·6 7·9	$14.2 \\ 19.0 \\ 11.7$	$102.6 \\ 111.4 \\ 98.3$	40·1 40·0 40·8	$     \begin{array}{r}       60.8 \\       61.4 \\       61.9     \end{array} $	41·7 50·0 36·4	69·9 71·6 70·4	
1931 1932 1933 1934 1935	65·7 64·5 62·7 59·3 57·0	$\begin{array}{c} 31.5\\ 31.5\\ 32.1\\ 31.4\\ 30.4 \end{array}$	$\begin{array}{c} 22 \cdot 1 \\ 22 \cdot 4 \\ 22 \cdot 9 \\ 22 \cdot 7 \\ 22 \cdot 0 \end{array}$	9·5 9·2 9·3 8·7 8·4	34·2 33·0 30·6 27·9 26·6	$ \begin{array}{c c} 10.4 \\ 10.6 \\ 11.0 \\ 10.9 \\ 10.7 \end{array} $	$11.7 \\ 11.8 \\ 11.8 \\ 11.8 \\ 11.8 \\ 11.3 \\ 11.3$	10.8 10.8 9.8 8.9 9.1	9·2 9·0 8·6 7·7 7·7	$     \begin{array}{r}       14 \cdot 2 \\       13 \cdot 2 \\       12 \cdot 2 \\       11 \cdot 3 \\       9 \cdot 8     \end{array} $	$104.5 \\ 103.7 \\ 102.5 \\ 96.7 \\ 95.4$	40·9 41·3 41·4 40·5 40·7	62·1 62·8 63·4 62·2 61·9	42·4 40·8 39·1 34·5 33·5	71·2 71·6 72·3 70·5 69·9	
1936 1937 1938 1939 1940	58·7 57·7 52·8 50·6 56·8	30·2 29·7 28·3 28·3 29·6	$\begin{array}{c} 21 \cdot 9 \\ 22 \cdot 0 \\ 21 \cdot 1 \\ 21 \cdot 2 \\ 21 \cdot 3 \end{array}$	8·2 7·8 7·1 7·1 8·3	$28.5 \\ 28.0 \\ 24.5 \\ 22.2 \\ 27.2$	$ \begin{array}{c c} 10.7 \\ 10.8 \\ 10.3 \\ 10.3 \\ 9.8 \end{array} $	$     \begin{array}{r}       11.3 \\       11.2 \\       10.8 \\       10.9 \\       11.5     \end{array} $	9·3 9·4 8·2 7·9 9·3	8·3 8·3 7·3 7·0 8·2	$     \begin{array}{r}       10.9 \\       10.3 \\       9.0 \\       7.3 \\       9.7     \end{array} $	95·9 94·4 88·9 86·9 92·5	39·7 39·0 38·3 38·1 37·2	60·8 60·2 58·6 58·5 57·7	35·2 34·2 30·4 28·4 34·7	68·7 67·6 65·5 65·3 65·7	
1941 1942 1943 1944 1945	60·0 50·6 49·1 45·4 46·0	29·0 27·2 25·2 24·4 24·8	$20.7 \\ 19.6 \\ 18.3 \\ 17.5 \\ 18.0$	8·3 7·7 6·9 6·9 6·8	$\begin{array}{c} 31 \cdot 1 \\ 23 \cdot 4 \\ 23 \cdot 9 \\ 21 \cdot 1 \\ 21 \cdot 3 \end{array}$	10·1 9·6 9·1 8·8 9·0	10.6 10.0 9.2 8.8 9.0	11.3 8.7 8.8 8.0 8.2	9·7 7·5 7·8 7·0 7·0	$10.1 \\ 7.2 \\ 7.3 \\ 6.1 \\ 6.1$	92·4 81·1 77·5 70·9 73·4	34·8 33·2 30·1 27·6 27·6	$54.7 \\ 52.1 \\ 47.9 \\ 44.5 \\ 45.2$	$\begin{array}{c} 37 \cdot 7 \\ 29 \cdot 0 \\ 29 \cdot 6 \\ 26 \cdot 3 \\ 28 \cdot 1 \end{array}$	62.7 59.4 54.6 51.1 51.8	
1946 1947 1948 1949 1950	42·9 41·4 33·9 32·4 29·6	24.5 22.7 19.7 19.3 18.5	$17.8 \\ 16.5 \\ 15.6 \\ 15.6 \\ 15.2$	6·7 6·2 4·1 3·7 3·3	$     18.4 \\     18.6 \\     14.2 \\     13.0 \\     11.1   $	8.7 7.8 7.8 7.6 7.2	9·1 8·7 7·9 8·0 8·0	7.1 6.9 5.5 4.8 4.3	6·1 6·0 4·8 4·4 3·7	5·2 5·7 3·9 3·8 3·1	66·9 65·0 56·9 54·6 51·7	$\begin{array}{c} 27 \cdot 2 \\ 24 \cdot 1 \\ 23 \cdot 2 \\ 22 \cdot 7 \\ 22 \cdot 6 \end{array}$	44·3 40·3 38·5 38·0 37·4	$22.6 \\ 24.6 \\ 18.4 \\ 16.7 \\ 14.3$	50·7 46·4 42·5 41·5 40·7	
1951	29.7	18.8	15.5	3.3	10.9	7.5	8.0	4.1	3.6	3.2	52.2	23.0	38.2	14.0	41.5	

 Table LX.—Secular Trend of Stillbirths per 1,000 total births, 1928–1951, and of Deaths in the Neonatal, Post-neonatal and other Age Periods under One Year per 1,000 live births, 1906–1951. England and Wales

Rates based on related live births from 1926 onwards.
The births upon which these rates are based for successive calendar years are numbers registered up to 1938 inclusive and numbers of occurrences from 1939.

 Table LXI.—Secular Trend of Legitimate and Illegitimate Stillbirths per 1,000 total births, and of Legitimate and Illegitimate Deaths in Early Neonatal, Late Neonatal and Post-neonatal Periods per 1,000 related live births.

 England and Wales, 1936-1951

					1936 to 1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951
	Stillbirths (Late fœtal deaths at or over 28 w	 veeks)	 	 Annual rate per cent of 1936-39	38·3 100	36·7 96	34·2 89	32·8 86	29·6 77	27·0 70	27·3 71	26·7 70	23·8 62	22·7 59	22·3 58	22·2 58	22.6 59
Legitimate Infants	Early neonatal deaths (Under 1 week)		 	 Annual rate per cent of 1936-39	21·0 100	20·9 100	20·2 96	18·9 90	17·7 84	16·9 80	17·4 83	17·4 83	16·1 77	15·3 73	15·1 72	14·9 71	15·2 72
100	(1 mools and under A moole)		 	 Annual rate per cent of 1936-39	7·4 100	8·1 . 109	8·1 109	7.5 101	6·8 92	6·6 89	6·4 86	6.5 88	6·0 81	4·0 54	3.6 49	3·3 45	3·3 45
	(A weeks and under 1 weer)	 	 	 Annual rate per cent of 1936-39	25·1 100	26·6 106	30·5 122	22·8 91	23·2 92	20·2 80	20·3 81	17·7 71	18·3 73	14·0 56	13·0 52	11·0 44	10·8 43
	Stillbirths	 reeks)	 	 Annual rate per cent of 1936-39	49·6 100	47·6 96	45·8 92	40·8 82	37·5 76	34·3 69	31·5 64	33·2 67	30·6 62	31·6 64	29·5 59	29·1 59	31.6 64
Illegitimate Infants	(IIndar 1 moole)		 	 Annual rate per cent of 1936-39	34·4 100	31·2 91	29·8 87	30·0 87	27·0 78	25·2 73	24·3 71	23·7 69	23.5 68	22·0 64	24·9 72	21·4 62	21·4 62
	(1 mools and under A mooles)		 	 Annual rate per cent of 1936-39	10·9 100	12·8 117	11·2 103	10·7 98	9·3 85	10·3 94	10·0 92	9·6 88	9·9 91	5·5 50	4·8 44	4·5 41	4·3 39
	Post-neonatal deaths (4 weeks and under 1 year) .		 	 Annual rate per cent of 1936-39	41·6 100	38·4 92	41·3 99	34·3 82	35·1 84	33·0 79	30·5 73	26·9 65	24·7 59	17·9 43	15·1 36	13.6 33	12·8 31

Table LXII.—Secular Trend of Stillbi	irths per 1,000 total births, and of
Deaths in the Neonatal	and Post-neonatal Periods per
1,000 related live births.	England and Wales; Standard
<b>Regions</b> , 1947–1951	

	Standard Regions			es in ea 947 to	ach yea 1951	ır	Rates in 1948 to 1950 per cent of rate in 1947					
		1947	1948	1949	1950	1951	1947	1948	1949	1950	1951	
	ENGLAND AND WALES	24.1	23.2	22.7	22.6	23.0	100	96	94	94	% 95	
	NORTH OF ENGLAND Northern East and West Ridings North Western	$\begin{array}{c c} 26 \cdot 2 \\ 26 \cdot 1 \\ 25 \cdot 9 \\ 26 \cdot 5 \end{array}$	$25.5 \\ 25.2 \\ 24.2 \\ 26.5$	24.7 24.6 23.5 25.5	24·3 25·8 22·9 24·4	$24.8 \\ 24.6 \\ 24.2 \\ 25.2$	100 100 100 100	97 97 93 100	94 94 91 96	93 99 88 92	95 94 93 95	
TILLBIRTHS (at or over 28	MIDLANDS AND EAST	23.6	23.1	22.2	22.6	23.1	100	98	94	96	98 阔	
week gestation) per 1,000 live and stillbirths.	North Midland Midland Eastern	$\begin{array}{c c} 24.0 \\ 24.9 \\ 21.3 \end{array}$	$23.9 \\ 23.5 \\ 21.5$	$22 \cdot 2$ $23 \cdot 1$ $20 \cdot 9$	23.0 23.8 20.6	$23.1 \\ 23.9 \\ 21.9$	100 100 100	100 94 101	93 93 98	96 96 97	96 96 103	
	SOUTH OF ENGLAND	22.0	20.5	20.2	20.1	20.9	100	93	92	91	95 #	
	London and South Eastern Southern South Western	21.6 21.8 23.5	19·9 20·9 22·4	19·9 19·4 22·0	19.6 18.9 22.5	$20.8 \\ 19.4 \\ 22.3$	100 100 100	92 96 95	92 89 94	91 87 96	96 89 95	
	WALES	28.4	26.8	28.2	27.2	26.4	100	94	99	96	93	
1811 S	ENGLAND AND WALES	22.7	19.7	19.3	18.5	18.8	100	87	85	81	83	
	NORTH OF ENGLAND	26.0	21.8	21.2	20.2	20.6	100	84	82	78	79	
	Northern East and West Ridings North Western	$24.7 \\ 24.3 \\ 27.7$	$21.3 \\ 20.7 \\ 22.6$	$22.0 \\ 20.6 \\ 21.3$	20·8 19·5 20·3	$21.6 \\ 19.1 \\ 20.9$	100 100 100	86 85 82	89 85 77	84 80 73	87 79 75	
NEONATAL	MIDLANDS AND EAST	22.3	20.1	18.4	18.4	18.5	100	90	83	83	83	
MORTALITY per 1,000 related live births	North Midland Midland Eastern	$23 \cdot 2$ $22 \cdot 7$ $20 \cdot 7$	$21.5 \\ 21.1 \\ 16.9$	18·8 19·6 16·2	18·9 19·4 16·3	$17.6 \\ 20.3 \\ 16.8$	100 100 100	93 93 82	81 86 78	81 85 79	76 89 81	
	SOUTH OF ENGLAND	19.6	17.1	17.4	16.5	17.0	100	87	89	84	87	
	London and South Eastern Southern South Western	$\begin{array}{c} 18.7 \\ 20.2 \\ 22.7 \end{array}$	16·4 18·0 18·8	16·8 17·6 19·7	15·9 16·7 18·5	16·7 16·9 18·2	100 100 100	88 89 83	90 87 87	85 83 81	89 84 80	
	WALES	25.3	22.5	22.9	21.6	21.8	100	89	91	85	86	
11 111	ENGLAND AND WALES	18.6	14.2	13.0	11.1	10.9	100	76	70	60	59	
	NORTH OF ENGLAND	24.6	18.9	17.8	14.6	13.8	100	77	72	59	56	
	Northern East and West Ridings North Western	23.7 21.9 26.8	20·5 17·3 19·2	19·9 15·4 18·1	$     \begin{array}{c}       16 \cdot 9 \\       13 \cdot 3 \\       14 \cdot 2     \end{array}   $	15·5 13·8 13·0	100 100 100	86 79 72	84 70 68	71 61 53	65 63 49	
POST- NEONATAL	MIDLANDS AND EAST	16.9	13.5	12.4	10.6	10.5	100	80	73	63	62	
MORTALITY per 1,000 related live births	<sup>26</sup> North Midland Midland Eastern	19·0 19·1 11·1	15·6 14·7 9·1	13·8 13·8 8·6	11.7 11.8 7.6	11·1 11·3 8·6	100 100 100	82 77 82	73 72 77	62 62 68_	58 59 77	
in the last	SOUTH OF ENGLAND	13.7	10.0	8.8	7.8	7.8	100	73	64	57	57	
a starte	London and South Eastern Southern South Western	$14 \cdot 2$ 13 \cdot 1 12 \cdot 6	10·5 8·8 9·5	8·8 8·6 9·1	7·8 7·9 7·9	7·4 8·3 8·3	100 100 100	74 67 75	62 66 72	55 60 63	52 63 67	
1 CA CA	WALES	23.9	16.8	16.4	13.9	14.3	100	70	69	58	60	

# **INFECTIOUS DISEASES**

## Infectious Disease generally

This review omits any reference to a number of infectious diseases such as chickenpox, rubella and mumps; they are very rarely fatal and, though a large proportion of the child population are attacked, the volume of morbidity is not measurable, except by special survey, because the diseases are not notifiable. Other infectious diseases, for example cholera, typhus and anthrax, receive no mention because subject to continued vigilance their occurrence is rare in the extreme. Reference to erysipelas has been omitted and no special mention has been made of syphilis. Diseases in the infective and parasitic group apart from tuberculosis no longer appear among the important causes of death in childhood; and tuberculosis, though by no means to be discounted as a serious problem, is much less fatal than it was in earlier years. In 1901-10 the C.M.I. for typhoid and paratyphoid was 23.84, in 1951 0.12; in 1901-10 the C.M.I. for tuberculosis of all forms was 2.70, in 1950 0.51; in 1901-10 the four diseases, scarlet fever, diphtheria, whooping cough and measles produced a combined death rate per million at ages under 15 of 2,572; in 1951 this was reduced to 79.

## Typhoid and Paratyphoid (040, 041)

For the intestinal infections classed to this group the notified cases and deaths, with the notification rates, from 1944 to 1951 are shown in Table LXIII (page 138). The notification rate has reached such a low level, despite the effect of improved diagnostic services which have made notification more complete, that sharp fluctuations from year to year naturally occur by the play of chance; the fewer the outbreaks the less the likelihood that their statistics merge to produce the appearance of more constant prevalence. An upward fluctuation occurred in 1951. The sharp decline in mortality in 1949 associated with the introduction of chloramphenicol has persisted and, in 1951, in spite of raised incidence, only 21 deaths were registered, yielding a ratio of deaths to 1,000 notifications of 16 compared with 48, 65, 36, 30 in 1947, 1948, 1949 and 1950. It will be seen from page 137 that of the 21 deaths in 1951 there were two cases in which death was certified as due to cardiac conditions originating in attacks of typhoid many years previously. In accordance with international procedure these deaths have been assigned to typhoid though clearly they are not part of the fatality of 1951 cases, a truer value of which would therefore be 15 deaths per 1,000 cases.

The incidence of notified typhoid and paratyphoid fever was in 1951 spread fairly evenly over the regions but the notification rates were generally higher in the conurbations than elsewhere, the exceptions being the Typeside conurbation and Greater London.

## Food poisoning

The International Classification rubric 042 "other Salmonella infections" to which 36 deaths were assigned in 1951 does not correspond to a notifiable disease; but "food poisoning," whether suspected or confirmed, is statutorily notifiable and in Table LXIV (page 139) the notification rates are shown by sex and geographical area. The notification rate for females was higher than for males in most of the areas shown.

The highest notification rates were observed in the Tyneside and Merseyside conurbations, the North Midland and Midland regions, the South West region and Greater London. Over the whole country notified cases were relatively more frequent both in rural areas and in larger towns than in the small and medium sized towns. This factor was also the subject of comment in the Text of the Annual Review for 1950 (page 60).

## **Dysentery** (045–048)

Notifications and deaths from the various types of dysentery (from 1931 to 1951) are shown in Table LXV (page 140). The trend toward more complete notification of dysentery which has been the concomitant of improved pathological laboratory services has been the subject of comment in previous Reviews and is illustrated by the increased ratio of notifications to deaths in the final column of Table LXV. This ratio, which was of the order of 10 in the early 'thirties, increased tenfold by 1945, the increase being most rapid during the final years of the 1939–45 war. In 1946 and 1947 the ratio declined temporarily but in 1948 there was a further rise and in 1951 the ratio rose to 386, over forty times as large as in 1931. That notification is made upon the basis of laboratory investigation rather than upon clinical assessment only is suggested by the relatively low degree of correction of diagnoses.

Notification rates and fatality ratios by sex and age are shown in Table LXVI (page 141). The risk of infection is higher in the very young and very old. Among young children, as is the common experience with many other infections, boys are more affected than girls. Among adults, the sex preponderance is reversed. Fatality is however higher in males at all ages, though less consistently so at advanced ages where most of the deaths are concentrated.

For all forms of dysentery, mortality has steadily declined since 1941 when the death rate rose sharply in reaction to the adverse conditions of that year. Even then the total deaths numbered only 329. The deaths from 1947 to 1950 were 81, 61, 45, 65 and in 1951 there were only 74 deaths, in spite of the very greatly increased prevalence of infection.

In Table LXVII (page 142) the notification rates and fatality ratios are shown for 1951 in the different regions of England and Wales.

### Scarlet fever, Streptococcal Sore Throat (050, 051)

Scarlet fever and streptococcal sore throat are treated as distinct entities in the 6th Revision of the International List and it is to scarlet fever only that the present notification regulations apply. It will be seen from Table LXIX (page 143) that deaths assigned to scarlet fever have dwindled from 469 in 1931 to 37 in 1951; and of those 37 deaths it is known that 22 were by International usage assigned to that cause because scarlet fever was shown on the certificate though the onset was more than 5 years earlier; they were thus not related to the cases occurring in 1951. Deaths assigned to streptococcal throat in 1951 numbered 29. This dramatic decline in mortality is not due to a proportionate decline in the incidence of infection. The notification rate fluctuates from year to year; over the last 10 years it has varied from 133 per 100,000 in 1946 to 275 in 1943. It was last exceptionally high in 1934 at 376. In 1951 it was 111. The decline in mortality, although accelerated first by the introduction of the sulphonamides and later by penicillin, has been continuing for more than three quarters of a century and it seems that either the virulence of the disease has diminished or natural resistance has increased. Deaths assigned to scarlet fever amounted to 5.7 per 1,000 notified cases in 1931 and in 1951 the corresponding fatality ratio was only 0.8.

Notification rates and fatality ratios in 1951 by age and sex are shown in Table LXVIII (page 143) for scarlet fever only. Notified attacks were most prevalent between ages 3 and 10 but fatality was highest (though deaths were still rare) among the comparatively small number of adult cases. There was little difference in the experience of the two sexes, a small male excess in incidence under five years of age being followed by a female excess at older ages; on balance the total notification rate was slightly higher in males.

Notification and death rates and fatality ratios for different geographical areas are shown in Table LXX (page 144) for 1951. The notification rates were above average in the regions and most conurbations of the North and in Greater London and below average in the regions of the Midlands, East and the South. In general there is a gradient with urbanization, the notification rates (but not the fatality ratios) being higher in the more densely populated areas.

### Diphtheria (055)

From 1944, when original notifications were first fully corrected for revision of diagnosis, the notification rate at ages 0–14 fell from 183 per 100,000 to 5 per 100,000 in 1951; and there was a corresponding fall at ages 15 and over, from 21 to 1 per 100,000. The actual final notifications in 1944 were 23,199; in 1951 there were only 664. The death rate per million has fallen from 22 in 1944 to 1 in 1951, the actual deaths being 908 and 33 respectively. This decline is proportionate to the reduction in notified cases and it is significant that the case fatality at ages 0–14 which was indicated in 1944 by 50 deaths to every 1,000 notifications was of the same magnitude in 1951 (Table LXXI, page 145). At ages 15 and over the case fatality has apparently increased. Of the 9 adult deaths in 1951, however, 3 were attributed to attacks of diphtheria occurring many years previously (page 138).

The annual returns of immunization for 1951 made to the Ministry of Health by the Medical Officers of Health of Counties and County Boroughs have been summarized and Table LXXXII (page 154) shows the proportion immunized in the age groups 1–4 and 5–14 in each area as at 31st December, 1951.

In England and Wales as a whole in 1951 there was an increase in the proportion immunized at ages 5–14 years, as compared with 1949, from 74 to 77 per cent. This does not necessarily indicate an improvement in the degree of immunity of the population as a whole, because it takes no account of the interval since immunization took place and will therefore include a considerable number of children who have had time to lose some of their immunity. At ages 1–4 the proportion fell slightly from 62 to 61 per cent between these two years.

Table LXXXIII (page 156) compares the relative mortality and incidence of notified cases of diphtheria among those children who have at some time been immunized and among those who have not. At ages 1–4 the notification rate among the immunized  $(2\cdot2)$  was less than a quarter of the corresponding rate among the unimmunized  $(9\cdot9)$ , and at ages 5–14 it was less than one eighth (1·8 and 16·3 respectively). The fatality ratio was also much lower among the immunized than among the unimmunized. Of the latter, a total of 359 notified

cases of diphtheria at ages under 15 gave rise to 23 deaths (a fatality ratio of  $6\cdot4$  per cent) whereas for the same age groups among the immunized only 1 death resulted from 126 cases notified (a fatality ratio of  $0\cdot8$  per cent).

### Whooping Cough (056)

In 1951 there were 169,441 final notifications, more than in any year since 1944, and there were more original notifications than in any preceding year from the date general notification was introduced in 1940. This followed a record figure in the preceding year; nevertheless there were only 456 deaths (two occurred after intervals from onset of more than 20 years) compared with 678 in 1940, since when the ratio of deaths to notifications at all ages has been reduced by about four-fifths. The death rate at ages under 15 for whooping cough in 1951 was 46 per million compared with an average of 223 in 1931–35.

Table LXXII (page 146) shows that the sex and age pattern differs little from one year to another. Notifications (per 1,000) were maximal in the age group 3-4. As always, fatality was highest in the first year of life; of the 456 deaths in 1951, 273 occurred in this age period and a further 119 occurred in the second year of life.

The regional distribution of the disease is shown in Table LXXIII (page 147). The notification rates were higher in the regions of the Midlands, East and South in contrast to 1950 when the rates were below average in these areas. The notification rate in Wales was much lower than the average for the country as a whole, as it was in 1950. There was little regional variation in fatality but compared with the average for England and Wales (2.7 deaths per 1,000 notifications) the ratio was exceptional in the Merseyside conurbation (4.8) and in Wales (5.2).

#### Meningococcal Infections (057)

There were 1,390 final notifications of meningococcal infections and 298 deaths in 1951 (Table LXXIV, page 148). The 1951 notifications were more numerous than those of 1949 and 1950 and fit into a rising phase of the irregular upward and downward variation in prevalence which has been, in peace conditions, a normal part of the epidemiology of the disease. The case fatality (21.4 per cent of notifications) was somewhat lower than the average of 1948-50 (26.3). The majority of the deaths were in very young children; in 1951, 208 of the 298 deaths were of children under 5 years of age and 104 were in the first year of life.

## Acute Poliomyelitis (080, 081)

Prior to 1947 the number of cases of poliomyelitis notified each year rarely exceeded a thousand but in that year there were 9,335 original and 7,766 final notifications and the subsequent experience of very high prevalence again in 1949 and 1950 has made it clear that periodical epidemics of the disease have replaced the lower and less fluctuating prevalence of an endemic character. 1951 like 1948 was a year of low inter-epidemic prevalence. There were only 2,609 final notifications and 217 deaths, compared with 7,752 notifications and 755 deaths in 1950. The case fatality was 8 per cent. This fatality is lower than in pre-epidemic times ; in 1944 for example 21 per cent of notified cases were fatal but the epidemic outbreak in 1947 undoubtedly increased public anxiety and raised the intensity of case-finding ; it is likely that from that time a greater proportion of the milder and almost symptomless cases have been brought to the notice of practitioners and have been notified. In 1950 for the

first time notifying practitioners were asked to distinguish between paralytic and non-paralytic cases; in 1951, 41 per cent of the notifications were of non-paralytic cases, compared with 28 per cent in 1950.

The notification rates are shown by sex and age in Table LXXV (page 148). Following the first epidemic of 1947, in which larger proportions of adults were affected, the age distribution of cases reverted to that which had prevailed in earlier years—in 1951, 30 per cent of cases were under 5 years of age. The disease remains one which mainly attacks children or adolescents but those adults who are attacked suffer a much higher fatality than children.

The geographical distribution of the disease in 1951 is shown in Table LXXVI (page 149). It has been noted (Benjamin and Logan, 1953)\* that the mean prevalence over the four years 1947–50 was significantly above the national average in the Midland, London and South Eastern, Southern and South Western regions and below average in the Northern, North Western, Eastern and Wales regions. In a single year of low prevalence such as 1951 the numbers were not large enough to permit geographical variation to be reliably assessed but broadly in 1951 the pattern was similar to that of 1947–50 except that in London and in the South Western region. Over the four years 1947–50 the highest death rates were experienced in the Southern and South Western regions. It was still true in 1951 that of all regions the South Western had the highest death rate but mortality in the Southern region was not exceptional.

Over the four years 1947-50 the average death rate from poliomyelitis in England and Wales was 14 per million, compared with an average in 1943-46 of 3 per million. In 1951 the death rate was 5 per million. Of the 217 deaths in 1951, 66 were specified as from the bulbar form or polioencephalitis; 26 were from late effects.

### Acute Infectious Encephalitis (082, 083)

There were 334 deaths in 1950 from acute infectious encephalitis (including 216 from late effects). The number of deaths from this condition has been falling steadily since 1931, apart from a temporary wartime rise in 1940–41, but the pace of the decline in the last two or three years has been much slower than in earlier years. In 1951 there were 202 final notifications of the infective type and 110 final notifications of post infectious encephalitis, i.e. following or accompanying infectious diseases (measles, mumps, chickenpox, have so far been the most common diseases mentioned but the necessary supplementary information available is, as yet, scanty). Deaths in this latter group of which there were only a small number, are assigned under the 6th Revision to the primary infectious disease and are not included in the deaths from encephalitis shown in Table LXXVII (page 150).

It will be seen from Table LXXVIII (page 151) that the deaths were well spread over all ages; this spread arises mainly from the fact that two-thirds of the deaths follow, from late effects, many years after the onset of acute disease. Of the 118 deaths from acute disease, 41 occurred before the age of 5 years, the remainder being spread over all age groups.

# Measles (085)

Although there were 616,192 final notifications of measles in 1951, there were only 317 deaths. As recently as in 1940 there were 857 deaths and ten years earlier in 1930 there were 4,188 deaths.

<sup>\*</sup> British Journal of Preventive and Social Medicine, Vol. 7, No. 3 (July, 1953), page 131.

As can be seen from Table LXXIX (page 151) the normal pattern was followed in 1951, of a slight female excess in the first year of life, no appreciable sex differences between 1 and 10 years, and a female excess thereafter, i.e. the average age of reported attack is later in females than in males. In total relatively more males than females suffer notified attacks. Of the 317 deaths, 173 were of males ; 98 were in the first year of life, and 75 in the second. In examining the regional distribution of Table LXXX (page 152) it must be borne in mind that the epidemic rhythm is not the same in all areas nor at present, because of the continuing effect of disturbances in the birth rate and re-distribution of population in housing development, constant in any one area. In some towns biennial epidemics are the rule, with very minor prevalence in the intervening years; in other towns regular annual epidemics occur; and some areas seem to be in a transitional stage between the two. The disease is nearly always most epidemic in the winter months (December and January are commonly the months of rapid spread) and a great deal seems to depend upon whether in a particular locality the susceptibles are exhausted before the refractory period of the following autumn. In the previous year, 1950, on the whole the Southern regions had lower, and the Northern regions higher prevalence than elsewhere ; in 1951, not unexpectedly, this differential was reversed. For prevalence in thel ong run is fairly evenly shared and it is a matter of which areas suffer an epidemic rise in a particular year and which in the following year.

#### Smallpox (084)

In 1951 there were 10 deaths from smallpox—a notable event because of its rare occurrence in England and Wales. The country was entirely free of fatal attacks from 1938 to 1944; most of the outbreaks since then have had their origin in the return of service men to this country from the Far East in a state of incubating the disease. In 1951 the outbreak occurred in Brighton. The disease was introduced into the country by an R.A.F. officer who flew from Karachi via Malta, landed in Scotland and travelled to Brighton on 29th November, 1950. A full account of the spread of the outbreak has been given in the Annual Report of the Chief Medical Officer of the Ministry of Health for 1950. The outbreak was confined to Brighton and was brought under control by the careful tracing and surveillance of contacts combined with intensive vaccination measures. There were 27 cases in 1951, 10 fatal, and the last case was removed to hospital on 22nd January.

In all during the outbreak and the period of anxiety following the outbreak some 80,000 persons were vaccinated. About one-third of those were primary vaccinations and the remainder revaccinations. Much light upon the protective role of vaccination can be thrown by relating the fatalities to their vaccination state. This has been done in Table LXXXI (page 153). Among those cases which were not vaccinated after exposure to infection (second line of table) 6 cases had either never been vaccinated or had been vaccinated in infancy without any renewal of protection and among these 2 deaths occurred; one only had been revaccinated since infancy—this case was not fatal. Of those who were vaccinated after exposure most of the 22 cases and all the 8 who died had either never been vaccinated or had been vaccinated only in infancy; while 17 of these unprotected cases. Neither of the 2 cases died which had been revaccinated since infancy but were nevertheless attacked.

### Deaths from infectious disease occurring a long period after onset

The rules for classification, embodied in the International Statistical Classification of Diseases, Injuries and Causes of Death, 1948, state that "when an acute infective disease classified to categories 040–043, 050, 055, 056, 058, 084–087, 100–108 is certified as the underlying cause of some other condition and the interval between its onset and death is stated to be one year or more, it is recommended that such deaths should be appropriately identified in tabulation". This practice has been followed in England and Wales and the deaths in question in 1951 are separately tabulated below. Only four infectious diseases were involved, Typhoid (2 deaths), Scarlet Fever (22 deaths), Diphtheria (3 deaths) and Whooping Cough (3 deaths).

		Interva	l between or	uset of infec	tious disease	and death	(years)
Age		1-4	5-9	10-19	20-29	30-39	40 and ove
then a child	() e	idocardin	ip pinonio	Typhoid	fever (040)	ano fili	9 08
45-64			mitral step			Myoca	E UT
65 and over		eritin.	mic endoce	(ion : chr	dar <del>m</del> ada	oinu <del>tr</del>	a saî
88 June 19	1			Scarlet f	ever (050)	Cardia	3.8.
5–14 15–44		apelence	oitral incon	2	$\frac{1}{2}$	esaco	9 30-
15–44 45–64			1	2	2	1 9	6
65 and over				î	3883710 IS	22	3
( DO 2)	i cit	preoopua	- <del>Sinonis</del>	Diphth	eria (055)	atte	-
45-64						1	1
65 and over			_	_		- <sub>1</sub>	Disting
diference	de lor	Sim bas o	from sort	Whooping	g cough (05	6)	Thure w
5-14	30.1-	ententeles-	wi has ; ;	diphtheri		cerval tro	101 Tohmy OE
15-44	ent.a	athe <del>as</del> dau	1 10-2001	te otogi	dibih mob	ovit <del>es</del> ure	died-of sur
45-64		odm <del>o</del> ult [	om cerebra	the <del>die</del> d fr	e ag <del>oit</del> 80 v	no hana is	Velate carl
65 and over		daib to to	I since and	wrader nee	1 hr Talin	transf ant	1 town 1 wath

## Typhoid fever

Whooping coug

Both these deaths were of females, aged 55 and 74 respectively. The younger was certified as dying from congestive cardiac failure due to mitral stenosis, and the older woman was certified as dying from hypostatic pneumonia due to chronic endocarditis. Both were stated to have suffered from typhoid as schoolgirls.

# Scarlet fever

Details of age, sex, other conditions on death certificate, and interval (in years) since onset of scarlet fever, in that order, are :

14	Μ	Syncope ; valvular heart disease ; myocarditis	9
20	F	Uræmia ; chronic nephritis	9
23	F		14
27	F	2) )) )) •••• ••• ••• •••	16
33	М	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	33
31	Μ	Nephritis, chronic parenchymatous ; hypertension	20
50	F	Mitral stenosis	30
53	F	Cardiac muscle failure; chronic valvulitis and chronic myocarditis	37
		137	

53	F	Cerebral hæmorrhage ; hyperpiesis ; nephritis 15
64	M	Auricular fibrillation ; mitral stenosis (in childhood)
47	M	Cachexia ; pyelonephritis ; spastic diplegia 46
64	М	Hypostatic pneumonia; myocarditis and endocarditis (in infancy)
52	F	Chronic nephritis ; hypertension (many years ago)
58	F	Cardiac asthma ; myocarditis (in childhood)
70	F	Coronary thrombosis; valvular heart disease; left bundle branch block 64
78	F	Myocardial degeneration; chronic endocarditis (when a child)
71	F	Myocardial degeneration ; mitral stenosis 35
68	F	Auricular fibrillation ; chronic endocarditis (in childhood)
39	F	Cardiac failure ; mitral stenosis 25
57	F	Congestive heart failure ; mitral incompetence(in childhood)
67	F	Valvular disease of heart 30
71	F	Myocardial degeneration ; chronic endocarditis ; arteriosclerosis 15–20

# Diphtheria

There was one male aged 60 who died from aortic and mitral stenosis with a 30 year interval from onset of diphtheria; and two females—one aged 60 who died of suppurative thyroiditis due to stenosis of trachea after tracheotomy 53 years earlier, and one aged 80 who died from cerebral thrombosis due to valvular disease of the heart with a 40 year interval since onset of diphtheria.

## Whooping cough

There was one male aged 8 who died of congestive heart failure and pneumonia, two years after whooping cough, and two females—one aged 25 died from bronchiectasis (? gangrene of lung) 21 years after whooping cough (this woman was pregnant and was delivered on the day of death), and the other aged 65 died of cerebral embolism and fibrosis of lungs 40 years after whooping cough.

## Table LXIII.—Typhoid and Paratyphoid Fevers : Corrected notifications\* and deaths, and notification and death rates per million living, 1944 to 1951

	1944	1945	1946	1947	1948	1949	1950	1951
Deaths	54	47	54	34	48	32	16	21†
Notifications	542	535	1,229	706	742	893	529	1,301
living	13	13	29	16	17	20	12	30

\* Including cases in Port Health Districts which are uncorrected.

† Including 2 deaths which occurred one or more years after onset of the disease.

 Table LXIV.—Food Poisoning : Notification rates per 100,000 living by sex in Standard Regions and Population Density Aggregates, 1951

ms to deaths, 1931 to

		Ar	ea				No	tificat	ion rat livi		100,000
								Male	10 200	E Tr	males
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Conurbations	5							13	and a second		15
Areas outsid	e conur	batio	ons				mercen	11	arar and		14
Urban areas				f 100 0	00 and	over	8	16	836		171881
Urban areas	with p	opula	tions of	f 50 00	0 and 1	inder	2	10	92.9		ecor.
100,000		· · · ·		- 00,00		andor	5	8	783		10
Urban areas				nder 50	000		7	9	763		10
	, when be	pulat	lions ui	iuci bu	,000		8	9	100		10
Rural areas	22						1	13	888		10001
iturur arous	CTT			••••	10		No.	13	TAT I		17
e martine i i							1 3.		A GA CT		
6.00% N	80	4-1 1	00		" 8.8" ···	1. 184	01	N.S.			0001
NORTH OF E	NOTAN	TD			60 51 [		1.10 		13-0,1		1939
Regions:	NGLAN	<b>ID</b>					1		-088.1		
							Gai		4.670		
Northern					1.3.0		8	13	1.296		13
East and We	est Ridin	ıgs					8	6	1,995		6
North Weste			Q		201			9	4,246		111441
	Total							9	100,0		10
					SIL	1 30			4.774		
Conurbations	:								4 247		
Tyneside	111		04		· · · ·			16	8.459		140101
West Yorksh	nire							3	1878		64
South East I	ancashi		T		84			9	881		13
Merseyside								16	1.781		16
E.ER	Total							10	Ser.		
	Total				•••			10	100000000000000000000000000000000000000		110401
AIDLANDS AN	ID FA	TET	TAC						4.084		
Regions:	U LA	SILI	CIN .						4,875		
North Midla								No. 16	1.618		
		••••						15			17
Midland	•••	•••		•••	•••			19	arran management		19
Eastern								9			9
	Total				4.5.			15	4,878		16
									4.319		
Conurbation:									082.83		
West Midlan	d			1. 1. 2. 7				11	1278		13
					57				288.43		1051*
REATER LO	NDON							17	188.89		18
								11	and the		10
OUTH OF EN	IGLAN	D		the of monorality	de la companya de la	unicurrenting			Salan sugar		en prochagos and balance real
Regions:	tell lan	oldeno				(8581)		to th	gaibno		teat w
Remainder o						d gaib			ritensh.		16
Southern	1 South		•••		•••						
South Wester		(1465)	E or a	HIT. PERE	an start	(dove)		OPPOSITE STATES IN			
South weste		•••							ialiyco		18 20100
	Total	••••						11			16
VALES											

anivi 000,001 rad eater neitschiloff :

Table LXV.—Dysentery: Notifications and deaths, and ratio of notifica-tions to deaths, 1931 to 1951

1951*	1950*	1949*	ALL THE PARTY	1949	1948	1947	1946	1945	s in t	1942 1943	1941	1939	1938	1936	1935	1933	1931	11	e 1894.	Year	100,000	
$\begin{array}{c} (c) & 11,211 \\ (a) & 29,663 \\ (b) & 28,564 \end{array}$		100		(a) $4,875(b)$ $4.519$	(a) 5,496 (b) 5,024			$\begin{array}{c} (v) & 13,000\\ (a) & 16,774\\ (b) & 16,947 \end{array}$		7,296 7.905	6,670	1,941 9 860	4,170	1,333	1,177	783	924		2 Mayora	Number of notifications†	supp iste be	alles also also al a la la
14	17	13		80	11	16	17	11	9	<b>G X</b>	15	10	10	n 0	<b>00 -</b>	10	1 1.2 00	>	and the period	Amœbiasis	NOETHOS	A MARCHART AND A
57	43	25		25	34	48	55	113	102	130 88	244	63 149	62	43 61	55	27	40	5	dysentery	Bacillary	Number	
ಲು	CT	r		7.5.17	16	17	49	41	46	30 60	70	223 29	40	23	#1 32	4 33	61 61	anoite	torms of dysentery	Other and unspecified	Number of deaths	
7 <u>4</u>	65	45	(FERDER - SELECT	84 40 MA	61	81	121	165	157	198 124	329	96	112	111	95	275	109	ide countp	TRD ANT	All forms		
386-0	265.7	100.4	INC MARCINE COM	113.0	83.3	46.4	65-0	98.5	82.8	63-8	20.3	20.2	37.2	18.5	12.4	10-4 9-0	00 00 00 00	Anese atta	ENCRY ND	to deaths	Ratio of	The Contraction of the

rest of the table deaths are according to the 5th (1938) Revision.  $\dagger$  (a) Original ; (b) Corrected, excluding cases in Port Health Districts. Up to 1943, figures are partially corrected.

Table LXVI.—Dysentery : Notification rates per 100,000 living and deaths per 1,000 notifications by sex and age, 1944 to 1951

61							have at	
1951*	682 F.	1000 1000	272 130 43	20 26	65	RQR	2 0 3	1808
19	M.		313 148 24	15 21	66	61.78	222102	3
*0	F.	0.00	196 67 25	12 14	39	2	35.0112	3
1950*	M.		231 72 13	8 21	40	24	1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	1255 10 00
*	н. -		49 15 6		11		3 11 22	537.03 N
1949*	M.		53 18 4		10	2	7 4 26 33 78 78	13
-		144 	49 15 6	20 00		:	3 11 22	9
1949	۲ <u>۲</u>	5705 12	41	Çonu,	<b>11</b>	No. Con	57	L CON
	M.	out the	53 18 4	ကက	10	EVEA	7 21 26 63	10 <b>12</b>
68	н.	living	48 17 7	6 10	12	tions	00000000000000000000000000000000000000	10
1948	M.	000,000	55 18 5	5 · · 2	<b>12</b>	notifica	10 6 36 36	14 b
7	ц.	ns per ]	21 5 6	10	œ	1,000	11 8 9 37 37	16
1947	M.	Notifications per 100,000 living	26 7 6	9 11	9 200	Deaths per 1,000 notifications	38 32 23 19	27
9	<u>н</u>	Not	48 24 15	13 20	19	Dea	13 2 4 4 8 8	10
1946	M.		57 25 13	12	18	30 	21 4 26 34 34	21
E5	Ĕ.	23	115 54 32	21 33	38	88	9 15 38 38	8.1
1945	M.		144 58 27	30	38		14 5 5 9 13 36 36	1 <b>12</b> 0
<b>[4</b>	Ъ.	•	107 43 22	15 33	30	: :	12 6 22 28 28	A TOL
1944	M.	LuioT	131 51 21	11 23	32	: :	17 3 8 43 43	13
the addition			C. TYA	Tod dip	arp bob	NVE.		
A	Age	A CONTRACT ANONE	<del>ار</del> م . : : :	45- 65 and over	All ages	JAW QMA GMA DWS	0 5 15 45 65 and over	All ages

\* Deaths according to 6th (1948) Revision of the International List.

Table LXVII.—Dysentery : 1	Notification rates per 10	0,000 living, deaths per	1,000 notifications and corrected notifica-
tions per 1,	00 original in Standard I	<b>Regions and Population</b>	Density Aggregates, 1951

.

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Area	Corrected notifications per 100,000 living Deaths per 1,000 corrected notifications	Corrected notifications per 1,000 original	Area 52	Corrected notifications per 100,000 living	Corrected notifications per 1,000 original
ENGLAND AND WALES	65 3 88 2	963 959	MIDLANDS AND EASTERN Regions: North Midland	55 1	869
Areas outside conurbations Urban areas with populations of 100,000 and over Urban areas with populations of 50,000 and under 100,000 Urban areas with populations under 50,000	51         3           90         2           50         4           35         6           41         3	969 946 974 982 989	Midland	45 3 86 3 60 2 40 4	979 991 950
Rural areas              NORTH OF ENGLAND              Northern              East and West Ridings	40 3 55 0	948 985	West Midland	10         52           111         52           521         150	961
North Western Total	66         2           57         3	962 966	SOUTH OF ENGLAND         Regions:         Remainder of South East         Southern         SouthWestern         North Western	44 8 61 2 · 47 4	996 968 1,003
Conurbations:         Tyneside         West Yorkshire         South East Lancashire         Merseyside	65            73         7           88         0           58         1	936 1,002 960 898	Total	50 <b>4</b> 31 5	987 972
Total	74 2	957	1.303		

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Table LXVI.- Dysentery : Notification rates per 100,000 living and deaths per 1,000 notifications by sex and age,

.

Table	LXVIII.—Scarlet Fever : Notification* rates per 100,000 living	
15.	and deaths per 1,000 notifications by sex and age, 1951	
I ZI		

		Scarlet	Fever	N IN			
ana ali	Notifications p	per 100,000 living	Deaths per 1,000 notifications				
	Males	Females	Males	Females			
1 3 5 10	25 264 711 764 155 11	31 233 678 822 211 8	0.5 0.2 0.4 5.6	9.8 0.6 0.4 0.1 0.7 11.5			
All ages	. 116	107	0.2	1.0			

\* Fully corrected Scarlet Fever notifications, excluding cases in Port Health Districts.

# Table LXIX.—Scarlet Fever (excluding streptococcal sore throat):Notification rates per 100,000 living, numbers of deaths,<br/>and death rates per 1,000 notifications, 1931 to 1951

Year	Notification rate per 100,000 living*	Number of deaths†	Deaths per 1,000 cases notified
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{c} 204\\ 212\\ 321\\ 376\\ 296\\ 257\\ 233\\ 241\\ 188\\ 156\\ 142\\ 203\\ 275\\ 218\\ 173\\ 133\\ \end{array}$	$\begin{array}{r} 469\\ 461\\ 635\\ 838\\ 499\\ 440\\ 305\\ 311\\ 181\\ 154\\ 133\\ 104\\ 134\\ 107\\ 84\\ 43\\ \end{array}$	5.7 $5.4$ $4.9$ $5.5$ $4.1$ $4.2$ $3.2$ $3.1$ $2.3$ $2.4$ $2.2$ $1.2$
1947           1948           1949           1949           1949           1950           1951	135 172 161 161 150 111	42 37 18 27 33 37	0.8 0.7 0.5 0.3 0.4 0.5 0.8 \$

\* Corrected notifications from 1944, excluding cases in Port Health Districts.

<sup>†</sup> The figures shown below the line for 1949, 1950 and 1951 include deaths occurring one or more years after onset of the disease, numbering 22 in 1951.

<sup>‡</sup> This ratio becomes 0.3 after excluding deaths occurring one or more years after onset of the disease.

Агеа	Notification rate per 100,000 living	Deaths per 1,000 notifications	Death rate per million living	Area	Notification rate per 100,000 living	Deaths per 1,000 notifications	Death rate per million living
NGLAND AND WALES	467	0.22	1.03	MIDLANDS AND EASTERN (contd.)	Curristal.	1 de la com	an(
Conurbations	537	0.20	1.09	Conurbation:			1
Areas outside conurbations	424	0.23	0·99 0·77	West Midland	384	0.49	1.87
Urban areas with populations of 100,000 and over Urban areas with populations of 50,000 and under	539	0.14	0.77	Areas outside conurbation:	and the second second	1 1 1	
100.000	403	1.02	4.10	Urban areas with populations of 100,000 and over Urban areas with populations of 50,000 and under	?	?	2.23
100,000	431	0.11	0.48	Urban areas with populations of 50,000 and under			New .
Rural areas	346	0.15	0.52	100,000	?	2	
ORTH OF ENGLAND				Rural areas	2	2 -	
Regions:			9889	1 2 9 W	- 10 A		
Northern	543	-					
East and West Ridings	454 585	0.24	1.08 2.79	GREATER LONDON	571	0	- Internet
North West	909	0.40	2.10	Card and the second sec		181	ind ind
Total	536	0.30	1.61	SOUTH OF ENGLAND			2
and the second second				Regions: Remainder of South East	369	- Court train	100
Conurbations: Tyneside	556	_	_	Southern	310		
Tyneside              West Yorkshire	501	- 00 -4-02 02		South Western	399	0.77	3.07
South East Lancashire	689	0.28	1.90	88 888 <u>-</u> -			i pre
Merseyside	404	1.42	5.73	Total	360	0.31	1.11
Total	554	0.38	2.10	Urban areas with populations of 100,000 and over		?	
10ta				Urban areas with populations of 50,000 and under	3.10		
Areas outside conurbations:				100.000	?	?	4.35
Urban areas with populations of 100,000 and over Urban areas with populations of 50,000 and under	?	?		Urban areas with populations under 50,000 Rural areas	2	2	1.04
100.000	?	?	8.15				0
Urban areas with populations under 50,000	?	?		9.93 4 50 10	the second second		
Rural areas	?	?		WALES			1.22
IDLANDS AND EASTERN	16 .	the states of		Regions:			1
Regions:		1	-	Wales I and II	446	0.38	1.69
North Midland	430			Urban areas with populations of 100,000 and over	?	3	
Midland	407 326	0.47	1.90	Urban areas with populations of 50,000 and under 100,000	?	?	-
Eastern	320			Urban areas with populations under 50,000	?	?	-
Total	392	0.20	0.79	Rural areas	?	?	5.72

# Table LXX.—Scarlet Fever : Notification and death rates and fatality ratios at ages 0–14 years, in Standard Regions and Population Density Aggregates, 1951

3.8	2200		3.9		12-9			and age
	- 0 0 0				30.6	20.0		Rex
			2-57	in the	18.1			oue by
000	9180	1.6						anoiteofiton
			3:4	1.0				000,
			daa					int int

Table LXXI.—Diphtheria : Notification rates per 100,000 living and deaths per 1,000 notifications at ages 0–14 and 15 and over, 1944 to 1951

Hea	ce	- 3	Notifications*	* per 100,000 living	Deaths per 1,0	00 notifications*
Year			0-14	15 and over	0-14	15 and over
1944          1945          1946          1947          1948          1949          1950          1951	à:::::::::	1.1	183     146     91     42     26     14     7     5     5	21 17 12 5 3 2 1 1	50 46 44 54 55 51 53 50	19 24 31 21 20 31 46 52†

\* Corrected figures, excluding cases in Port Health Districts.
† 35 per 1,000 notifications, excluding deaths occurring one or more years after onset of the disease.

13.0	1-3 3-4 3-4 0-1-0			16.2			
 <i>Q.Q</i>	1.0	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	0.0	11-12	.M		
12-0	11 I I I I	() () ()		1.12		14	a noohing Consu
10.3	8-5- 6-5- 6-5-6- 6-5-6- 6-5-6-	5.5	0.0	7-02 7-02			
All ages		esas IIA	tovo bo				TRUE L'AV

	19	44	19	45	19	46	19	47	194	48	19	49	19	50	19	51
Age	м.	F.	 M.	F.	м.	F.,	M.	F.	M.	F.	M.	F.	M.	F.	м.	F.
			R and work		8	Notific	cations*	per 1,000	) living.	269	18	<u></u>	1			
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	14.5 19.4 20.7 9.8 0.8 0.0 <b>2.2</b>	15·1 22·0 24·1 11·2 1·0 0·1 <b>2·3</b>	9·4 12·7 14·2 6·0 0·5 0·0 <b>1·4</b>	10.0 14.4 16.5 7.0 0.6 0.0 <b>1.5</b>	12.8 18.5 21.0 8.6 0.6 0.0 <b>2.1</b>	14·1 20·8 24·7 10·0 0·8 0·1 <b>2·2</b>	12·2 16·8 18·9 9·0 0·6 0·0 <b>2·1</b>	13·2 19·1 22·6 10·3 0·7 0·1 <b>2·2</b>	18·3 25·3 29·5 14·0 0·8 0·0 <b>3·3</b>	20·0 27·9 34·8 16·0 1·0 0·1 <b>3·4</b>	12.9 17.2 20.2 9.4 0.6 0.0 <b>2.3</b>	13.8 19.5 24.0 11.0 0.8 0.1 <b>2.4</b>	18.5 24.3 30.0 15.7 0.7 0.0 <b>3.5</b>	19.0 27.6 35.4 18.1 0.9 0.1 <b>3.7</b>	21·2 29·0 30·5 15·5 0·9 0·0 <b>3·9</b>	22-8 31-5 35-5 17-6 1-0 0-1 <b>3-9</b>
Sale Taketta	and the second				dibuls	Deaths	s per 1,0	00 notifie	cations*	000						
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	62.6 9.4 0.9 0.9 0.9 2.5 10.3	$72 \cdot 1 \\ 13 \cdot 0 \\ 3 \cdot 0 \\ 1 \cdot 1 \\ \\ 1 \cdot 6 \\ 12 \cdot 0$	58·2 9·1 1·7 0·7 1·4  9·9	$ \begin{array}{r} 64 \cdot 9 \\ 14 \cdot 1 \\ 3 \cdot 4 \\ 1 \cdot 5 \\ \hline 1 \cdot 3 \\ 12 \cdot 0 \end{array} $	52·4 6·7 1·7 0·2 1·2 2·9 8·1	56·1 10·3 2·1 0·6 1·0 3·3 <b>9·3</b>	46.9 9.8 1.2 0.2 	$     \begin{array}{r}       54 \cdot 9 \\       12 \cdot 8 \\       2 \cdot 2 \\       1 \cdot 3 \\       \overline{} \cdot 0 \\       10 \cdot 6 \\     \end{array} $	$   \begin{array}{r}     31 \cdot 6 \\     4 \cdot 0 \\     1 \cdot 0 \\     0 \cdot 1 \\     \hline     \overline{} \\      \overline{} \\      \overline{} \\     \overline{} \\       \overline{} \\      \overline{} \\      \overline{} \\      \overline{} \\      \overline{} \\      \overline{} \\      \overline{} \\      \overline{} \\      \overline{} \\       \overline{} \\      \overline{} \\       \overline{} \\      \overline{} \\       \overline{} \\      \overline{} \\       \overline{} \\       \overline{} \\       \overline{} \\       \overline{} \\       \overline{} \\       \overline{} \\       \overline{} \\       \overline{} \\       \overline{} \\       \overline{} \\       \overline{} \\       \overline{} \\       \overline{} \\       \overline{} \\       \overline{} \\       \overline{ } \\       \overline{} \\       \overline{} \\$	$   \begin{array}{r}     33.0 \\     6.6 \\     0.6 \\     0.2 \\     \hline     1.9 \\     5.4   \end{array} $	37·1 2·8 0·7 0·6 	36·1 5·8 1·0 0·3 	$     \begin{array}{r}       18.3 \\       1.6 \\       0.3 \\       0.2 \\       \\       \overline{1.9} \\       2.2     \end{array} $	$ \begin{array}{r} 24.0 \\ 2.5 \\ 0.8 \\ 0.1 \\ \hline 1.4 \\ 2.8 \end{array} $	18·1 3·1 0·3 0·2 0·8 1·4 <b>2·6</b>	18.7 3.8 0.2 0.2 0.7 1.6 2.8

Table LXXII.—Whooping Cough : Notification rates per 1,000 living and deaths per 1,000 notifications by sex and age,1944 to 1951

\* Corrected figures, excluding cases in Port Health Districts.

Table LXXIII.—Whooping Cough : Notification, and death rates and fatality ratios at ages 0–14 years in Standard Regions and Population Density Aggregates, 1951

Area	Notification rate per 100,000 living	Deaths per 1,000 notifications	Death rate per million living	Агеа	Notification rate per 100,000 living	Deaths per 1,000 notifications	Death rat per million living
ENGLAND AND WALES	1,712	2.7	46	MIDI ANDS AND DAGENERAS	88 88	1 2 5 2	<u>a</u>
Conurbations	1,687	2.3	39	MIDLANDS AND EASTERN (contd.) Conurbation:	04 64	1 2 2 2	9
Urban areas with populations of 100,000 and over	1,727	2.9	51	West Midland	15.15 50.00	1 1 2 3 2	ST
Urban areas with populations of 50,000 and under	1,761	2.7	48	100 000 000 00 00 20	1,721	2.6	45
100.000	1,498	2.6	38	Areas outside conurbation:		11 20 11 3	21
Urban areas with populations under 50 000	1,743	2.9	38 51	Urban areas with populations of 100,000 and over	?	2	51
Rural areas	1,774	3.2	57	Urban areas with populations of 100,000 and over 100,000 and under			<b>D1</b>
NORTH OF ENGLAND				100,000 Urban areas with populations of under 50,000 Rural areas	?	3	29
Regions:	1 10 100		4 1	Rural areas	2		60
Northern	1,585	2.7	43		· · · ·	1 20	58
North Witcat	1,648	3.0	50	GREATER LONDON	Here Here	1 1	
North Western	1,321	3.1	40	OREATER LONDON	1,803	1.7	31
Total	1,482		1 4 A	the same little and the same same and the same of the same of	in a start of the	and the state of the	
E Provide the second se	1,482	3.0	44	SOUTH OF ENGLAND			
Conurbations:	1 9 201		24	Regions: Remainder of South East		1 5	1
Tyneside	1,854	2.7	51	Southern	2,471	2.0	48
South Fast Langashing	1,701	3.0	50	South Western	1,670	2.4	41
Merseyside	1,177 1,724	1.5 4.8	17		1,791	2.7	48
The second secon	1,724	4.8	83	Total	1,962	2.3	46
Total	1,535	3.0	46	Urban areas with nexulations (tes ass	The second second		40
Areas outside conurbations	100			Urban areas with populations of 100,000 and over Urban areas with populations of 50,000 and under	?	3	25
Urban areas with populations of 100 000 and aver			5 T			1 1	-
Urban areas with populations of 100,000 and over Urban areas with populations of 50,000 and under	1 表注	?	48	Urban areas with populations of under 50,000	2	?	30 48
	~~~	2	53	Rural areas	?	2	48 60
Urban areas with populations of under 50,000	?	?	37	the set of	- 10 in	1 9 9 8 8	00
Rural areas	2	?	37	WALES	and the		
IIDLANDS AND EASTERN	1 6 1		1 1	Regions:		1 2 - 2 2	\$ 1
Regions:	* 201		14 F.	Wales I and II	1.621	5.2	85
North Midland	1,770	2.5	45	* The second		02	99
Midland	1,661	3.6	59	Urban areas with populations of 100,000 and over Urban areas with populations of 50,000 and under	?	?	91
Lastern	1,955	2.4	47	100.000			
Total	1 770			Urban areas with populations of under 50 000	2	?	74
10tai	1,776	2.9	52	Rural areas	2	2	75

	Year	And in	Number of notifications (partially corrected)	Number of deaths	Yea	r	Number of notifications (a) original (b) corrected <sup>+</sup>	Number of deaths
1931	•••		2,216	1,446	1944		(a) 2,982 (b) 2,306	592
1932		••	2,136	1,218 946	1945	•••	$\begin{array}{c} (a) \ 2,739 \\ (b) \ 2,060 \end{array}$	555
1933 1934			1,695 1,094	732	1946		(a) 2,673	509
1935			883	619	1947	n training a	(b) 2,010 (a) 3,146	534
1936	• • •		994	638			(b) 2,282	i de
1937	•••		1,140	701	1948	•••	(a) 2,024 (b) 1,216	300
1938	3	100 miles	1,288	655	1949		(a) 1,619	288
1939	)		1,500	517	1010	a poi	(b) 942	Lot
1940	)	1107 A.	12,771	2,584	1950		(a) 1,747 (b) 1,149	283
194]	ι		11,077	2,163	1951		(a) 1,964	298
1942	2		6,029	1,206	1001		(b) 1,390	isu
1943	3	••	3,303	780	10			00

# Table LXXIV.—Meningococcal Infections : Notifications and deaths, 1931 to 1951

† Corrected notifications (1944-1951) exclude cases in Port Health Districts.

# Table LXXV.—Acute Poliomyelitis : Notification rates per 100,000 living and deaths per 100 cases by sex and age, 1951

		Notificat	ion* rate	per 100,0	000 living	and the second	Deaths	per 100	
	Para	lytic	Non-pa	ralytic	То	tal	notime	io tinoutions	
	М.	F.	М.	F.	М.	F.	M.	F.	
0 1 3 5 10 15 25 and over.	$9 \\ 18 \\ 14 \\ 10 \\ 5 \\ 4 \\ 1$	9 19 14 8 4 4 1	4 5 10 12 8 4 1	$     \begin{array}{c}       1 \\       4 \\       6 \\       6 \\       5 \\       3 \\       1     \end{array} $	$     \begin{array}{r}       12 \\       24 \\       22 \\       13 \\       8 \\       2     \end{array} $	$     \begin{array}{r}       11 \\       23 \\       20 \\       15 \\       9 \\       6 \\       2     \end{array} $	9 5 5 2 9 19	6 5 6 5 5 10 17	
All ages	4	3	3	2	7	5	8	8	

\* Corrected notifications, excluding cases in Port Health Districts.

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# Table LXXVI.—Poliomyelitis : Notification and death rates and fatality ratios in Standard Regions and Population Density Aggregates within Regional Groups, 1951

Are	38	Notification rates per 100,000 living	Deaths per 1,000 notifications	Death rate per million living	Area	Notification rates per 100,000 living	Deaths per 1,000 notifications	Death rate per million living
ENGLAND AND WALE	s	6.0	83	5	MIDLANDS AND EASTERN (contd.)			and a second sec
Conurbations		4.4	82	4	Conurbation:	and the second		
Areas outside conurbat		6.9	84	6	West Midland	4.1	120	5
Urban areas with popul	lations of 100,000 and over lations of 50,000 and under	8.4	66	6	Areas outside conurbation:	TI I	120	8 0
100,000		7.2	62	4	Urban areas with populations of 100,000 and over	?		10
Urban areas with popu	lations under 50.000	6.4	91	6	Urban areas with populations of 50,000 and over	:	?	6
Rural areas		6.4	102	7	100,000	2	2	2 7
ORTH OF ENGLAND		1 B. Sau			Urban areas with populations under 50 000	;	2	4
Regions:	And the second se				Rural areas	2	?	5
Northern	the second second	5.1	07					7 73
East and West Ridings	•• •• •• ••	8.7	87 59	4 5	GREATER LONDON			
North Western		4.4	127	5 6	GREATER LONDON	4.7	44	2
Conurbations:	Total	5.9	89	5	SOUTH OF ENGLAND Regions: Remainder of South East			Duc
Tyneside		4.0	212	8	Southorn	6·0 6·1	116 85	7
West Yorkshire		5.4	55	3	South Western	5.5	161	0
South East Lancashire		2.9	159	5			101	Sale 8
Merseyside		5.2	139	7	Total	5.9	121	7
Areas outside conurbat	Total	4.5	125	5	Urban areas with populations of 100,000 and over Urban areas with populations of 50,000 and under	?	?	7
	ations of 100,000 and over	?	?	5		?	3	2
Urban areas with popul	ations of 50,000 and under	•	on har in the	0	Urban areas with populations under 50,000 Rural areas	?	?	8
100,000	- 10 · 01 -1 · 0 01	?	?	5	Kurai areas		8. 1	8
Urban areas with popul	ations under 50.000	?	?	4	and and and a state with the set	r (2) (2)	8 1	
Rural areas	and the second and	?	?	7	WALES Regions:		1	
IIDLANDS AND EAST.	ERN				Wales I and II	5.2	119	6
Regions:							110	they want
North Midland		7.1	62	4	Urban areas with populations of 100,000 and over	?	?	2
The set of the set of the set	•• •• •• ••	6·9 4·9	69 118	5	Urban areas with populations of 50,000 and under		1	
Lastern		4.8	118	6		?	?	
	Total	6.4	77	5	Urban areas with populations under 50,000 Rural areas	?	2	9
	2 2 2				Rurai areas		· · · · · · · · · · · · · · · · · · ·	O

Number of	1. 位、空家型心	Number	of deaths	
notifications†	Acute form	Sequelæ	Unspecified	Total
654	2	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	?	771
FCA	?	?	3	662
. 432	?			654
	3	4.10		632 579
. 329	I state			010
. 269	?	?	?	574
. 217	?	?		599
1 = 0				516 572
011				729
. 411	-10	000		
. 191	36	363	305	704
				590
. 109	20	304	171	495
(a) 88	14	244	159	417
(b) 79	Ne state	1 al	The second secon	
(a) 02	20	288	141	461
	52	200		101
(0)	A A R D	著	2	
. (a) 90	33	314	90	437
(b) 78			a share an in the ray of	
. (a) 84	73	259	94	426
(b) 68		and the second second		
(-) 96	80	109	101	373
	00	152	101	010
	1 杂剧教馆 组	and an	· · · · · · · · · · · · · · · · · · ·	
. (a) 56	65	194	103	362
(b) 49		and mariles in standing of	a provide a second	- 33
		• •		Reloa
Arth Vinning Bett				Tatal
ALE CANADA	encephalitis	s (082) inf. e	encephalitis (083)	Total
: :: : : : : :		111 11	120111	
	198	ALL ALL MARKED	171	369
(b) 49	1 2 2 2 2			
(a) 276	115	ale ale	250	365
(b) 253		1.1.1 1.1.1	388. : ! ! !	24
A standard and the standard	110	and the second se	010	004
$\begin{array}{c c} (a) & 321 \\ (b) & 312 \end{array}$	118		216	334
	$\begin{array}{c} & 654 \\ 564 \\ . & 432 \\ . & 411 \\ . & 329 \\ . & 269 \\ 217 \\ . & 194 \\ . & 194 \\ . & 159 \\ . & 211 \\ . & 191 \\ . & 148 \\ . & 109 \\ . & (a) 88 \\ (b) 79 \\ . & (a) 93 \\ (b) 76 \\ . & (a) 93 \\ (b) 76 \\ . & (a) 93 \\ (b) 76 \\ . & (a) 93 \\ (b) 78 \\ . & (a) 84 \\ (b) 68 \\ . & (a) 36 \\ (b) 30 \\ . & (a) 56 \\ (b) 49 \\ \end{array}$	notifications†       Acute form $\begin{array}{c} 654 \\ 564 \\ 432 \\ 432 \\ 411 \\ 329 \\ 411 \\ 329 \\ 411 \\ 329 \\ 103 \\ 217 \\ 194 \\ 7 \\ 159 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 148 \\ 29 \\ 109 \\ 20 \\ 148 \\ 29 \\ 20 \\ 109 \\ 20 \\ 148 \\ 29 \\ 20 \\ 109 \\ 20 \\ 148 \\ 29 \\ 20 \\ 109 \\ 20 \\ 148 \\ 14 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 109 \\ 20 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 10$	Number of notifications†         Acute form         Sequelæ           . $654$ ?         ?           . $564$ ?         ?           . $432$ ?         ?           . $432$ ?         ?           . $432$ ?         ?           . $329$ ?         ?           . $329$ ?         ?           . $329$ ?         ?           . $329$ ?         ?           . $329$ ?         ?           . $329$ ?         ?           . $269$ ?         ?           . $191$ $36$ $363$ . $109$ $20$ $304$ . $(a)$ $88$ $14$ $244$ . $(a)$ $90$ $33$ $314$ . $(a)$ $90$ $33$ $314$ . $(a)$ $36$ $80$ $192$	notifications†         Acute form         Sequelæ         Unspecified           . $654$ ?         ?         ?           . $432$ ?         ?         ?           . $432$ ?         ?         ?           . $432$ ?         ?         ?           . $329$ ?         ?         ?           . $329$ ?         ?         ?           . $329$ ?         ?         ?           . $329$ ?         ?         ?           . $269$ ?         ?         ?           . $194$ ?         ?         ?           . $194$ ?         ?         ?           . $194$ . $366$ $324$ . $109$ $20$ $304$ $171$ . $(a)$ $88$ $14$ $244$ $159$ . $(a)$ $93$ $32$ $288$ $141$ . $(a)$

Table LXXVII.—Acute Infectious Encephalitis: Notifications and deaths, 1931 to 1951

\* Deaths according to the 6th (1948) Revision of International List. Throughout the rest of the table deaths are according to the 5th (1938) Revision.
† (a) Original; (b) corrected, except in Port Health Districts. Up to 1943 notifications are partially corrected.
§ Notifications of acute infective encephalitis and post-infectious encephalitis.

.



Table LXXVIII.—Acute Infectious Encephalitis (including late effects): Death rates per million living by sex and age, 1951

pinit c	Age (l.b.d.)	Death rate per million living			
and the second		Males	Females		
		THE SE	1		
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	••• ••• ••• •••	11	12		
15		3	0		
15		5	5		
5 and over		12	12		
		12	13		
All ages		7			
	2		8		

# Table LXXIX.—Measles: Notification rates per 100,000 living and deaths per 1,000 notifications by sex and age, 1951

	Notifications* per	r 100,000 living	Deaths per 1,000 notifications				
20 Fish	 Males	Females	Males	Females			
0 1 3 5 0 5 and over	 3,058 9,742 12,057 7,372 483 27	3,195 9,646 11,995 7,480 552 33	4·4 1·0 0·3 0·1 0·4 2·6	4·9 0·6 0·2 0·1 0·1 2·5			
All ages	 1,488	1,331	0.6	0.5			

\*Fully corrected figures excluding cases in Port Health Districts.

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Table LXXX.—Measles : Notification rates	and fatality	ratios at ages 0-14 years in Standard Regions and Population
	Density .	Aggregates, 1951

Агеа	Notification rate per 1,000 population	Deaths per 1,000 notifications	Death rate per million population	Area	Notification rate per 1,000 population	Deaths per 1,000 notifications	Death rate per million population
ENGLAND AND WALES Conurbations Areas outside conurbations	62 66 60	0·48 0·49 0·47	30 32 28	MIDLANDS AND EASTERN (contd.) Conurbation: West Midland	62	0.57	35
Urban areas with populations of 100,000 and over Urban areas with populations of 50,000 and under 100,000	65 55 62	0·47 0·47 0·45	31 26 28	Areas outside conurbation: Urban areas with populations of 100,000 and over Urban areas with populations of 50,000 and under		?	20 16
Rural areas	57	0.51	29	100,000 Urban areas with populations under 50,000 Rural areas	Vd ba	?	32 16
Northern	59 54 57	0.59 0.57 0.61	35 31 34	GREATER LONDON	74	0.38	28
Conurbations:         Tyneside            West Yorkshire            South East Lancashire            Merseyside	1 40	0.53 0.84 0.63 0.48	30 50 38 23	SOUTH OF ENGLAND Regions: Remainder of South East Southern	73 75 76	0·37 0·25 0·34 0·32	27 19 26
Total	?	0·64 ? ? ? ?	36 30 45 24 42	TotalUrban areas with populations of 100,000 and over Urban areas with populations of 50,000 and under 100,000Urban areas with populations of under 50,000Urban areas with populations of under 50,000Rural areas	???	?	24 38 17 16 27
MIDLANDS AND EASTERN Regions: North Midland Midland Eastern Total	54 49	0.51 0.55 0.23 0.46	30 30 12 25	WALES	-?	0-96 ? ? ?	52 49 

# Table LXXXI.-Smallpox Epidemic at Brighton : December, 1950-January, 1951. Vaccination state of confirmed cases

Vaccination state	nito East Ki	Vaccin	ation sta	te before	e exposu	re to sma	llpox*	Beskiel
after exposure to smallpox*	Never vaccinated		Vaccinated only in infancy		Revaccinated after infancy		Total	
TAL. 61 75	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
Vaccinated	17	6	4	2	1	-	22†	8‡
Not vaccinated	1	1	5	1	1		7	2
Total	18	7§	9	3¶	2**		29	10

\* "No takes " are included with " vaccinated " (see notes ‡ and \*\*).

† 3 after onset of smallpox, 1 on day of onset, 16 before onset and 2 with day of onset undetermined.

2 after onset and 6 before onset (including 2 " no takes ").
§ Ages 17, 20, 28, 28, 38, 43, 48.
[] None aged under 21.

Ages 53, 53, and 53.
\*\* 1 in infancy and 1935; 1 in infancy, 1943 and 1949. (Source:—Public Health, No. 7, Vol. LXIV (April, 1951) p. 123).

Table LXXXII.—Proportions of children at ages 1–4 and 5–14 years on 31st December, 1951, who had been immunized against diphtheria in each county and county borough, according to the returns made by local authorities to the Ministry of Health—England and Wales.

Area		Per cent of population immunized prior to 31.12.51		Area	Per cent. of population immunized prior to 31,12,51	
		1-4	5-14		1-4	5-14
: December, 1930.	ach.	Brigh	ic at.	XISmallpox Epidem	Chil a	ldsT
Admin. Counties	lo s		ofteni	Admin. Counties-contd.		
Bedfordshire		69	76	Wiltshire	60	81
Berkshire		65	69	Worcestershire	63	73
Buckinghamshire	meorg	70	74	Yorkshire, East Riding	56	70
		74	76	Yorkshire, North Riding	61	61
0	iouval.	51	62	Yorkshire, West Riding	55	69
		62	62	1 of a single of the second seco	smallpu	
	ni with	66	87	ENGLAND, Admin.		
Cumberland	a superior	THE R. CO. LANSING MICH.	79	Counties TOTAL.	61	75
Derbyshire	••	50		Countres TOTAL		
Devon	••	63	85	Anglagor	62	79
Dorset	••	87	80	Anglesey	60 60	67
Durham		50	70	Brecknockshire	70	71
Ely, Isle of		48	13	Caernarvonshire	and the second second	
Essex		61	78	Cardiganshire	55	77
Gloucestershire		59	76	Carmarthenshire	62	94
Herefordshire		57	88	Denbighshire	64	88
Hertfordshire		58	66	Flintshire	59	82
Huntingdonshire	States -	62	68	Glamorganshire	61	87
Kent		64	81	Merionethshire	72	73
Lancashire		61	76	Monmouthshire	55	68
	an t-a	63	86	Montgomeryshire	77	89
Leicestershire	oaito.	60	91	Pembrokeshire	55	86
Lincs., Holland	••	50	77	D 1him	55	68
Lincs., Kesteven		COLUMN TRACTOR OF THE	59	Radnorshire	0 1000	1
Lincs., Lindsey	••	54		WALES, Admin. Counties	12 838	A. E.
London	• •	64	81		61	82
Middlesex	••	63	79	TOTAL	1 Storage	04
Norfolk	••	55	79	THAT TO A MALES	itai mi	and the second
Northamptonshire		61	77	ENGLAND and WALES,	:eburoe	
Northumberland		65	88	Admin. Counties	11	=
Nottinghamshire		68	82	TOTAL	61	76
Oxfordshire		66	61			
Peterborough, Soke of		50	70			
Rutlandshire		53	78	County Boroughs		
Shropshire		61	76	Barnsley	62	94
Somerset		63	75	Barrow-in-Furness	54	65
Southampton		65	66	Bath	53	60
		50	79	Birkenhead	49	68
Staffordshire	••	63	41	Birmingham	70	99
Suffolk, East	••	65	48	Blackburn	61	93
Suffolk, West	••	100 C	40 82		60	85
Surrey	••	64			55	74
Sussex, East		73	84	Bolton	56	68
Sussex, West		59	73	Bootle	and a specific state of	85
Warwickshire		57	63	Bournemouth	75	100000000000000000000000000000000000000
Westmorland		67	78	Bradford	55	65
Wight, Isle of		52	67	Brighton	61	42

# Table LXXXII.—contd.

Агеа	popu immu pric	ent of lation inised or to 2.51	Area	Per cent or population immunised prior to 31.12.51	
system in consider such	1-4	5-14		1-4	5-14
ounty Boroughs—contd.	- Ones		County Boroughs—contd.		S. Over
Bristol	59	73	Ct Halana	51	76
Burnley	59	73	Salford	86	CONTRACTOR OF
Burton-upon-Trent	46	95	Chaff ald	Arrived The State of State	96
Bury	56	74	C	67	90
Canterbury	64	63	C. II I	74	96
Carlisle ,	81	90	Couthand on Con	52	69
Chester	45	94	Couthment	47	46
Cont	50	94 73	Southport	76	92
Crowdon	63	70	South Shields	70	85
Di	50	61	Stockport	66	87
Darbar	57	89	Stoke-on-Trent	56	49
Danisham	52	A STATE OF A	Sunderland	45	59
D	47	72	Tynemouth	60	88
T 11	The state of the second second	65	Wakefield	58	72
T 11	57	92	Wallasey	59	60
Trat II.	46	78	Walsall	38	89
T	63	69	Warrington	49	87
Exeter	69	81	West Bromwich	57	85
Gateshead	50	66	West Ham	54	85
Gloucester	52	69	West Hartlepool	39	93
Great Yarmouth	67	58	Wigan	52	73
Grimsby	54	67	Wolverhampton	40	76
Halifax	68	70	Worcester	63	71
Hastings	73	50	York	58	68
Huddersfield	61	90	to take		aress of
Ipswich	60	87	ENGLAND, County		UTEU
Kingston-upon-Hull	70	78	Boroughs TOTAL	60	79
Leeds	72	94			1
Leicester	60	85	save net 100 000 ten sus	Ly Alerter	AND N
Lincoln	53	99*	Cardiff	88	82
Liverpool	47	78	Merthyr Tydfil	50	91
Manchester	67	82	Newport (Mon.)	67	78
Middlesbrough	56	78	Swansea	54	90
Newcastle-upon-Tyne	66	81		04	90
Northampton	58	81			
Norwich	53	65	WALES, County		A LAND
Nottingham	65	83	Boroughs TOTAL	71	04
Oldham	54	33	Doroughs TOTAL	/1	84
Oxford	71	98	and the second		- The second
Discouth	59	85	ENCLAND and WALDS		
D	66		ENGLAND and WALES,		a series and
Dreater	63	91	County Boroughs		
Dealing	Contraction of the second	83	TOTAL	61	80
D 111	65	75	The second states and the second states and		
Datharban	57	94			
Rotherham	52	78	ENGLAND and WALES.	61	77

\* No allowance has been made in respect of children living outside the city but immunized while attending schools there (Lincoln C. B.).

Table LXXXIII.—Comparative rates of diphtheria notifications and deaths in 1951, per 100,000 children who were returned as having been immunized and as not having been immunized before the end of 1951—England and Wales.

			bro-on-T-ont Gordand.	1-4	5–14	All ages under 15
	1.86	1.E	votili	Wr Weers To		Dudhey .
		Immunized	. I Hater	1 000 000	4,722,201	6,656,045
		children	···	1,868,633 42	4,722,201	
	per of of o	corrected notif		42	1	1
ates		leatns	•• enal•••			Glottoester
		ases per 100,0	000	2	2	
				- II	] _ ]	L. missing
200	tone pe		Talebou		1	Halifax
		ot immunize	ed .	ST 1 100 10		0.001.010
		children		1,208,060	1,414,970	
		corrected not		120 5	230	
		deaths	••••0500•••	0		Ministra and a start a
lates	s :			1 19 1 23		Loods
Not	s : tified c	ases per 100,0	000	10 4	16	
Not	s : tified c			10	16	11
Not	s : tified c	ases per 100,0	000	10	16	
ates	s : tified c	ases per 100,0 er 100 cases	000	10 4	16	
ates	s :— tified c aths pe	ases per 100,0 er 100 cases		10 4	16	
ates	s :— tified c aths pe	cases per 100,6 er 100 cases		10 4	16	
ates Not Dea	s :— tified c aths pe	ases per 100,6 pr 100 cases		10 4	16	II ceter
ates Not Dea	s :— tified c aths pe	ases per 100,6 pr 100 cases		10 4	16	11 cates 11 cates 11 cates 12 cates 13 cates 14 cat
ates Not Dea	s :— tified c aths pe	ases per 100,6 pr 100 cases		10 4	16	11 ester 6 mooin Middo ester Northatopron Northatopron Northatopron Northatopron Northatopron
ates Not Dea	s :— tified c aths pe	ases per 100,6 er 100 cases		10 4	16	11 cates 11 cates 11 cates 12 cates 13 cates 14 cat
ates Not Dea	s :— tified c aths pe	ases per 100,6 er 100 cases		10 4	16	II cester 6 mean 1 mean 1 mean 1 mean Northainpean Northainpean Northainpean Northainpean Oldham Oldham Didott
ates Not Dea	s :— tified c aths pe	cases per 100,( er 100 cases		10 4	16	II caster
ates Not Dea	s : tified c aths pe	ases per 100,6 er 100 cases		10 4	16	II caster 6 10 10 10 10 10 10 10 10 10 10
ates Not Dea	s :— tified c aths pe	cases per 100,( er 100 cases		10 4	16	II caste 6 moto 10
ates Not Dea	s :— tified c aths pe	cases per 100,6 er 100 cases		10 4	16	II caster

\* No allowance has been made in sequent of children living outside the city has immunical while attending schools herein income R R.

With regard to the effect of improved case-tinding, the numbers of examinets found as 'a result of mass radiography to be suffering from active post-

# TUBERCULOSIS

## **Respiratory tuberculosis**—morbidity

The notification rates by sex and age for tuberculosis of the respiratory system in England and Wales are shown in Table LXXXIV (page 163). The introduction of mass radiography, improved chest clinic facilities and a better public attitude toward the disease has so improved the efficiency of case-finding that the rates for the years following the 1939-45 war are not comparable with those of earlier years. It is doubtful whether the incidence of disease was in fact higher in 1951 than in 1938 and considerable evidence is available (e.g. Lowe C. R., and Geddes J. E., 1953\*) to indicate that the notification rates have been sustained at their higher levels by more efficient case-finding and earlier diagnosis. Notwithstanding this factor, however, the rates have tended to fall at most ages since 1948; more consistently so for females than for males.

The sex and age differentials are important. At ages under 15 notification rates are now much higher than ten years ago as a result of wider recognition of the clinical reactions to primary tuberculous infection and a greater tendency to notify such cases in order to secure precautionary observation.

The adolescent and young adult is most vulnerable to respiratory tuberculosis and the notification rate at ages 15–24 responds quickly to changes in the balance of, on the one hand, forces of infection and, on the other hand, innate resistance and environmental influences. During the war years the notification rates for both sexes in this age group rose first as a reflection of adverse war conditions but later also as a result of improved case-finding, but it is not possible to separate the effects of these two factors. In males there has been some considerable improvement from the peak of 1948, when the rate was 52 per cent above the 1938 figure, but in 1951 there was an upward fluctuation. This was a year of higher than average prevalence of non-tuberculous respiratory infection, especially of influenza, which may have had some exacerbating effect upon early cases of tuberculosis. It must also be borne in mind that the intensity of case-finding further increased in 1951 and may have affected males more than females.

With regard to the possible effect of epidemic influenza it is noteworthy that the only region in which the rise in notifications of respiratory tuberculosis in males in this 15-24 age group was statistically significant was the North Western Region, the main contributors being Bolton (11 in 1950 increasing to 16 in 1951), Bootle (14 to 21), Liverpool (123 to 170), Manchester (73 to 80), and Warrington (5 to 8). There were increases in the London and South Eastern Region mainly in East Ham (10 to 17) and West Ham (13 to 24), the South Western Region (Bristol 43 to 71), and Wales (Newport 14 to 24), but they were not statistically significant (except for Bristol as an individual town). Other regions taken as a whole experienced decreases in notifications though there were minor upward fluctuations of no significance in some towns, the exception being Sunderland where the rise was very large from 19 to 45.

\* Lowe, C. R., and Geddes, J. E. (1953), Brit. J. of Prev. and Soc. Med., 7, 227.

With regard to the effect of improved case-finding, the numbers of examinees found as a result of mass radiography to be suffering from active postprimary respiratory tuberculosis in 1950 and 1951 were \*:

		Females				
Age	1950	1951	Increase	1950	1951	Increase
14           15-24           25-34           35-44           45 and over	30 578 860 552 989	33 656 989 714 1,096	3 78 129 162 107	59 1,095 649 257 190	56 1,283 729 319 242	$     \begin{array}{r}       -3 \\       188 \\       80 \\       62 \\       52     \end{array} $
Total	3,009	3,488	479	2,250	2,629	379

\* Ministry of Health (1951, 1952, 1953). Annual Reports of Chief Medical Officer, 1949, 1950, 1951, H.M.S.O.

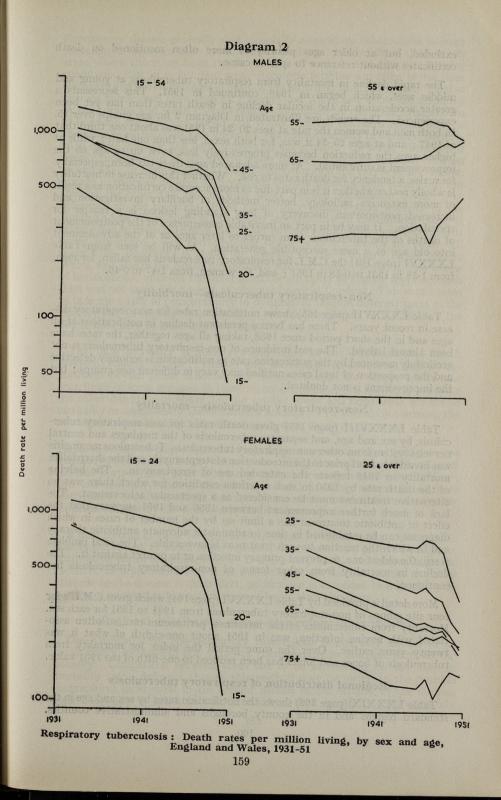
The increase in case-finding in 1951 by mass radiography, while greater for males than for females when all ages are taken together, is actually less for males than for females in the 15–24 age group. This particular aspect of casefinding does not appear to offer an explanation of the differential trend. It is however difficult to draw conclusions from these figures, interesting though they are, for the extent to which they represent real increases in new cases or merely represent cases which would otherwise have been detected by alternative sources of diagnosis is not known, nor whether this factor operates differently in the two sexes.

In females the post-war notification trend has not been so favourable as for males. The rate for ages 15–24 reached a maximum in 1948 at a figure 38 per cent above that for 1938 and though there has been a downward trend since that year, the improvement has not been substantial. At ages 25–34 the contrast is even greater than at 15–24 between a downward trend for men, with probable recovery of ground lost by the war, and persistence of raised morbidity in women.

At ages over 35 the more chronic course of the disease in males is more clearly demonstrated. In women there has been only a very slight tendency for rates of notification at older ages to decline; the rates are already relatively low in these age groups, for most women who contract tuberculosis do so before the age of 35. In men there was a downward trend at ages 35–64 between 1943 and 1947. This trend was arrested in 1948 and at ages 65 and over notifications have been considerably higher since 1948 than for many years.

## **Respiratory tuberculosis**—mortality

Death rates from respiratory tuberculosis by sex and age are shown in Table LXXXV (page 164). In 1950 deaths were classified on the basis of the 6th Revision of the International List and in order to show the effect of the new classification the 1949 rates have been shown according to both the 5th and 6th Revisions. The relatively minor change involved is the inclusion under respiratory tuberculosis in the new classification of pleurisy or pleural effusion without stated cause, which was formerly assigned to the non-tuberculous respiratory group of causes but which is now assumed to be tuberculous for purposes of classification. Pleural effusion without specific statement of cause is not numerically important at younger ages, since death is extremely unlikely to occur before the diagnosis of tuberculosis has been confirmed or



excluded, but at older ages pleurisy is more often mentioned on death certificates without reference to specific cause.

The rapid decline in mortality from respiratory tuberculosis at young and middle ages, which began in 1948, continued in 1951. This represents a greater acceleration in the secular decline in death rates than has yet been experienced. The trends are illustrated in Diagram 2 for age groups over 15. In both men and women the rate at ages 20-24 in 1951 was about one third that of 1947; and at ages 25-34 it was, for both sexes, less than one half; while at higher ages the reduction becomes progressively less, even up to age 65 the improvement is substantial. At more advanced ages there has been, especially for males, a tendency for death rates to rise. Whether this increase in mortality is wholly real or whether it is in part due to more accurate certification as a result of more extensive radiology, better methods of bacillary investigation and increased post-mortem discovery of long standing lesions is a matter for speculation. It may be in part an inevitable consequence of the postponement of deaths of the tuberculous from earlier to later ages or of the advancement into old age of a more susceptible generation. As will be seen from Table LXXXVI (page 164) the C.M.I. for respiratory tuberculosis has fallen, for men, from 1.38 in 1931 to 0.58 in 1951 ; and, for women, from 1.47 to 0.46.

## Non-respiratory tuberculosis-morbidity

Table LXXXVII (page 165) shows notification rates for non-respiratory disease in recent years. There has been a persistent decline in notifications at all ages and in the short period since 1938, taking all ages together, the rates have been almost halved. The real incidence of non-respiratory tuberculosis is not accurately measured by the notification rate as notification is seriously defective and the proportion of total cases notified may vary in different age groups ; but the improvement is not doubted.

# Non-respiratory tuberculosis-mortality

Table LXXXVIII (page 165) gives death rates for non-respiratory tuberculosis, by sex and age, and separates tuberculosis of the meninges and central nervous system from other non-respiratory tuberculosis. Tuberculous meningitis was invariably fatal prior to the introduction of streptomycin and the sharp fall in mortality in 1948 reflects the extended use of streptomycin. The halving of the death rate by 1950 in such a serious condition for which there was no alternative treatment must be considered as a spectacular achievement. The lack of much further improvement between 1950 and 1951 suggests that the effect of antibiotic treatment has a limit set by the number of cases in which diagnosis can be established in time to administer adequate antibiotic therapy and in which the reaction to such treatment is favourable. The vital problem is still the oldest one, to prevent primary infection or to protect against it. The decline in mortality from other forms of non-respiratory tuberculosis has continued.

More detail is provided by Table LXXXVI (page 164) which gives C.M.I.'s for four site groups of non-respiratory tuberculosis from 1931 to 1951 for each sex. Mortality from tuberculosis of the intestines, peritoneum etc., so often associated with bovine infection, was in 1951 about one-eighth of what it was twenty years earlier. Over the same period the index for mortality from tuberculosis of bones and joints has been reduced to one-fifth of the 1931 value.

## Regional distribution of respiratory tuberculosis

Table LXXXIX (page 166) shows the notification rates by sex and age in the standard regions and in the county boroughs and administrative counties.

Respiratory tuberculosis : Death rate. 1916 in thing, by sex and age, Equivalent and Wales, 1931-51

Respiratory disease generally and especially respiratory tuberculosis is more prevalent in the town than in the country and particularly affects those urban areas where there are large concentrations of workers and crowded housing conditions; but in such urban areas diagnostic facilities are often better than elsewhere and thus differences in notification rates may be accentuated. Higher average notification rates than for England and Wales as a whole are exhibited by the London and South Eastern region (dominated by the dense urbanisation of London), the Northern region and Wales. In the Northern region there is an excess in males at all ages under 65, but more especially in females, particularly of the younger and more vulnerable age groups. In Wales the excess is mainly in females in all age groups above the age of 15, and in males between 15 and 45. In London and the South Eastern region the excess is, in contrast, mainly in males of all ages with younger females showing some excess but less than in the other two regions with above average notification rates. This difference in the direction of the excess may indicate that whereas in the North and in Wales there is real excess in morbidity, in London the excess is largely due to more extensive diagnostic services resulting in more tuberculosis being discovered. The corresponding death rates are shown in Table XC (page 172). Mortality is above the average in the Northern region and in Wales, and also in the North Western and Midland regions which had no excess of notifications, while on the other hand the mortality in London and the South East was not excessive (except at advanced ages in London). This would seem to indicate a lack of comparability in notification rates in different parts of the country and to confirm that the higher recorded morbidity in London and the South East may be more apparent than real.

The high mortality is mainly attributable in the Northern and North Western regions to the Typeside and Merseyside conurbations and in the Midlands to the West Midland conurbation, though the larger towns also contribute in some measure to these regional excesses ; the mortality rates for the other density aggregates, i.e., for smaller towns and rural areas, are not so markedly or consistently above national averages. In Wales, by contrast, the mortality is considerably above average in each density aggregate.

The summary on page 162 indicates the larger towns with palpably high or low mortality rates for respiratory tuberculosis. High mortality (persons, all ages) for this purpose, has been arbitrarily defined as exceeding 450 per million; and low mortality as less than 200 per million. This summary has been restricted to county boroughs since comparisons of administrative counties are rendered difficult by the differing levels of urbanisation.

A final column in Table XC (page 172) indicates by the ratio of notified cases to deaths the extent to which either results of treatment vary or, more probably, notification varies in completeness. It seems very likely that where diagnostic facilities, as supplemented by mass radiography, are more extensive or public attitude to the disease is more alert, notification is extended to a greater proportion of minimal or less active types of lesion than elsewhere.

#### **Regional distribution of non-respiratory tuberculosis**

The notification of non-respiratory tuberculosis is not only known to be considerably incomplete but varies in completeness in different parts of the country. Comparison between areas has to be carried out on the basis of mortality rates, deficient though this method may be owing to the possible geographical differential in the secular decline in the fatality of the disease. Since mortality is much heavier in children than in adults (approximately

Region and Cou		tuberculo	ate from res osis per milli 1951	piratory ion living
	n northeatjon rates in for England and We	Males	Females	Persons
d by the tense mountailor the Northern region (here )	High mortality	South Root	bas nobre	v the L
	Sunderland	635	306	463
North Western	Liverpool	668	375	512
	Bootle	606	388	493
	Salford	646	291	461
	Manchester	606	316	452
North Midland	Grimsby	738	248	487
Midland	Walsall	737	348	541
and state protocol of and the	Smethwick	782	222	484
	Wolverhampton	661	303	479
to have long in manifold, an	Low mortality	hty is abo	ntiola Lei osin bi	age 17
East and West Ridings	Huddersfield	111	151	132
Lundoni. I ma would seem	York	177	183	180
North Western	Bury	108	162	136
Eastern	Ipswich	221	55	134
London and South Eastern .	Brighton	245	138	185
South Western	Bath	296	88	177
and the surger to the state	Exeter	268	119	185

40 per cent of the deaths were under age 15) and because deaths in children represent more recent disease than the long standing lesions involved in older persons whose deaths are assigned to non-respiratory tuberculosis, the index chosen was the death rate at ages 0–14. Table XCI (page 177) shows the rate for each standard region, county borough and administrative county, separated into two parts—the mortality attributable to tuberculous meningitis and to other non-respiratory tuberculosis. The numbers of deaths involved are small and few of the figures for individual areas are significant. In 1951 mortality from tuberculous meningitis was higher than average in the Northern, North Western and Midland regions of the country and in Wales and lower than average in the London and South Eastern, Southern and South Western regions. Mortality from other forms of tuberculosis, which are associated not only with human but with bovine sources of infection, shows less variation but is on the whole above average in the Northern region and Wales and low in the London and South Eastern, Southern regions.

#### Regional distribution of non-respiratory industriation

The notification of non-respiratory titherculosis is not only known to be considerably incomplete but varies in completeness in different parts of the country. Comparison between areas has to be carried out on the fraits of mortality rates, deficient through this method may be owing to the possible geographical differential in the secondar decline in the fatality of the disease. Since mortality is much heavier in oblicities than in gdufts approximatory Table IXXXI. Teberculosis of respiratory system : Death rates per multion living by sex and age, 1931-15 and 1946 to 1931

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# Table LXXXIV.—Tuberculosis of respiratory system : Notification rates per 100,000 living by sex and age, 1938 to 1951

11,340 月前初日 一	897 968	All ages	0-	5-	15-	25-	35-	45-	65 and over
м	ales								
1938		108	20	42	141	137	136	136	52
1939	272	98	17	32	132	137	124	125	
1940	and the second second	104	17	29	132	124			46
1941		115	20	29 33		140	128	123	43
1942					154	155	148	141	50
1943		117	22	38	165	148	153	142	49
1945		119	27	40	166	144	154	152	50
		122	30	41	180	158	142	149	56
1945		118	32	40	178	160	135	142	53
1946		119	32	46	179	174	125	138	54
1947		118	40	53	193	163	116	137	56
1948		117	44	51	215	161	117	139	64
1949		119	46	49	180	159	122	146	68
1950		111	53	49	159	154	107	135	67
1951		115	53	48	171	157	117	140	73
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1939		77	18	42	175	129	72	42	19
	30 ···· F	71	15	33	166	116	68	37	18
1940	101	70	17	30	168	120	66	35	16
1941		76	19	33	185	126	69	41	19
1942		78	20	34	204	130	70	37	18
1943	M	83	26	40	209	142	73	40	18
1944		86	26	40	227	150	75	38	16
1945	45-15	81	26	41	223	140	69	34	16
1946	85	80	28	49	213	141	65	35	16
1947	91. [9	83	33	51	235	146	66	35	17
1948	10	86	46	58	244	151	68	35	17
1949	78.09	85	44	53	238	155	71	35	17
1950	20	82	43	52	238	152	69	31	16
1951	20 2	81	50	52	228	150	68	33	16
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					85 0-04		83 0-82		81
					177   6-55		-76 0-72		13
		影响。自己的							199
									13

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	0	5	10-	15	20-	25-	35→	45→	55-	65	75 and over
Males 1931–35	85	42	64	490	963	961	1.140	1.368	1,176	723	275
1931 - 35 1936 - 40	61	20	44	366	742	785	937	1,210	1,216	718	296
1930-40 1941-45	76	24	34	339	581	674	811	1,114	1,203	741	295
1946	68	22	23	239	481	615	687	1,020	1,165	768	340
1947	77	15	29	241	500	632	679	1,034	1,213	812	267
1948	56	10	14	211	445	603	633	961	1,166	881	334
1949	33	6	13	127	368	496	591	869	1,153	927	380
1949*	34	7	14	127	366	497	592	869	1,159	937	400
1950*	38	.9	8	78	229	395	428	751	1,024	891	411
1951*	30	7	7	46	174	294	361	632	972	958	465
Females										anti-	115 .
1931-35	74	43	143	840	1,138	911	646	475	394	306	170
1936-40	55	24	98	658	1,016	759	511	377	339	272	160
1941-45	72	24	76	591	916	692	427	304	269	220	123
1946	60	25	69	468	842	662	382	261	242	207	119
1947	70	24	63	502	899	730	411	267	249	224	133
1948	52	19	53	462	812	702	367	255	235	218	105
1949	33	9	30	349	684	622	348	253	245	229	127
1949*	33	10	30	351	682	622	348	254	249	236	139
1950*	29	8	15	199	429	444	273	229	212	212	144
1951*	25	8	14	107	279	348	237	193	180	198	137
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Table LXXXV.—Tuberculosis of respiratory system : Death rates per million living by sex and age, 1931–45 and 1946 to 1951

\* According to the 6th (1948) Revision of the International List. Throughout the rest of the table rates are according to the 5th (1938) Revision.

Table	LXXXVI.—Tuberculosis : (	Comparative	Mortality	Indices	for
	various sites	, 1931 to 1951			

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	<b>M</b> .	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
1931          1932          1933          1934          1935          1936          1937          1938          1939          1940          1941          1942          1943          1945          1946          1947	$\begin{array}{c} 1.39\\ 1.30\\ 1.29\\ 1.20\\ 1.13\\ 1.09\\ 1.08\\ 1.00\\ 1.01\\ 1.18\\ 1.28\\ 1.19\\ 1.26\\ 1.21\\ 1.17\\ 0.94\\ 0.90\\ 0.83\\ \end{array}$	$\begin{array}{c} 1 \cdot 47 \\ 1 \cdot 38 \\ 1 \cdot 34 \\ 1 \cdot 24 \\ 1 \cdot 16 \\ 1 \cdot 10 \\ 1 \cdot 12 \\ 1 \cdot 00 \\ 0 \cdot 99 \\ 1 \cdot 08 \\ 1 \cdot 11 \\ 0 \cdot 99 \\ 0 \cdot 98 \\ 0 \cdot 92 \\ 0 \cdot 92 \\ 0 \cdot 80 \\ 0 \cdot 89 \\ 0 \cdot 82 \\ \end{array}$	$\begin{array}{c} 1\cdot 38\\ 1\cdot 27\\ 1\cdot 29\\ 1\cdot 19\\ 1\cdot 13\\ 1\cdot 09\\ 1\cdot 08\\ 1\cdot 00\\ 1\cdot 02\\ 1\cdot 22\\ 1\cdot 36\\ 1\cdot 27\\ 1\cdot 33\\ 1\cdot 27\\ 1\cdot 23\\ 1\cdot 27\\ 1\cdot 23\\ 0\cdot 97\\ 0\cdot 93\\ 0\cdot 87\\ \end{array}$	$\begin{array}{c} 1\cdot 47 \\ 1\cdot 36 \\ 1\cdot 35 \\ 1\cdot 24 \\ 1\cdot 18 \\ 1\cdot 11 \\ 1\cdot 12 \\ 1\cdot 00 \\ 1\cdot 00 \\ 1\cdot 09 \\ 0\cdot 97 \\ 0\cdot 96 \\ 0\cdot 91 \\ 0\cdot 91 \\ 0\cdot 96 \\ 0\cdot 92 \\ 0\cdot 85 \end{array}$	$\begin{array}{c} 1\cdot 44\\ 1\cdot 38\\ 1\cdot 21\\ 1\cdot 22\\ 1\cdot 10\\ 1\cdot 06\\ 1\cdot 04\\ 1\cdot 00\\ 0\cdot 92\\ 1\cdot 06\\ 1\cdot 42\\ 1\cdot 20\\ 1\cdot 13\\ 1\cdot 05\\ 1\cdot 01\\ 0\cdot 88\\ 0\cdot 81\\ 0\cdot 64\\ \end{array}$	$\begin{array}{c} 1\cdot 39\\ 1\cdot 28\\ 1\cdot 18\\ 1\cdot 22\\ 1\cdot 01\\ 1\cdot 00\\ 0\cdot 93\\ 1\cdot 07\\ 1\cdot 37\\ 1\cdot 13\\ 1\cdot 14\\ 1\cdot 02\\ 1\cdot 04\\ 0\cdot 89\\ 0\cdot 81\\ 0\cdot 70\\ \end{array}$	$\begin{array}{c} 1\cdot75\\ 1\cdot78\\ 1\cdot50\\ 1\cdot34\\ 1\cdot23\\ 1\cdot08\\ 1\cdot19\\ 1\cdot00\\ 0\cdot96\\ 1\cdot09\\ 1\cdot27\\ 1\cdot27\\ 1\cdot02\\ 0\cdot97\\ 0\cdot93\\ 0\cdot69\\ 0\cdot56\\ 0\cdot45\\ \end{array}$	$\begin{array}{c} 1\cdot 91 \\ 1\cdot 65 \\ 1\cdot 72 \\ 1\cdot 45 \\ 1\cdot 31 \\ 1\cdot 23 \\ 1\cdot 09 \\ 1\cdot 00 \\ 0\cdot 92 \\ 1\cdot 05 \\ 1\cdot 00 \\ 1\cdot 08 \\ 0\cdot 96 \\ 0\cdot 81 \\ 0\cdot 71 \\ 0\cdot 53 \\ 0\cdot 62 \\ 0\cdot 51 \end{array}$	$\begin{array}{c} 1\cdot 53\\ 1\cdot 45\\ 1\cdot 46\\ 1\cdot 41\\ 1\cdot 29\\ 1\cdot 21\\ 1\cdot 12\\ 1\cdot 00\\ 1\cdot 05\\ 1\cdot 10\\ 1\cdot 03\\ 1\cdot 30\\ 1\cdot 22\\ 1\cdot 05\\ 1\cdot 01\\ 0\cdot 69\\ 0\cdot 58\\ 0\cdot 54\\ \end{array}$	$\begin{array}{c} 1\cdot 72 \\ 1\cdot 88 \\ 1\cdot 52 \\ 1\cdot 56 \\ 1\cdot 39 \\ 1\cdot 33 \\ 1\cdot 24 \\ 1\cdot 00 \\ 1\cdot 14 \\ 0\cdot 99 \\ 1\cdot 11 \\ 1\cdot 06 \\ 0\cdot 99 \\ 0\cdot 94 \\ 0\cdot 81 \\ 0\cdot 80 \\ 0\cdot 66 \\ 0\cdot 65 \end{array}$	$\begin{array}{c} 1\cdot 24\\ 1\cdot 28\\ 1\cdot 19\\ 1\cdot 07\\ 0\cdot 97\\ 1\cdot 02\\ 1\cdot 04\\ 1\cdot 00\\ 0\cdot 98\\ 0\cdot 92\\ 1\cdot 32\\ 1\cdot 13\\ 1\cdot 14\\ 1\cdot 11\\ 1\cdot 08\\ 0\cdot 81\\ 0\cdot 83\\ 0\cdot 70\\ \end{array}$	$\begin{array}{c} 1\cdot 23\\ 1\cdot 34\\ 1\cdot 10\\ 1\cdot 12\\ 0\cdot 98\\ 0\cdot 95\\ 1\cdot 12\\ 1\cdot 00\\ 0\cdot 93\\ 1\cdot 05\\ 1\cdot 12\\ 0\cdot 99\\ 0\cdot 98\\ 1\cdot 00\\ 0\cdot 92\\ 0\cdot 86\\ 0\cdot 86\\ 0\cdot 68\end{array}$
1949 1950 1951	  0.76 0.62 0.55	0.72 0.55 0.45	$0.80 \\ 0.66 \\ 0.58$	$0.77 \\ 0.58 \\ 0.46$	$0.55 \\ 0.42 \\ 0.43$	$0.56 \\ 0.48 \\ 0.46$	$\begin{array}{c} 0.39 \\ 0.23 \\ 0.21 \end{array}$	$0.37 \\ 0.25 \\ 0.24$	$0.39 \\ 0.38 \\ 0.29$	$0.48 \\ 0.39 \\ 0.35$	$0.64 \\ 0.47 \\ 0.43$	0·49 0·44 0·39

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# Table LXXXVII.—Tuberculosis, non-respiratory: Notification rates per million living by sex and age, 1938–40, 1941–45 and 1946 to 1951

			Males			6	F	emales		
	All ages	0-	15-	25-	45 & over	All ages	0-	15-	25-	45 & over
1938–40	290	744	341	151	72	264	641	403	172	61
1941-45	269	698	326	148	64	261	632	413	178	63
1946	217	569	250	123	53	210	518	334	149	47
1947	202	518	227	114	54	196	455	317	144	51
1948	197	505	243	99	53	199	473	333	138	46
1949	171	423	211	93	50	174	399	304	127	40
1950	151	350	186	93	48	164	343	288	139	39
1951	149	327	198	98	47	159	314	299	131	47

Table LXXXVIII.—Tuberculosis of meninges and central nervous system, and other non-respiratory tuberculosis : Death rates per million living by sex and age, 1938–40, 1941–45 and 1946 to 1951

			Male	S					F	emale	s		
All ages	0-	5-	15-	25-	45-	65 & over	2000 10 10 10 10 10 10 10 10 10 10 10 10	0-	5-	15-	25-	45-	65 & over

Tuberculosis of meninges and central nervous system

			3.0.200					<u>A1</u>		1	and the			hard a start of
1938-40	45	289	73	41	14	6	2	40	273	77	48	11	4	2
1941-45	50	308	87	51	15	6	1	45	282	90	65	14	4	1
1946	40	222	80	42	11	7	3	36	199	82	52	12	3	0
1947	39	215	68	39	12	8	1	34	184	66	52	11	4	1
1948	31	179	47	30	9	7	3	30	166	54	44	10	3	2
1949	27	153	40	26	8	5	4	24	126	40	33	10	4	1
1950	20	103	32	20	7	7	3	20	116	31	31	6	4	2
1951	21	109	30	19	9	5	3	19	102	34	30	8	3	1
	N. Maria			77 197 19	N GO ON	28	ter alle	12 (E. 19)		E C	122		and the second	

Other non-respiratory tuberculosis

1938 - 40	 69	148	42	85	61	63	60	53	114	35	72	48	40	5
1941-45	 63	134	40	77	57	58	52	50	101	35	72	45	37	5
1946	 48	87	24	51	48	50	44	39	64	25	53	38	30	4
1947	 46	92	29	46	41	48	43	39	65	27	57	37	34	2
1948	 40	57	20	41	37	49	40	33	56	18	39	31	28	3
1949	 34	34	15	38	32	42	41	24	33	8	26	24	26	2
1950	 26	24	10	25	27	31	41	20	20	7	22	16	23	3
1951	 23	17	5	19	25	30	38	18	15	5	14	13	25	3

$\begin{array}{c ccccccccccccccccccccccccccccccccccc$					Males							Females				Person
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Area	0-	- 5-	15	25-	45	and the second sec	Construction and a second	0→	5—	15	25-	45-			All ages
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	England and Wales Standard Regions:	. 53	3 48	171	136	140	73	115	50	52	228	108	33	16	81	97
East and West Ridings53501351171308110351462019526127186North Western554017613614672115554322410834147996North Midland463814711497599247482249826127583Midland451641321525811653542159537177997Eastern4542115112113609136481669032186578London and South Eastern5952231155155901355551241117341886109Southern293913112912761101334021010733147386	Northern			195	156	162	62	135	65	94	319	127	35	17	110	122
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		. 4	0 50	207	140	140	14	122	40	57	286	136	37	19	99	110
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 Table LXXXIX.—Respiratory tuberculosis : Notification rates per 100,000 living by sex and age for Standard Regions, County Boroughs and Administrative Counties, 1951

than the and

# Table LXXXIX.—continued

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Anglesoy Brodenoceshira	• •	32			Males				158			Females			139	Persons
Area			1	1	1	<u> </u>	1	0								A said
	08	0-	5-	15-	25-	45-	65 and	All	0-	5-	15-	25-	45-	65 and	All	All
Yorkshire, North 194	int j	92	19	23	83	124	over	ages	13		183	10 Marca	10-	over	ages	ages
A destinistanti - G		<i>67</i>	38	180	132	130	NO I	100	32	00	103	1.9	23 7		10	21
Administrative Coun	ties:	9.9	32	195	170	198	- 18 8	88		- 20- 1	TIN				144	55
Bedfordshire	***	43	56	152	157	141	53	120	53	41	197	94	47	40	80	100
Berkshire	•••	54	56	139	144	153	44	116	36	49	157	90	39	27	69	92
Buckinghamshire	*••	58	22	131	114	121	80	97	37	61	141	76	40	12	64	80
Cambridgeshire		13	56	159	78	76	65	78	63	75	220	89	29	29	80	79
Cheshire	•••	9	15	98	85	97	48	69	12	26	116	52	15	11	37	52
Cornwall	•••	TTT I	34	98	110	123	50	84	16	37	124	111	30	14	60	71
Cumberland	···	10	63	148	165	179	97	127	78	25	294	184	47	25	119	123
Derbyshire	••	32	17	151	96	90	59	80	7	17	139	65	26	5	46	63
Devon	··•]	37	27	96	89	84	40	69	36	28	157	88	28	13	54	61
Dorset	•••	9	11	102	133	122	77	93	9	45	197	89	32	8	.62	77
Durham	•••	82	78	194	140	153	52	127	69	84	300	113	37	29	107	117
Ely, Isle of		48	53	51	79	92	44	68	44	71	121	76	30	20	62	65
Essex	· · · ·	43	31	163	120	132	57	102	26	36	193	96	31	12	69	85
Gloucestershire	· ···!	16	36	156	131	114	44	95	6	24	238	116	36	13	73	80
Herefordshire		68	94	171	167	124	141	134	87	54	190	102	73	20	86	
Hertfordshire	••••	67	30	142	122	128	76	101	35	49	148	87	26	13	80 62	109
Huntingdonshire	· · · ·		53	89	44	68	26	51		49	205	80	20 51	100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100		82
Kent	•	32	52	214	130	131	61	114	45	38	205	93		-	59	. 55
Lancashire	• • • •	47	32	137	116	134	55	99	40	37	197	93 89	33	23	71	91
Leicestershire		22	13	97	123	86	55	81	35	25	197		35	11	67	82
	rts of		10		120	00	00	01	00	20	173	89	18	5	61	71
Holland)			24	136	127	26	23	66		0.0	100					
	rts of	1	NT	100	141	20	20	00		27	130	101	17	-	54	60
Kesteven)		32	32	123	98	75	a that the second second	70			0.01	0.0		COAGE	92.02	30.00
	rts of	04	00	120	30	10	66 <del></del> 1 1	73		-	301	96	36	11	73	73
Tindaara		14	29	107	66	98	10	0.5						1		
London	••	97	72	272	202	98 216	43	65	14	50	96	61	27	5	46	56
Middleson	••	63	50	272			135	181	91	68	309	153	44	21	116	146
middlesex	••	03	50	208	152	141	87	133	54	48	240	107	33	15	83	106
											n and a special			and a second second	and the second se	Company and Company

Table TXXXIX - Calderad.

# Table LXXXIX.—continued.

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London	03 04	20	508 525	Males	111 216 217	84 130 43	129 181 00	24 33 44	48 03 06	240 800 08	Females	33 44 35	10 10 10 10 10	83 116 .30	Persons
Area	0-	5-	15-	25-	45-	65 and over	All ages	0-	5-	15-	25-	45-	65 and over	All ages	All ages
Administrative Counties—contd.         Norfolk          Northamptonshire          Northumberland          Northumberland          Nottinghamshire          Nottinghamshire          Nottinghamshire          Nottinghamshire          Nottinghamshire          Nottinghamshire          Nottinghamshire          Nottinghamshire          Shropshire          Somerset          Southampton          Southampton          Suffolk, East          Suffolk, Keast          Suffolk, West          Sussex, East          Sussex, West          Sussex, West          Sussex, West          Warwickshire          Worcestershire          Yorkshire, North Riding          Yorkshire, North Riding          Yorkshire, West Riding          Anglesey	$\begin{array}{c} 45\\ 18\\ 57\\ 35\\ 15\\ 50\\ \hline \\ 36\\ 38\\ 20\\ 29\\ 49\\ \hline \\ 30\\ 16\\ 33\\ 30\\ 87\\ 36\\ 20\\ \hline \\ 49\\ 49\\ \hline \\ 49\\ 49\\ \hline \\ 49\\ 49\\ \hline \\ 40\\ \hline \\ 83\\ \hline \\ 35\\ \hline \\ 5\\ \hline \\ \\ \\ 5\\ \hline \\ \\ \\ 5\\ \hline \\ \\ \\ \\$	$\begin{array}{c} 63\\ 22\\ 68\\ 27\\ 38\\\\ 20\\ 18\\ 13\\ 39\\ 32\\ 37\\ 31\\ 49\\ 35\\ 53\\ 93\\ 17\\ 35\\ 36\\ 16\\ 15\\ 37\\ 182\\ 53\\ 141\\\\ 182\\ 53\\ 141\\\\ 142\\ 53\\ 141\\\\ 142\\ 53\\ 141\\\\ 142\\ 53\\ 141\\\\ 142\\ 53\\ 141\\\\ 142\\ 53\\ 141\\\\ 142\\ 53\\ 141\\\\ 142\\ 53\\ 141\\\\ 142\\ 53\\ 141\\\\ 142\\ 53\\ 141\\\\ 142\\ 53\\ 141\\\\ 142\\ 53\\ 141\\\\ 142\\ 53\\ 141\\\\ 142\\ 53\\ 141\\\\ 142\\ 53\\ 141\\\\ 142\\ 53\\ 141\\\\ 142\\ 53\\ 141\\\\ 142\\ 53\\ 141\\\\ 142\\ 53\\ 141\\\\ 142\\ 53\\ 141\\\\ 142\\ 53\\ 141\\\\ 142\\ 53\\ 141\\\\ 142\\ 53\\ 141\\\\ 142\\ 142\\ 142\\ 142\\ 142\\ 142\\ 142\\ 142$	$\begin{array}{c} 65\\ 107\\ 211\\ 104\\ 72\\ 185\\ 125\\ 24\\ 127\\ 84\\ 118\\ 107\\ 77\\ 199\\ 149\\ 93\\ 215\\ 40\\ 98\\ 52\\ 190\\ 40\\ 58\\ 118\\ 150\\ 43\\ 270\\ 71\\ \end{array}$	$59 \\ 84 \\ 147 \\ 88 \\ 106 \\ 135 \\ 74 \\ 53 \\ 148 \\ 133 \\ 123 \\ 157 \\ 89 \\ 141 \\ 145 \\ 96 \\ 115 \\ 135 \\ 102 \\ 119 \\ 118 \\ 90 \\ 83 \\ 117 \\ 118 \\ 128 \\ 274 \\ 11 \\ 128 \\ 274 \\ 11 \\ 118 \\ 128 \\ 274 \\ 11 \\ 118 \\ 128 \\ 274 \\ 11 \\ 118 \\ 128 \\ 274 \\ 11 \\ 118 \\ 128 \\ 274 \\ 11 \\ 118 \\ 128 \\ 274 \\ 11 \\ 118 \\ 128 \\ 274 \\ 11 \\ 118 \\ 128 \\ 274 \\ 11 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 \\ 118 $	$\begin{array}{c} 56\\ 58\\ 160\\ 82\\ 71\\ 143\\ 38\\ 45\\ 107\\ 142\\ 157\\ 96\\ 44\\ 111\\ 100\\ 76\\ 101\\ 130\\ 104\\ 138\\ 136\\ 66\\ 124\\ 116\\ 143\\ 82\\ 190\\ 36\\ \end{array}$	$\begin{array}{c} 40\\ 41\\ 50\\ 69\\ 99\\ 79\\ \hline \\ 17\\ 48\\ 53\\ 65\\ 66\\ 44\\ 556\\ 71\\ 36\\ 33\\ \hline \\ 32\\ 79\\ 66\\ 28\\ 71\\ 75\\ \hline \\ 115\\ \hline \\ 160\\ \hline \\ - \end{array}$	$\begin{array}{c} 57\\ 60\\ 129\\ 73\\ 77\\ 108\\ 53\\ 36\\ 96\\ 90\\ 104\\ 97\\ 58\\ 106\\ 99\\ 68\\ 99\\ 86\\ 79\\ 88\\ 105\\ 52\\ 72\\ 94\\ 155\\ 72\\ 94\\ 155\\ 71\\ 194\\ 20\\ \end{array}$	$\begin{array}{c} 44\\ 16\\ 25\\ 44\\ 15\\ \hline \\ 31\\ 46\\ 41\\ 36\\ 41\\ 36\\ 37\\ 29\\ 19\\ 16\\ 31\\ 69\\ \hline \\ 47\\ 23\\ \hline \\ 11\\ 35\\ \hline \\ 158\\ 86\\ \hline \\ \end{array}$	$\begin{array}{c} 71\\ 31\\ 111\\ 47\\ 23\\ 23\\ 56\\ 15\\ 50\\ 30\\ 42\\ 52\\ 53\\ 35\\ 46\\ 28\\ 63\\ 23\\ -30\\ 56\\ 14\\ 41\\ 39\\ 186\\ 158\\ 136\\ -10\\ \end{array}$	$\begin{array}{c} 123\\ 177\\ 192\\ 171\\ 101\\ 310\\ 500\\ 67\\ 188\\ 138\\ 238\\ 89\\ 205\\ 189\\ 92\\ 104\\ 215\\ 220\\ 118\\ 170\\ 162\\ 181\\ 193\\ 185\\ \end{array}$	$\begin{array}{c} 85\\ 61\\ 108\\ 92\\ 102\\ 87\\ 33\\ 55\\ 79\\ 97\\ 90\\ 128\\ 129\\ 96\\ 134\\ 94\\ 93\\ 54\\ 84\\ 132\\ 73\\ 70\\ 77\\ 89\\ 159\\ 159\\ 151\\ 124\\ 39\\ 108\\ \end{array}$	$\begin{array}{c} 34\\ 14\\ 24\\ 19\\ 29\\ \hline \\ 50\\ 22\\ 34\\ 46\\ 40\\ 18\\ 56\\ 21\\ 32\\ 23\\ 17\\ 21\\ 45\\ 29\\ 34\\ 27\\ 22\\ 20\\ \hline \\ 38\\ 38\\ 31\\ \hline \\ 46\\ \end{array}$	$ \begin{array}{c} 13\\6\\8\\24\\31\\40\\-\\6\\13\\11\\15\\34\\-\\11\\8\\13\\7\\-\\11\\12\\24\\-\\15\\16\\-\\34\\19\\-\\42\end{array} $	$\begin{array}{c} 64\\ 48\\ 79\\ 67\\ 59\\ 74\\ 65\\ 35\\ 65\\ 65\\ 79\\ 63\\ 83\\ 63\\ 59\\ 49\\ 73\\ 47\\ 51\\ 75\\ 65\\ 49\\ 59\\ 64\\ 117\\ 124\\ 131\\ 25\\ 82\end{array}$	$\begin{array}{c} 60\\ 54\\ 104\\ 70\\ 68\\ 91\\ 59\\ 36\\ 80\\ 78\\ 91\\ 79\\ 70\\ 83\\ 76\\ 57\\ 86\\ 65\\ 64\\ 82\\ 84\\ 51\\ 66\\ 78\\ 84\\ 51\\ 66\\ 78\\ 132\\ 97\\ 160\\ 23\\ 96\end{array}$
Carmarthenshire	52	41	164	137	150		109		19	265	103	10			-

# Table LXXXIX.—continued.

	Table LAAAIA.—communed	• 103	175	TOD	137	101										
	Ordina	271 20 263	97 98 070	523_ 158 181	Males	222 223 224	13 13	313 80 101	20- 202 014	92 51 1411	827 542	Females	-12		-04- 01 133	Persons
_	Area	0-	5-	15–	25–	45-	65 and over	All ages	0-	5-	15–	25-	45-	65 and over	All ages	All ages
169	Administrative         Countiescontd.         Denbighshire          Flintshire          Glamorganshire          Glamorganshire          Merionethshire          Montgomeryshire          Montgomeryshire          Pembrokeshire          Pembrokeshire          Radnorshire          Barnsley          Barnow-in-Furness          Bath          Birkenhead          Birkenhead          Birkenhead          Blackburn          Blackburn          Bolton          Bootle          Bournemouth          Brighton          Burnley          Burton upon Trent          Bury          Canterbury          Chester          Croydon	$\begin{array}{c} 76\\\\ 52\\\\ 45\\\\ 24\\\\ 102\\ 29\\\\ 41\\ 85\\ 24\\ 26\\\\ 108\\ 18\\ 23\\ 18\\ 63\\ 26\\\\\\ 61\\ 200\\ 76\\ 42\\ \end{array}$	40 18 51 -20  18 77 56 65 23 79 60  12 18 97  48 100 60 18   48 100 60 18          -	$\begin{array}{c} 93\\ 55\\ 256\\ 70\\ 305\\ 179\\ 153\\ 53\\ 180\\ 167\\ 242\\ 126\\ 174\\ 73\\ 104\\ 184\\ 396\\ 233\\ 150\\ 380\\ 262\\ 159\\ 120\\ 107\\ 34\\ 93\\ 83\\ 267\\ 153\\ \end{array}$	$\begin{array}{c} 150\\ 107\\ 148\\ 212\\ 124\\ 53\\ 78\\ 36\\ \end{array}\\ \begin{array}{c} 36\\ 36\\ 183\\ 155\\ 196\\ 230\\ 139\\ 79\\ 164\\ 80\\ 211\\ 193\\ 130\\ 191\\ 156\\ 94\\ 42\\ 89\\ 241\\ 162\\ 213\\ 182\\ 85\\ \end{array}$	$\begin{array}{c} 127\\ 145\\ 124\\ 111\\ 142\\ 49\\ 136\\ 34\\ \end{array}$	$\begin{array}{c} 100\\ 34\\ 76\\ 74\\ 86\\\\ 24\\\\ 172\\ 33\\ 167\\ 70\\ 65\\ 174\\ 88\\ 96\\ 235\\ 114\\ 101\\ 33\\ 60\\ 53\\ 43\\ 31\\ 91\\ 56\\ 95\\ 69\\ 116\\ \end{array}$	$\begin{array}{c} 109\\79\\125\\99\\122\\51\\86\\36\\\end{array}\\ \begin{array}{c} 6\\36\\\end{array}\\ \begin{array}{c} 161\\125\\142\\152\\129\\77\\102\\91\\220\\116\\107\\164\\141\\94\\68\\68\\74\\127\\132\\154\\97\\\end{array}$	$\begin{array}{c} 15\\ 33\\ 48\\ 111\\ 30\\ 87\\ \hline \\ 111\\ 94\\ 65\\ \hline \\ 71\\ 51\\ \hline \\ 32\\ 73\\ 103\\ 23\\ \hline \\ 53\\ 26\\ \hline \\ 77\\ \hline \\ 77\\ \hline \\ 69\\ 59\\ 17\\ 19\\ \end{array}$	$\begin{array}{c} 17\\ 29\\ 63\\ 147\\ 69\\ 31\\ 75\\ -\\ \\ 65\\ -\\ \\ 65\\ -\\ \\ 65\\ -\\ \\ 57\\ 46\\ -\\ 51\\ 69\\ 22\\ 40\\ 231\\ 58\\ 42\\ -\\ 40\\ 231\\ 58\\ 42\\ -\\ 42\\ 59\\ 73\\ -\\ 32\\ 29\\ \end{array}$	$\begin{array}{c} 193\\ 141\\ 296\\ 667\\ 404\\ 125\\ 159\\ 143\\ 500\\ 167\\ 212\\ 267\\ 237\\ 194\\ 207\\ 127\\ 355\\ 124\\ 134\\ 333\\ 293\\ 59\\ 51\\ 105\\ 214\\ 610\\ 196\\ 180\\ 165\\ \end{array}$	$\begin{array}{c} 137\\ 124\\ 137\\ 104\\ 108\\ 113\\ 81\\ 185\\ 185\\ 185\\ 179\\ 130\\ 113\\ 137\\ 99\\ 115\\ 59\\ 85\\ 282\\ 105\\ 79\\ 167\\ 100\\ 86\\ 47\\ 154\\ 125\\ 150\\ 145\\ 135\\ 68\\ \end{array}$	$\begin{array}{c} 39\\ 17\\ 29\\ 71\\ 36\\ 53\\ 34\\\\ 65\\ 42\\ 32\\ 39\\ 16\\ 36\\ 21\\ 54\\ 25\\ 30\\ 22\\ 42\\ 14\\ 28\\ 24\\ 14\\ 28\\ 24\\ 14\\ 28\\ 24\\ 56\\ 14\\ 45\\ 24\\ \end{array}$	$\begin{array}{c} 26\\ 24\\ 11\\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\$	$\begin{array}{c} 77\\ 67\\ 101\\ 158\\ 104\\ 69\\ 65\\ 89\\ \end{array}$	$\begin{array}{c} 93\\73\\113\\128\\113\\128\\113\\61\\75\\60\\151\\102\\101\\126\\106\\73\\71\\74\\197\\88\\79\\139\\114\\69\\47\\77\\72\\135\\102\\119\\73\\\end{array}$

# Table LXXXIX.—continued.

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Carlielo	67 206			Males	102				1 23	1010	Females	120	•		Persons
Area Batton abou Licet Batton	0-	5	15	25-	45-	65 and over	All ages	0-	5	15	25-	45	65 and over	All ages	All ages
County Boroughs—contd.	19	190	360	1017	185				223		J.C.N.		15	15,0	1 120
Darlington	21	16	280	130	158	91	121	1	20	200	102	37	38	76	98
Derby	40	21	294	128	83	61	103	47	38	139	118	33		72	87
Dewsbury	56	28		135	63	32	67			38	76	13		29	47
Doncaster	- 19-03		136	85	87	135	80	-		109	144	9	26	62	71
Dudley	53	143	191	126	194	50	144	33	43	250	99	11	83	84	112
Eastbourne		27	48	79	69	108	61			417	53	38		57	59
East Ham	91	97	254	94	150	17	117	106	33	171	83	55	46	78	97
Exeter	45	128	412	107	151	192	155		45	333	150	25	34 20	98	123 206
Gateshead	133	338	424	165	258	35	222	113	259	472	198	45 24	Charles and the second	$\frac{191}{112}$	126
Gloucester	50	67	125	196	169	71	141	29	122	378 111	141 96	$\frac{24}{42}$		58	120
Great Yarmouth	48	42	172	68	100	188	89 148	158	160	209	158	28	18	120	133
Grimsby	125	101	186	145	168	161 146	$   \begin{array}{c}     148 \\     211   \end{array} $	158 67	81	209	228	71		120	165
Halifax	100	19	98	271	354 231	$140 \\ 146$	134	07	81	50	122	29	34	57	89
Hastings	The second	26	280	100 86	231 83	54	134 68		13	159	56	21	22	45	57
Huddersfield	83	11 114	$\begin{array}{c} 122\\222\end{array}$	80 129	261	132	165	73	99	233	96	33		84	122
Ipswich	17	28	167	129	148	107	105	12	23	206	102	28	14	72	91
Kingston upon Hull	30	34	150	143	140	85	105	44	29	215	89	28	3	66	84
Leeds Leicester	61	59	200	155	156	66	128	102	76	343	128	48	21	114	121
Lincoln	45	40	96	113	105	125	95	40	75	196	89	<u></u>	23	69	82
Liverpool	125	74	324	248	306	137	218	115	88	437	231	74	25	173	194
Manchester	69	59	199	135	149	66	123	83	42	246	97	34	5	82	101
Middlesbrough	233	134	213	175	199	111	181	254	165	409	137	75	26	163	172
Newcastle upon Tyne	74	65	337	216	174	90	174	59	115	464	132	28	6	130	151
Northampton	28	28	241	101	103	42	95	29	45	329	90	13	13	81	87
Norwich	23	13	195	127	165	88	117	58	15	122	80	29	40	57	85
Nottingham	133	120	284	207	154	130	177	170	119	449	191	63	17	171	174
Oldham	64	36	129	139	93	73	99	106	27	246	86			61	7.9 86
Oxford	114	16	233	129	88	59	113	30	48	152	83	23	—	64	120
Plymouth		49	219	154	170	102	133	21	22	480	123	35	05	107	120
Portsmouth	.103	41	155	134	167	118	128	50	66	326	89	47	25	92	110

# Table LXXXIX.—continued.

Sub-total: Noeth Midland Midland		1	3.	Males	1992 - 2018 19						Female	S			Persons
Area Area Area Area Area Area Area Area Area Area Area	0→	5	15-	25-	45-	65 and over	All ages	0-	5-	15-	25-	45-	65 and over	All ages	Allages
County Boroughs—contd. Preston	$\begin{array}{c} 38\\ 21\\ 56\\ 33\\ 35\\ 106\\ 223\\ 132\\ 86\\ 61\\ 127\\ 16\\ 19\\ 62\\ 127\\ 16\\ 19\\ 62\\ 23\\ 47\\ 34\\ 88\\ 212\\ 92\\ 42\\ 42\\ -\\ 50\\ 23\\ 63\\ 95\\ 63\\ 32\\ \end{array}$	$\begin{array}{c} 73\\ 16\\ 82\\ 20\\ 25\\ 14\\ 185\\ 382\\ 48\\ 30\\ -\\ 135\\ 32\\ 93\\ 27\\ 99\\ -\\ 44\\ 88\\ -\\ 96\\ 73\\ 56\\ 27\\ 8\\ 44\\ 38\\ 82\\ -\\ 94\\ 75\end{array}$	$\begin{array}{c} 123\\ 258\\ 205\\ 105\\ 106\\ 150\\ 143\\ 289\\ 170\\ 173\\ 71\\ 198\\ 101\\ 114\\ 308\\ 209\\ 116\\ 167\\ 264\\ 145\\ 176\\ 226\\ 250\\ 167\\ 183\\ 250\\ 169\\ 301\\ 300\\ 414\\ 140\\ \end{array}$	$\begin{array}{c} 137\\ 116\\ 141\\ 90\\ 99\\ 153\\ 122\\ 136\\ 112\\ 119\\ 126\\ 247\\ 75\\ 137\\ 196\\ 213\\ 58\\ 111\\ 189\\ 118\\ 158\\ 125\\ 112\\ 126\\ 164\\ 177\\ 123\\ 181\\ 224\\ 89\\ 160\\ \end{array}$	169 159 53 74 111 187 170 345 219 120 113 310 104 157 144 178 83 156 244 192 186 197 120 99 185 130 80 165 194 163 173	$\begin{array}{c}\\ 70\\ 42\\ 73\\ 122\\ 83\\ 75\\ 77\\ 105\\ 120\\ 43\\ 75\\ 48\\ 45\\ 90\\ 74\\ 71\\ 53\\ 135\\ 125\\ 118\\ 108\\\\ 51\\ 33\\ 71\\ 49\\ 77\\ 167\\ 45\\ 167\\ 167\\ 167\\ 167\\ 167\\ 167\\ 167\\ 167$	$\begin{array}{c} 112\\ 121\\ 99\\ 73\\ 87\\ 127\\ 149\\ 237\\ 129\\ 107\\ 82\\ 207\\ 72\\ 111\\ 154\\ 152\\ 65\\ 104\\ 179\\ 103\\ 156\\ 142\\ 100\\ 90\\ 115\\ 134\\ 91\\ 154\\ 178\\ 137\\ 139\\ \end{array}$	48 30 	$\begin{array}{c} 25\\ 25\\ -\\ -\\ 16\\ 36\\ 30\\ 134\\ 375\\ 138\\ 31\\ 20\\ 230\\ 11\\ 59\\ 110\\ 73\\ -\\ 90\\ 48\\ 16\\ 98\\ 45\\ 66\\ 42\\ 26\\ -\\ 43\\ 50\\ 81\\ 39\\ -\\ -\\ \end{array}$	$\begin{array}{c} 96\\ 172\\ 150\\ 211\\ 132\\ 306\\ 217\\ 308\\ 180\\ 269\\ 34\\ 434\\ 115\\ 243\\ 479\\ 295\\ 194\\ 130\\ 370\\ 230\\ 373\\ 210\\ 377\\ 236\\ 204\\ 102\\ 152\\ 280\\ 302\\ 375\\ 213\\ \end{array}$	$\begin{array}{c} 64\\ 150\\ 95\\ 68\\ 132\\ 106\\ 123\\ 102\\ 91\\ 60\\ 89\\ 205\\ 72\\ 98\\ 150\\ 212\\ 60\\ 127\\ 140\\ 60\\ 116\\ 93\\ 63\\ 102\\ 91\\ 111\\ 51\\ 196\\ 255\\ 91\\ 151\\ \end{array}$	$\begin{array}{c} 42\\ 51\\ 15\\\\ 34\\ 42\\ 37\\ 102\\ 24\\ 44\\ 14\\ 55\\ 14\\ 64\\ 47\\ 27\\ 14\\ 64\\ 47\\ 27\\ 14\\ 46\\ 34\\ 31\\ 32\\ 42\\ 24\\ 48\\ 80\\ 24\\ 29\\ 34\\ 83\\ 62\\ 43\\ \end{array}$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{c} 50\\ 83\\ 58\\ 49\\ 71\\ 93\\ 107\\ 170\\ 88\\ 62\\ 35\\ 180\\ 43\\ 94\\ 153\\ 122\\ 51\\ 180\\ 43\\ 94\\ 153\\ 122\\ 51\\ 128\\ 84\\ 90\\ 83\\ 62\\ 59\\ 59\\ 114\\ 148\\ 96\\ 92\end{array}$	$\begin{array}{c} 81\\ 101\\ 78\\ 61\\ 79\\ 109\\ 127\\ 202\\ 108\\ 82\\ 55\\ 193\\ 56\\ 103\\ 153\\ 137\\ 58\\ 92\\ 147\\ 88\\ 142\\ 112\\ 95\\ 86\\ 88\\ 94\\ 74\\ 133\\ 162\\ 116\\ 116\\ 115\\ \end{array}$

Table XC.—Respiratory toberculosis : Beath rates per million living by sex and age and notifications per 100 degine

Table XC.—Respiratory tuberculosis : Death rates per million living by sex and age and notifications per 100 deaths in Regions, population Density Aggregates within Regional Groups, County Boroughs and Administrative Counties, 1951

Cardiff 7000	88	9 <i>01:</i> 108	223	Males	15	107		22	- 83 20	280	Females	5		13	Pe	ersons
Area Anglassississississississississississississi	0-	5-	15-	25-	45-	65 and over	All ages	0-	5-	15-	25-	45-	65 and over	All ages	All ages	Notifica- tions per hundred deaths
ENGLAND AND WALES Conurbations	<b>30</b> 27	7 6	<b>111</b> 139	<b>328</b> 363	<b>773</b> 898	<b>807</b> 1,100	<b>375</b> 447	<b>25</b> 31	11 15	<b>196</b> 202	<b>291</b> 308	<b>187</b> 194	<b>178</b> 202	<b>181</b> 196	275 314	<b>355</b> ?
over	31	7	117	398	898	927	439	16	10	260	347	226	211	218	323	?
under 100,000	42 40 19	4 9 6	106 104 79	317 293 248	840 709 476	743 651 460	384 339 237	22 16 29	9 8 5	211 192 132	254 290 229	180 177 159	171 155 136	169 173 140	271 252 189	???
NORTH OF ENGLANDNorthernEast and West RidingsNorth Western	76 38 18	13 10 4	157 111 128	396 314 392	908 709 912	579 928 905	406 372 442	7 23 30	13 18 18	369 193 257	371 267 386	228 156 195	166 158 186	231 164 221	317 264 325	385 327 296
Sub-total: Northern	38	8	131	369	849	835	412	22	17	266	347	190	173	206	305	325
Tyneside conurbationWest Yorkshire conurbationSouth East Lancashire conurbationMerseyside conurbationTotal conurbations	26 42 29 	9 6 5	255 107 88 232 152	521 315 376 570 420	1,128 658 925 1,336 957	639 1,080 941 1,380 1,023	513 386 446 600 473	27 29 10 77 33	33 37 6 28 23	393 <i>170</i> 219 356 265	456 239 359 608 394	189 131 175 246 178	87 197 248 278 221	248 156 209 321 225	375 263 320 451 341	?????
Urban areas with populations of 100,000 and over	38	8	57	420	870	974	438	14	17	282	370	229	183	225	327	82. 101
Urban areas with populations of 50,000 and under 100,000 Urban areas with populations under 50,000 Rural areas	77 58 27		149 146 91	380 312 233	992 735 601	600 694 446	428 357 258	22 16	27 10	320 256 202	288 315 225	224 186 175	104 155 59	199 190 140	309 270 200	???
MIDLANDS AND EASTERNNorth MidlandMidlandEastern	20 45 22	4 9 9	130 139 <i>60</i>	282 406 184	660 952 491	619 791 561	316 429 235	27 37 16	13 6 5	257 220 111	262 306 224	150 242 130	172 169 171	169 199 134	242 312 183	345 311 426
Sub-total: North Midland Midland }	31	8	112	307	727	663	339	28	8	201	270	180	170	171	253	345
Eastern	39	18	188	507	1,171	951	529	52	6	307	344	277	178	233	376	?
over	32	—	136	342	917	1,024	428	12	8	233	279	176	213	183	301 252	?
Urban areas with populations of 50,000 and under 100,000	20		77	302	812	767	354	-	-	143	236	145	254	154	252	?

Table XC.—continued.

	Residna				Males	- 221	1,163				112	Females	191	311	401    1887 -   -	P	ersons
	Area	0-	5–	15-	25-	45-	65 and over	All ages	0-	5-	15-	25-	45-	65 and over	All ages	All ages	Notifica- tions per hundred deaths
	MIDLANDS AND EASTERN—contd. Urban areas with populations under 50,000 Rural areas	43 16	<u>16</u>	83 97	240 184	642 346	638 358	300 182	9 47	11 9	158 145	258 227	164 142	163 120	157 136	226 159	?
	GREATER LONDON	26	4	115	286	785	1,195	405	24	12	126	239	187	194	164	277	} 415
	SOUTH OF ENGLANDRemainder of South EasternSouthernSouthernSouth Western	29 17 	$\frac{5}{14}$	71 59 105	308 231 354	597 610 674	604 631 562	308 274 334	28 17	$\frac{-}{10}$	119 98 198	182 204 289	175 161 198	179 141 170	137 131 182	217 201 255	415 417 338
	Sub-total: Remainder of South Eastern Southern	14	7	79	299	630	597	306	15	4	141	228	179	164	151	226	*401
173	Urban areas with populations of 100,000 and over	16	10	120	413	813	652	404	_	10	278	372	247	217	233	314	?
~	Urban areas with populations of 50,000 and under 100,000 Urban areas with populations under 50,000 Rural areas	22 26 —	14 5 5	115 82 62	260 268 288	793 671 435	839 582 510	375 315 241	48 19 9		127 144 72	238 219 154	153 187 146	<i>165</i> 147 160	150 149 111	252 227 176	? ? ?
	WALES	45	5	115	446	951	888	467	56	5	198	476	226	231	250	356	309
	WALES Urban areas with populations of 100,000 and over	33	24	222	527	1,127	926	549	80	-	186	474	305	286	278	407	?
	Urban areas with populations of 50,000 and under 100,000	20 91	111	123 52	333 417 411	857 903 867	1,500 1,019 707	414 459 417	22 91	13	750 236 125	111 467 495	750 143 216	188 283	313 227 251	361 340 334	?
	County Boroughs         Barnsley          Barrow-in-Furness          Bath          Birkenhead          Birmingham          Blackburn          Blackpool          Bolton          Bournemouth          Bradford          Brighton			 211 161 182 149  167 143 141	367 583 622 398 216 175 310 625 468 325 160	519 814 750 1,293 1,147 1,088 950 734 1,364 652 767 505	345 1,000 952 2,105 959 870 875 685 2,941 506 1,008 333	237 476 296 673 481 536 470 356 606 392 405 245			600 	427 500 81 441 261 382 274 325 855 191 278 180	118 260 85 316 304 155 324 83 405 123 162 112	286 132 230 217 353 	239 236 88 243 202 197 180 192 388 148 201 138	238 356 177 449 337 351 306 269 493 256 294 185	633 288 571 280 316 208 231 273 400 343 267 752

\* Including Greater London.

# Table XC.—continued.

and the state of t	LA DEM		111			1.111	1992 J			198	1. 28.6	138 3	1865 R	133 1	160 1	102
Bolton				Males	925 9363	200 57557				110.	Females	161 162		134	Pe	rsons
Area Brospinio · · · Area Brospinio · · · · · · · · · · · · · · · · · · ·	0-	5-	15	25-	45-	65 and over	All ages	0-	5-	15-	25-	45-	65 and over	All ages	All ages	Notifica- tions per hundred deaths
County Boroughs—contd. Bristol Burnley Ganterbury Carlisle Chester Coventry Croydon Darlington Derby Dewsbury Dewsbury Eastbourne East Ham Gloucester Gateshead Gloucester Great Yarmouth Huddersfield Ipswich Kingston upon Hull Leeds Licecster Lincoln Northampton Norwich Nottingham Oldham Oxford Plymouth Preston Reading Rochdale		31	$\begin{array}{c} 111\\ 227\\ 400\\ -\\ -\\ 465\\ -\\ 81\\ 200\\ 588\\ -\\ 9\\ 213\\ -\\ -\\ 455\\ 625\\ -\\ 169\\ -\\ -\\ 317\\ 111\\ 73\\ 267\\ 267\\ 174\\ 106\\ 181\\ 185\\ -\\ 55\\ -\\ -\\ 199\\ 100\\ -\\ 152\\ -\\ 118\end{array}$	$\begin{array}{r} 393\\ 472\\ 278\\ -\\ 690\\ 476\\ 328\\ 421\\ 201\\ 407\\ 345\\ 405\\ 342\\ 583\\ 263\\ 50\\ 165\\ 471\\ 686\\ 411\\ 840\\ 526\\ 286\\ 160\\ 143\\ 397\\ 383\\ 416\\ 283\\ 642\\ 435\\ 404\\ 379\\ 383\\ 416\\ 283\\ 642\\ 435\\ 404\\ 379\\ 360\\ 289\\ 326\\ 374\\ 152\\ 801\\ 292\\ 609\\ 331\\ 519\\ 410\\ 263\\ \end{array}$	832 990 877 429 556 1,127 968 931 634 947 829 781 1,058 1,045 690 709 698 1,250 964 1,000 1,416 619 1,077 1,238 814 1,602 1,414 1,325 1,105 873 394 721 1,000 877 766 739 704 797 531 1,053 794	$\begin{array}{c} 603\\ 526\\ 870\\\\ 909\\ 278\\ 952\\ 1,149\\ 698\\ 606\\ 1,212\\ 645\\ 270\\\\ 1,351\\ 508\\ 385\\ 526\\ 1,429\\ 625\\ 1,935\\ 1,463\\ 1,220\\ 357\\ 377\\ 984\\ 1,408\\ 661\\ 1,875\\ 1,587\\ 1,408\\ 661\\ 1,875\\ 1,587\\ 1,408\\ 661\\ 1,875\\ 1,587\\ 1,408\\ 661\\ 1,875\\ 1,587\\ 1,408\\ 661\\ 1,875\\ 1,587\\ 1,408\\ 661\\ 1,875\\ 1,587\\ 1,408\\ 665\\ 1,081\\ 1,667\\ 1,324\\ 1,217\\ 727\\ 1,765\\ 795\\ 686\\ 351\\ 1,163\\ 208\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,463\\ 1,220\\ 1,4$	394 470 424 108 370 512 500 443 309 413 517 392 424 515 420 228 268 511 675 380 738 455 520 111 2211 434 514 514 500 460 668 606 465 501 527 355 356 452 398 516 339 427 329 329 339 427 329 329 339 427 329 329 339 427 329 329 339 427 329 329 339 427 329 329 339 427 329 330 387	263 	31 208 	$\begin{array}{c} 393 \\$	$\begin{array}{c} 431\\ 517\\ 313\\ 110\\ \hline \\ 100\\ 645\\ 288\\ 175\\ 236\\ 245\\ 380\\ 329\\ 220\\ 426\\ 340\\ 250\\ 407\\ 326\\ 274\\ 526\\ 276\\ 222\\ 223\\ 112\\ 287\\ 322\\ 411\\ 297\\ 718\\ 568\\ 457\\ 448\\ 60\\ 227\\ 283\\ 107\\ 64\\ 569\\ 179\\ 291\\ 375\\ 79\\ 329\\ \end{array}$	$\begin{array}{c} 338\\ 145\\ 141\\ 118\\ 238\\ 449\\ 135\\ -49\\ 135\\ -38\\ 238\\ 449\\ 135\\ -38\\ 238\\ 238\\ -38\\ 238\\ 274\\ -303\\ 282\\ 93\\ 65\\ 274\\ -303\\ 282\\ 93\\ 65\\ -548\\ 157\\ 83\\ 312\\ 124\\ 178\\ 118\\ 243\\ 276\\ 548\\ 150\\ 133\\ 176\\ 217\\ -308\\ 346\\ 215\\ 240\\ 256\\ 296\\ 991\\ 68\\ \end{array}$	$\begin{array}{c} 234\\ 182\\ -\\ 667\\ -\\ -\\ 275\\ 115\\ 385\\ 241\\ -\\ -\\ 282\\ 462\\ 169\\ -\\ -\\ 282\\ 462\\ 169\\ -\\ -\\ 526\\ 263\\ 112\\ 326\\ 263\\ 112\\ 326\\ 282\\ 324\\ 206\\ 227\\ 295\\ 263\\ 256\\ 64\\ -\\ 198\\ 284\\ 233\\ 167\\ 294\\ 124\\ 476\\ -\\ 357\\ -\\ -\\ -\\ -\\ -\\ -\\ -\\ -\\ -\\ -\\ -\\ -\\ -\\$	$\begin{array}{c} 289\\ 247\\ 117\\ 162\\ 140\\ 173\\ 229\\ 144\\ 116\\ 252\\ 190\\ 250\\ 144\\ 299\\ 380\\ 251\\ 119\\ 309\\ 115\\ 219\\ 248\\ 129\\ 78\\ 151\\ 55\\ 199\\ 192\\ 215\\ 173\\ 375\\ 316\\ 347\\ 266\\ 105\\ 170\\ 206\\ 94\\ 112\\ 348\\ 177\\ 285\\ 182\\ 199\\ 70\\ 214 \end{array}$	$\begin{array}{r} 339\\ 353\\ 264\\ 136\\ 252\\ 339\\ 353\\ 290\\ 208\\ 330\\ 347\\ 318\\ 281\\ 400\\ 398\\ 240\\ 185\\ 409\\ 386\\ 294\\ 487\\ 274\\ 409\\ 386\\ 294\\ 487\\ 274\\ 311\\ 341\\ 351\\ 311\\ 341\\ 3511\\ 317\\ 512\\ 452\\ 737\\ 297\\ 256\\ 278\\ 264\\ 243\\ 431\\ 257\\ 344\\ 298\\ 262\\ 299\\ 299\\ \end{array}$	$\begin{array}{c} 336\\ 197\\ 177\\ 563\\ 286\\ 400\\ 288\\ 409\\ 352\\ 296\\ 251\\ 147\\ 252\\ 280\\ 148\\ 403\\ 664\\ 504\\ 327\\ 247\\ 274\\ 600\\ 341\\ 429\\ 914\\ 291\\ 247\\ 274\\ 600\\ 341\\ 429\\ 914\\ 291\\ 247\\ 344\\ 4259\\ 379\\ 224\\ 400\\ 294\\ 332\\ 627\\ 300\\ 354\\ 279\\ 427\\ 237\\ 338\\ 296\\ 208\\ 264\\ \end{array}$

# Table XC.—continued.

Mornene timure Mohnesey freisre sion thomsey sure	ate caso in ci	A Constant		in in	Males	1995 1970 1970			144 174 - 1			Females	NEL ST			Pe	ersons
Carteration Carteration	a	0-	5-	15-	25-	45	65 and over	All ages	0-	5-	15-	25-	45-	65 and over	All ages	All ages	Notifica- tions per hundred deaths
County Boroughs—co Salford Sheffield Smethwick Southampton Southend-on-Sea South Shields South Shields Stockport Stock on Trent Stoke on Trent Stoke on Trent Stoke on Trent Walefield Wallasey Wallasey Wallasey Wallasey Wast Hartlepool West Hartlepool Wigan Worcester York Cardiff Merthyr Tydfil Newport (Mon.) Swansea		· · · · · · · · · · · · · · · · · · ·		93 	634 366 545 361 299 388 479 249 428 957 449 233 296 857 273 935 209 259 504 738 380 323 593 353 318 630	1,604 751 2,143 1,421 570 1,134 1,504 694 1,538 1,186 1,096 833 1,101 1,417 769 1,047 656 800 1,188 1,272 870 160 1,199 833 1,220 941	$\begin{array}{c} 1,167\\ 1,125\\ 1,154\\ 814\\ 1,200\\ 870\\ \hline \\ 806\\ 1,081\\ 1,493\\ 370\\ 714\\ 1,316\\ 2,432\\ 938\\ 294\\ 1,351\\ 435\\ 294\\ 1,351\\ 417\\ 769\\ 1,833\\ 357\\ 488\\ 481\\ 1,250\\ 1,136\\ 606\\ \end{array}$	646 407 782 505 355 540 498 328 573 635 427 323 475 737 333 564 346 372 546 661 397 177 536 418 529 537	50 	28 	165 197 — 128 169 241 256 347 486 — 411 270 339 - 6 566 1,091 291 - 202 179 698 156 93	495 424 424 528 383 81 464 574 350 500 505 476 482 618 431 479 271 268 315 632 333 256 608 106 244 431	376 142 408 236 88 68 187 486 233 274 282 76 135 208 430 421 595 96 254 357 288 344 714 462 130	303 91 	291 200 222 226 178 61 202 241 313 306 237 204 200 348 216 320 241 292 283 303 188 183 336 309 239 206	461 298 484 359 257 262 347 282 443 463 331 265 326 541 273 443 292 331 414 479 285 180 431 360 380 387	$\begin{array}{c} 237\\ 426\\ 416\\ 300\\ 318\\ 209\\ 557\\ 200\\ 231\\ 331\\ 414\\ 219\\ 282\\ 271\\ 323\\ 321\\ 323\\ 321\\ 384\\ 288\\ 209\\ 183\\ 329\\ 411\\ 309\\ 450\\ 305\\ 314\\ \end{array}$
Administrative CountBedfordshireBerkshireBuckinghamshireCambridgeshireCambridgeshireCheshireCornwallCumberlandDerbyshireDevonDorsetDurhamEly, Isle ofEssexGloucestershireHerefordshireHuntingdonshireKent		$ \begin{array}{cccccccccccccccccccccccccccccccccccc$		$ \begin{array}{c}$	98 192 172 206 226 352 427 150 378 194 351 	$\begin{array}{c} 778\\ 350\\ 309\\ 543\\ 563\\ 576\\ 780\\ 499\\ 548\\ 526\\ 961\\ 102\\ 661\\ 678\\ 683\\ 324\\ 568\\ 742 \end{array}$	458 667 690 326 560 498 1,183 519 543 516 399 667 801 488 625 677 769 792	242 216 190 247 264 302 460 226 326 326 249 391 <i>91</i> 296 314 <i>307</i> 200 <i>352</i> 392	91 		99 101 72 86 143 563 185 37 390 125 255 97 160	197 242 105 85 174 267 518 182 273 169 383 227 192 228 359 265 227 255	79 332 85 192 113 234 156 136 239 53 278 99 149 207 182 161 127 139	253 160 329 74 88 205 82 132 275 122 270  179 31  79 217 188	123 193 102 81 104 195 276 123 192 80 261 89 132 146 153 147 123 152	183 204 145 162 181 246 368 174 255 161 326 90 210 228 228 228 172 245 264	546 451 552 489 290 291 334 362 239 478 358 725 403 366 479 477 224 343

# Table XC.—continued.

Gioversitrissies			- 348 152 1925	Males	234 823 639		300 305 1773		- Pro	100	F	emales	1 53	Y#1 115	P	ersons
Area	0-	5-	15-	25-	45-	65 and over	All ages	0-	5-	15-	25-	45-	65 and over	All ages	All ages	Notifica- tions per hundred deaths
Administrative Counties—contd.         Lancashire	75 21 59 65 90 52 	14 	$\begin{array}{c} 90\\ 88\\ 508\\ 82\\\\ 103\\ 146\\ 31\\ 229\\ 74\\ 109\\ 60\\\\ 175\\ 70\\ 34\\ 129\\ 192\\ 81\\\\ 192\\ 81\\ 192\\ 81\\\\ 192\\ 81\\ 129\\ 192\\ 81\\\\ 65\\ 40\\ 57\\ 24\\ 183\end{array}$	$\begin{array}{c} 340\\ 307\\ 467\\ 328\\ 144\\ 332\\ 235\\ 110\\ 296\\ 324\\ 194\\ 141\\ 521\\ -\\ 277\\ 311\\ 208\\ 411\\ 356\\ 279\\ 308\\ 284\\ 411\\ 356\\ 279\\ 308\\ 284\\ 363\\ 195\\ 135\\ 169\\ 205\\ 372\\ 104\\ 263\\ 293\\ \end{array}$	$\begin{array}{c} 666\\ 660\\ 345\\ 373\\ 373\\ 1094\\ 601\\ 483\\ 580\\ 729\\ 617\\ 408\\ 909\\ -453\\ 691\\ 696\\ 959\\ 359\\ 221\\ 477\\ 315\\ 449\\ 600\\ 390\\ 755\\ 567\\ 544\\ 655\\ 534\\ 649\\ \end{array}$	$\begin{array}{c} 677\\ 488\\ 233\\ 313\\ 366\\ 1,663\\ 717\\ 450\\ 204\\ 545\\ 553\\ 704\\ 263\\\\ 522\\ 476\\ 502\\ 516\\ 441\\ 147\\ 704\\ 306\\ 619\\ 670\\ 263\\ 476\\ 393\\ 803\\ 660\\ 496\\ 789\\ \end{array}$	346 321 301 212 160 531 311 195 284 337 256 203 413 248 326 251 397 239 178 292 196 308 282 190 293 228 303 256 226 345	12 71 	7 	$\begin{array}{c} 171\\121\\130\\137\\91\\147\\126\\165\\253\\107\\560\\233\\-\\1,667\\137\\24\\335\\74\\128\\67\\-\\104\\-\\104\\-\\179\\211\\157\\263\\183\end{array}$	$\begin{array}{c} 293\\ 350\\ 288\\ 144\\ 227\\ 243\\ 260\\ 198\\ 361\\ 276\\ 233\\ 118\\\\ 250\\ 194\\ 203\\ 355\\ 310\\ 204\\ 172\\ 154\\ 96\\ 199\\ 217\\ 195\\ 211\\ 175\\ 232\\ 212\\ 197\\ \end{array}$	$\begin{array}{c} 194\\ 180\\ 172\\ 219\\ 209\\ 226\\ 166\\ 46\\ 86\\ 166\\ 143\\ 48\\ -\\ 500\\ 94\\ 51\\ 157\\ 239\\ 281\\ 185\\ 129\\ 169\\ 210\\ 233\\ -\\ 149\\ 143\\ 168\\ 34\\ 132\\ 154\\ \end{array}$	$\begin{array}{c} 162\\ 105\\ 313\\ 115\\ 106\\ 224\\ 182\\ 85\\ 59\\ 75\\ 209\\ -\\ 200\\ -\\ 118\\ 158\\ 65\\ 145\\ 168\\ 562\\ 122\\ 161\\ 219\\ 108\\ -\\ 114\\ -\\ 95\\ 189\\ 149\\ 95\\ \end{array}$	179 180 174 137 137 183 163 102 167 143 208 79 31 217 114 109 112 222 187 204 108 116 122 140 56 117 119 136 118 142 132	258 249 236 175 149 223 232 149 223 239 232 141 219 98 183 212 181 309 212 181 309 212 191 192 151 207 210 <i>119</i> <i>199</i> 176 217 184 185 235	$\begin{array}{r} 319\\ 285\\ 254\\ 417\\ 374\\ 424\\ 458\\ 404\\ 240\\ 434\\ 302\\ 480\\ 414\\ 600\\ 196\\ 376\\ 429\\ 295\\ 374\\ 370\\ 430\\ 506\\ 277\\ 408\\ 550\\ 321\\ 465\\ 387\\ 274\\ 357\\ 333\\ \end{array}$
AngleseyBrecknockshireCaernarvonshireCardiganshireCarmarthenshireDenbighshireFlintshireGlamorganshireMerionethshireMonmouthshirePembrokeshireRadnorshire				200 256 963 110 431 40 732 434 385 352 877 391	794 685 1,076 1,636 892 490 1,570 953 1,333 635 984 583 690	1,154	402 247 815 392 444 178 649 467 755 372 558 338 364				476 685 414 526 346 442 239 634 417 389 161 296 370	253 380 155 247 249 130 225 165 		177 390 226 288 244 243 165 296 99 154 163 237 111	277 319 500 338 344 211 407 380 434 266 348 286 250	479 306 321 67 278 442 180 297 294 426 175 262 240

Table XCI.—Death rates per million living at ages 0–14 by sex from tuberculous meningitis and other non-respiratory tuberculosis in Standard Regions, County Boroughs and Administrative Counties, 1951

Augustantin	Ma	les	Fem	ales	a getteren standen och ander i hande	Ma	les	Fem	ales
Area	Tuberculous meningitis	Other non- respiratory tuberculosis	Tuberculous meningitis	Other non- respiratory tuberculosis	Area	Tuberculous meningitis	Other non- respiratory tuberculosis	Tuberculous meningitis	Other non- respiratory tuberculosis
England and Wales	$ \begin{array}{c} 52\\ 45\\ 86\\ \hline 123\\ 123\\ 123\\ 114\\ 76\\ 106\\ 83\\ 55\\ 101\\ \hline 95\\ 68\\ 79\\ \hline 169\\ \hline 130\\ 385\\ 104\\ 76\\ 180\\ 68\\ \hline 370\\ \hline 370\\ \hline \end{array} $	10 13 15 7 12 9 11 8 7 6 17 123 	60 97 33 83 50 88 33 41 36 44 109 	9 11 15 13 5 12 6 5 4 3 14 106 	County Boroughs—contd. East Ham	$\begin{array}{c} 85\\ 225\\ 90\\\\ 252\\ 50\\\\ 41\\ 80\\\\ 118\\ 123\\ 72\\ 87\\ 55\\ 108\\ 243\\\\ 313\\\\ 313\\\\ 129\\ 54\\ 125\\ \end{array}$	86 65 308 	$\begin{array}{c} 216 \\ \hline 72 \\ \hline \\ 84 \\ 93 \\ \hline \\ 82 \\ 52 \\ 73 \\ 35 \\ \hline \\ 106 \\ 103 \\ 54 \\ 311 \\ 297 \\ \hline \\ 57 \\ \hline \\ 104 \\ 85 \\ 37 \\ 83 \\ \hline \\ 224 \\ 94 \\ 18 \\ \hline \\ 224 \\ 94 \\ 18 \\ \hline \\ 66 \\ \hline \\ 182 \\ 129 \\ 130 \\ 179 \\ \end{array}$	72 72 85 18 10 10 168 83 83 10 10 168 83 10 10 10 10 10 10 10 10 10 10 10 10 10

Table	e XC	I.—continued.
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Tuberculous meningitis         Other non- respiratory tuberculous         Tuberculous         Tuberculous         Tuberculous         Other non- meningitis         Other non- meningitis         Other non- meningitis         Other non- meningitis	Dathagico Dathy	Males		Fem	ales		Ma	lles	Fem	ales
County Borougns-cond.         Administrative Counties-cond.         Administrative Counties-cond.           Wallasey $                                                                                       -$	Constant of the second second	meningitis res	espiratory		respiratory	Area		respiratory		respiratory
Lincolnshire (Parts of Lindsey) 52 - 29 - Radnorshire 303 101 102 -	Tynemouth	$ \begin{array}{c} -\\ -\\ 79\\ 126\\ 87\\ -\\ 43\\ -\\ 43\\ -\\ -\\ 178\\ 109\\ 31\\ 23\\ 54\\ 76\\ 53\\ 34\\ 37\\ -\\ -\\ 107\\ -\\ 54\\ 72\\ 69\\ 15\\ -\\ 41\\ 80\\ -\\ 190\\ \end{array} $	$ \begin{array}{c} - \\ 87 \\ 53 \\ - \\ - \\ - \\ - \\ - \\ - \\ - \\ - \\ - \\ -$	$\begin{array}{c}$	$ \begin{array}{c}$	London	$\begin{array}{c} 21\\ 91\\ 34\\ -\\ -\\ -\\ -\\ -\\ 28\\ 39\\ 53\\ 48\\ -\\ -\\ -\\ -\\ -\\ -\\ -\\ -\\ -\\ -\\ -\\ -\\ -\\$	4 23 	$\begin{array}{c} 38\\ -36\\ 40\\ 63\\ 52\\\\\\\\ 40\\ 29\\ 121\\ 42\\ 90\\ 21\\ 31\\ 32\\ 53\\\\ 23\\ 65\\\\ 23\\ 65\\\\ 23\\ 65\\\\ 33\\\\ 175\\ 86\\ 357\\ 179\\\\ 61\\ 117\\\\\\\\\\\\\\\\\\\\ -$	6 

# CANCER

# Cancer trends since 1900

During the period 1900 to 1951 there have been several revisions of the International Classification of Diseases and Causes of Death and of the subdivisions of the sites of cancer for which figures are published in the Registrar General's tables. An important change in the mode of assignment of cause of death occurred in 1940 whereby, if several diseases were mentioned on the death certificate, the cause of death was assigned according to the opinion of the certifying practitioner as to the underlying cause of death, whereas before it had been assigned by certain fixed rules of preferential selection.\* The effect of this was that from 1940, where cancer was shown among the causes of death upon the certificate, the death would no longer almost invariably be assigned to cancer as hitherto (only violent causes and certain rare infectious diseases taking priority) but would be assigned to one of the other diseases mentioned if that was in the opinion of the certifying practitioner the underlying cause of death. The assessment of the effect of these various changes is difficult, but Table XCII (page 191) provides comparative death rates over the five decades of the half-century adjusted as far as possible to take these changes into account. The figures for the first three decades, therefore, differ from those originally shown in the Statistical Reviews and especially those in the 1938-39 Text volume, since they have now been adjusted to the sixth revision of the International List of Causes of Death, whereas the latter were based on the fourth revision. The differences however are very small and have little effect upon the general trend or upon the arguments which are based upon them.

Table XCII shows that in men there has been a steady increase in the rate of mortality for all sites of cancer over the half-century. For women, however, the rate of mortality rose during the first three decades but has very distinctly declined during the last two. This difference of trend is largely the result of the different impact of the prodigious increase of carcinoma of the lung since the 1920's upon the two sexes. For males recorded mortality from cancer of the lung during the last decade was more than eighteen times as great as during the first decade of the century while for females the rate had only risen by some four and a half times.

Excluding cancer of lung, the rates take on a very different aspect and in each sex they increased over the first three decades and decreased over the latter two. The ratio between male and female death rates has however changed considerably. In the first decade female mortality from cancer (excluding lung) was greater than male in the proportion of 1.2:1, but during the 1920's the ratio changed and in the last three decades the male rate has been greater than the female, remaining approximately constant at 1:0.97.

Among females the most striking improvement has been in cancer of the uterus where the annual rate has fallen from 188 to 111 deaths per million during the fifty years. Cancer of the breast has shown very little change and, after an increase during the first two decades, the rate has remained comparatively steady.

<sup>\*</sup> For a full explanation of the effects of this change, see pages 77-80 of the Statistical Review, Text, Vol. I Medical for 1940-45.

An examination of trends of cancer mortality without taking account of age does not give an adequate picture ; for accurate evaluation of the trends it is necessary to consider specific age groups. Accordingly, death rates by sex and age from cancer of various sites are being re-tabulated from 1936 onwards according to the Sixth Revision of the International Classification. The agespecific rates will be given for 32 sites and the current figures published for each subsequent year. The complete tables for 1936–52 will be published in the next volume. This volume contains a brief extract comprising lung, prostate, uterus and female breast, with the remaining sites consolidated under a single head.

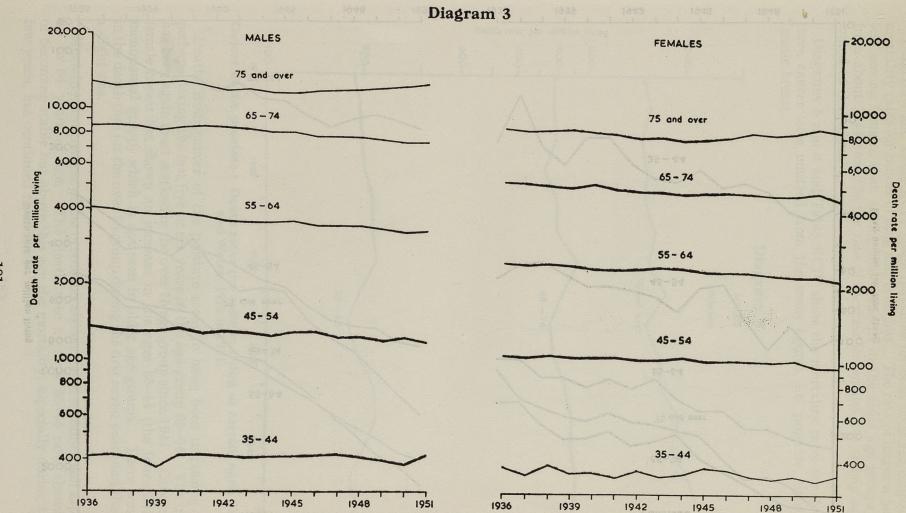
For a comparison of the mortality from cancer between the two sexes it is advisable to exclude important forms of cancers peculiar to one sex, and also cancer of the lung which is increasing so rapidly as to overshadow all other changes.

Diagram 3 and Table XCIII (page 192) show death rates from cancer from 1936 to 1951 for various age groups, excluding lung, prostate (about 7 per cent of all male cancers), female breast and uterus (together about 30 per cent of female cancers). The remaining cancer mortality for the years 1936 to 1951, in the age groups 35-, 45-, 55-, 65-, and 75 and over for each sex is shown in Diagram 3, the graphs being drawn on a logarithmic scale to show proportionate increase or decrease in the mortality rates. For most age groups and in each sex mortality has tended to fall in a regular manner over these sixteen years. The fall has not been striking in the 35-44 age groups, but thereafter until 74 has been very constant. The curve, for both sexes over 75, follows a curious course. For the years 1936 to 1944 the rate was roughly parallel with those of younger groups, but between 1944 and 1946 a change occurred and thereafter cancer in the oldest group has risen.

These graphs have been smoothed and straight line regression curves fitted, from which the annual percentage changes over the periods have been calculated. They are shown in the following table. On the whole these represent

been a stadt ador of the worden, for ever aif-century. For worden, for ever jurge decades int has very distinctly are of trend is largely the result of	Average annual chang rate (1936 to 1951) sho different age	ge in cancer mortality own as a percentage for groups :—
Age Group 35 45 55 65 75 and over	MALES All sites except lung and prostate $-\overline{0.6}$ -1.2 -0.8	FEMALES All sites except lung, breast and uterus -0.4 -0.8 -0.8 -0.8 

a very hopeful picture, and show that rates have tended to fall except in the oldest age group. The reason for the increased mortality since 1946 in this group has not been discovered but the fact that this is the only age group in which the rate of mortality from cancer has recently increased tends somewhat to suggest that the life of those who suffer from cancer is being prolonged and that they die at a later age than formerly. Against this interpretation, however, are the facts that total mortality (all causes) at advanced ages in recent years has presented a similar trend, and that the regression curves are much influenced by exceptionally low mortality in 1944–45 and exceptionally high mortality in 1951.



Thearth rates are rolling lying from cancer of the lung and bronchus, by sex and age, 1960 to 1981.

England and Wales. Death rates per million living from cancer (including Hodgkin's disease, leukæmia and aleukæmia), by sex and age, 1936 to 1951: Males:—All sites except lung, bronchus, prostate. Females:—All sites except lung, bronchus, uterus, breast.

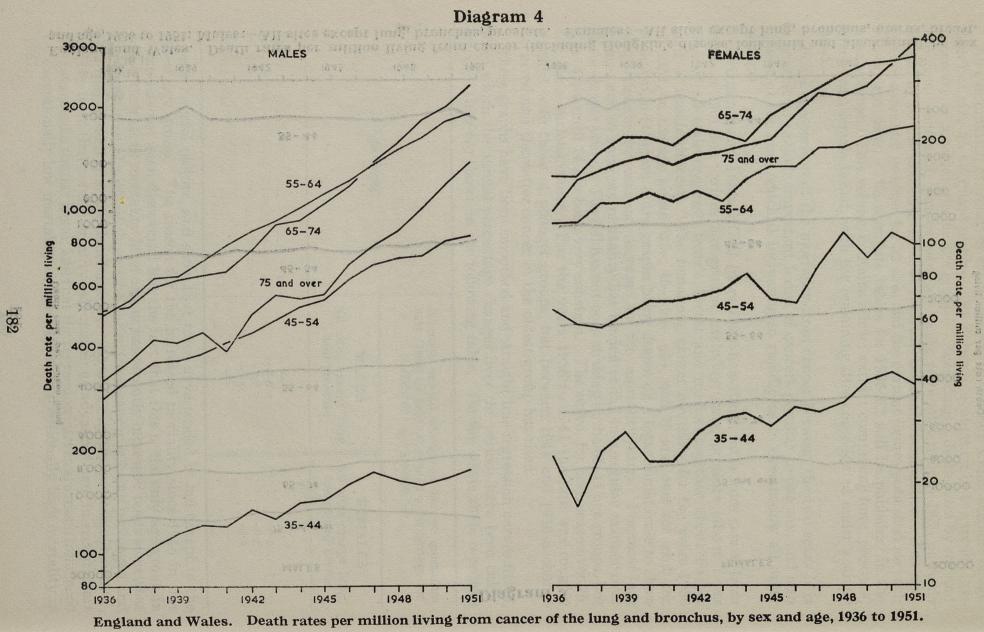
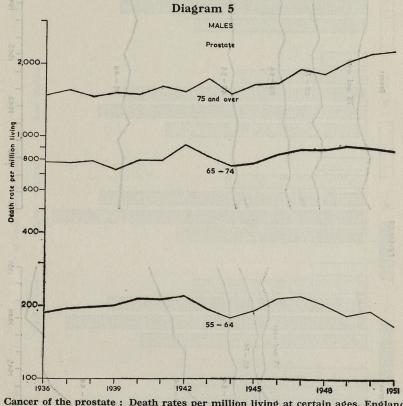


Diagram 4 and Table XCIV (page 193) show for both sexes the course of the mortality rates for cancer of lung and bronchus. The rate of increase has been less among females than among males except in the older age groups where from about 1944 onwards the rate of increase in females has closely approximated to that of males.

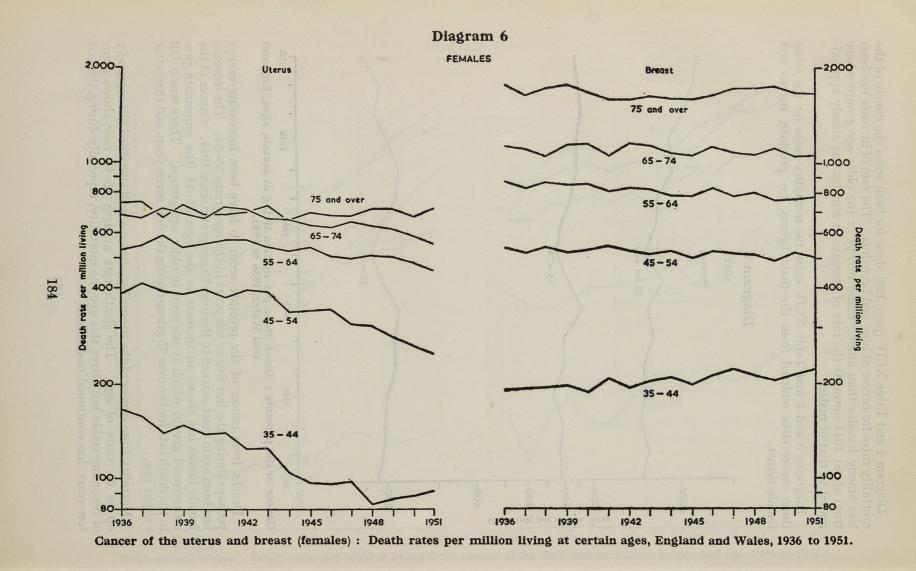
Diagrams 5 and 6 and Table XCIV show the mortality rates for the other three cancer sites omitted from the main figures, i.e. prostate, uterus and female breast.

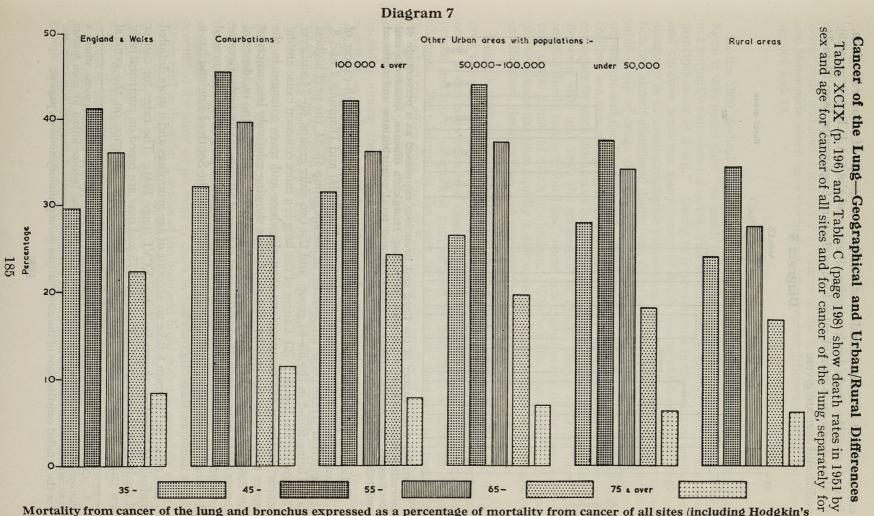


Cancer of the prostate : Death rates per million living at certain ages, England and Wales, 1936 to 1951.

Deaths from cancer of the prostate seem to have been increasing except perhaps during the last five or six years in the age group 55-64. The increase has been again most marked in the over 75 age group since 1944. Cancer of the female breast has shown an increase in the ages 35-44 (the immediate premenopausal group) which is not seen in older age groups. There was a fall in the death rate for the over 75 group during the first seven years and thereafter a slight rise.

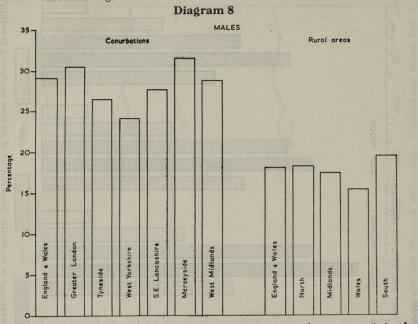
Mortality from cancer of the uterus has shown a well sustained fall especially up to 54 years of age. The death rate at ages 35-44 now shows signs of becoming stable but above this age the mortality, especially during the last few years, has continued to decline.





Mortality from cancer of the lung and bronchus expressed as a percentage of mortality from cancer of all sites (including Hodgkin's disease, leukæmia and aleukæmia) for males at different ages. England and Wales, and national density aggregates, 1951.

conurbations,\* urban and rural areas, and for four groups of standard regions. In each case the crude death rates for all ages and the E.A.D.R. (see page 85) for the age group 0-34 and rates for the decennial age groups from 35 to 74 and 75 and over are given.



Mortality from cancer of the lung and bronchus expressed as a percentage of mortality from cancer of all sites (including Hodgkin's disease, leukæmia and aleukæmia) for males. Each conurbation and total conurbations and national and regional aggregates of rural areas, 1951.

Ratios of the death rates for cancer of the lung as compared with cancer of all sites are shown for males in Table XCV (page 194) and Diagrams 7 and 8. It is seen that (1) the ratios are greatest in the age group 45–54, the next highest ratios being found in the 55–64 group, and the two older groups, 65–74 and over 75, showing the lowest. (2) Cancer of the lung is a more common cause among cancer deaths in the conurbations than elsewhere and more common in the larger towns than the smaller, the rural areas showing relatively less cancer of the lung is high, the incidence of cancer of all sites is also high. Greater London and the Merseyside conurbations have a greater proportion of cancer of the lung than elsewhere and, among the rural areas, the South of England has a higher incidence than other areas.

The ratios in Diagram 8 take no account of age groupings and a more detailed analysis is therefore shown in Table XCVI (page 194). The rates for cancer of the lung in the age groups 35–44 and 75 and over are based on comparatively few cases (Table C, page 198) and can have little influence on the general rates. Even at ages 45-54 the variation from conurbation to conurbation is small and it is only in the two succeeding age groups that the differences are important. Thus, comparing the West Yorkshire conurbation, which has the lowest ratio and lowest mortality of cancer of the lung, with Greater London and Merseyside which have the highest, the greatest differences occur between ages 55 and 74.

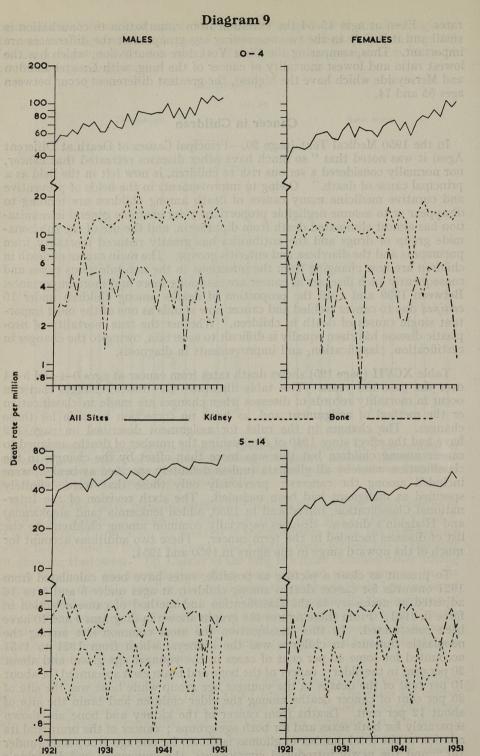
### Cancer in Children

In the 1950 Medical Text (page 20,-Principal Causes of Death at Different Ages) it was noted that "so much have other diseases retreated that cancer, not normally considered a serious risk to children, is now left in the field as a principal cause of death." Owing to improvements in the fields of preventive and curative medicine many causes of death among children are tending to disappear or to assume negligible proportions ; for example general immunization has almost eliminated death from diphtheria, and the use of the sulphonamide group of drugs and the antibiotics has greatly reduced mortality from pneumonia and the diarrhœa and enteritis groups. The main causes of death in children are now changing from the infectious to the non-infectious types and consequently such diseases as cancer are assuming more and more importance. Between 1939 and 1949 the proportion of deaths among children under 15 certified due to cancer trebled and cancer now stands as one of the most important single causes of death in children. Whether the true mortality of neoplastic disease has risen equally is difficult to ascertain, owing to the changes in certification, classification, and improvements in diagnosis.

Table XCVII (page 195) shows death rates from cancer at ages 0-4 and 5-14 over the past 100 years. This table illustrates the drastic changes that can occur in mortality records of diseases when changes are made in classification or the method of assignment and, as here, no correction is made for those changes. The changes in the rules for assignment described on page 179 have had the effect since 1940 of diminishing the number of deaths assigned to cancer among children but this was more than offset by the changes in the classification whereby all gliomata (unless definitely specified as benign) were included among the cancers ; previously only those that were definitely specified as malignant had been included. The sixth revision of the International Classification, introduced in 1950, added leukæmia (and aleukæmia) and Hodgkin's disease—disease especially common among children—to the list of diseases included in the term cancer. These two additions account for much of the upward surge in the figure in 1950 and 1951.

To present as clear a picture as possible, rates have been calculated from 1921 onwards for cancer deaths among children at ages under 5 and 5 to 14 adjusted as necessary to the classification and method of cause selection in force in 1951. From these figures the graphs shown in diagrams 9 and 10 have been constructed. In this classification the most common site among the neoplastic tumours in children was the kidneys, which from 1921 to 1951 accounted for some 40 per cent of cases in the younger age group and about 20 per cent in the older ; cancer of the bone and brain each accounted for about 10 per cent of the deaths in the younger age group while bone was the site of 25 per cent of cancer deaths among the elder children and brain the site of about 12 per cent. Deaths from cancer of the kidney and bone are shown separately for both sexes and for both age groups ; cancer of the brain and its relation to the total number of gliomas is shown for one age group only (under 15); and the newly introduced components, the leukæmias and Hodgkin's disease, are shown in separate diagrams for the two sexes, one for the two age groups and the other for the elder group only.

<sup>\* &</sup>quot;Conurbation" is a term used to describe an area of urban development where a number of separate towns have grown into each other and become linked by such factors as a common industrial or business interest, as a common centre of shopping, education, etc. For the detailed constitutions of the conurbations see explanatory notes on page xi.



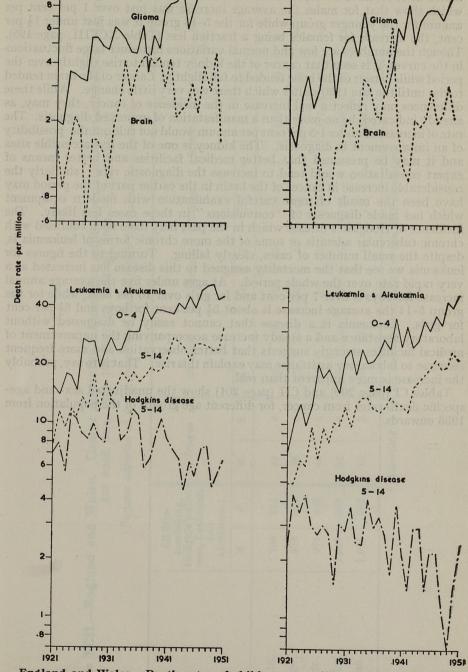


Diagram 10

FEMALES

0-14

MALES

0-14

10-

England and Wales. Death rates per million living from cancer of all sites (including Hodgkin's disease, leukæmia and aleukæmia), kidney and bone of children aged 0-4 and 5-14 by sex, 1921 to 1951.

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England and Wales. Death rates of children per million living by sex, from glioma and cancer of the brain (excluding glioma) at ages 0–14 from leukæmia and aleukæmia at ages 0–4 and 5–14, and from Hodgkin's disease at ages 5–14, 1921 to 1951.

From the diagrams of cancer of all sites it is seen that there has been steady and regular increase throughout the thirty-year period ; the curves for cancer of all sites as recorded in 1921 [that is, excluding leukæmia and Hodgkin's disease, added in 1950, and the gliomas, etc. (except when specified as benign) added in 1940] have been plotted and smoothed and regression lines calculated which show that for males the average increase was just over 1 per cent per annum for the younger group while for the 5-14 group it was just under  $1\frac{1}{2}$  per cent, the increase for females being a fraction less (Table XCVIII, page 195). Though the numbers are few and normal variations introduce large fluctuations in the curves, it is seen that cancer of the kidney tended to rise slightly over the period while cancer of the bone tended to fall slightly. Cancer of the brain tended to rise until the late 1930's after which there was very little change. While these differences may reflect a real increase in the incidence of cancer, they may, as already indicated, be no more than a manifestation of improved diagnosis. The rate of increase of under 1.5 per cent per annum would not rule out the possibility of an improvement in diagnosis. The kidney is one of the less accessible sites and it may be presumed that better medical facilities and better means of expert consultation would tend to increase the diagnostic rate ; similarly the considerable increase in cancer of the brain in the earlier part of the period may have been the result of more careful examination with modern equipment which has made diagnosis of "convulsions" in these cases less likely. The incidence of Hodgkin's disease which in the past may have been confused with chronic tubercular adenitis or some of the more chronic forms of leukæmia is, despite the small number of cases, clearly falling. Turning to the figures for leukæmia we see that the mortality assigned to this disease has increased at a very rapid rate over the whole period. At ages under five the average annual increase for boys is over 7 per cent and for girls over 10 per cent, while for the group 5-14 the average increase is about  $5\frac{1}{2}$  per cent for boys and  $6\frac{1}{2}$  per cent for girls. Leukæmia is a disease that cannot easily be diagnosed without laboratory assistance and a steady increase accompanying the improvement of medical facilities strongly suggests that better observation and more frequent recourse to laboratory assistance may explain this rise. That is to say, probably the increase is more apparent than real.

Tables CI (page 200) and CII (page 201) show the unadjusted sex- and agespecific death rates from cancer, for different age groups of the population from 1936 onwards.

England and Wales. Death rates of children per million living by say, from gliforms and cancer of the brain (excluding gliforms) at ages 0.15 from isothemics and abcubernia at ages 0-4 and 5.15, and from Hodglin a discuss at ages 5.14.

# Table XCII.—England and Wales.Cancer mortality : Rates per million population (standardized\*) for certain sites<br/>for each sex, 1901–10, 1911–20, 1921–30, 1931–39, and 1940–49

			(exch Hodgki	ukæmia d	Tor	Igue	Ston	nach	Rec	tum	Uterus	Bre	east		g and ichus		mia and kæmia
191			M.	F.	M.	F.	M.	F.	М.	F.	F.	M. ,	<b>F</b> .	M.	F.	M.	F.
	1901–10		764	911	41	4	165	130	77	54	188	1	149	10	7		-
	1911-20	•••	875	927	48	4	183	136	91	, 57	169	1	-161	13	7	12	10
	1921-30		975	948	44	4	217	151	102	57	153	2	177	25	9	16	12
	1931-39	•••	1,027	931	32	3	229	149	107	55	128	2	186	84	22	21	17
	1940-49		1,073	892	19	3	219	131	107	55	111	2	184	187	34	30	23
				A Company and	Contraction of the second	A COLOR S CALL	Land The Car		the the			1.5.5.3	123 52	State and		The second second	and a take of

(Figures adjusted so far as possible to the 1948 (6th Revision) classification)

\* According to the sex and age constitution of the 1901 population.

# Table XCIII.—England and Wales. Cancer mortality : Death rates per million living at certain ages from cancer of all sites except lung, bronchus, prostate (males) and all sites except lung, bronchus, breast, uterus (females). 1936 to 1951

			prostate		ius,			st, uterus	g, bronch 3	
	n (200 1995), 1	37	Males				I	Females		e ya es da Nevado a t
	35	45	55	65-	75 and over	35	45	55-	65-	75 and over
1937 1938 1939	411 419 407 371 411 419 410 406 408 410 412 419 409 399 384	$\begin{array}{c} 1,353\\ 1,305\\ 1,292\\ 1,291\\ 1,333\\ 1,279\\ 1,294\\ 1,278\\ 1,235\\ 1,277\\ 1,290\\ 1,211\\ 1,239\\ 1,195\\ 1,223\\ \end{array}$	$\begin{array}{c} 4,042\\ 3,979\\ 3,861\\ 3,793\\ 3,804\\ 3,722\\ 3,593\\ 3,557\\ 3,516\\ 3,599\\ 3,412\\ 3,426\\ 3,415\\ 3,318\\ 3,246\end{array}$	8,563 8,586 8,497 8,182 8,363 8,445 8,344 8,233 8,023 8,026 7,755 7,755 7,757 7,590 7,386	$\begin{array}{c} 12,766\\ 12,336\\ 12,410\\ 12,618\\ 12,866\\ 12,279\\ 11,837\\ 11,930\\ 11,544\\ 11,508\\ 11,882\\ 11,910\\ 11,997\\ 12,123\\ 12,351\\ \end{array}$	384 357 391 360 367 348 372 352 358 381 375 353 344 356 339 355	1,071 1,058 1,066 1,052 1,057 1,055 1,027 1,026 1,049 1,019 1,026 1,026 1,010 <b>1,</b> 027 973 968	2,495 2,452 2,495 2,395 2,394 2,365 2,385 2,399 2,400 2,328 2,337 2,306 2,272 2,231 2,237 2,237 2,2160	5,205 5,179 5,085 4,997 5,131 4,929 4,852 4,834 4,720 4,796 4,805 4,738 4,690 4,698 4,712 4,532	$\begin{array}{c} 8,515\\ 8,323\\ 8,392\\ 8,432\\ 8,230\\ 8,177\\ 7,879\\ 7,946\\ 7,629\\ 7,787\\ 7,946\\ 8,293\\ 8,123\\ 8,123\\ 8,123\\ 8,245\\ 8,622\\ 8,460\\ \end{array}$

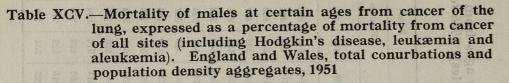
(Based on the 1948 (6th Revision) classification.)

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XOII - England at

# Table XCIV.—England and Wales.<br/>(a) lung, bronchus and pleura;Cancer mortality : Death rates per million living at certain ages from cancer of<br/>(b) prostate (males); (c) uterus (females); (d) breast (females).1936 to 1951<br/>(Based on the 1948 (6th Revision) classification.)

				Lung	, bronch	us, pl	eura	12.6				Pro	state				Ut	erus	16 - P		· · · · · ·		I	Breast		
	-		Males					Femal	es			М	lales			24	Fei	males	-		4		F	emales		
	35-	45-	55-	65-	75 and over	35-	45-	55-	65-	75 and over	45-	55	65-	75 and over	25-	35-	45-	55-	65-	75 and over	25-	35-	45-	55	65-	75 and over
1936	82	286	496	499	323	24	62	114	156	124	25	187	782	1,480	25	168	384	536	685	746	32	190	544	865	1,126	1,769
1937	92	322	542	512	361	17	59	115	156	151	26	195	781	1,561	17	159	415	553	670	754	27	192	520	831	1,109	1,637
1938	106	365	631	599	426	25	58	131	184	165	25	199	796	1,480	21	140	387	593	716	666	27	194	547	866	1,054	
3 1939	116	372	643	638	410	29	63	132	206	173	27	201	735	1,522	20	149	381	542	692	734	26	197	528	847	1,140	1,780
1940	121	387	716	656	443	23	68	141	205	180	24	217	801	1,504	21	139	395	559	665	686	29	188	535	855	1,145	
1941	120	416	789	672	390	23	68	132	194	170	30	216	804	1,643	23	140	373	576	726	684	32	208	550	814	1,051	1,588
1942	135	442	868	774	503	28	70	142	217	181	28	222	937	1,567	19	125	392	573	709	695	32	194	531	834	1,158	1,580
1943	126	487	936	921	574	31	73	132	210	185	25	196	836	1,778	21	126	388	544	664	730	31	203	518	827		1,613
1944	141	529	1,019	953	560	32	82	154	200	195	25	181	766	1,508	28	104	339	528	660	658	27	210	530	786	1,085	
1945	143	556	1,117	1,051	573	29	79	169	239	201	23	192	786	1,676	21	97	340	542	629	691	31	198	500	785	1,068	1,596
1946	160	639	1,229	1,184	705	33	77	169	261	238	27	217	859	1,698	22	96	344	508	620	680	32	211	531	834	1,122	1,629
1947	173	703	1,376	1,388	800	32	87	190	286	277	25	223	899	1,934	21	98	308	497	652	678	31	224	520	785	1,092	
1948	163	737	1,520	1,589	878	34	109	191	311	273	19	206	899	1,857	20	84	303	513	632	717	30	211	514	804	1,082	
1949	157	747	1,637	1,842	1,024	40	91	206	338	290	22	185	929	2,091	21	87	279	504	608	712	33	206	493	763	1,112	1,754
1950	165	822	1,837	2,027	1,205	42	107	214	344	336	21	192	912	2,264	23	89	261	485	587	675	31	215	522	770	1,052	1,675
1951	176	850	1,953	2,359	1,382	39	100	220	352	384	20	168	889	2,312	22	92	248	457	554	715	31	222	504	779	1,062	1,661



	35→	45	55	65	75 and over
England and Wales	29.6	41.3	<b>36</b> ·1	22.2	8.4
Conurbations	32.3	45.5	39.7	26.5	11.5
Other urban areas with population of 100,000 and over	31.6	42.2	36.4	24.2	7.7
Urban areas with population 50,000-100,000	26.6	44.1	37.4	19.7	7.0
Urban areas with population under 50,000	28.1	37.7	34.4	18.2	6.4
Rural areas	24.2	34.6	27.6	16.9	6.1

Table XCVI.—Mortality of males at certain ages from cancer of the lung, expressed as a percentage of mortality from cancer of all sites (including Hodgkin's disease, leukæmia and aleukæmia). Each conurbation, and four regional groups of rural areas, 1951

Conurbations : $30.8$ $45.7$ $41.8$ $28.7$ West Yorkshire $29.3$ $42.4$ $31.9$ $19.7$ West Midlands $38.6$ $42.1$ $38.6$ $25.6$ Tyneside $29.5$ $43.9$ $40.8$ $22.8$ South East Lancashire $31.5$ $43.7$ $39.5$ $23.1$ Merseyside $\dots$ $35.4$ $45.6$ $36.9$ $31.9$	$     \begin{array}{r}       12.6 \\       11.2 \\       9.8 \\       7.0 \\       9.5 \\     \end{array}   $	30·7 24·4 28·9 26·7 27·9
	13.3	31.7
Rural areas :North of England $27 \cdot 6$ $35 \cdot 7$ $27 \cdot 9$ $13 \cdot 3$ Midlands $22 \cdot 8$ $37 \cdot 0$ $27 \cdot 6$ $16 \cdot 2$ South of England $23 \cdot 7$ $34 \cdot 8$ $29 \cdot 3$ $19 \cdot 9$ Wales $20 \cdot 7$ $23 \cdot 3$ $22 \cdot 4$ $16 \cdot 5$	5.7 4.7 8.2 3.8	18-4 17-6 19-7 15-6

Table XCVII.—England and Wales.Cancer mortality.Death ratesper million living at ages 0-4 and 5-14, by sex, 1851-1951(According to the classification of disease in force at the time)

		Mi	ales	Fem	ales
	10 10 10 10 10 10 10 10 10 10 10 10 10 1	0-4	5-14	0-4	5-14
1851-1860	10 E 10 E	21	9	23	9
1861-1870		13	8	13	9 7
1871-1880	•••	13	8	12	7
1881-1890	2.3 3	21	12	19	10
1891-1900	10	33	18	28	14
1901-1910		36	18	29	14
1911-1920		35	17	29	13
1921-1930	A. 202.1	35	18	32	15
1931-1939	1	42	22	36	17
1940-1949		50	32	46	24
1950-1951	g	107	68	99	52

(Source : 1851-1930—Registrar General's Decennial Supplements. 1931-1951—Registrar General's Annual Statistical Reviews.)

Table XCVIII.—England and Wales. Cancer and the leukæmias in children. Average annual rates of change of mortality rate, 1921–1951\* (expressed as a percentage of the 1921 rate)

	Males	Females
84 108 118 108 108 108 108 108 108 108 108	0-4 5-14	0-4 5-14
All sites (excluding leukæmia and aleu- kæmia and Hodgkin's disease)	per cent per cent $+1.0$ $+1.4$	$\begin{array}{ c c c } per cent & per cent \\ +0.9 & +1.4 \end{array}$
Leukæmia and aleukæmia	+7.2 +5.5	+10.2 $+6.5$

\* Adjusted to the classification and method of cause selection in force in 1951.

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	-	Sal - Sal	to us	Males							Females			
	E.A.D.R. 0-34	85-	45-	55-	65-	75 and over	Crude death rate (all ages)	E.A.D.R. 0-34	35-	45-	55-	65-	75 and over	Crude death rate (all ages
ENGLAND AND WALES	114	591	2,057	5,414	10,638	16,412	2,120	102	708	1,820	3,616	6,499	11,220	1,822
<b>Conurbations</b>	118	634	2,313	5,931	11,721	18,352	2,246	96	699	1,909	3,679	6,757	11,991	1,830
Other urban areas: 100,000 and over	112	649	2,243	5,941	11,583	17,973	2,268	120	779	1,803	3,648	6,867	11,091	1,837
Other urban areas: 50,000 and under 100,000	106	636	2,000	5,329	9,981	15,277	2,068	108	762	1,942	3,650	6,263	11,098	1,908
Other urban areas: under 50,000	119	548	1,911	5,170	10,131	15,587	2,122	98	686	1,782	3,635	6,411	10,804	1,855
Rural areas	104	488	1,579	4,345	9,014	14,154	1,809	103	679	1,621	3,418	5,923	10,464	1,720
NORTH OF ENGLAND (Northern, E. and W. Ridings, North Western)	114	659	2,209	5,620	10,613	16,923	2,158	99	698	1,817	3,771	6,735	11,572	1,808
Tyneside conurbation	120	746	2,236	5,590	10,462	18,600	2,170	67	758	1,797	4,170	6,656	12,143	1,717
W. Yorks conurbation	111	516	2,118	5,590	11,093	16,571	2,259	94	644	1,852	4,009	6,728	11,250	1,963
S.E. Lancs conurbation	122	597	2,303	6,017	11,649	19,111	2,337	98	726	2,032	3,796	6,820	12,022	1,924
Merseyside conurbation	123	663	2,939	6,690	12,278	19,286	2,254	97	629	1,734	3,727	7,109	12,500	1,691
Total conurbations	119	608	2,366	5,973	11,447	18,333	2,276	92	687	1,892	3,888	6,832	11,900	1,857
Other urban areas: 100,000 and over	105	943	2,413	6,000	11,136	17,381	2,282	131	752	1,836	3,650	7,173	12,310	1,832
Other urban areas: 50,000 and under 100,000	119	740	2,391	5,685	9,314	14,867	2,104	101	750	2,050	4,206	6,304	12,048	1,871
Other urban areas: under 50,000	118	617	1,995	5,547	10,447	16,263	2,101	83	721	1,712	3,611	6,632	11,667	1,753
Rural areas	94	615	1,777	4,524	8,900	14,522	1,760	117	604	1,487	3,247	6,522	10,365	1,591

 Table XCIX.—Cancer (6th revision, nos. 140–205): sex and age specific death rates per million living in four regional groups and conurbations and population density aggregates within groups. England and Wales, 1951

# Table XCIX.—continued.

	Other urban areas: 50,000 and under 100,000. Other urban areas: moder (0.060.	10	203	1,110	Males	1.14	C'200	1990			124	Females	970	199	87
	Other arban meast 100,000 and over	a	383	305	1 8:059	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	11100	003		14	1	314	122	1 93.0	11 00
	Total contributions	E.A.D.R.	35-	45-	55-	65-	75 and	Crude death	E.A.D.R.	35-	45-	55-	65-	75 and	Crude death
	Mereryside commutation	0-34	202	1'241	5'469	\$ 615	over	(all ages)	0-34		108	242		over	rate (all ages)
	S.E. Laner contribution	19	389	3.000	49-26-09	6 680						-			
	MIDLAND AND EAST (North Midland, Midland, Eastern)	111	579	1,905	4,970	9,859	15,621	1,927	104	743	1,795	3,458	6,285	10,646	1,698
	West Midlands conurbation	113	746	2,441	5,611	11,603	17,417	2,021	96	707	1,877	3,462	6,625	11,632	1,601
	Other urban areas: 100,000 and over	124	559	2,186	6,045	10,897	18,167	2,156	117	781	1,797	3,571	6,659	11,325	1,789
19	Other urban areas: 50,000 and under 100,000	80	630	1,757	4,915	9,400	17,000	1,801	119	904	1,849	3,310	6,467	10,348	1,758
	Other urban areas: under 50,000	122	551	1,840	4,919	10,400	14,366	2,025	102	693	1,845	3,748	6,383	10,559	1,753
197	Rural areas	102	461	1,464	4,074	8,223	13,724	1,715	94	729	1,593	3,380	5,607	10,287	1,647
	SOUTH OF ENGLAND (London and South Eastern, Southern, South	0	3.89	682	1,904	1.971	1.064	245	1		100	1955		- 2028	·
	Western)	115	553	2,067	5,482	11,050	16,665	2,205	102	703	1,829	3,522	6,342	11,200	1,900
	Greater London conurbation	118	623	2,240	5,977	11,967	18,590	2,286	101	705	1,929	3,566	6,728	12,125	1,868
	Other urban areas: 100,000 and over	104	524	2,111	5,722	12,239	16,261	2,355	122	887	1,804	3,385	6,464	10,784	1,918
	Other urban areas: 50,000 and under 100,000	124	564	2,167	5,440	11,297	13,737	2,347	101	644	2,039	3,608	5,869	11,361	2,123
	Other urban areas: under 50,000	115	454	1,933	5,038	10,479	16,149	2,253	104	664	1,659	3,634	6,034	10,800	2,017
	Rural areas	109	422	1,596	4,508	9,276	15,146	1,916	97	628	1,561	3,519	5,571	10,326	1,796
•	WALES	118	527	1,820	5,682	11,287	15,711	2,217	111	654	1,868	4,055	7,200	12,176	1,898
	Urban areas: 100,000 and over	109	543	2,237	6,535	13,000	17,342	2,336	102	592	1,767	4,507	7,208	11,271	1,815
-	Urban areas: 50,000 and under 100,000	-	500	1,957	8,000	16,923	13,000	2,214	114	500	2,264	4,000	5,909	7,692	1,594]
	Urban areas: under 50,000	125	518	1,895	5,376	10,972	15,471	2,213	112	575	1,897	3,666	7,543	12,034	1,927
1	Rural areas	123	537	1,564	5,381	10,607	14,154	2,105	116	815	1,912	4,296	6,781	13,857	1,926

Table C.—Cancer of lung and bronch	us (6th revision, nos. 162 and 163): sex and age specific death rates per million	
living in four regional	groups and conurbations and population density aggregates within groups.	
England and Wales, 1951		

Uchan areas: abiquib and ever	100	1713		Males	12000		17800	2002	298. 	STARES.	Females	12008	1FGM	1.879
Other urban arras: under (stoto)	E.A.D.R. 0-34	35-	45-	55-	65–	75 and over	Crude death rate	E.A.D.R. 0-34	35-	45-	55-	65-	75 and over	Crude death rate
COMPARATION PROFIL OF GREAT AND PROFILE TOP ( 100	107	084	770	2'440	11.591	12'191	(all ages)	101	677	2008			11/901	(all ages)
ENGLAND AND WALES	8	175	850	1,952	2,359	1,377	530	4	39	100	221	352	381	91
Conurbations	11	205	1,029	2,352	3,107	2,102	658	4	46	112	252	403	480	103
Other urban areas: 100,000 and over	9	205	946	2,162	2,800	1,384	596	4	38	101	205	427	264	90
Other urban areas: 50,000 and under 100,000	6	169	882	1,994	1,971	1,064	509	9	43	100	185	342	268	88
Other urban areas: under 50,000	7	154	720	1,778	1,843	993	461	2	31	102	208	306	384	88
Rural areas	2	118	546	1,199	1,526	867	330	4	30	67	198	256	323	73
NORTH OF ENGLAND (Northern, E. and W. Ridings, North Western)	10	208	921	1,941	2,216	1,367	539		40	103	217	343	339	87
Tyneside conurbation	5	220	982	2,282	2,385	1,300	580	5	65	119	319	406	214	99
W. Yorks conurbation	3	151	899	1,783	2,185	1,857	551	2	52	141	229	173	361	88
S.E. Lancs conurbation	18	188	1,006	2,379	2,689	1,815	652	5	36	70	276	405	304	97
Merseyside conurbation	19	235	1,341	2,466	3,917	2,571	715	3	19	106	247	418	375	87
Total conurbations	12	192	1,038	2,216	2,737	1,903	629	4	40	104	262	341	325	93
Other urban areas: 100,000 and over	9	369	967	2,076	2,737	1,190	607	7	54	117	214	453	310	99
Other urban areas: 50,000 and under 100,000	11	247	1,116	1,981	1,714	1,200	538	11	38	125	127	522	190	92
Other urban areas: under 50,000	10	163	762	1,742	1,718	842	38	1	53	111	186	325	392	86
Rural areas	2	170	634	1,261	1,183	826	324	3	7	53	140	149	456	53

Table C.—continued.	6,49	1.8.1	01		00,1	12 Dev	-	0.81	10.5 19.5	0.20	*10				I Majee	noillin	
00 (c) 00 (c) 14 (c)	6,93	1 at	19 C		1.0	100	Males	10. 65 10. 101	5.57 5.57 5.57 5.57 5.57 5.57 5.57 5.57	201 201 201 201 201 201 201 201 201 201	CONTRACTOR		,	Females	0 782 strue		
ron'ii	6,127	1, 2, 202.	639	E.A.D.R. 0-34	35-	45-	55-	65-	75 and over	Crude death rate (all ages)	E.A.D.R. 0-34	35-	45-	55-	65-	75 and over	Cru dea ra (all a
200 000 000 000 000 000 000 000 000 000			- Car							1000		- G			105		
MIDLAND AND EAST (North Midland, Midland, Ed	stern)			10	167	731	1.756	2.007	1.020			2			and the	13.62	
West Midlands conurbation			•••	19	288	1,028	1,756 2,168	2,087	1,026	451	6	39	83	220	315	293	8
Other urban areas: 100,000 and				11	145	876	2,108	2,966	1,708	585	8	34.	65	239	300	316	7
Other urban areas: 50,000 and			1000	7	143	700	1,894	2,033	1,167 1,000	569	4	40	101	179	427	250	8
Other urban areas: under 50,000				7	151	617	1,734	2,033	1,000	437	15	60	96	196	222	261	7
Rural areas				5	105	541	1,125	1,330	643	445	3	25	119	231	308	* 390	8
SOUTH OF ENGLAND	•••				105		1,125	1,000	043	302	5	47	41	247	287	241	70
(London and South Eastern, Western).	Souther	rn, Sou	ith	5	163	907	2,122	2,705	1,702	591	2	-				Jour	
Greater London conurbation	- Alexandre			7	192	1,023	2,500	3,435	2,340	701	3	39	112	235	392	458	10
Other urban areas: 100,000 and				8	175	939	2,014	2,870	1.696	613		53_	130	246	476	614	119
Other urban areas: 50,000 and		di Bri	-		115	1,015	2,014	2,297	1,000	576	3	17. 33	112 92	187	348	216	85
Other urban areas: under 50,00	and the			5	143	831	1.917	1,968	1,191	520	4	27	92 78	243	295	333	98
Rural areas					100	556	1,323	1,847	1,191	377	3		78 96	246	340	376	101
WALES				1	117	624	1,729	2.046	763	444	0	14 31		228	278	378	87
Urban areas: 100,000 and over				6	65	1,132	2,409	2,778	1,139	601		41	66 23	152	276	353	66
Urban areas: 50,000 and under		)		_	250	217	3,000	769		321	_	11	20	310	542	424	99
Urban areas: under 50,000					145	618	1,703	1,995	765	446	-		90	123	171	466	59
Rural areas	••				111	364	1,204	1,750	538	328		74	30 74	73	250	400 - 143	53

Table	CI.—Cancer*: sex and age specific death rates per n	nillion
	living, and E.A.D.R. (ages 0-64). England and	Wales,
	1936-39, 1940-44 and each individual year, 1945 to 195	51

			7 I.	2 (G 1)	1936- 1939	1940- 1944	1945	1946	1947	1948	1949	1950	1951
					13	13 12		208	Males				
Crude ages		ath	Rat	e (all 	1,635	1,743	1,844	1,876	1,928	1,963	1,991	2,058	2,120
E.A.D.	.R. (	age	s 0-	64)	1,111	1,134	1,185	1,196	1,225	1,244	1,241	1,274	1,302
0- 5-	 		 	 	86 51	88 61	95 57	83 67	112 65	101 65	116 64	106 62	109 74
15 - 25 - 35 -	 		· · · · ·	••	85 175 505	82 169 542	86 189 557	Contraction and the second second	94 190 594	169	102 180 559	100 177 549	92 178 591
45- 55-	··· ··			 	1,673 4,692	1,762 4,712	1,856 4,908		1,940 5,024		1,964 5,140	2,066 5,275	2,057 5,414
65-	•••		•••		9,791	9,909	9,864	9,799	10,071	10,246	10,362	10,324	10,638
75 a.	nd o	ver			14.398	14,149	13.757	14.285	14,645	14,732	15,238	15,820	16,412

Females

	A Martin a Constant Mill	La Marchael Capital St	Mary and a second	Charles and the second second	Soffer Brand Managerry St.	A CONTRACTOR SEA	State Carlo State		
Crude Death Rate (all ages)	1,632	1,697	1,738	1,773	1,792	1,799	1,819	1,840	1,822
E.A.D.R. (ages 0-64)	1,093	1,073	1,047	1,057	1,040	1,033	1,021	1,017	1,000
0	66	70	81	79	91	81	106	96	102
5	36	41	46	43	42	41	45	56	49
15	64	61	62	61	63	64	71	60	66
25	182	192	191	188	186	177	188	194	191
35	744	714	705	715	707	674	689	685	708
45	2.049	2,025	1.937	1,977	1,941	1,936	1,889	1,863	1,820
40- · · · · · · · · · · · · · · · · · · ·	3,999	Contraction of the second second		3,848	3,778	3,780	3,704	3,706	3,616
65	7,089	6,891	6,732	6,808	6,769	6,715	6,757	6,695	6,499
75 and over	11,019	10,448	10,274	10,493	10,965	10,825	11,001	11,308	11,220

\* Up to and including 1948 : 5th Revision (Nos. 45-55 together with Hodgkin's Disease (44b) and Leukæmia and Aleukæmia (74)). 1949-1951 : 6th Revision (Nos. 140-205).

Table CII.—Cancer\*: sex and age specific death rates per million living and E.A.D.R. (ages 0-64). England and Wales: Rates for 1940-44 and 1945 to 1951 expressed as percentages of the corresponding average rate over the period 1936-39

	1936- 1939	1940- 1944	1945	1946	1947	1948	1949	1950	195
69 5 - 6 6 - 6 7 - 7 7 -					Males			2	19 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
Crude Death Rate (all ages)	100	107	113	115	118	120	122	126	13
C.A.D.R. (ages 0-64)	100	102	107	108	110	112	112	115	11
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	100 100	102 120	110 112	97 131	130 127	117 127	$\begin{array}{c} 135\\125\end{array}$	123 122	12 14
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	100 100 100	96 97 107	101 108 110	111 105 114	111 109 118	107 97 114	120 103 111	118 101 109	10 10 11
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	100 100	105 100	111 105	117 104	116 107	119 110	117 110	123 112	12 11
65	100	101	101	100	103	105	106	105	10.
75 and over	100	98	96	99	102	102	106	110	11:
= 11-1-1 =	i d	1	1 1.	F	emales		· ·	6	201200
rude Death Rate (all ages)	100	104	106	109	110	110	111	113	11;
.A.D.R. (ages 0-64)	100	98	96	97	95	95	93	93	9.
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	100 100	106 114	123 128	120 119	138 117	123 114	161 125	$\begin{array}{c} 145\\ 156\end{array}$	158 130
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	100 100 100	95 105 96	97 105 95	95 103 96	98 102 95	100 97 91	111 103 93	94 107 92	10. 10. 9.
45 55	100 100	99 98	95 96	96 96	95 94	94 95	92 93	91 93	8! 90
65	100	97	95	96	95	95	95	94	92
	100	95	93	95	100	98	100	103	102

\* Up to and including 1948 : 5th Revision (Nos. 45-55 together with Hodgkin's Disease (44b) and Leukæmia and Aleukæmia (74)). 1949-1951 : 6th Revision (Nos. 140-205).

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	0.01								and the second		and the second	
Int Class No. 6th Revision	Site or Organ	All ages	0-	5-	15-	25-	35-	45-	55-	65–	75	85 and over
140 141 142 143 144	Lip Tongue Salivary gland Floor of mouth Other parts of mouth and mouth unspecified	49	-	100 1 10	1	1	4	15	75	275	720	881
145 146 147 148	Oral mesopharynx Nasopharynx Hypopharynx Pharynx unspecified	25	andrea	2	0	1	6	15	52	133	284	288
150	Œsophagus	71	<u> </u>		·	. 3	8	41	157	400	768	814
151	Stomach	387	_	0-25	2	14	90	354	1,015	2,110	3,064	2,746
152 153	Small intestine, including duodenum}	206	-	0	. 3	13	46	129	372	1,153	2,350	2,610
154	Rectum	172	-	-	3	6	35	101	354	981	-1,834	2,085
155	Biliary passages and of liver (stated to be primary site)	23	1	0	0	1	6	22	50	127	179	237
157	Pancreas	77	-			3	20	63	211	389	656	678
161	Larynx is it is it.	38	-	30	0 -	0	3	23	98	215	387	356
162	Trachea and of bronchus and lung specified as )			A P	4	22	175	850	1,952	2,359	1,448	729
163	Lung and bronchus, unspecified as to whether pri- mary or secondary	530	1	, , ,	4	- 24	175		1,002	2,000	1000	
170	Breast	3	-	-		0	1	3	8	13	24	34
177	Prostate	143	-	1		1	2	20	168	889	2,227	3,102
178	Testis	9	1	0	5	17	15	8	9	17	24	· — ·
179	Other and unspecified male genital organs	8	_	- :	:		2	Ġ	16	36	109	119
180 181	Kidney	113	12	4	2	4	23	101	298	589	901	1,068

Table CIII.—Cancer (6th revision, nos. 140–205): sex and age specific death rates per million living from cancer at<br/>England and Wales, 1951—Males

Table (	CIII.—continued.					S	*	9	23	11	116	116
Int. Class No. 6th Revision	Site or organ	All ages	0-	5-	15-	25-	35-	45-	55-	65	75-	85 and over
190 191	Skin (malignant melanoma)	23	1	0	1	3	8	18	34	87	300	780
193	Malignant neoplasm of brain and other parts of nervous system	35	24	10	9	17	37	65	95	47	20	-
194	Thyroid gland	4	_	_	0	1	2	4	15	18	28	34
195	Other endocrine glands	2	7	2	0	1	1	2	4	4	6	
196 197	Bone (including jaw bone)	26	3	6	15	7	12	21	50	112	166	203
158 164 198	Peritoneum	15	4	1	3	2	6	17	35	73	90	102
200	Lymphosarcoma and reticulosarcoma	20	4	9	8	7	13	26	42	72	70	85
201	Hodgkin's disease	22	1	7	13	21	24	35	38	51	31	34
202	Other forms of lymphoma (reticulosis)	4	2	-	1	3	3	6	8	15	4	170
203	Multiple myeloma (plasmocytoma)	7	-	-	-	-	5	11	27	32	13	-
204	Leukæmia and aleukæmia	47	46	31	22	24	29	41	81	152	138	68
205	Mycosis fungoides	1	-	-	-	-	-	1	3	1	2	-
Others in 140-205	Remaining sites	58	4	1	1	5	15	59	147	286	440	576
140-205	Total	2,120	109	74	92	178	591	2,057	5,414	10,638	16,280	17,627
193	Malignant neoplasm of brain and other parts of nervous system	[41] SEAR			10-	12	10-	\$20	10-	01	19	04.81. 1919 57
223	Benign neoplasm of brain and other parts of nervous	61	37	17	16	31	56	115	168	97	41	
237	Neoplasm of unspecified nature of brain and other parts of nervous system	sites.	Hagiar	pus p	Wales,	1951	[01510]	197				

Table CIV.—Cancer (6th revision, nos. 140-20	5) : sex and age specific death rates per million living from cancer at
	England and Wales, 1951—Females.

		No. 11	32.			21	20	1.12	198	03	11	
Int. Class No. 6th Revision	Site or organ	All ages	0-	5-	15-	25-	35–	45-	55-	65-	.75-	85 and over
HO SUP	T in state	3150	194	3.4		628	165	5'093			16,280	17,627
140 141 142 143 144	Lip Tongue Salivary glands Floor of mouth Other parts of mouth and mouth unspecified	15	1	1	0	2	3	8	23	57	107	235
145	Oral mesopharynx		and the second			and a	1.1.1	1			13	
146 147	Nasopharynx	13	201	1		1	6	20	30	41	54	83
148	Pharynx unspecified	5					1	11	34	32	13	-
150	Œsophagus	37	-			2	6	20	71	164	279	318
151	Stomach	286	1		3	12	54	160	448	1,220	2,392	2,667
2 152 153	Small intestine, including duodenum	244	1	1	1	14	53	155	384	921	2,065	3,152
154	Rectum	106	—	-	2	6	27	74	193	434	770	917
155	Biliary passages and of liver (stated to be primary site)	34	1	0	0	0	5	20	60	158	242	242
157	Pancreas	60		<u></u>	1	1	6	42	110	272	415	576
161	Larynx	9		·	-	1	4	9	18	37	41	.61
162	Trachea and of bronchus and lung specified as primary	91	2	0	2	11	39	100	221	352	396	288
163	mary or secondary	30		10	8	14	27	42	04	. 34	6.9	
170	Breast	352	-	-	1	31	222	504	779	1,062	1,543	2,402
171	Cervix uteri	114	-	-	-	18	73	178	297	314	392	394
172 173 174	Corpus uteri	65		0	1	4	20	70	160	240	338	227
175	Ovary, Fallopian tube and broad ligament	112		1	6	13	60	201	289	328	318	265
176	Other and unspecified female genital organs	19	1	Landard and a state		1	4	9	33	77	146	341

# Table CIV.—continued.

Int. Class No. 6th Revision	Site or organ	All ages	0-	5-	15-	25-	35-	45-	55-	65-	75-	85 and over
180 181	Kidney	} 51	15	4	1	3	8	35	93	205	378	326
190 191	Skin (malignant melanoma) Skin (malignant neoplasm)			8-2	1	4	9	11	24	50	150	432
193	Brain and other parts of nervous system	22	12	7	10	13	25	39	46	26	12	8
194	Thyroid gland	11	1		0	1	3	8	24	46	66	114
195	Other endocrine glands	2	11	1	0		1	2	2	3	1	
196 197	Bone (including jaw bone) Connective tissue		3	4	8	7	8	14	31	50	99	121
158 164 198	Peritoneum	12	2	0	1	2	6	17	22	40	47	76
200	Lymphosarcoma and reticulosarcoma	13	2	2	2	6	7	14	26	39	58	61
201	Hodgkin's disease	12	1	2	6	15	14	12	20	24	24	30
202	Other forms of lymphoma (reticulosis)	2	2	1		1	1	2	7	5	7	-
203	Multiple myeloma (plasmocytoma)	7		diti-	Ö	0	2	7	21	27	17	8
204	Leukæmia and aleukæmia	41	47	21	15	18	28	42	70	104	101	38
205	Mycosis fungoides	0		1-1			0	0	0		1	_
Others in 140-205	Remaining sites	55	2	1	2	5	14	47	113	203	335	508
140-205	Total	1,822	102	49	66	191	708	1,820	3,616	6 ,499	10,795	13,886
193 223 237	Malignant neoplasm of brain and other parts of nervous system	43	19	14	17	23	41	74	97	61	42	38

# DISEASES OF THE RESPIRATORY SYSTEM

## Influenza (480-483)

The general trend of mortality from influenza, though interrupted by epidemics of greater or less severity, has been downward since the pandemic of 1918–19. The C.M.I's. in successive quinquennia and in 1950 were :

1921-25		 		3.77	
1926-30		 		3.54	
1931 - 35		 		2.85	
1936-39		 		2.01	
1940 - 44		 		1.64	
1945 - 49		 •••	••••	0.70	
1950	····-	 		0.71	

In 1951 there was a severe outbreak of influenza and the total deaths assigned to influenza increased to 15,809, compared with only 3,902 in 1950, and raised the C.M.I. to 2.87 for the year. No outbreak as serious as this had occurred since 1943 when there were 12,576 deaths and a C.M.I. of 2.65. While the epidemic did undoubtedly produce heavy mortality it is worth recording that the interval between 1943 and 1951 was the longest interval without the C.M.I. exceeding 2 since the index first fell below that level in 1928. Since 1927 the intervals (between years with a C.M.I. exceeding 2) have been 2, 2, 1, 1, 4, 3, 3, 8.

The incidence of influenza rose first in Newcastle at the end of December 1950 but this was rapidly overshadowed by an outbreak of much greater severity on Merseyside at the turn of the year. In subsequent weeks the epidemic reached the Midlands and the South but not with comparable severity. In Liverpool this epidemic was in three weeks the cause of the highest weekly death roll (apart from war deaths) since the cholera epidemic of 1849 (Semple, 1951).\* The epidemic had spent itself by the end of January and the high mortality was concentrated in a very short period; in this period the medical services were severely taxed.

It will be seen from Table CV (page 209) that, as in other years of high influenza prevalence (Stocks 1935),<sup>†</sup> the mortality from bronchitis and especially from pneumonia in elderly persons was also raised, together with mortality from non-respiratory causes that are not so regularly affected by influenza epidemics. Unlike the 1943 outbreak, mortality was concentrated among older people, the rates at younger ages being little different from those of years with only minimal prevalence (Logan, 1951).<sup>‡</sup> This suggests that the mortality would have been much heavier but for the improved chemotherapeutic resources developed in the last few years. These improvements are naturally of less avail at advanced ages but probably save countless lives at younger ages.

An important feature of influenza mortality, as indicated by Table CVI (page 209), and remarked upon in the Medical Text for 1950, is the excess of

\* Semple, A.B., 1951; Proc. R.S.M. 44, 794.

† Stocks, P., 1935 ; Lancet, ii, 386.

t Logan, W. P. D., 1951; Proc. R.S.M., 44, 789.

male mortality in the 45-64 age range and beyond. In 1951 the deaths in quinary age groups were :—

allo sin Age ad othor	Males	Females	Difference
C DER POLEICULLY JOK	MAR ALL STREET STALL STAR	REAMING OFFICIES OFFICE	VILLI IDCHEDOR OF
40	115	104	+11
15-201 10 TROY	233 IN 99.81	all a 94133 al said a	+100
50	2009 10 <b>379</b>	202	+177
55 ,	555	366	+189
50 55	812	567	+245
35	1,028	987	+41

The geographical distribution of influenza varies from epidemic to epidemic and to the extent to which prevalence is dependent upon the importation of virus from abroad it is affected by the actual port of entry and the paths of spread. In 1951 mortality was particularly high in the North Western Region and the Merseyside Conurbation where the main outbreak originated and spread rapidly. Mortality was also above average in Wales. The average death rate per million was 361. In Liverpool it was 719 and in Manchester 367. In Birmingham it was 263, Newcastle 329 and in Greater London only 220.

#### Pneumonia (490-493, 763)

There were 23,442 deaths from all forms of pneumonia in 1951 compared with 18,416 in 1950 and the largest number since the last serious influenza mortality year of 1943. The C.M.I. in 1951 was however only 0.67 indicating that mortality was still much below the level of earlier years. Notifications though notoriously incomplete totalled 43,259 compared with 30,663 in the previous year but the number of deaths per 100 notifications was reduced from 60 to 54.

Death rates by sex and age for the two main forms of pneumonia from 1931 to 1951, together with the C.M.I's., are shown in Table CVII (page 210). It will be seen that the full utilization of sulphonamides is marked in 1939 by a 31 per cent fall in the mortality of males from lobar pneumonia compared with the previous year; the corresponding decline for females being 25 per cent. In 1951 the much heavier morbidity associated with the influenza outbreak increased the C.M.I. by 7 per cent for males and 5 per cent for females. Other forms of pneumonia, comprising for the most part broncho-pneumonia and pneumonia without further description, mainly affect young infants and elderly people and are more sensitive to adverse weather conditions and to rises in the general level of upper respiratory infection, but rapid decline in mortality can be seen. The two sexes have shared almost equally in the very great progress that has been achieved; but naturally there has been less reduction in mortality at advanced ages. Naturally also the effect of the influenza outbreak was greater for this form of pneumonia, the C.M.I. in 1951 rising by 33 per cent for males and 31 per cent for females.

That a higher prevalence of respiratory disease is a concomitant of urbanization is illustrated by Table CVIII (page 212); the death rates are highest in the conurbations and lowest in the rural areas; between the extremes there is at most ages a steady gradient in mortality. The mortality effects of the greater crowding and the atmospheric pollution of the industrial areas is expressed here by higher mortality rates from pneumonia at working ages in such industrial regions of the North and Midlands. At older ages the death rates are highest in Greater London.

# Bronchitis (500–502)

In this country bronchitis is a common cause of death; in 1951, 36,985 deaths were assigned to this disease, of which 73.0 per cent were over the age of 65. Most of these deaths are described as due to chronic bronchitis often with mention of some cardiac condition. The death rate in a particular year is sensitive to weather conditions and to epidemics of upper respiratory infection or of influenza, and the increase in the rate in the influenza year of 1951 was to be expected. The reduction in mortality in recent years, as can be seen from Table CIX (page 214) has been greater for acute than for chronic bronchitis; in males the C.M.I. for chronic bronchitis had risen very slightly in the last few years apart from the increase associated with the special conditions of 1951.

The geographical distribution of mortality from bronchitis shows the same Northern and Midland excess at all ages as was indicated for pneumonia, more especially for males; and the same excess at advanced ages in Greater London.

It can be seen from the following figures that the tendency to ascribe a larger proportion of respiratory mortality in older persons (over age 65) to pneumonia, and less to bronchitis, than formerly, which was commented upon in the 1950 Text, has persisted.

Year	Total deaths from diseases of respiratory system at ages over 65 (excluding influenza)	Per cent assigned to					
secondo 1661 :	65 (excluding initializa)	Pneumonia	Bronchitis				
1940-44	165,240	26.7	65.2				
1945-49	158,642	29.0	61.8				
1950	33,005	31.0	62.1				
1951	44.082	32.7	61.2				

Similarly, as the following figures show, there has also been a general tendency to stress cardiac conditions in the certification of deaths of old people. This results in the assignment of more deaths either to heart disease or to pneumonia and fewer to bronchitis.

Year	Total deaths over age 65	Per cent assigned to							
ed in cour-	eather conditions and c	Heart disease	Pneumonia	Bronchitis					
1940–44	1,370,643	33	3	8					
1945-49	1,481,095	36	3	7					
1950	330,753	40	3	6					
1951	365,703	39	4	1 1 1 1 1 1 1 1 1 1					

I hat a nigher prevalence of respiratory disease is a concomptant of arbanizaation as diastrated by Table CVIII (page 212); the death rates are highest in the commbations and lowest in the rural areas; between the extremes that is at most ages a strady gradient in mortality. The mortality effects of the greater crowding and the atmospheric pollution of the industrial areas is expressed here by higher mortality rates from pneumonia at working ages in such industrial regions of the North and Midlands, aft older ages the death tables are highest to intenter I endones.

# Table CV.—Diseases of the respiratory system : Death rates per million living at ages 0–14, 15–44 and 45 and over from influenza; at ages 65 and over from bronchitis, pneumonia and other respiratory diseases (excluding influenza) and from non-respiratory diseases, 1921 to 1951

# (Excluding non-civilians, 1939 to 1949)

Yea	r		Influenz	a	Bronchitis	Pneumonia	Other res- piratory diseases (excluding influenza)	All non- respiratory causes
107 101 101 105	01	0-14	15-44	45 and over	988 001. 010 160 918 934	65 and	l over	1015 0201 19201 19201
1921		121	129	564	8,773	2,704	950	58,611
1922		305	289	1,338	10,781	3,088	1,018	61,410
1923		83	107	565	8,541	2,765	948	58,380
1924		229	205	1,257	9,760	2,947	949	60,003
1925		117	141	858	9,002	3,023	969	61,051
1926		91	104	573	7,461	2,563	857	59,692
1927		252	222	1,440	8,275	2,953	904	61,934
1928		71	93	480	5,531	2,409	760	61,823
1929		261	250	1,948	7,959	3,513	898	66,771
1930		42	52	318	4,417	2,272	648	61,145
1931		141	139	898	5,674	2,680	763	64,743
1932		113	114	840	4,506	2,525	686	64,885
1933		160	238	1,408	4,541	2,465	688	64,022
1934		46	55	340	3,512	2,380	599	63,065
1935		57	71	445	3,152	2,238	614	63,800
1936		47	53	367	3,410	2,367	596	65,865
1937		113	144	1,165	3,355	2,436	591	65,086
1938		42	45	279	2,395	2,062	484	62,691
1939		57	62	555	2,744	2,098	497	65,830
1940		88	76	691	7,817	2,678	927	66,594
1941		59	43	413	5,720	2,352	671	60,868
1942		36	23	193	4,365	1,889	577	56,728
1943		77	57	780	5,075	2,328	638	56,343
1944		39	19	226	4,164	1,806	561	56,231
1945		33	15	148	4,457	1,790	604	56,478
1946		44	27	305	4,246	1,939	604	57,489
1947		31	15	188	4,743	2,214	661	60,211
1948		16	7	64	3,643	1,762	616	54,855
1949		27	20	334	4,544	2,406	739	60,155
1949*		21	20	334	4,446	2,406	471	60,521
1950*		17	18	222	4,279	2,139	475	61,670
1951*		28	32	969	5,609	2,996	554	64,393

\* According to the 6th Revision of the International Classification. Other years according to the classification in use at the time.

Table CVI.—Influenza : Mean annual death rate\* per million living by sex and age, 1942-51

	0-	15-	45-	65 and over	All ages
Males	37	24	186	816	135
Females	31	23	102	801	134

\* The figures for the years 1942-48 include deaths from meningitis due to hæmophilus influenzæ (340.0), most of which occurred in the 0-14 age group.

sxaeo1	0-	1-	5→	15-	25-	35-	45-	55-	65–	75 and over	C.M.I. All ages
Year		(11/1)		Lo	bar p	neum	onia-	-Male	S		
1931	880	275	62	124	170	356	525	705	948	1,229	1.11
1932	890	244	68	124	171	320	482	641	919	1,253	1.06
1933	904	272	65	116	167	341	498	652	799	1,146	1.04
1934	911	280	62	130	179	364	587	721	945	1,264	1.16
1935	912	215	55	103	160	332	533	737	827	1,126	1.06
1936	873	227	53	102	157	310	527	727	868	1,012	1.04
1937	938	245	54	91	159	316	540	759	803	1,075	1.05
1938	832	199	49	108	149	300	515	693	824	1,102	1.00
1939	657	131	26	. 44	67	142	327	526	701	1,122	0.69
1940	795 1,014	$\begin{array}{c}131\\154\end{array}$	$\begin{array}{c} 27\\27\end{array}$	$53 \\ 41$	$\begin{array}{c} 75 \\ 50 \end{array}$	$\frac{137}{137}$	311	$\begin{array}{c} 560 \\ 544 \end{array}$	732 717	958	0.71
$\frac{1941}{1942}$	712	98	19	41 34	41	118	$\begin{array}{c} 295\\ 223 \end{array}$	477	647	1,014 804	0·70 0·59
1943	784	77	19	26	37	106	246	478	655	1,057	0.59
1944	773	62	14	20	34	86	186	403	610	859	0.53
1945	746	51	11	21	28	65	158	347	540	824	0.46
1946	631	55	5	15	25	56	136	354	547	868	0.42
1947	546	60	6	15	23	55	139	349	528	938	0.42
1948	505	35	7	9	20	34	130	283	461	758	0.34
1949	491	30	7	8	16	33	96	273	480	877	0.33
1949*	410		7		16			273	400	0.75	0.00
1949	413 286	$30 \\ 25$	5	8 12	16	33 33	96 97	239	480 459	877	0·33 0·30
1951*	269	16	5	11	$10 \\ 12$	32	96	247	511	988	0.30
				Lob	oar pn	eumo	nia—	Fema	les		
1931	717	242	66	76	101	173	206	338	567	965	1.31
1931	671	242	54	68	94	146	194	331	577	1,006	1.31
1933	539	239	52	61	87	160	186	320	514	921	1.18
1934	588	205	56	56	91	145	180	314	584	890	1.18
1935	542	193	48	58	84	141	174	289	534	783	1.10
1936	641	194	45	57	87	122	182	308	510	841	1.11
1937	631	200	41	46	77	133	181	288	513	875	1.09
1938	658	200	38	49	74	125	162	258	456	717	1.00
1939	538	103	27	39	50	70	116	215	372	698	0.75
1940	750	120	23	27	48	69 68	114	208	413	741	0.79
$\frac{1941}{1942}$	754 597	$\frac{113}{96}$	18 17	$\frac{31}{28}$	41 38	56	$\begin{array}{c}103\\90\end{array}$	$\begin{array}{c c}214\\166\end{array}$	412 305	710 570	$\begin{array}{ c c c } 0.76\\ 0.62\end{array}$
1942	682	90 94	18	39	38 46	59	106	173	375	660	0.02
1943	470	53	15	22	26	46	78	133	281	556	0.53
1945	600	59	9	18	26	37	68	123	275	544	0.51
1946	557	48	10	16	25	37	62	130	274	568	0.50
1947	525	40	9	15	21	27	63	131	267	622	0.50
1948	402	29	5	10	14	23	45	90	217	507	0.38
1949	343	24	5	9	16	26	44	104	269	607	0.43
	A 70%	a mine ore					44	104	269		0.10
10.04	000	<b>C</b> 1				16			761		
	303	24	5	9	16	26				607	0.42
1949* 1950* 1951*	$303 \\ 214 \\ 253$	24 19 17	5 8 4	9 8 5	10 13 17	20 21 21	39 41	90 98	235 248	574 614	0.42 0.37 0.39

Table CVII.—Pneumonia : Death rates per million living by sex and age and Comparative Mortality Indices, 1931 to 1951

# Table CVII.—continued.

Year	0	1-	5-	15-	25-	35-	45-	- 55-	65-	75 and over	C.M.I. All age
nus suo	iger ba	Bro	ncho :	and ur	spec	ified <sub>J</sub>	oneur	nonia-	-Males	CVIII.	oldaT
1931	12,794	2,119	113	1 70	100	1	terret	a letterid	wind the		
1932	10,635	1,530	97	73 61	100	229	433	LUCE MARKING STREET	1,640	3,777	1.43
1933	10,183	1,638	110	58	87	192	357	and the second second	1,447	3,631	1.18
1934	8,972	1,431	92	57	97	237	431	Contraction of the second second	1,394	3,724	1.23
1935	9,050	1,089	65	54	76	205	390	and the second sec	1,391	3,224	1.11
1936	9,726	1,218	65	55	81 72	172	352	600	1,397	3,211	1.04
1937	10,378	1,233	61	43		155	390	705	1,435	3,319	1.14
1938	8,643	1,059	70	58	62 78	161	410	776	1,494	3,622	1.21
1939	7,650	631	46	36	48	173	371	665	1,306	3,202	1.00
1940	10,879	1,103	55	55	80	$  113 \\ 165 $	291	595	1,102	2,935	0.89
1941	11,361	908	53	45	59	105	419	895	1,573	4,032	1.18
1942	8,238	522	41	39	52	120	312	728	1,252	3,277	1.02
1943	9,051	551	42	37	40	109	229 285	547	1,095	2,824	0.80
1944	7,507	410	41	23	41	89	285	619	1,310	3,456	0.94
1945	7,904	386	36	26	37	66	229	506	1,056	2,625	0.76
1946	7,386	304	30	24	35	69	200	524	1,013	2,664	0.75
1947	7,293	325	28	28	32	70	202	508 535	1,070	2,875	0.71
1948	5,639	229	22	16	21	47	152	432	1,224	3,643	0.80
1949	5,299	234	16	27	26	57	167	527	985 1,345	2,922	0.59
	912 Y 22 1			T. Sta	R1		101	021	1,040	3,948	0.68
1949*	5,723	234	16	27	26	. 57	167	527	1.945	2.040	0.00
1950*	4,849	182	29	17	29	46	142	395	$1,345 \\ 1,096$	3,948 3,680	0.68
1951*	5,451	160	18	17	28	59	171	622	1,673	5,342	$0.58 \\ 0.77$
164.0 N	1815.1	Bron	cho ai	nd uns	pecif	ied pr	neum	onia—	Female	s	
1931	9,413	1,815	111	48	86	154	244	494	1,374	2 4 5 2	11
1932	7,874	1,460	95	51	75	127	202	470	1,374	3,452	1.53
			00		STUDIES SCOOL ST					3,216	1.32
1933	7,556	1,467	90	44	75	153	248		1 9 17		
1933 1934	7,556 7,047	$\begin{array}{c}1,467\\1,272\end{array}$	98 79	42 47	75 63	$\begin{array}{c c}153\\108\end{array}$	$248 \\ 211$	480	1,217	3,358	1.35
1933 1934 1935	7,556 7,047 7,151	$\begin{array}{c}1,272\\997\end{array}$		COLOR DATE OF DATE	75 63 63	108	211	415	1,133	3,358 2,837	$1.35 \\ 1.18$
1933 1934 1935 1936	7,556 7,047 7,151 7,335	$\begin{array}{c} 1,272 \\ 997 \\ 1,004 \end{array}$	$79 \\ 66 \\ 65$	47	63	$\begin{array}{c}108\\105\end{array}$	$\begin{array}{c} 211\\ 184 \end{array}$	415 401	$1,133 \\ 1,037$	3,358 2,837 2,661	$1.35 \\ 1.18 \\ 1.10$
1933 1934 1935 1936 1937	7,556 7,047 7,151 7,335 7,154	1,272 997 1,004 1,109	79 66 65 57	47 38 32 32	63 63	108	211 184 191	$   \begin{array}{r}     415 \\     401 \\     368   \end{array} $	$\begin{array}{c} 1,133 \\ 1,037 \\ 1,079 \end{array}$	3,358 2,837 2,661 2,925	1.35 1.18 1.10 1.14
1933 1934 1935 1936 1937 1938	7,5567,0477,1517,3357,154 $6,543$	$1,272 \\997 \\1,004 \\1,109 \\865$	79 66 65 57 64	47 38 32 32 47	63 63 58	$     \begin{array}{r}       108 \\       105 \\       92     \end{array} $	$\begin{array}{c} 211\\ 184 \end{array}$	415 401	$\begin{array}{c} 1,133 \\ 1,037 \\ 1,079 \\ 1,098 \end{array}$	3,358 2,837 2,661 2,925 3,116	$     \begin{array}{r}       1 \cdot 35 \\       1 \cdot 18 \\       1 \cdot 10 \\       1 \cdot 14 \\       1 \cdot 21     \end{array} $
1933         1934         1935         1936         1937         1938         1939	7,5567,0477,1517,3357,154 $6,5435,869$	$1,272 \\997 \\1,004 \\1,109 \\865 \\581$	$79 \\ 66 \\ 65 \\ 57 \\ 64 \\ 46$	47 38 32 32 47 35	63 63 58 59 52 55	108 105 92 123 97 87	211 184 191 225	$     \begin{array}{r}       415 \\       401 \\       368 \\       445     \end{array} $	$1,133 \\ 1,037 \\ 1,079 \\ 1,098 \\ 890$	3,358 2,837 2,661 2,925 3,116 2,575	$     \begin{array}{r}       1 \cdot 35 \\       1 \cdot 18 \\       1 \cdot 10 \\       1 \cdot 14 \\       1 \cdot 21 \\       1 \cdot 00 \\       \end{array} $
1933         1934         1935         1936         1937         1938         1939         1940	7,5567,0477,1517,3357,1546,5435,8698,067	$1,272 \\997 \\1,004 \\1,109 \\865 \\581 \\918$	$79 \\ 66 \\ 65 \\ 57 \\ 64 \\ 46 \\ 52$	47 38 32 32 47 35 38	$\begin{array}{c} 63\\ 63\\ 58\\ 59\\ 52\\ 55\\ 61\\ \end{array}$	108 105 92 123 97	211 184 191 225 170	$\begin{array}{r} 415 \\ 401 \\ 368 \\ 445 \\ 355 \end{array}$	$\begin{array}{c} 1,133 \\ 1,037 \\ 1,079 \\ 1,098 \\ 890 \\ 962 \end{array}$	3,358 2,837 2,661 2,925 3,116 2,575 3,012	$   \begin{array}{r}     1 \cdot 35 \\     1 \cdot 18 \\     1 \cdot 10 \\     1 \cdot 14 \\     1 \cdot 21 \\     1 \cdot 00 \\     0 \cdot 97 \\   \end{array} $
1933         1934         1935         1936         1937         1938         1939         1940         1941	$\begin{array}{c} 7,556\\ 7,047\\ 7,151\\ 7,335\\ 7,154\\ 6,543\\ 5,869\\ 8,067\\ 9,060\\ \end{array}$	$1,272 \\997 \\1,004 \\1,109 \\865 \\581 \\918 \\817$	$79 \\ 66 \\ 65 \\ 57 \\ 64 \\ 46 \\ 52 \\ 56$	47 38 32 32 47 35 38 39	$\begin{array}{c} 63\\ 63\\ 58\\ 59\\ 52\\ 55\\ 61\\ 54 \end{array}$	108 105 92 123 97 87	211 184 191 225 170 148	$\begin{array}{r} 415\\ 401\\ 368\\ 445\\ 355\\ 368\\ 448\\ 341 \end{array}$	$ \begin{array}{c} 1,133\\ 1,037\\ 1,079\\ 1,098\\ 890\\ 962\\ 1,199\\ \end{array} $	$\begin{array}{c} 3,358\\ 2,837\\ 2,661\\ 2,925\\ 3,116\\ 2,575\\ 3,012\\ 3,581\\ \end{array}$	$ \begin{array}{c} 1.35\\ 1.18\\ 1.10\\ 1.14\\ 1.21\\ 1.00\\ 0.97\\ 1.23 \end{array} $
1933         1934         1935         1936         1937         1938         1939         1940         1941         1942	$\begin{array}{c} 7,556\\ 7,047\\ 7,151\\ 7,335\\ 7,154\\ 6,543\\ 5,869\\ 8,067\\ 9,060\\ 6,160\\ \end{array}$	$1,272 \\997 \\1,004 \\1,109 \\865 \\581 \\918 \\817 \\501$	79 66 65 57 64 46 52 56 36	47 38 32 32 47 35 38 39 33	$\begin{array}{c} 63\\ 63\\ 58\\ 59\\ 52\\ 55\\ 61\\ 54\\ 45\\ \end{array}$	108 105 92 123 97 87 97 81 74	211 184 191 225 170 148 203 153 122	415 401 368 445 355 368 448 341 270	$\begin{array}{c} 1,133\\ 1,037\\ 1,079\\ 1,098\\ 890\\ 962\\ 1,199\\ 982\\ 744 \end{array}$	$\begin{array}{c} 3,358\\ 2,837\\ 2,661\\ 2,925\\ 3,116\\ 2,575\\ 3,012\\ 3,581\\ 3,251\\ \end{array}$	$\begin{array}{c} 1.35 \\ 1.18 \\ 1.10 \\ 1.14 \\ 1.21 \\ 1.00 \\ 0.97 \\ 1.23 \\ 1.12 \end{array}$
1933         1934         1935         1936         1937         1938         1939         1940         1941         1942         1943	$\begin{array}{c} 7,556\\ 7,047\\ 7,151\\ 7,335\\ 7,154\\ 6,543\\ 5,869\\ 8,067\\ 9,060\\ 6,160\\ 6,890 \end{array}$	$\begin{array}{c} 1,272\\ 997\\ 1,004\\ 1,109\\ 865\\ 581\\ 918\\ 817\\ 501\\ 529\\ \end{array}$	79 66 65 57 64 46 52 56 36 40	47 38 32 32 47 35 38 39 33 36	63 63 58 59 52 55 61 54 45 57	108 105 92 123 97 87 97 81 74 90	211 184 191 225 170 148 203 153 122 144	415 401 368 445 355 368 448 341 270 339	$1,133 \\ 1,037 \\ 1,079 \\ 1,098 \\ 890 \\ 962 \\ 1,199 \\ 982 \\ 744 \\ 899$	$\begin{array}{c} 3,358\\ 2,837\\ 2,661\\ 2,925\\ 3,116\\ 2,575\\ 3,012\\ 3,581\\ \end{array}$	$\begin{array}{c} 1.35\\ 1.18\\ 1.10\\ 1.14\\ 1.21\\ 1.00\\ 0.97\\ 1.23\\ 1.12\\ 0.82 \end{array}$
1933         1934         1935         1936         1937         1938         1939         1940         1941         1942         1943         1944	$\begin{array}{c} 7,556\\ 7,047\\ 7,151\\ 7,335\\ 7,154\\ 6,543\\ 5,869\\ 8,067\\ 9,060\\ 6,160\\ 6,890\\ 6,042 \end{array}$	$\begin{array}{c} 1,272\\ 997\\ 1,004\\ 1,109\\ 865\\ 581\\ 918\\ 817\\ 501\\ 529\\ 395 \end{array}$	79 66 65 57 64 46 52 56 36 40 32	47 38 32 32 47 35 38 39 33 36 25	$\begin{array}{c} 63\\ 63\\ 58\\ 59\\ 52\\ 55\\ 61\\ 54\\ 45\\ 57\\ 40\\ \end{array}$	108 105 92 123 97 87 97 81 74 90 57	211 184 191 225 170 148 203 153 122 144 96	415 401 368 445 355 368 448 341 270 339 224	$\begin{array}{c} 1,133\\ 1,037\\ 1,079\\ 1,098\\ 890\\ 962\\ 1,199\\ 982\\ 744\\ 899\\ 686\\ \end{array}$	3,358 2,837 2,661 2,925 3,116 2,575 3,012 3,251 2,330 3,166 2,184	$\begin{array}{c} 1.35\\ 1.18\\ 1.10\\ 1.14\\ 1.21\\ 1.00\\ 0.97\\ 1.23\\ 1.12\\ 0.82\\ 1.01 \end{array}$
1933         1934         1935         1936         1937         1938         1939         1940         1941         1942         1943         1944         1945	$\begin{array}{c} 7,556\\ 7,047\\ 7,151\\ 7,335\\ 7,154\\ 6,543\\ 5,869\\ 8,067\\ 9,060\\ 6,160\\ 6,890\\ 6,042\\ 6,493\\ \end{array}$	$\begin{array}{c} 1,272\\ 997\\ 1,004\\ 1,109\\ 865\\ 581\\ 918\\ 817\\ 501\\ 529\\ 395\\ 351\\ \end{array}$	$\begin{array}{c} 79\\ 66\\ 65\\ 57\\ 64\\ 46\\ 52\\ 56\\ 36\\ 40\\ 32\\ 28 \end{array}$	47 38 32 47 35 38 39 33 36 25 24	63 63 58 59 52 55 61 54 45 57 40 36	108 105 92 123 97 87 97 81 74 90 57 56	211 184 191 225 170 148 203 153 122 144 96 92	$\begin{array}{r} 415\\ 401\\ 368\\ 445\\ 355\\ 368\\ 448\\ 341\\ 270\\ 339\\ 224\\ 233\\ \end{array}$	$\begin{array}{c} 1,133\\ 1,037\\ 1,079\\ 1,098\\ 890\\ 962\\ 1,199\\ 982\\ 744\\ 899\\ 686\\ 712\\ \end{array}$	3,358 2,837 2,661 2,925 3,116 2,575 3,012 3,251 2,330 3,166 2,184 2,216	$\begin{array}{c} 1.35\\ 1.18\\ 1.10\\ 1.14\\ 1.21\\ 1.00\\ 0.97\\ 1.23\\ 1.12\\ 0.82\\ 1.01\\ 0.77\\ 0.77\end{array}$
1933         1934         1935         1936         1937         1938         1939         1940         1941         1942         1943         1944         1945         1946	$\begin{array}{c} 7,556\\ 7,047\\ 7,151\\ 7,335\\ 7,154\\ 6,543\\ 5,869\\ 8,067\\ 9,060\\ 6,160\\ 6,890\\ 6,042\\ 6,493\\ 6,097\\ \end{array}$	$\begin{array}{c} 1,272\\ 997\\ 1,004\\ 1,109\\ 865\\ 581\\ 918\\ 817\\ 501\\ 529\\ 395\\ 351\\ 281\\ \end{array}$	$\begin{array}{c} 79\\ 66\\ 65\\ 57\\ 64\\ 46\\ 52\\ 56\\ 36\\ 40\\ 32\\ 28\\ 24\\ \end{array}$	47 38 32 47 35 38 39 33 36 25 24 21	63 63 58 59 52 55 61 54 45 57 40 36 36	$108 \\ 105 \\ 92 \\ 123 \\ 97 \\ 87 \\ 97 \\ 81 \\ 74 \\ 90 \\ 57 \\ 56 \\ 53 \\ 100 \\ 57 \\ 56 \\ 53 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\$	211 184 191 225 170 148 203 153 122 144 96 92 108	415 401 368 445 355 368 448 341 270 339 224 233 261	1,133 1,037 1,079 1,098 890 962 1,199 982 744 899 686 712 723	3,358 2,837 2,661 2,925 3,116 2,575 3,012 3,581 3,251 2,330 3,166 2,184 2,216 2,636	$\begin{array}{c} 1.35\\ 1.18\\ 1.10\\ 1.14\\ 1.21\\ 1.00\\ 0.97\\ 1.23\\ 1.12\\ 0.82\\ 1.01\\ 0.77\end{array}$
1933         1934         1935         1936         1937         1938         1939         1940         1941         1942         1943         1944         1945         1946         1947	$\begin{array}{c} 7,556\\ 7,047\\ 7,151\\ 7,335\\ 7,154\\ 6,543\\ 5,869\\ 8,067\\ 9,060\\ 6,160\\ 6,890\\ 6,042\\ 6,493\\ 6,097\\ 5,642 \end{array}$	$\begin{array}{c} 1,272\\997\\1,004\\1,109\\865\\581\\918\\817\\501\\529\\395\\351\\281\\286\end{array}$	$\begin{array}{c} 79\\ 66\\ 65\\ 57\\ 64\\ 46\\ 52\\ 56\\ 36\\ 40\\ 32\\ 28\\ 24\\ 25\\ \end{array}$	47 38 32 32 47 35 38 39 33 36 25 24 21 21	63 63 58 59 52 55 61 54 45 57 40 36 36 24	$\begin{array}{c} 108\\ 105\\ 92\\ 123\\ 97\\ 87\\ 97\\ 81\\ 74\\ 90\\ 57\\ 56\\ 53\\ 50\\ \end{array}$	211 184 191 225 170 148 203 153 122 144 96 92 108 108	415 401 368 445 355 368 448 341 270 339 224 233 261 268	$\begin{array}{c} 1,133\\ 1,037\\ 1,079\\ 1,098\\ 890\\ 962\\ 1,199\\ 982\\ 744\\ 899\\ 686\\ 712\\ 723\\ 789\\ \end{array}$	3,358 2,837 2,661 2,925 3,116 2,575 3,012 3,581 3,251 2,330 3,166 2,184 2,216 2,636 3,176	$\begin{array}{c} 1.35\\ 1.18\\ 1.10\\ 1.14\\ 1.21\\ 1.00\\ 0.97\\ 1.23\\ 1.12\\ 0.82\\ 1.01\\ 0.77\\ 0.77\end{array}$
1933         1934         1935         1936         1937         1938         1939         1940         1941         1942         1943         1944         1945         1946	$\begin{array}{c} 7,556\\ 7,047\\ 7,151\\ 7,335\\ 7,154\\ 6,543\\ 5,869\\ 8,067\\ 9,060\\ 6,160\\ 6,890\\ 6,042\\ 6,493\\ 6,097\\ \end{array}$	$\begin{array}{c} 1,272\\ 997\\ 1,004\\ 1,109\\ 865\\ 581\\ 918\\ 817\\ 501\\ 529\\ 395\\ 351\\ 281\\ \end{array}$	$\begin{array}{c} 79\\ 66\\ 65\\ 57\\ 64\\ 46\\ 52\\ 56\\ 36\\ 40\\ 32\\ 28\\ 24\\ \end{array}$	47 38 32 47 35 38 39 33 36 25 24 21	63 63 58 59 52 55 61 54 45 57 40 36 36	$108 \\ 105 \\ 92 \\ 123 \\ 97 \\ 87 \\ 97 \\ 81 \\ 74 \\ 90 \\ 57 \\ 56 \\ 53 \\ 100 \\ 57 \\ 56 \\ 53 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\$	211 184 191 225 170 148 203 153 122 144 96 92 108	415 401 368 445 355 368 448 341 270 339 224 233 261	1,133 1,037 1,079 1,098 890 962 1,199 982 744 899 686 712 723	3,358 2,837 2,661 2,925 3,116 2,575 3,012 3,581 3,251 2,330 3,166 2,184 2,216 2,636	$\begin{array}{c} 1.35\\ 1.18\\ 1.10\\ 1.14\\ 1.21\\ 1.00\\ 0.97\\ 1.23\\ 1.12\\ 0.82\\ 1.01\\ 0.77\\ 0.77\\ 0.79\end{array}$
1933 1934 1935 1936 1937 1938 1939 1940 1941 1942 1943 1944 1945 1946 1947 1948 1949	$\begin{array}{c} 7,556\\ 7,047\\ 7,151\\ 7,335\\ 7,154\\ 6,543\\ 5,869\\ 8,067\\ 9,060\\ 6,160\\ 6,890\\ 6,042\\ 6,493\\ 6,097\\ 5,642\\ 4,569\\ 4,242\\ \end{array}$	$\begin{array}{c} 1,272\\ 997\\ 1,004\\ 1,109\\ 865\\ 581\\ 918\\ 817\\ 501\\ 529\\ 395\\ 351\\ 281\\ 286\\ 240\\ \end{array}$	$\begin{array}{c} 79\\ 66\\ 65\\ 57\\ 64\\ 46\\ 52\\ 56\\ 36\\ 40\\ 32\\ 28\\ 24\\ 25\\ 15\\ \end{array}$	47 38 32 32 47 35 38 39 33 36 25 24 21 21 18	63 63 58 59 52 55 61 54 45 57 40 36 36 24 22	$\begin{array}{c} 108 \\ 105 \\ 92 \\ 123 \\ 97 \\ 87 \\ 97 \\ 81 \\ 74 \\ 90 \\ 57 \\ 56 \\ 53 \\ 50 \\ 39 \end{array}$	211 184 191 225 170 148 203 153 122 144 96 92 108 108 88	415 401 368 445 355 368 448 341 270 339 224 233 261 268 183	$\begin{array}{c} 1,133\\ 1,037\\ 1,079\\ 1,098\\ 890\\ 962\\ 1,199\\ 982\\ 744\\ 899\\ 686\\ 712\\ 723\\ 789\\ 598\\ \end{array}$	3,358 2,837 2,661 2,925 3,116 2,575 3,012 3,581 3,251 2,330 3,166 2,184 2,216 2,636 3,176 2,385	$\begin{array}{c} 1.35\\ 1.18\\ 1.10\\ 1.14\\ 1.21\\ 1.00\\ 0.97\\ 1.23\\ 1.02\\ 1.01\\ 0.77\\ 0.77\\ 0.77\\ 0.79\\ 0.86\\ 0.64\end{array}$
1933         1934         1935         1936         1937         1938         1939         1940         1941         1942         1943         1944         1945         1946         1947         1948         1949	7,556 7,047 7,151 7,335 7,154 6,543 5,869 8,067 9,060 6,160 6,890 6,042 6,493 6,097 5,642 4,569 4,242	1,272 997 1,004 1,109 865 581 918 817 501 529 395 351 281 286 240 214 214	$\begin{array}{c} 79\\ 66\\ 65\\ 57\\ 64\\ 46\\ 52\\ 56\\ 36\\ 40\\ 32\\ 28\\ 24\\ 25\\ 15\\ \end{array}$	47 38 32 32 47 35 38 39 33 36 25 24 21 21 18	63 63 58 59 52 55 61 54 45 57 40 36 36 24 22 33	108 105 92 123 97 87 97 81 74 90 57 56 53 50 39 50	211 184 191 225 170 148 203 153 122 144 96 92 108 108 108 88 92	415 401 368 445 355 368 448 341 270 339 224 233 261 268 183 282	$1,133 \\ 1,037 \\ 1,079 \\ 1,098 \\ 890 \\ 962 \\ 1,199 \\ 982 \\ 744 \\ 899 \\ 686 \\ 712 \\ 723 \\ 789 \\ 598 \\ 912 \\ 912 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,037 \\ 1,03$	3,358 2,837 2,661 2,925 3,116 2,575 3,012 3,581 3,251 2,330 3,166 2,184 2,216 2,636 3,176 2,385 3,504	$\begin{array}{c} 1.35\\ 1.18\\ 1.10\\ 1.14\\ 1.21\\ 1.00\\ 0.97\\ 1.23\\ 1.12\\ 0.82\\ 1.01\\ 0.77\\ 0.77\\ 0.79\\ 0.86\\ 0.64\\ 0.81\\ \end{array}$
1933         1934         1935         1936         1937         1938         1939         1940         1941         1942         1943         1944         1945         1946         1947         1948         1949	$\begin{array}{c} 7,556\\ 7,047\\ 7,151\\ 7,335\\ 7,154\\ 6,543\\ 5,869\\ 8,067\\ 9,060\\ 6,160\\ 6,890\\ 6,042\\ 6,493\\ 6,097\\ 5,642\\ 4,569\\ 4,242\\ \end{array}$	1,272 997 1,004 1,109 865 581 918 817 501 529 395 351 281 286 240 214	79 66 65 57 64 46 52 56 36 40 32 28 24 25 15 20	47 38 32 32 47 35 38 39 33 36 25 24 21 21 18 16	63 63 58 59 52 55 61 54 45 57 40 36 36 24 22	$\begin{array}{c} 108 \\ 105 \\ 92 \\ 123 \\ 97 \\ 87 \\ 97 \\ 81 \\ 74 \\ 90 \\ 57 \\ 56 \\ 53 \\ 50 \\ 39 \end{array}$	211 184 191 225 170 148 203 153 122 144 96 92 108 108 88	415 401 368 445 355 368 448 341 270 339 224 233 261 268 183	$\begin{array}{c} 1,133\\ 1,037\\ 1,079\\ 1,098\\ 890\\ 962\\ 1,199\\ 982\\ 744\\ 899\\ 686\\ 712\\ 723\\ 789\\ 598\\ \end{array}$	3,358 2,837 2,661 2,925 3,116 2,575 3,012 3,581 3,251 2,330 3,166 2,184 2,216 2,636 3,176 2,385	$\begin{array}{c} 1.35\\ 1.18\\ 1.10\\ 1.14\\ 1.21\\ 1.00\\ 0.97\\ 1.23\\ 1.12\\ 0.82\\ 1.01\\ 0.77\\ 0.77\\ 0.79\\ 0.86\\ 0.64\end{array}$

\* According to the 6th Revision of the International Classification. Other years according to the 5th Revision.

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Table CVIIIP	neumonia : Death rates per million living by sex at
2005	15-44, 45-64 and 65 and over in standard regions and
non	ulation density aggregates, 1951

	15	-	45-	-	65 and over		
100 990 172 1291 3224 111 172 353 950 1295 3231 1.44 160 596 765 1.423 1.519	M.	F.	М.	F.	М.	F.	
ENGLAND AND WALES	55	40	516	254	3,452	2,681	
Conurbations	58	38	599	285	4,322	3,196	
Areas outside conurbations	53	42	463	233	2,990	2,377	
Urban areas with populations of 100,000 and over	66	46	643	305	3,835	3,011	
Urban areas with populations of 50,000 and under 100,000	60	39	477	239	3,316	2,697	
Urban areas with populations under 50,000	51	45	443	$\begin{array}{c} 212\\ 201 \end{array}$	2,670 2,726	$2,102 \\ 2,136$	
Rural areas	43	37	355	201	2,120	2,100	
NORTH OF ENGLAND Regions:	ner	705		000	0.600	2,034	
Northern	66	42	530	$\begin{array}{c} 209 \\ 292 \end{array}$	2,629 3,211	2,054	
East and West Ridings North Western	78 70	39 60	558 677	336	3,669	2,764	
Total	71	50	608	296	3,286	2,489	
Conurbations :				208	3.472	2,109	
Tyneside	88	32	628 614	316	3,800	2,735	
West Yorkshire	89	33	630	326	3,089	2,255	
South East Lancashire	61	49 80	957	491	6,400	5,127	
Merseyside	73	1.92				ARG1	
Total	74	50	689	341	3,977	2,947	
Areas outside conurbations:	085	17,1		3	-670	1938	
Urban areas with populations of 100,000 and over	104	64	825	385	3,649	2,606	
Urban areas with populations of		88	100° 1 0.			0.400	
50 000 and under 100,000 ···	58	34	585	294	2,840	2,493	
Urban areas with populations under	60	49	473	186	2,452	1,940	
50,000 ·· ·· ·· ·· Rural areas ·· ·· ··	56	44	353	194	2,373	1,564	
THE REPORT OF THE PARTY OF THE	108	and a set	18 1 1	5	6,00	.0101	
MIDLANDS AND EASTERN		12	164 1			1381	
Regions: North Midland	54	35	473	183	2,781	2,426	
Midland	59	33	606	286	3,785	2,539	
Eastern	40	34	402	252	3,368	2,834	
Total	52	34	505	244	3,333	2,60	

# Table CVIII.—continued.

Areas outside conurbation:       49       28       599       260       3,915       3         Urban areas with populations of 50,000 and under 100,000       60       25       496       268       4,023       3         Urban areas with populations under 50,000         47       38       373       193       2,750       5         GREATER LONDON         47       38       373       193       2,750       5         GREATER LONDON         47       30       498       234       4,596       3         SOUTH OF ENGLAND         47       30       498       234       4,596       3         Southern         47       30       498       234       4,596       3         Southern         45       32       313       220       3,036       2         Total         42       37       376       226       3,171       2         Urban areas with populations of 100,000          48       41       485       318       4,174       3		. 1	.5-	4	.5-	65 ai	nd over
Conurbation:         West Midland         West Midland         West Midland         Urban areas with populations of 100,000 and over         Urban areas with populations of 50,000 and under 100,000         Urban areas with populations under 56         50,000         Urban areas with populations under 56         50,000         Urban areas with populations under 56         50,000         Urban areas with populations under 56         Solutt OF ENGLAND         Remainder of South East         45         Southern         Mession	- 二日語 - 毎日常語は読むな言語に言語は	М.	F.	M.	F.	М.	F.
Conurbation:         West Midland $\dots$ $54$ $34$ $733$ $317$ $4,293$ $25$ Areas outside conurbation:       Urban areas with populations of 100,000 and over $49$ $28$ $599$ $260$ $3,915$ $32$ Urban areas with populations of $50,000$ and under $100,000$ $60$ $25$ $496$ $268$ $4,023$ $32$ Urban areas with populations under $50,000$ $\dots$ $47$ $38$ $373$ $193$ $2,750$ $25$ GREATER LONDON $\dots$ $47$ $30$ $498$ $234$ $4,596$ $5$ SOUTH OF ENGLAND $\dots$ $47$ $30$ $498$ $234$ $4,596$ $5$ SOUTH OF ENGLAND $\dots$ $42$ $37$ $376$ $226$ $3,171$ $2$ Southern $\dots$ $42$ $37$ $376$ $226$ $3,171$ $2$ Urban areas with populations of $100,000$ and over $\dots$ $48$ $41$ $485$ $318$ $4,174$ $3$ Urban areas with populations under $50,000$ and under $100,000$	ANDS AND FASTERN				des	Q.	
West Midland         54       34       733       317       4,293       2         Areas outside conurbation: Urban areas with populations of 50,000 and over         49       28       599       260       3,915       2         Urban areas with populations of 50,000         49       28       599       260       3,915       2         Urban areas with populations under 50,000          47       38       373       193       2,750       2         GREATER LONDON         47       30       498       234       4,596       2         SOUTH OF ENGLAND Regions: Remainder of South East        47       30       498       234       4,596       2         Southern          23       18       321       194       3,277       2         South Western          42       37       376       226       3,171       2         Urban areas with populations of 100,000 and over          48       41       485       318       4,174       3	urbation				1	- Pro-	
Areas outside conurbation:       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       0.1       <						Prove B	-
Urban areas with populations of 100,000 and over       49       28       599       260       3,915       3         Urban areas with populations under 50,000       60       25       496       268       4,023       3         Rural areas        47       38       373       193       2,750       2         GREATER LONDON        47       30       498       234       4,596       3         SOUTH OF ENGLAND Regions: Remainder of South East        45       32       313       220       3,036       2         Southern         42       37       376       226       3,171       2         Urban areas with populations of 100,000 and over        42       37       376       226       3,171       2         Vrban areas with populations of 100,000 and over        48       41       485       318       4,174       3         Urban areas with populations of 50,000         45       64       560       217       2,560       2         Vrban areas with populations of 100,000 and over        45       64       560       217       2,560       2         Vr		54	34	733	317	4,293	2,619
Urban areas with populations of 100,000 and over       49       28       599       260       3,915       3         Urban areas with populations of 50,000         49       28       599       260       3,915       3         Urban areas with populations under 50,000         60       25       496       268       4,023       3         Rural areas         47       38       373       193       2,750       2         GREATER LONDON         47       30       498       234       4,596       3         SOUTH OF ENGLAND Regions: Remainder of South East        45       32       313       220       3,036       2         Southern         42       37       376       226       3,171       2         Total         42       37       376       226       3,171       2         Urban areas with populations of 100,000 and under 100,000        48       41       485       318       4,174       3         Murban areas with populations of 50,000          45       64       560 <td>as outside conurbation.</td> <td></td> <td>The second</td> <td></td> <td></td> <td>1 2</td> <td></td>	as outside conurbation.		The second			1 2	
100,000 and over       49       28       599       260       3,915       3         Urban areas with populations under 50,000       60       25       496       268       4,023       3         Rural areas         60       25       496       268       4,023       3         Rural areas         47       38       373       193       2,750       5         GREATER LONDON         47       30       498       234       4,596       3         SOUTH OF ENGLAND Regions:        45       32       313       220       3,036       2         Southern         45       32       313       220       3,036       2         Southern         23       18       321       194       3,277       2         South Western         42       37       376       226       3,171       2         Urban areas with populations of 100,000 and over        48       41       485       318       4,174       3         VALES         48       41	rban areas with populations of		a construction			22	
Urban areas with populations of 50,000 and under 100,000       100       250       3,913       2000       3,913       2         Urban areas with populations under 50,000       100,000       60       25       496       268       4,023       3         Rural areas       1100,000       147       38       373       193       2,750       5         GREATER LONDON       1100,000       147       38       373       193       2,750       5         SOUTH OF ENGLAND Regions: Remainder of South East       147       30       498       234       4,596       3         Southern       1100,000       1104       1220       3,036       2       3,237       2       3,203       2         Total       1110       123       18       321       194       3,277       2       3,203       2         Total       1110       123       18       3117       2       3,203       2       3,203       2       2       1,171       2         Urban areas with populations of 100,000 and under 100,000       160       46       388       187       3,196       2         VALES       1139       348       216       2,979       2       3,017	100 000 and arran	10	00	500	000	0.01-	
50,000 and under $100,000$ $60$ $25$ $496$ $268$ $4,023$ $37$ $Vrban$ areas with populations under $56$ $36$ $418$ $217$ $2,804$ $52$ $Rural areas$ $$ $47$ $38$ $373$ $193$ $2,750$ $52$ $GREATER LONDON$ $$ $47$ $30$ $498$ $234$ $4,596$ $33$ $SOUTH$ OF ENGLAND $$ $47$ $30$ $498$ $234$ $4,596$ $33$ $SOUTH$ OF ENGLAND $$ $47$ $30$ $498$ $234$ $4,596$ $33$ $Southern$ $$ $45$ $32$ $313$ $220$ $3,036$ $2$ $Southern$ $$ $45$ $32$ $311$ $210$ $3,277$ $2$ $South Western$ $$ $42$ $37$ $376$ $226$ $3,171$ $2$ $Vrban$ areas with populations of $100,000$ and over $$ $48$ $41$ $485$ $318$ $4,174$ $3$	rban areas with populations of	49	40	099	200	3,915	3,115
Urban areas with populations under 50,000       0.0       0.0       203       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023       4,023	50 000 and under 100 000	60	95	106	000	1 000	0.10
50,000 $566$ $36$ $418$ $217$ $2,804$ $52,750$ $52$ <b>GREATER LONDON</b> $477$ $30$ $498$ $234$ $4,596$ $52$ <b>SOUTH OF ENGLAND</b> $477$ $30$ $498$ $234$ $4,596$ $52$ <b>SOUTH OF ENGLAND</b> $455$ $322$ $313$ $220$ $3,0366$ $22$ Southern $425$ $321$ $194$ $3,277$ $22$ South Western $58$ $58$ $475$ $259$ $3,203$ $22$ Total $42$ $37$ $376$ $226$ $3,171$ $2$ Urban areas with populations of 100,000 and over $48$ $411$ $485$ $318$ $4,174$ $3$ $47000$ $48$ $411$ $485$ $318$ $4,174$ $3$ $47000$ .	rban areas with populations under	00	20	490	208	4,023	3,164
Rural areas         47       38       373       193 $2,002$ 2         GREATER LONDON         47       30       498       234       4,596       3         SOUTH OF ENGLAND Regions: Southern        45       32       313       220       3,036       2         Southern         45       32       313       220       3,036       2         Southern         45       32       313       220       3,036       2         South Western         45       32       313       220       3,036       2         Total         45       32       313       321       194       3,277       2         South Western         42       37       376       226       3,171       2         Urban areas with populations of 100,000 and under 100,000        48       41       485       318       4,174       3         VALES          45       64       560       217       2,560       2	50,000	56	36	410	917	0.004	2.355
GREATER LONDON        47       30       498       234       4,596       3         SOUTH OF ENGLAND Regions: Southern        45       32       313       220       3,036       2         Southern         45       32       313       220       3,036       2         Southern         45       32       313       220       3,036       2         Southern          23       18       321       194       3,277       2         South Western          42       37       376       226       3,171       2         Urban areas with populations of 100,000 and over         48       41       485       318       4,174       3         Urban areas with populations under 50,000          41       39       348       216       2,979       2         VALES              63       65       657       177       2,560       2         Urban areas with populations of 100,000 and over	11701 07000						
SOUTH OF ENGLAND       45       32       313       220       3,036       2         Remainder of South East        45       32       313       220       3,036       2         Southern         23       18       321       194       3,277       2         South Western         58       58       475       259       3,203       2         Total         42       37       376       226       3,171       2         Urban areas with populations of 100,000 and over         48       41       485       318       4,174       3         Urban areas with populations under 50,000          48       41       485       318       4,174       3         WALES          48       41       39       348       216       2,979       2         WALES             63       65       657       177       2,707       2         Urban areas with populations of 100,000 and under 100,000	1110 CEPPENDELONNOR	- C - C	00	010	195	2,100	2,309
SOUTH OF ENGLAND       45       32       313       220       3,036       2         Remainder of South East        45       32       313       220       3,036       2         Southern         23       18       321       194       3,277       2         South Western         58       58       475       259       3,203       2         Total         42       37       376       226       3,171       2         Urban areas with populations of 100,000 and over         48       41       485       318       4,174       3         Urban areas with populations under 50,000         48       41       485       318       4,174       3         WALES          48       41       39       348       216       2,979       2         WALES           63       65       657       177       2,707       2         Urban areas with populations of 100,000 and under 100,000           63       6	TER LONDON					10	
Regions:       45       32       313       220 $3,036$ 22         Southern $\cdots$ $23$ $18$ $321$ $194$ $3,277$ $22$ South Western $\cdots$ $58$ $58$ $475$ $259$ $3,203$ $22$ Total $\cdots$ $42$ $37$ $376$ $226$ $3,171$ $22$ Urban areas with populations of 100,000 and over $\cdots$ $48$ $41$ $485$ $318$ $4,174$ $3$ Urban areas with populations of 50,000 and under 100,000 $60$ $46$ $388$ $187$ $3,196$ $2$ Values $\cdots$ $\cdots$ $41$ $39$ $348$ $216$ $2,979$ $2$ VALES $\cdots$ $\cdots$ $45$ $64$ $560$ $217$ $2,560$ $2$ Urban areas with populations of 100,000 and over $\cdots$ $63$ $65$ $657$ $177$ $2,707$ $2$ Urban areas with populations of 50,000 and under 100,000 $77$ $222$ $597$ $ 4,348$ $1$		47	30	498	234	4,596	3,508
Southern $23$ $18$ $321$ $194$ $3,277$ $22$ South Western $58$ $58$ $475$ $259$ $3,203$ $22$ Total $42$ $37$ $376$ $226$ $3,171$ $22$ Urban areas with populations of 100,000 and over $42$ $37$ $376$ $226$ $3,171$ $2$ Urban areas with populations of 50,000 and under $100,000$ $48$ $41$ $485$ $318$ $4,174$ $3$ Urban areas with populations under 50,000 $41$ $39$ $348$ $216$ $2,979$ $2$ Rural areas $36$ $28$ $344$ $205$ $3,017$ $2$ VALES $45$ $64$ $560$ $217$ $2,560$ $2$ Urban areas with populations of 100,000 and over $63$ $65$ $657$ $177$ $2,707$ $2$ Urban areas with populations of 50,0000	ions:	1.5				10 X 91	
South Western	uthorn	and the second second	and the second se	and a support of the second			2,256
Total        42       37       376       226       3,171       2         Urban areas with populations of 100,000 and over        48       41       485       318       4,174       3         Urban areas with populations of 50,000 and under 100,000         48       41       485       318       4,174       3         Urban areas with populations under 50,000          48       41       485       318       4,174       3         WALES          41       39       348       216       2,979       2         VALES          36       28       344       205       3,017       2         VALES         45       64       560       217       2,560       2         Urban areas with populations of 100,000 and over         63       65       657       177       2,707       2         Urban areas with populations of 50,000 and under 100,000        77       222       597        4,348       1	uth Waston		and the second				2,828
Urban areas with populations of 100,000 and over $\dots$ $\dots$ 48414853184,1743Urban areas with populations of 50,000 and under 100,000 $\dots$ 60463881873,1962Urban areas with populations under 50,000 $\dots$ $\dots$ $\dots$ $\dots$ 41393482162,9792Rural areas $\dots$ $\dots$ $\dots$ $\dots$ $\dots$ 36283442053,0172VALES $\dots$ $\dots$ $\dots$ $\dots$ 45645602172,5602Urban areas with populations of 100,000 and over $\dots$ $\dots$ $\dots$ 63656571772,7072Urban areas with populations of 50,000 and under 100,000 $\dots$ 77222597 $-$ 4,3481		98	58	475	259	3,203	2,435
100,000 and over $48$ $41$ $485$ $318$ $4,174$ $3$ Urban areas with populations of $50,000$ and under $100,000$ $60$ $46$ $388$ $187$ $3,196$ $2$ Urban areas with populations under $50,000$ $41$ $39$ $348$ $216$ $2,979$ $2$ Rural areas $36$ $28$ $344$ $205$ $3,017$ $2$ VALES $45$ $64$ $560$ $217$ $2,560$ $2$ Urban areas with populations of $100,000$ and over $63$ $65$ $657$ $177$ $2,707$ $2$ Urban areas with populations of $50,000$ and under $100,000$ $77$ $222$ $597$ $4,348$ $1$		42	37	376	226	3,171	2,490
Urban areas with populations of 50,000 and under 100,000       10       11       100       313       4,114       3         Urban areas with populations under 50,000        60       46       388       187       3,196       2         Rural areas          41       39       348       216       2,979       2         Rural areas          36       28       344       205       3,017       2         VALES         45       64       560       217       2,560       2         Urban areas with populations of 100,000 and over         63       65       657       177       2,707       2         Urban areas with populations of 50,000 and under 100,000        77       222       597        4,348       1	ban areas with populations of					E. S	
Other areas with populations of 50,000 and under 100,000 $60$ $46$ $388$ $187$ $3,196$ $2$ Urban areas with populations under 50,000 $41$ $39$ $348$ $216$ $2,979$ $2$ Rural areas $36$ $28$ $344$ $205$ $3,017$ $2$ VALES $36$ $28$ $344$ $205$ $3,017$ $2$ Urban areas with populations of 100,000 and over $63$ $65$ $657$ $177$ $2,707$ $2$ Urban areas with populations of 50,000 and under 100,000 $77$ $222$ $597$ $ 4,348$ $1$	100,000 and over	48	41	485	318	4.174	3.425
Urban areas with populations under       10       10       101       5,150       2         Solo       101       5,150       2       3,150       2         Rural areas         36       28       348       216       2,979       2         VALES         36       28       344       205       3,017       2         VALES         45       64       560       217       2,560       2         Urban areas with populations of 100,000 and over         63       65       657       177       2,707       2         Urban areas with populations of 50,000 and under 100,000        77       222       597        4,348       1	ban areas with populations of			and the second s		and a second	0,120
Urban areas with populations under       41       39       348       216       2,979       2         Rural areas         36       28       344       205       3,017       2         VALES         45       64       560       217       2,560       2         Urban areas with populations of 100,000 and over        63       65       657       177       2,707       2         Urban areas with populations of 50,000 and under 100,000        77       222       597        4,348       1	50,000 and under 100,000	60	46	388	187	3,196	2.536
Rural areas $\dots$ $\dots$ $41$ $39$ $348$ $216$ $2,979$ $2$ WALES $\dots$ $\dots$ $36$ $28$ $344$ $205$ $3,017$ $2$ VALES $\dots$ $45$ $64$ $560$ $217$ $2,560$ $2$ Urban areas with populations of 100,000 and over $\dots$ $63$ $65$ $657$ $177$ $2,707$ $2$ Urban areas with populations of 50,000 and under $100,000$ $$ $77$ $222$ $597$ $ 4,348$ $1$				Sec. 1			_,
VALES $\dots$ $\dots$ $30$ $23$ $344$ $205$ $3,017$ $2$ VALES $\dots$ $\dots$ $45$ $64$ $560$ $217$ $2,560$ $2$ Urban areas with populations of 100,000 and over $\dots$ $63$ $65$ $657$ $177$ $2,707$ $2$ Urban areas with populations of $50,000$ and under $100,000$ $\dots$ $77$ $222$ $597$ $ 4,348$ $1$		1 ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) (	39	348	216	2,979	2,250
Urban areas with populations of 100,000 and over $\cdot$	iral areas	36	28	344	205	3,017	2,291
Urban areas with populations of 100,000 and over $\cdot$		223			17 <b>4</b> .	100 M	
Urban areas with populations of 100,000 and over       63       65       657       177       2,707       2         Urban areas with populations of 50,000 and under 100,000        77       222       597        4,348       1	s	45	64	560	917	9 560	9 000
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		10	01	000	211	2,000	2,000
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	ban areas with populations of	10.00.00	and allowed			and a start	
Urban areas with populations of 50,000 and under 100,000 77 222 597 — 4,348 1 Urban areas with populations under	100,000 and over	63	65	657	177	9 707	2,615
50,000 and under 100,000 77 222 597 — 4,348 1 Urban areas with populations under	ban areas with populations of					2,101	2,015
Urban areas with populations under	50,000 and under 100 000	77	222	597		4 348	1,714
	ban areas with populations under					1,010	1,/14
	50,000	44	68	659	243	2,613	1.662
							2,000

					1		Males	N Col									F	emales	1,44 - <u>1</u>				
Yea	r	0-	1-	5-	15-	25-	35-	45-	55-	65-	75 and over	C.M.I. (all ages)	0-	1-	5-	15-	25-	35-	45-	55-	65-	75 and over	C.M.I. (all ages)
										-	1	Acute B	ronchiti	S									
1931          1932          1933          1934          1935          1936          1937          1938          1939          1939          1940          1941          1942          1943          1944          1945          1946          1947          1948          1949		$\begin{array}{c} 2,210\\ 1,834\\ 1,521\\ 1,504\\ 1,287\\ 1,332\\ 1,473\\ 1,172\\ 951\\ 1,892\\ 2,114\\ 1,202\\ 1,293\\ 1,091\\ 1,099\\ 1,008\\ 738\\ 689\\ 477\end{array}$	$\begin{array}{c} 147\\ 103\\ 98\\ 95\\ 70\\ 82\\ 85\\ 72\\ 65\\ 131\\ 115\\ 78\\ 70\\ 44\\ 55\\ 45\\ 45\\ 45\\ 45\\ 36\\ 22\\ \end{array}$	8 5 4 6 2 5 11 9 8 7 6 4 4 4 5 2	7252334349453444434	$\begin{array}{c} 7 \\ 4 \\ 5 \\ 3 \\ 5 \\ 5 \\ 5 \\ 4 \\ 3 \\ 17 \\ 7 \\ 10 \\ 7 \\ 6 \\ 6 \\ 6 \\ 6 \\ 6 \\ 4 \\ 5 \end{array}$	24 20 25 16 14 16 12 10 13 56 27 26 23 19 19 20 15 9 11	76 41 75 52 41 57 59 34 45 216 107 102 99 88 84 76 87 46 53	$159 \\ 117 \\ 153 \\ 109 \\ 91 \\ 138 \\ 143 \\ 102 \\ 103 \\ 539 \\ 322 \\ 294 \\ 310 \\ 259 \\ 273 \\ 232 \\ 272 \\ 169 \\ 197 \\ 197 \\ 197 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\$	$\begin{array}{c} 611\\ 463\\ 481\\ 380\\ 356\\ 431\\ 413\\ 268\\ 326\\ 1,159\\ 721\\ 668\\ 764\\ 593\\ 652\\ 535\\ 574\\ 423\\ 523\\ \end{array}$	$\begin{array}{c} 2,798\\ 2,102\\ 2,513\\ 1,780\\ 1,567\\ 1,833\\ 1,861\\ 1,347\\ 1,684\\ 3,912\\ 2,757\\ 2,284\\ 2,877\\ 1,933\\ 2,023\\ 1,920\\ 2,458\\ 1,311\\ 1,860\\ \end{array}$	$\begin{array}{c} \\ \\ \\ \\ \\ \\ \\$	$\begin{array}{c} 1,757\\ 1,399\\ 1,182\\ 1,081\\ 1,069\\ 1,021\\ 1,133\\ 828\\ 914\\ 1,373\\ 1,683\\ 941\\ 1,079\\ 896\\ 901\\ 657\\ 546\\ 493\\ 410\\ \end{array}$	$137 \\ 115 \\ 104 \\ 97 \\ 67 \\ 74 \\ 63 \\ 46 \\ 63 \\ 98 \\ 105 \\ 56 \\ 62 \\ 51 \\ 47 \\ 38 \\ 30 \\ 29 \\ 19 \\ 19$	75854834486555434434	5343332316564345325	7 7 5 4 5 5 5 4 11 10 8 8 6 4 7 3 1 4	$     18 \\     13 \\     12 \\     8 \\     11 \\     15 \\     7 \\     8 \\     28 \\     19 \\     11 \\     22 \\     11 \\     16 \\     12 \\     13 \\     8 \\     10 \\     $	$\begin{array}{r} 43\\ 37\\ 46\\ 22\\ 27\\ 23\\ 32\\ 18\\ 22\\ 101\\ 59\\ 35\\ 47\\ 33\\ 34\\ 25\\ 34\\ 20\\ 26\\ \end{array}$	$\begin{array}{c} 140\\ 102\\ 129\\ 82\\ 79\\ 95\\ 97\\ 49\\ 69\\ 304\\ 172\\ 130\\ 172\\ 101\\ 128\\ 104\\ 135\\ 60\\ 87\\ \end{array}$	$\begin{array}{c} 740\\ 495\\ 526\\ 434\\ 362\\ 411\\ 424\\ 262\\ 323\\ 1,103\\ 744\\ 521\\ 663\\ 423\\ 482\\ 425\\ 440\\ 259\\ 386\\ \end{array}$	3,515 2,643 3,088 2,062 1,851 1,935 2,321 1,484 4,329 3,273 2,223 3,071 1,852 2,172 2,105 2,322 1,329 1,951	
1949* 1950* 1951*		467 541 540	19 25 28	2 4 4	4 1 2	5 4 4	11 6 8	52 30 46	197 97 164	512 346 520	1,834 1,505 2,257	0.81 0.60 0.87	399 367 427	19 23 31	4 2 3	4 3 3	4 5 3	10 11 7	25 17 19	88 61 87	384 269 423	1,943 1,635 2,328	0.77 0.62 0.87

 Table CIX.—Bronchitis : Death rates per million living by sex and age and Comparative Mortality Indices, 1931 to 1951

 (Excluding non-civilians, 1939 to 1949)

The second second second		Service and the service of	1	1		1. Surface and the second	-					Charles and Coldina					
5- 15- 25-	35-	45-	55-	65-	75 and over	C.M.I. (all ages)	0-	1-	5-	15-	25-	35-	45-	55-	65–	75 and over	C.M.I. (all ages)
	5- 15- 25-	5- 15- 25- 35-	5- 15- 25- 35- 45-	5- 15- 25- 35- 45- 55-	5- 15- 25- 35- 45- 55- 65-				5- 15- 25- 35- 45- 55- 65- and (all o- 1- over ages) 0- 1-								

1931          1932          1933          1934          1935          1936          1938          1939          1939          1940          1941          1942          1943          1944          1945          1945          1946          1947          1948          1949	$\begin{array}{c} 26\\ 33\\ 14\\ 18\\ 14\\ 27\\ 34\\ 23\\ 26\\ 61\\ 39\\ 56\\ 36\\ 28\\ 311\\ 25\\ 22\\ 20\\ 13\\ \end{array}$	12 16 11 12 8 8 10 13 6 16 27 18 18 18 18 15 8 9 15 7 7	5666846759887687583	12 16 14 16 19 18 19 16 21 27 20 20 20 20 20 19 16 15 11 11 12	26           19           27           20           26           18           21           31           22           48           38           36           40           37           33           32           28           24           21	91 82 78 56 79 60 69 45 61 156 119 105 108 100 101 98 93 75 82	248 210 249 220 217 250 255 196 236 737 520 449 492 441 488 461 495 414 470	527 431 478 470 408 522 543 433 552 1,970 1,446 1,255 1,351 1,411 1,527 1,526 1,690 1,462 1,686	$\begin{array}{c} 1,490\\ 1,244\\ 1,235\\ 1,120\\ 1,048\\ 1,161\\ 1,136\\ 929\\ 1,067\\ 3,642\\ 2,762\\ 2,314\\ 2,495\\ 2,798\\ 2,798\\ 2,729\\ 3,157\\ 2,991\\ 3,419\\ \end{array}$	4,820 3,934 3,873 3,274 3,333 3,590 3,279 2,809 3,075 9,616 7,638 5,998 6,521 5,778 5,747 5,713 6,786 5,410 6,245	$\begin{array}{c} \\ \\ \\ \\ \\ \\ \\$	27 27 14 15 7 18 18 10 14 42 22 21 22 21 5 21 12 14 16 11	3 9 9 9 11 8 6 8 6 20 17 12 13 7 12 10 11 14 7	6 4 4 5 5 5 6 6 10 5 6 4 6 5 7 9 5 5	11 8 11 9 13 11 10 11 13 21 17 18 14 13 12 13 10 13 12	11 14 13 15 12 14 14 14 13 12 26 15 18 22 23 19 18 19 17 15	20 22 27 23 28 23 28 23 18 25 55 42 35 46 39 39 41 47 37 39	$\begin{array}{c} 70\\ 60\\ 75\\ 47\\ 44\\ 58\\ 61\\ 45\\ 53\\ 163\\ 123\\ 95\\ 113\\ 110\\ 123\\ 103\\ 123\\ 94\\ 112\\ \end{array}$	242 195 208 164 152 176 189 121 161 629 394 281 337 299 367 336 329 278 363	952 720 688 635 538 621 578 412 474 1,927 1,368 1,026 1,145 1,009 1,16 1,034 1,120 880 1,192	3,219 2,664 2,579 2,094 1,926 2,072 1,958 1,505 1,803 6,490 4,985 3,555 3,983 3,360 3,413 3,295 3,465 2,822 3,516	
1949*	11	1	2	3	8	61	413	1,618	3,362	6,563	$1.31 \\ 1.36 \\ 1.74$	3	2	1	2	6	22	92	324	1,146	3,705	1.06
1950*	39	26	2	3	8	62	426	1,727	3,634	6,938		18	1	0	3	5	22	79	325	1,141	3,787	1.02
1951*	43	4	2	3	10	79	538	2,172	4,736	9,023		24	3	1	2	8	28	108	465	1,441	4,802	1.32

# Table CIX.—continued.

1020s	33	20	1	12 80	8	Males	till	1.013	2,488.	0 0.00 0'1'93	1-30			10	3	F	emales	19 19 20	and Art.	1141	1307	1-02
Year	0-	1-	5	15-	25-	35-	45-	55-	65-	75 and over	C.M.I. (All ages)	0-	1-	5-	15-	25-	35-	45-	55	65-	75 and over	C.M.I. (All ages)
1841 ··· ··· ··· ··· ··· ··· ··· ··· ··· ·		10		30 10		105	101		51578 51578 51578 -11658	Bron	chitis (	Unqualif	led			10 10	91 30 38			Tost	2020 C	1963 1963
1931          1932          1933          1934          1935          1936          1937          1938          1939          1934          1935          1936          1937          1938          1940          1941          1942          1943          1944          1945          1946          1947          1948          1949	$\begin{array}{c} 2,026\\ 1,639\\ 1,362\\ 1,110\\ 1,038\\ 1,096\\ 929\\ 710\\ 628\\ 1,215\\ 1,536\\ 828\\ 835\\ 680\\ 630\\ 458\\ 327\\ 226\\ 288\\ \end{array}$	$125 \\ 88 \\ 73 \\ 60 \\ 44 \\ 38 \\ 44 \\ 31 \\ 34 \\ 92 \\ 68 \\ 29 \\ 36 \\ 30 \\ 18 \\ 16 \\ 18 \\ 16 \\ 8 \\ 8 \\ 8 \\ 8 \\ 8 \\ 8 \\ 8 \\ 8 \\ 16 \\ 8 \\ 8 \\ 8 \\ 8 \\ 8 \\ 8 \\ 8 \\ 8 \\ 8 \\ $	5 4 5 3 3 3 3 4 2 3 5 3 4 2 3 5 3 4 2 3 1 1 1 1	4 2 4 4 3 2 2 2 1 6 5 2 2 2 3 1 2 3 2	10 11 7 4 3 7 5 0 5 12 5 6 4 4 3 3 5 2 2	34 25 28 18 17 21 18 11 14 47 29 20 19 15 16 14 11 7 8	$127 \\ 81 \\ 110 \\ 76 \\ 68 \\ 91 \\ 82 \\ 54 \\ 63 \\ 208 \\ 121 \\ 88 \\ 108 \\ 85 \\ 84 \\ 68 \\ 63 \\ 46 \\ 40 \\ -$	277 203 225 188 165 198 169 146 167 592 397 296 302 265 281 246 246 185 206	$\begin{array}{c} 1,233\\ 827\\ 827\\ 642\\ 557\\ 562\\ 554\\ 399\\ 412\\ 1,210\\ 856\\ 655\\ 681\\ 598\\ 601\\ 501\\ 531\\ 420\\ 505\\ \end{array}$	$\begin{array}{c} 6,120\\ 4,985\\ 4,611\\ 3,534\\ 3,220\\ 3,345\\ 3,158\\ 2,181\\ 2,172\\ 3,518\\ 2,314\\ 1,941\\ 1,987\\ 1,649\\ 1,834\\ 1,631\\ 1,857\\ 1,252\\ 1,505\\ \end{array}$		$\begin{array}{c} 1,497\\ 1,460\\ 1,107\\ 777\\ 823\\ 690\\ 684\\ 522\\ 491\\ 845\\ 1,108\\ 566\\ 513\\ 464\\ 437\\ 331\\ 296\\ 217\\ 191\\ \end{array}$	95 84 71 67 57 42 40 36 41 77 50 27 38 23 18 14 21 8 7	5 6 4 1 3 4 3 2 3 2 2 2 1 2 1 2 1 2 1 1	5 3 4 6 2 2 2 3 1 5 6 1 1 3 3 2 1 2 1	6 4 6 6 3 2 3 3 3 10 5 4 3 5 5 6 3 2 1	$ \begin{array}{c} 14\\ 11\\ 16\\ 10\\ 10\\ 12\\ 8\\ 4\\ 6\\ 26\\ 10\\ 11\\ 12\\ 9\\ 8\\ 7\\ 6\\ 5\\ 5\\ 5\\ 5\\ 5\\ 5\\ 5\\ 5\\ 5\\ 5\\ 5\\ 5\\ 5\\$	49 33 35 30 24 24 27 16 15 65 47 39 33 29 22 24 21 13 18	197 129 136 91 85 89 94 50 61 258 141 107 107 87 107 83 80 55 69	$1,021 \\ 687 \\ 701 \\ 520 \\ 421 \\ 431 \\ 439 \\ 253 \\ 294 \\ 939 \\ 571 \\ 389 \\ 501 \\ 360 \\ 358 \\ 307 \\ 329 \\ 209 \\ 270 \\ 270 \\ 209 \\ 270 \\ 329 \\ 209 \\ 270 \\ 329 \\ 209 \\ 270 \\ 329 \\ 209 \\ 270 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 330 \\ 33$	$\begin{array}{c} 6,371\\ 4,825\\ 4,753\\ 3,252\\ 2,760\\ 2,980\\ 2,860\\ 1,894\\ 2,109\\ 3,234\\ 2,347\\ 1,538\\ 1,908\\ 1,436\\ 1,435\\ 1,428\\ 1,428\\ 1,428\\ 1,428\\ 1,254\\ \end{array}$	
1949* 1950* 1951*	216	9 13 14	1 2 0	2 0 0	2 1 1	5 4 5	26 18 28	147 98 129	396 316 387	1,137 933 1,153		171 182 152	7 10 7	1 2 0	1 0 1	2 1 2	4 2 6	14 11 15	61 45 57	249 172 242	1,025 775 1,023	

\*According to the 6th Revision of the International Classification. Other years according to the classification in use at the time.

# DISEASES OF THE CIRCULATORY SYSTEM

#### **Statistical Classification**

The classification of diseases of the circulatory system, that was adopted at the Sixth Revision (1948) of the International Statistical Classification, and brought into use in this country in 1950, has introduced a number of important changes from the classification used previously. As for other causes of death a dual tabulation in 1949 of deaths from circulatory causes, classified by both the Fifth and Sixth Revisions, has permitted comparison between the two classifications, and indicates the changes recently introduced, (Table CX, page 221). In their totality these resulted, in 1949, in the transfer to one or another of the rubrics in the circulatory diseases section of some 4,000 deaths previously assigned to other causes, an increase of 2.3 per cent. This increase is accounted for by the inclusion now within this section of a number of diseases previously classified elsewhere, including rheumatic fever (without heart involvement No. 400; with heart involvement No. 401; chorea No. 402), aortic aneurysm specified as non-syphilitic (No. 451), hypertensive or arteriosclerotic nephritis (Nos. 442, 446) and pulmonary embolism (No. 465). Several other items within the section, though possessing similar titles in the Fifth and Sixth Revisions have been allocated widely different numbers of deaths; e.g. Sixth Revision Nos. 440-447 (hypertension) were assigned almost 17,000 deaths whereas Fifth Revision No. 102 (high blood pressure) was assigned little over 6,000 deaths.

#### Mortality Trends

The considerable revision that the disease entities within this section have undergone has introduced problems in presenting uniformly comparable series of mortality statistics for some of these cardio-vascular causes for the years before and following the introduction of the new classification. With the assistance of the World Health Organization Centre for Classification of Diseases it was possible, on the basis of the dual tabulation in 1949, supplemented by additional research, to adjust the deaths tabulated during 1940–48 according to the Fifth Revision to provide estimates of the numbers that would have been assigned to the various rubrics of the Sixth Revision, and crude annual death rates in 1940–51 from various cardio-vascular causes classified in accordance with the Sixth Revision are shown in Table CXI (page 222). For actual numbers of deaths and fuller details of causes reference should be made to Tables 7 and 8 of Part I (1951).

In each sex, mortality from active rheumatic fever has declined rapidly since 1945. Improvement in respect of chronic rheumatic heart disease, of which well over half the cases involved the mitral valve, was much less for males and practically absent for females. The rates in Table CXI are for deaths at all ages ; there has been a much greater reduction in mortality at younger than at older ages. For example the percentage reduction at ages under and over 35 between 1941 and 1949 from Fifth Revision No. 92, chronic affections of the valves and endocardium (corresponding approximately to Nos. 410–416, 421 of the current classification) were :

		board	Males	Females
Under 35	logd	 ad.	34	42
35 and over		 	24	14

Mortality from "arteriosclerotic heart disease" has recorded a large and continuing increase during the past few decades. Deaths assigned to this cause comprise those with mention of coronary disease or myocardial infarction (No. 420.1); angina pectoris (No. 420.2); or described simply as arterio-sclerotic heart disease (No. 420.0). In 1951, 97.1 per cent of the deaths assigned to the group belonged to the first category, 2.3 per cent to the second and 0.6 per cent to the third. The steep rise in diseases of the coronary arteries as a certified cause of death in this and other Western countries has provoked much speculation as to its cause. That there has been a change in certification habits cannot be denied, and many deaths nowadays certified as due to coronary disease or its synonyms would formerly have been described by other terms. There is evidence too of a tendency at times to mention coronary disease as a terminal development during the course of other illnesses or to use the term occasionally as a more "precise" description of the cause of death of elderly persons dying apparently from nothing more definite than senile cardiac failure. But the possibility that some, or even much, of the recorded increase in mortality from this disease is nomenclatural does not exclude the possibility that this nomenclatural increase conceals, and perhaps has originated from, a real increase in the incidence of the disease, the true magnitude of which must remain uncertain. It is doubtful whether a study confined solely to the available vital statistics can throw much light on this point ; it seems rather that we must try to determine the factors responsible for the occurrence of the disease at the present time-among which mental stress, diet, and lack of physical activity have come under suspicion-and judge whether the varying influence of the causative factor or factors can have produced a rising incidence of the disease. The problem is made more difficult by the present unsatisfactory and confused state of terminology ; heart diseases described in terms such as coronary, myocardial, degenerative, ischæmic, arteriosclerotic, hypertensive, or senile, are frequently mentioned on death certificates, but it is evident that the same descriptions, though not used indiscriminately by the individual certifiers, are often intended to convey different meanings when used by different certifiers. The proportion of deaths ascribed to cardiovascular causes is becoming increasingly large and it is becoming more and more urgent to clarify the nomenclature of these diseases in order that the mortality trends can be properly analysed and those cardiac conditions responsible for premature and preventable deaths distinguished from those, if there are such, that are the inevitable concomitants of old age.

Mortality from chronic endocarditis not specified as rheumatic has undergone a considerable reduction in recent years. In 1951 about two thirds (1,486) of the deaths assigned to this group involved the aortic valve, the proportion being higher for men than for women. Of the remainder the majority did not incriminate any particular valve, only 36 deaths being assigned to the mitral and 5 each to the tricuspid and pulmonary valves respectively. In accordance with the Classification, deaths attributed to mitral valve disease not specifically described as non-rheumatic are assigned to the rheumatic group (No. 410).

The death rate from "other myocardial degeneration" (No. 422), still the largest constituent of the circulatory diseases section, has shown some recent tendency to decline amongst men but has remained steady amongst women. In each sex the deaths in 1951 were somewhat augmented by the influenza epidemic that occurred at the beginning of the year. It has been frequently observed that during influenza epidemics the mortality attributed on death certificates to a number of other diseases, especially the cardiovascular and respiratory diseases, is much increased (see page 206). This is illustrated in the following table which compares the number of deaths occurring in the month of January, 1950 and 1951.

ages 15-24 chronic theumatic heart disease	January 1950	January 1951	Increase
Influenza (480–483)	. 416	8,982	8,566
Arteriosclerotic Heart Disease (420)	. 5,291	6,738	1.447
Myocardial Degeneration (422)	. 7,879	13,470	5,591
Pneumonia (490–493)	. 2,250	5,698	3,448
Bronchitis (500–502)	0.01-	10,823	6.978

Mortality from acute and subacute endocarditis (No. 430), consisting in this country chiefly of subacute bacterial endocarditis, has fallen rapidly since about 1945 when antibiotic therapy began. In each sex the death rate in 1951 was about one third of that prevailing ten years earlier.

Although deaths now assigned to hypertensive diseases (Nos. 440–447) include many that were previously classified to a variety of cardiovascular and renal conditions, the reconstructed rates shown for 1940 to 1948 are probably comparable with those for 1949 to 1951, and indicate that in each sex there has been a steady increase in the number of deaths assigned to the group throughout this period. On the other hand the death rate from general arteriosclerosis has remained level for males but has latterly increased amongst females ; and a similar trend is given by the mortality from cerebral vascular diseases (Nos. 330–334) which, though not classified as circulatory diseases, have been appended to Table CXI for comparison.

Mortality assigned to pulmonary embolism and infarction has more than doubled in each sex since 1945. The tabulation of deaths from these conditions is at present somewhat unsatisfactory since assignment is ordinarily made to the underlying disease (or reason for operation in post-operative cases), if this can be ascertained. The deaths actually assigned to pulmonary embolism are therefore only those where no further details were available about the origin of the condition.

Taking the section of diseases of the circulatory system as a whole, (Nos. 400–468), and discounting, so far as possible, fluctuations between one year and another, there has been a tendency for the crude rates for each sex to rise during the last five years or so from the low levels recorded during 1942–46, and this tendency is confirmed after allowance is made for age changes in the population. Three-year moving averages of the Comparative Mortality Indices for successive years are shown in the following table (1938 = 1.00):—

North of England	a the l	i viner i	Male	Female	
1940-42	bation	unios	1.03	1.01	
1941-43			0.97	0.93	
1942-44			0.96	0.91	
1943-45	deewo.	Sit P	0.96	0.91	
1944-46	1	and the	0.97	0.91	alter attes
1945-47			1.00	0.94	
1946-48			1.00	0.93	
1947-49	0 1917 0	0.9071	1.03	0.96	
1948-50	anw s	8.6.77.0.5	1.04	0.97	
1949-51			1.11	1.03	
		autodo		in investig	

#### Sex and Age Distribution

Table CXII (page 223) gives numbers of deaths in 1951 from several circulatory diseases by sex and age with rates per million population and per 100 deaths from all circulatory diseases.

At ages under 15 rheumatic fever was the principal cardiovascular cause of death in each sex, but by ages 15–24 chronic rheumatic heart disease predominated and was responsible for more than half of the deaths from cardiovascular causes. At every age the death rate from chronic rheumatic heart disease was higher amongst females than amongst males, a sequel to the higher incidence of rheumatic fever amongst girls than boys. At ages 25–44 the distribution of causes differed markedly in the two sexes, with arteriosclerotic (coronary) disease assuming a major role for men but with chronic rheumatic heart disease continuing as a principal cause of cardiovascular deaths amongst women. Though becoming proportionately less important thereafter in each sex, the death rates from rheumatic heart disease continued to increase with advancing age, in this respect resembling each of the other causes in Table CXII except rheumatic fever.

Amongst men arteriosclerotic (coronary) disease occupied the principal position in each age group from 25 to 75 years but thereafter non-rheumatic valvular and myocardial degenerative conditions became the most frequently certified causes. Amongst women the death rates assigned to these two large groups of causes were lower than for men; at ages 45-64 more deaths were reported due to coronary than to valvular and myocardial diseases but at 65-74, and still more at ages 75 and over, as for men, the latter group predominated to the extent of many thousands of deaths.

At each adult age the death rates from hypertensive disease, with or without mention of heart, were much higher amongst men than women, a somewhat different sex relationship from that presented by cerebral cardiovascular disease, mortality from which showed practically no difference between the sexes at ages 25–64 and only a small male excess at higher ages.

#### **Geographical Distribution**

Table CXIII (page 224) compares the death rates from certain cardiovascular causes of men and women aged 55–74 living in different degrees of urbanization in different parts of England and Wales.

Chronic valvular disease, rheumatic or other, gave consistent rates in most areas, with a tendency towards higher mortality in Wales than elsewhere and a pronounced difference between the rates for women in the South East Lancashire conurbation (Manchester area) and the Merseyside conurbation (Liverpool area).

Mortality from arteriosclerotic (coronary) disease was less in the aggregated rural districts than in towns. Rates were higher in the North of England than in the Midlands and South of England, particularly in the Tyneside conurbation (Newcastle area) and the West Yorkshire conurbation (Leeds and Bradford area).

The conurbations and the rural areas gave the lowest rates from myocardial degeneration, the low figure for the conurbations resulting from the low rate for the Greater London conurbation which comprises about half of the aggregated conurbations' population. Several of the other conurbations gave rates considerably above the average for the country as a whole.

Death rates from hypertension were much higher in the conurbations and other large urban areas than in rural districts; regions with lowest rates were the Eastern and Southern.

High mortality from cerebral vascular disease was recorded in the northern conurbations, the rate in these areas contrasting with the low rate for Greater London, a rate that was even lower than in the aggregated rural districts.

· .	5th Revision			1.256	6th Revision		
No.	100-468 Discusses of the circulatory system Comparative Montality Index		ber of aths	1001 1001	4,198 4,429 4,437 4,111 4,520 5,579 4,335 8,323 3,337 3,465 3,370 5,780 8,522 4,968 0.96 0.97 0.97 1.97	A CONTRACTOR OF THE OWNER OWNE	ber of aths
INU.	Title	Male	Female	No.	Title	Male	Female
90–103	Diseases of the circulatory system	86,906	89,611	400-468	Diseases of the circulatory system	89,013	91,608
2 90 91 92 93 94 95 96 97 98 99 100 101 102 103	Pericarditis Acute endocarditis Acute endocarditis Acute endocarditis Acute endocarditis Acute endocarditis Acute endocarditis of the valves and endocardium Diseases of the myocardium Acute endocardium Arteriosclerosis of the heart Arteriosclerosis (excluding coronary or renal sclerosis or cerebral hæmorrhage) Gangrene	194 243 5,850 40,547 27,555 1,874 180 6,573 206 234 398 18 3,022 12	128 210 7,946 51,836 15,367 2,509 215 7,090 203 204 690 16 3,179 18	$\begin{array}{r} 400-402\\ 410-416\\ 420\\ 421\\ 422\\ 430\\ 431; 432\\ 433\\ 434\\ 440-443\\ 440-443\\ 444-447\\ 450\\ 451; 452\\ 453-456\\ 460-464\\ 465\\ 466-468\\ \end{array}$	Rheumatic fever	$\begin{array}{r} 312\\ 3,733\\ 29,902\\ 2,313\\ 35,554\\ 255\\ 115\\ 1,130\\ 943\\ 4,166\\ 3,845\\ 5,325\\ 355\\ 355\\ 360\\ 253\\ 284\\ 168\\ \end{array}$	$\begin{array}{r} 391\\ 6,075\\ 17,226\\ 2,142\\ 46,646\\ 215\\ 153\\ 1,733\\ 873\\ 4,660\\ 4,086\\ 5,617\\ 403\\ 340\\ 492\\ 312\\ 244\\ \end{array}$

# Table CX.—Diseases of the circulatory system : Deaths in 1949 classified according to the 5th and 6th Revisions of the International Statistical Classification

Abbre- viated List No.	Detailed List No.	and the fund and other	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951
B 24 B 25 B 26 B 26 B 27 B 28, 29 B 46 Pt.	400-402 410-416 420 421 422 430 431-434 440-447 450	Rheumatic fever	$\begin{array}{c} 28\\ 34\\ 254\\ 336\\ 808\\ 874\\ 228\\ 191\\ 2,039\\ 2,076\\ 27\\ 21\\ 161\\ 167\\ 316\\ 256\\ 275\\ 208\\ 208\\ 2\\ 208\\ 2\\ 2\\ 2\\ 2\\ 2\\ 2\\ 2\\ 2\\ 2\\ 2\\ 2\\ 2\\ 2\\$	$\begin{array}{c} 26\\ 26\\ 259\\ 307\\ 805\\ 348\\ 213\\ 165\\ 1,931\\ 1,817\\ 27\\ 22\\ 143\\ 143\\ 314\\ 237\\ 263\\ 190\\ 7\end{array}$	$\begin{array}{c} 23\\ 24\\ 252\\ 290\\ 850\\ 365\\ 203\\ 156\\ 1,864\\ 1,715\\ 27\\ 24\\ 133\\ 124\\ 133\\ 124\\ 316\\ 237\\ 263\\ 189\\ e\end{array}$	$\begin{array}{c} 25\\ 29\\ 241\\ 294\\ 954\\ 396\\ 202\\ 150\\ 1,950\\ 1,802\\ 28\\ 23\\ 127\\ 119\\ 338\\ 253\\ 272\\ 196\\ 7\end{array}$	$\begin{array}{c} 28\\ 26\\ 260\\ 290\\ 1,065\\ 425\\ 200\\ 148\\ 2,020\\ 1,798\\ 25\\ 20\\ 123\\ 115\\ 354\\ 260\\ 285\\ 194\\ 10\end{array}$	$\begin{array}{c} 25\\ 24\\ 246\\ 286\\ 1,137\\ 466\\ 182\\ 138\\ 2,004\\ 1,881\\ 21\\ 15\\ 119\\ 119\\ 358\\ 269\\ 279\\ 207\\ 7\end{array}$	$\begin{array}{c} 19\\ 19\\ 208\\ 272\\ 1,129\\ 522\\ 150\\ 123\\ 1,821\\ 1,921\\ 1,921\\ 16\\ 16\\ 13\\ 104\\ 117\\ 348\\ 293\\ 264\\ 224\\ 9\end{array}$	$18 \\ 19 \\ 203 \\ 272 \\ 1,245 \\ 586 \\ 132 \\ 114 \\ 1,890 \\ 2,026 \\ 16 \\ 11 \\ 103 \\ 120 \\ 375 \\ 331 \\ 279 \\ 235 \\ 11 \\ 11$	$18 \\ 20 \\ 181 \\ 257 \\ 1,264 \\ 652 \\ 106 \\ 97 \\ 1,559 \\ 1,772 \\ 14 \\ 10 \\ 86 \\ 109 \\ 351 \\ 324 \\ 239 \\ 214 \\ 11$	15 17 181 270 1,453 765 112 95 1,728 2,071 12 10 107 122 389 388 259 249 14	$\begin{array}{c} 12\\ 14\\ 201\\ 306\\ 1,640\\ 885\\ 72\\ 54\\ 1,555\\ 1,965\\ 11\\ 7\\ 111\\ 128\\ 445\\ 4452\\ 269\\ 260\\ 15\end{array}$	8 9 194 298 1,756 938 62 45 1,648 2,084 10 7 149 158 476 480 287 280 16
B 22	465 Rem. of 451-468 400-468 330-334	Pulmonary embolism and infarction $\begin{cases} M. \\ F. \\ \\ \\ M. \\ \\ M. \\ F. \\ \\ \\ \\ \end{cases}$ Diseases of the circulatory system $\begin{cases} M. \\ F. \\ \\ F. \\ \\ \\ M. \\ F. \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\$	6 7 62 64 <b>4,204</b> <b>3,735</b> <i>1.13</i> <i>1.13</i> <b>1,268</b> <b>1,326</b>	7 57 57 57 4,046 3,319 1.01 0.98 1,228 1,262	6 6 54 53 3,991 3,183 0.95 0.91 1,258 1,281	7 6 53 56 4,195 3,322 0.95 0.91 1,290 1,307	10 6 59 55 4,429 3,337 0.97 0.90 1,365 1,344	7 60 54 4,437 3,465 0.96 0.91 1,381 1,374	9 9 58 56 4,121 3,570 0.98 0.93 1,249 1,440	11 10 49 58 4,320 3,780 1.06 0.97 1,284 1,524	11 10 50 58 3,879 3,522 0.97 0.89 1,125 1,413	14 14 54 65 4,325 4,068 1.07 1.01 1,228 1,544	15 47 59 4,378 4,143 1.09 1.01 1,284 1,656	14 45 53 4,651 4,366 1.16 1,378 1,734

Table CXI.—Diseases of the circulatory system and vascular lesions affecting the central nervous system : Death rates per million living, by sex, 1940 to 1951

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# Table CXII.—Diseases of the circulatory system and vascular lesions affecting the central nervous system : Deaths and death rates per million living, and per 100 deaths from all circulatory diseases, by sex and age, 1951

Abbre- viated List No.	Cause of death	0-	15-	25-	45-	65-	75 and over	All ages
		1997		St.	Male	S	A ST	and a second sec
B 24	Rheumatic fever {Deaths Rates Per cent	36 7·2 33·3	29 10·6 <i>14</i> ·1	42 6·5 1·7	44 8·9 0·2	8.1	3.3	
В 25	Chronic rheumatic heart disease {Deaths Rates Per cent	29 5·8 26·9	$     \begin{array}{r}       106 \\       38 \cdot 9 \\       51 \cdot 7     \end{array}   $	724 112 28·8	1,518 307 6·8	720	1,189	4,076 194 4·2
B 26	$\left \begin{array}{c} \text{Arteriosclerotic heart disease} \\ \text{Rates} \\ \text{Per cent} \end{array}\right $	4 0.80 3.7	$ \begin{array}{c c} 10 \\ 3.7 \\ 4.9 \end{array} $	1,052 163 $42 \cdot 0$	$\begin{array}{c c} 13,139 \\ 2,660 \\ 59 \cdot 0 \end{array}$	9,803	15,563	36,965 1,756 37·7
	Degenerative heart disease $\begin{cases} Deaths \\ Rates \\ Per cent \end{cases}$	$     \begin{array}{c}       6 \\       1 \cdot 21 \\       5 \cdot 6     \end{array} $	14 5·1 6·8	$205 \\ 31.8 \\ 8.2$	3,423 693 15·4	7,067	37,681	35,985 1,710 36·8
B 27	Other diseases of heart $\dots$ $\begin{cases} Deaths \\ Rates \\ Per cent \end{cases}$	$\begin{array}{c} 21 \\ 4 \cdot 2 \\ 19 \cdot 4 \end{array}$	27 9·9 13·2	$\begin{array}{c c} 174 \\ 27.0 \\ 6.9 \end{array}$	815 165 3·7	786	2,051	3,346 159 3·4
B 28	Hypertension with heart disease Per cent	2 0·40 1·9	2 0·73 1·0	$     \begin{array}{c}       106 \\       16 \cdot 4 \\       4 \cdot 2     \end{array} $	1,862 377 8·4	2,195		8,019 381 8·2
В 29	Hypertension without heart disease {Deaths Rates Per cent	$\begin{array}{c c}1\\0\cdot20\\\theta\cdot9\end{array}$	$     \begin{array}{c}       12 \\       4 \cdot 4 \\       5 \cdot 9     \end{array} $	99 15·4 <i>3·9</i>	517 105 2·3	583 427 1·9	793 1,317 <i>1</i> ·9	2,005 95 2·0
B <sub>4</sub> 46 (Pt.)	Other circulatory diseases $\dots$ $\begin{cases} Deaths \\ Rates \\ Per cent \end{cases}$	9 1·8 <i>8</i> ·3	5 1·8 2·4	108 16·8 <i>4</i> ·3	946 192 4·2	2,027 1,484 6.6	4,236 7,037 <i>10</i> ·1	7,331 348 7·5
	All circulatory diseases { Deaths Rates Per cent	108 21·7 100	205 75·3 100	2,510 390 100	22,264 4,508 100	30,721 22,490 100	42,083 69,905 100	97,891 4,651 100
B 22	Vascular lesions affecting {Deaths central nervous system {Rates	29 8·8	37 13·6	455 70·6	5,596 1,133	9,964 7,294	12,922 21,465	29,003 1,378
					Female	s		- Ut
B 24	Rheumatic fever $\dots$ $\left\{ \begin{array}{l} \text{Deaths}\\ \text{Rates}\\ \text{Per cent} \end{array} \right.$	$55 \\ 11.5 \\ 45.7$	40 13·9 <i>16·5</i>	43 6·5 2·3	60 10·6 <i>0</i> ·5	12 6·4 0·1	4 4·2 0·0	214 9·4 0·2
B 25	Chronic rheumatic heart disease	$32 \\ 6.7 \\ 26.5$	$\begin{array}{c} 137 \\ 47 \cdot 7 \\ 56 \cdot 7 \end{array}$	1,079 163 57·3	2,493 440 <i>19·5</i>	1,667 885 6·2	1,369 1,425 2·4	6,777 298 6·8
в 26 √	$ \begin{array}{l} \text{Arteriosclerotic heart diseases} \\ \left\{ \begin{array}{l} \text{Deaths} \\ \text{Rates} \\ \text{Per cent} \end{array} \right. \end{array} \end{array} $	111	5 1·7 2·0	;178 26·9 <i>9</i> ·4	3,984 703 <i>31·1</i>	8,341 4,427 <i>31</i> ·1	8,836 9,195 <i>15</i> -5	21,344 938 21.5
{	Degenerative heart disease $\begin{cases} Deaths \\ Rates \\ Per \ cent \end{cases}$	$5 \\ 1 \cdot 0 \\ 3 \cdot 9$	$10 \\ 3.5 \\ 4.2$	$180 \\ 27.3 \\ 9.5$	$2,834 \\ 500 \\ 22 \cdot 1$	$10,269 \\ 5,451 \\ 38\cdot 3$	35,136 36,562 61·1	48,434 2,129 48·8
B 27	Other diseases of heart $\dots$ $\begin{cases} Deaths \\ Rates \\ Per \ cent \end{cases}$	17 3·6 14·0	26 9·1 10·8	$128 \\ 19.4 \\ 6.8$	722 127 5·6	$1,134 \\ 602 \\ 4 \cdot 2$	1,722 1,792 <i>3.0</i>	3,749 165 <i>3</i> .8
B 28	$\begin{array}{cccc} Hypertension & with \\ disease & \cdots & \cdots & \\ \end{array} \begin{array}{c} Deaths \\ Rates \\ Per \ cent \end{array}$	1 0·21 0·8	3 1·0 <i>1</i> ·2	94 14·2 5·0	$1,559 \\ 275 \\ 12 \cdot 2$	3,025 1,606 <i>11·3</i>	4,239 4,411 7·4	8,921 392 <i>9.0</i>
B 29	Hypertension without heart disease {Deaths Rates Per cent	2 0·42 1·7	7 2·4 2·8	76 11·5 4·0	398 70·2 <i>3·1</i>	583 309 <i>2·2</i>	934 972 1.5	2,000 87·9 2·0
B 46 (Pt.)	Other circulatory diseases $\begin{cases} Deaths \\ Rates \\ Per \ cent \end{cases}$	9 1·9 7·4	14 4·9 5·8	108 16·4 5·7	760 134 5·9	1,762 935 6·6	5,250 5,463 <i>9</i> ·1	7,903 347 7.9
Alter and	All circulatory diseases $\begin{cases} Deaths \\ Rates \\ Per cent \end{cases}$	121 25·4 100	242 84·3 100	1,886 286 100	12,810 2,260 100	26,793 14,221 100	57,490 59,823 100	99,342 4,366 100
B 22	Vascular lesions affecting { Deaths central nervous system { Rates	29 6·1	24 8·4	472 71·5	6,740 1,189	12,156 6,452	20,022 20,835	39,443

Table CXIII.—Death rates per million living by sex at age 55–74 from selected diseases of the circulatory system and from vascular lesions affecting the central nervous system in standard regions, conurbations and population density aggregates, 1951

1840 ALLES	and a state	AND		Contraction of the second	AND	0444 0444	10-0 10-0 10-0 10-0 10-0 10-0 10-0 10-0	antiget	Chronic rl heart dise other chro carc (410-41	ease and nic endo- litis	Art eriosc heart d (42	lisease	Myoca degene (42	ration	Hypertens or withou dise (440-	ut heart ase	of centra sys	r lesions 1 nervous tem -334)
									M.	F.	М.	F.	М.	F.	M.	F.	М.	F.
10-17°	England and Wales	10 - 10 - 10 - 10 - 10	are 19	8 10 m					749	798	6,559	2,599	3,419	2,724	1,561	1,139	4,145	3,863
166	Density Aggregates Conurbations Areas outside conu Urban areas with Urban areas with Urban areas with Rural areas	rbations n popula n popula	tions over tions over	100,000 50,000 a er 50,000	   	 er 100,00 	··· ·· ·· ·· 0 ·· ··		761 741 752 750 732 741	824 782 813 844 759 760	6,889 6,365 6,787 7,096 6,695 5,446	2,623 2,583 2,677 2,659 2,645 2,407	3,199 3,549 3,799 3,719 3,728 3,123	2,513 2,857 2,812 2,855 3,005 2,711	$1,847 \\ 1,393 \\ 1,626 \\ 1,454 \\ 1,440 \\ 1,165$	1,296 1,041 1,256 940 1,074 889	4,042 4,206 4,387 4,412 4,531 3,651	3,721 3,952 3,997 3,926 4,088 3,767
	Regional Summary Northern East and West Rio North Western North Midland Midland Eastern London and South Southern South Western Wales	lings  		··· ··· ···	··· ·· ·· ·· ··			··· ··· ··· ···	707 777 739 696 655 755 705 804	846 872 857 751 746 716 766 669 794 1,004	7,500 7,401 7,398 5,625 5,687 6,185 6,398 6,029 5,951 6,968	3,452 3,070 2,806 2,545 2,384 2,388 2,412 2,367 2,224 2,528	3,484 4,059 4,457 3,159 3,791 2,924 2,544 3,133 3,429 3,981	3,096 3,217 3,672 2,629 3,041 2,186 1,888 2,342 2,862 3,280	$1,693 \\ 1,426 \\ 1,714 \\ 1,719 \\ 1,687 \\ 1,185 \\ 1,724 \\ 1,352 \\ 1,392 \\ 1,500 \\ 1,500 \\ 1,500 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,00 \\ 1,$	1,2291,2561,2101,1371,3269181,1089241,0181,172	5,000 4,796 4,905 4,223 4,377 3,498 3,374 3,695 3,992 4,347	4,582 4,519 4,598 3,863 3,814 3,356 3,133 3,439 3,896 4,436
	<b>Conurbations:</b> Tyneside West Yorkshire South East Lancas Merseyside West Midlands Greater London	 shire  	··· ·· ·· ··		··· ··· ···	··· ··· ··	··· ·· ··		766 795 745 627 704	886 916 1,000 530 756 805	7,862 8,533 7,042 7,638 5,725 6,555	3,506 3,274 2,639 2,773 2,228 2,457	3,215 4,358 4,453 4,223 3,797 2,265	2,734 3,263 3,734 3,212 2,919 1,739	$2,108 \\ 1,642 \\ 1,884 \\ 2,074 \\ 1,869 \\ 1,813$	$1,519 \\ 1,405 \\ 1,335 \\ 1,295 \\ 1,396 \\ 1,214$	5,477 5,394 4,811 4,617 4,373 3,198	4,468 4,874 4,726 4,030 3,858 2,999

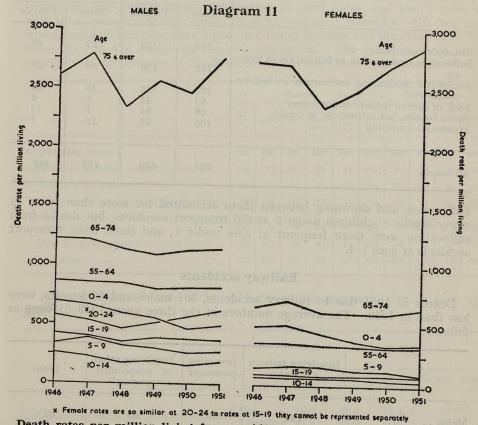
224

\* Including conurbations.

# ACCIDENTAL AND VIOLENT DEATHS

In 1951, 12,447 males and 7,309 females met with accidental and violent deaths, compared with 11,905 males and 6,984 females in 1950 and an average over the five preceding years of 11,899 and 7,290 respectively. In 1951 as in 1950, motor vehicle and other road vehicle accidents, suicides and accidental falls accounted for the greater part of the deaths ; 24 per cent, 23 per cent and 23 per cent respectively. Accidental drowning caused a further 5 per cent and burns by fires and hot substances and liquids an additional 4 per cent of the deaths in 1951. The crude death rates from accidental and violent causes per million living were as follows in the post-war years :—

Thereicon- to 1951 being	ntern. G I 9	or yo ate of	1946	1947	1948	1949	1950	1951
Males Females	····		624 325	632 333	558 306	569 302	562 308	591 321
Sex-ratio M/F			1.9	1.9	1.8	1.9	1.8	1.8



Death rates per million living from accidental and violent causes for certain age groups, 1946 to 1951.

For both sexes the rates in 1951 were higher than during 1948 to 1950, though they did not reach the 1947 level. The sex-ratio of male to female rates remained at 1.8 or 1.9 during the period.

Table CXIV (page 238) shows the proportion of deaths attributed to accidents and violence in different age groups. The proportion of accidental and violent deaths of both sexes at all ages and at ages 35 and over was slightly lower in 1951 than in 1950. At ages under 35 the proportions had increased and in the case of men aged 15–34, 35 per cent of deaths in 1951 were due to accidental and violent causes.

Table CXV (page 238) shows the death rates from accidental and violent causes per million living. In 1951 male rates showed an increase over those for 1950 in each age group except 15–19, and female rates an increase except at ages 5–14 and 35–44. Rates at ages 75 and over were roughly two and a half times those at ages 65–74 for men and four and a half times for women. There continued to be a peak in the male rate at ages 20–24, the rate of 619 in 1951 being the highest since 1941–45. The rate at ages 0–4 was higher for both sexes than at ages 5–19. Diagram 11 shows trends from 1946 to 1951 for certain age groups.

The chief causes of death in children aged under five were :---

Branch and the second s	Numbers		Percentage		
	Male	Female	Male	Female	
Fransport accidents	210	120	23	19	
Accidental mechanical suffocation in bed or cradle . Lack of care of infants under 1 year Burns by fire, hot substances or liquids . Accidental drowning .	182 163 63 68 105	130 125 41 84 52	20 18 7 7 11	20 20 6 13 8	
All causes	931	636	100	100	

Suffocation and drowning between them accounted for more than twice as many deaths of children under 5 as did transport accidents, but deaths from suffocation were more frequent at ages under 1, and those from transport accidents at ages 1–4.

#### **Railway** accidents

Deaths in 1951 due to railway accidents, 301 males and 33 females, were less than in 1950. The average numbers in the three years 1949-51 were as follows :—

	Involving railway employee	Involving passenger	Involving other or unspecified person	Total
Males	184	38	99	321
Females	2	13	18	33 C

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#### Motor and other Road Vehicle accidents

In 1951, 3,293 males and 1,099 females died from motor vehicle traffic accidents, an increase of 6 per cent in each case on the deaths in 1950. Accidents involving other road vehicles caused the deaths of 238 males and 68 females, decreases of 19 and 28 per cent respectively on the 1950 deaths. The distribution of road vehicle accidents in age groups in 1951 is shown in Table CXVI (page 239).

There were 304 deaths of children under 5 due to motor vehicle accidents on public highways, an increase of 16 per cent over 1950. Forty-six per cent of the men of working age who died were motor cycle riders or passengers. Of 1,092 fatal vehicle accidents to people of 65 and over, 868 or 79 per cent were deaths of pedestrians.

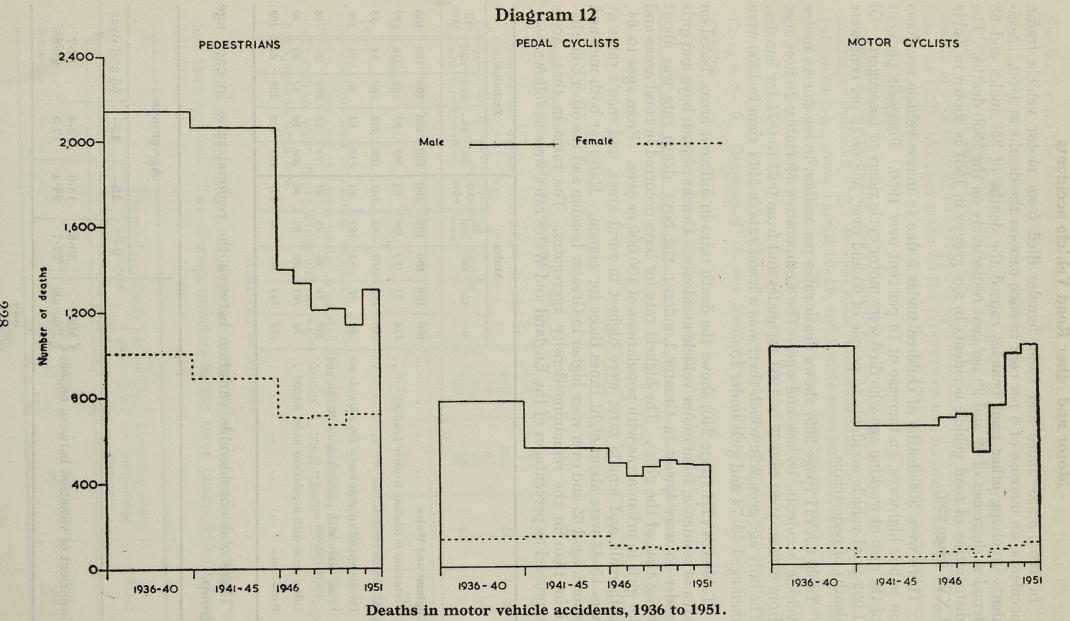
Table CXVII (page 239) shows death rates per million living due to motor vehicle accidents, by sex and age. The Comparative Mortality Indices rose from 0.72 in 1950 to 0.77 in 1951 for males and from 0.67 to 0.71 for females. The only age groups in which there was a lower rate in 1951 than in 1950 were men aged 65–74 and girls under 15.

Table CXVIII (page 240) shows the death rates in different areas, based on area of residence, from motor vehicle accidents. Deaths of both boys and girls under 15 were lowest in Greater London ; the boys' death rate was about twice that of the girls'. The highest rate for boys occurred in rural areas and for girls in urban areas with populations of 100,000 or over. From ages 15–64, both male and female rates were highest in rural areas, and men's rates at ages 15–44 were about eight times those for women. Rates for both men and women aged 65 and over were higher in Greater London and the other conurbations than in the remaining density aggregates. The rates in these areas expressed as percentages of the England and Wales rates were as follows ;—

	Males				Females					
	0-	15-	45-	65 and over	Allages	0-	15-	45-	65 and over	Allages
England and Wales	100	100	100	100	100	100	100	100	100	100
Conurbations (excluding Greater London)	114	81	104	106	94	104	93	98	116	102
Areas outside conurbations	106	113	103	95	107	106	100	102	84	98
Urban areas with populations of 100,000 and over	96	87	85	105	91	115	93	95	108	102
Urban areas with populations of 50,000 and under 100,000	108	79	80	96	87	104	78	105	92	96
Urban areas with populations under 50,000	95	101	. 92	91	96	100	96	81	85	92
Rural areas ·	124	154	137	93	137	108	122	128	63	100

There was considerable variation between the regional rates in each age group.

and and an process in provide the formation to	Age groups			S .
	0-	15	45-	65 and over
Coefficient of variation between regions ${Male \\ Female}$	30·6 27·7	$18.6 \\ 24.4$	13·4 17·5	17·7 26·8



For both males and females the coefficient of variation was highest at ages 0-14 and lowest at 45-64, and except at ages under 15 the female rates showed greater variation than the male.

Deaths from road accidents are shown in Table CXIX (page 241) according to the type of vehicle involved. Deaths of male pedestrians due to accidents involving motor vehicles, which had decreased during 1948 to 1950, returned to the 1947 level (Diagram 12); female deaths also showed a slight increase on the number in 1950. Deaths of motor cyclists in motor vehicle accidents continued to increase, the number of male deaths in 1951 being nearly double that in 1948, the year of lowest mortality in recent times. Little variation was shown in deaths of pedal cyclists in road vehicle accidents.

## Nature of injury

Table CXX (page 242) shows the proportion per 1,000 violent deaths classified according to the nature of the injury involved. Fractured skulls continued to be the commonest type of fatal injury in motor vehicle accidents, accounting for 61 per cent of male and 56 per cent of female deaths. In other transport accidents fractured skulls caused 37 per cent of male and 41 per cent of female deaths compared with 40 per cent and 53 per cent respectively in 1950 ; internal injuries caused 10 per cent of male and 12 per cent of female deaths. Skull fractures also caused 34 per cent of male deaths due to falls, compared with only 9 per cent for females, but the proportion due to fractured limbs was 73 per cent among women compared with 38 per cent among men. Internal injuries accounted for 4 per cent of male deaths due to falls and 1 per cent of female deaths. Poisoning was the responsible agent in nearly half the male suicides and more than 70 per cent of the female.

#### Aircraft accidents

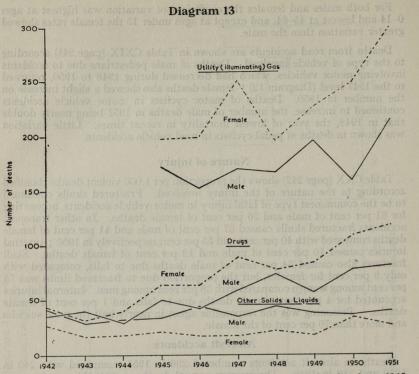
Deaths in aircraft accidents numbered 296 in 1951, compared with 240 in 1950 and 210 in 1949. The average annual deaths in 1949–51 are shown in Table CXXI (page 243). Thirty-five per cent of the deaths occurred to occupants of commercial transport aircraft, and a further 57 per cent to occupants of aircraft of other types, including military aircraft. Accidents to non-occupants, whether on or away from airfields, formed 4 per cent of the total.

#### Accidental poisoning

In 1951 820 people died from accidental poisoning; 121 males and 143 females from poisoning by solid or liquid substances, and 252 males and 304 females from poisoning by gas and other vapours. In each of these four groups deaths were more numerous than in any of the ten preceding years. The ratio of female to male deaths was roughly the same for each type of poisoning, 1·18 in the case of solids and liquids and 1·21 in the case of gases and vapours. Table CXXII (page 243) shows the numbers of deaths during the decade 1942 to 1951 according to the poisoning agent involved.

Deaths from poisoning by barbiturates in 1950–51 were 55 per cent of male and 70 per cent of female deaths due to drug poisoning, compared with 32 per cent and 49 per cent in 1942–43. Accidental deaths due to corrosives, caustic alkalis, etc., a group which includes many household cleansing materials, showed no general upward trend (see Diagram 13). Separate figures are available from 1945 onwards for deaths due to domestic gas, the 515 deaths from this cause in 1951 being a maximum in the seven years.

Table CXXIII (page 244) shows that during the three years 1949 to 1951, accidental drug poisoning occurred more commonly in the home than elsewhere,



Deaths from accidental poisoning, 1942 to 1951. (Utility gas poisoning from 1945 to 1951).

as also did utility gas poisoning. There was only one death in the three years in an industrial place from poisoning by a corrosive and only 26 deaths from utility gas poisoning; 15 deaths from gas poisoning occurred in mines and quarries.

In studying individual poisoning agents, various methods of grouping may be followed. Thus Craig and Fraser\*, comparing cases of accidental poisoning of children under 12 treated in two hospitals in Edinburgh and Aberdeen during 1931–51 with similar deaths of children under 10 in England and Wales (1931– 49) and Scotland (1939–51), have distinguished household poisons, the atropine group, medicines intended for either oral use or for external use and vegetable matter each excluding atropine. From the point of view of prevention, it seems convenient also to make a division according to the way the accident happened—thus tablets and pills may be eaten because they closely resemble some form of sweets, poisonous fungi and berries in mistake for innocuous ones, and household cleansers may be drunk in mistake for soft drinks. In England and Wales during the two periods 1931–39 and 1940–49 the deaths occurring in children under 15 years of age in the three groups those due to berries or fungi, those due to pills or tablets and those due to drinking poisonous liquids—are shown in Table CXXIV (page 245).

In the nine years 1931–39, 74 boys and 56 girls under 15 years of age died of accidental poisoning and in the following ten years up to 1949 another 161 boys

and 116 girls, the average annual number dying in the latter period being roughly double that in the former. Deaths from aspirin poisoning in the two periods were 3 and 13 respectively, from ferrous sulphate and fersolate 2 and 17, from oil of wintergreen (or methyl salicylate) 7 and 24. In each period, 79 per cent of all the deaths occurred among children aged one but under five, that is toddlers of the pre-school age. If, while such children are at home, all poisons and potentially dangerous medicaments were kept in an inaccessible place, the loss of these young lives would be prevented.

Deaths from accidental poisoning by gases and vapours have increased among old people, and the increase has been more marked among women. These trends cannot be attributed to an increasing number of elderly people in the population, for the death rates per million in 1941 and 1951 show the following comparison :—

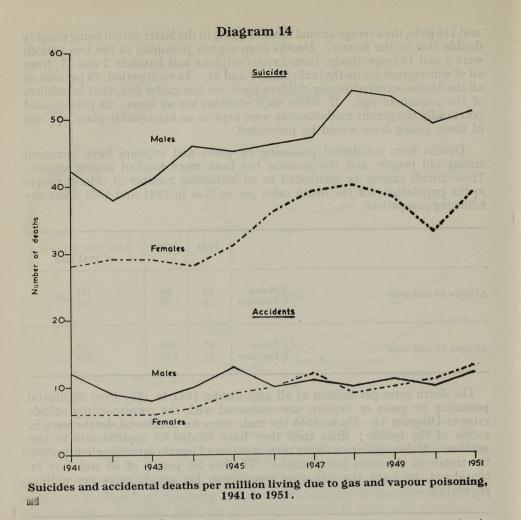
		1941	1951	1951 rate per cent of 1941 rate		
At ages 65 and over	$\cdots \left\{ \begin{smallmatrix} \text{Males} \\ \text{Females} \end{smallmatrix}  ight.$	36 29	50 73	139 252		
At ages 75 and over	$\cdots \left\{ \begin{matrix} \text{Males} \\ \text{Females} \end{matrix}  ight.$	57 67	106 150	186 224		

The death rates per million at all ages during 1941 to 1951 from accidental poisoning by gases or vapours are compared with the corresponding suicide rates in Diagram 14. Up to 1945 the male rates for accidental deaths were in excess of the female; since then they have tended to approximate to one another. Male suicide rates have been in excess of female over the whole period, the trends in the rates being similar. If rates for people of 65 and over be considered, we have the following comparison for suicide rates per million population:—

and suicides from poissbille by analgesto	1941	1951	1951 rate per cent of 1941 rate
At ages 65 and over $\dots \dots $ $\left\{ \begin{array}{ccc} Males \\ Females \end{array} \right.$	120	167	139
	43	82	191
At ages 75 and over $\dots \dots $ $\left\{ \begin{array}{ll} Males \\ Females \end{array} \right.$	139	193	139
	33	69	209

Comparing the increases in the suicide rates with those in the rates for accidental deaths as shown above, the ratio of 1951 to 1941 rates for all males aged 65 and over is 139 per cent in each case, the same increase being apparent in the suicide rates for the age group 75 and over ; the increase in the rate for accidental deaths in the latter group is 186 per cent. Among females aged 65 and over, the accidental death rate increased by 252 per cent compared with 191 per cent increase for suicides, while in the restricted age group of 75 and over, female suicide rates increased by 209 per cent compared with 224 per cent for accidental deaths.

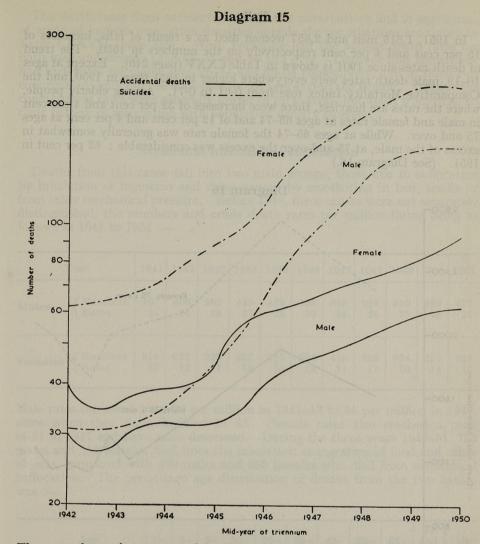
<sup>\*</sup> Archives of Disease in Childhood, Vol. 28, No. 140, August 1953.



The numbers of accidental deaths and suicides from poisoning by analgesic and soporific drugs during 1941 to 1951 were as follows :—

139 131		1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951
Accidental	$\left\{ \begin{matrix} M.\\ F. \end{matrix} \right.$	32	27	31	25	39	31	50	60	47	69	69
Deaths		31	37	24	33	48	55	76	67	76	101	106
Suicides	{ M.	46	36	39	29	49	53	97	142	148	176	152
	F.	61	58	67	69	82	116	142	217	207	245	221

There was an upward trend in the number of both accidental deaths and suicides from about 1947 onwards with a further jump in 1950 and 1951. Diagram 15 shows the variations in the three-yearly moving averages of numbers of deaths from poisoning by analgesic and soporific drugs, both accidental and suicidal. While the accidental deaths have increased, the upward trend in the number of suicides, which is very similar for both males and females, has



Three-yearly moving average of deaths from poisoning by analgesic and soporific drugs, 1941 to 1951.

been far greater. Moreover the percentage of suicides using analgesic and soporific drugs to total suicides has increased considerably, as shown below.

Year	1931	193	32 19	933	1934	1935	1936	193	7 19	38	1939	1940
Males Females	$0.9 \\ 1.4$	0· 1·	The second s	•0 •3	0·9 1·6	$1 \cdot 2 \\ 3 \cdot 6$	0.8 3.0	1.] 3.4		·7 ·2	1·1 3·7	1.5 5.2
Year	ralys cons	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951
Males Females	io tae	2·0 4·6	1.7 4.4	$1.8 \\ 5.0$	1·3 5·5	$2 \cdot 2 \\ 5 \cdot 7$	$2.0 \\ 7.1$	3·6 8·5	4·8 12·4	4·9 12·2	6·1 15·4	5·4 13·5

# Falls

In 1951, 1,816 men and 2,657 women died as a result of falls, increases of 15 per cent and 4 per cent respectively on the numbers in 1950. The trend of death rates since 1901 is shown in Table CXXV (page 246). Except at ages 10–19, male death rates were everywhere higher in 1951 than in 1950, and the Comparative Mortality Index rose from 0.61 to 0.71. Among elderly people, where the rates are heaviest, there were increases of 32 per cent and 4 per cent in male and female rates at ages 65–74 and of 12 per cent and 4 per cent at ages 75 and over. While at ages 65–74 the female rate was generally somewhat in excess of the male, at 75 and over the excess was considerable : 62 per cent in 1951. (See Diagram 16.)

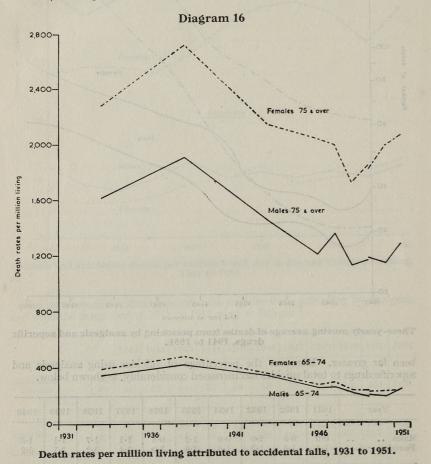


Table CXXVI (page 247) shows the number of falls analysed by type and whether or not they occurred at work or at home. The commonest type of fall among males, accounting for 34 per cent of the deaths, was from one level to another, whereas falls on the same level caused 42 per cent of female deaths. Seventy per cent of males and 89 per cent of females experiencing fatal falls on stairs were aged 65 and over. The death rates from accidental falls in the conurbations and in aggregates of areas of various population densities outside the conurbations are shown in Table CXXVII (page 248). West Yorkshire had the highest death rates for both men and women aged 65–74 and 75 and over. Tyneside and Merseyside had high rates for males aged 25–44 and 55–64 respectively, and in these two conurbations only did the male rate for all ages exceed the female. Outside the conurbations rates were generally lowest in rural areas, but apart from that, no clear pattern of association with population density emerges.

# Accidental mechanical suffocation

Deaths from this cause fall into two main groups, those due to suffocation by inhalation or ingestion and those caused by smothering in bed, cradle or from other mechanical pressure. Before 1949, these causes were not separately distinguished, the numbers and crude death rates per million living being as follows in 1941 to 1951 :—

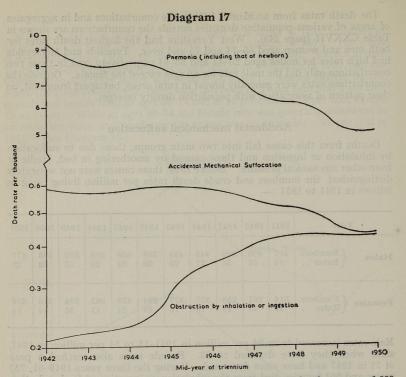
	Year	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951
Males	$\begin{cases} Numbers \\ Rates \\ \dots \\ \end{cases}$	407 24	400 24	<b>3</b> 92 24	445 27	<b>469</b> 29	558 30	$\begin{array}{c} 658\\ 34 \end{array}$	528 26	519 25	495 23	477 23
Females	{Numbers Rates	314 15	287 13	233 11	337 16	327 15	<b>394</b> 18	470 21	383 17	$354\\16$	315 14	326 14

Male rates increased from 24 per million in 1941-43 to 34 per million in 1947, since when they have declined to 23. Female rates also reached a peak of 21 in 1947 and have since decreased. During the three years 1949-51, 753 males and 551 females died from the inhalation or ingestion of food and other objects, compared with 690 males and 395 females who died from the two causes sufficient. The percentage age distribution of deaths from the two causes was :—

Age	0→	1-	5	15-	25-	35-	45-	55	65-	75 and over	Allages
Suffocation by in- { M. gestion and in- { F. halation.	68 66	777	3	2 1	4 2	2 7	6 6	2 2	3 4	3 5	100 100
$ \begin{array}{llllllllllllllllllllllllllllllllllll$	76 93	2 3	2 1	2	5 1	4	5	2 1	1	1	100 100

The three-yearly moving average of infant mortality rates per 1,000 related live births for 1941 to 1951 is shown in Diagram 17. While the rate for mechanical suffocation shows a downward trend, that for suffocation by ingestion or inhalation has increased considerably. Since it is suggested that mechanical suffocation is related to acute respiratory infection, the average rate from pneumonia, including that of the newborn, is also shown ; the trend is similar to that for mechanical suffocation.

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Three-yearly moving average of death rates of children under 1 year per 1,000 related live births, 1941 to 1951.

# Deaths following vaccination or other prophylactic inoculation

This section includes deaths classified to E940–E942, vaccinia, post-vaccinal encephalitis and other complications of smallpox vaccination, and to E943, E944, post-immunization jaundice and hepatitis and other complications of prophylactic inoculation. Deaths classified to some other condition as the underlying cause, but with vaccination or inoculation either mentioned on the certificate or ascertained by enquiry to have been associated with the death are also mentioned here.

In 1951 five deaths were assigned to complications of vaccination against smallpox, viz :---

- 1. Female aged 2 months, certified as post-vaccination encephalitis. Terminal broncho-pneumonia (bilateral) was also mentioned on the certificate.
- 2. Male aged 3 months, certified as convulsion following post-vaccinal encephalitis.
- 3. Female aged 6 months, certified as pyæmia following pyodermia gangrenosa due to generalized vaccinia.
- 4. Male aged 5 years, certified as cardio-respiratory failure due to status epilepticus following post-vaccinal encephalitis.
- 5. Male aged 20 years, certified as cardiac and respiratory failure due to post-vaccinal encephalomyelitis.

In addition there were two deaths in which vaccination was mentioned on the death certificate but which were assigned to other causes :---

- 1. Male aged 3 months, certified as broncho-pneumonia due to measles, the child having been vaccinated ten days previously. The death was assigned to measles.
- 2. Male aged 5 months, certified as acute gastro-enteritis, with mention of vaccination in Part II of the death certificate. The death was assigned to gastro-enteritis and colitis.

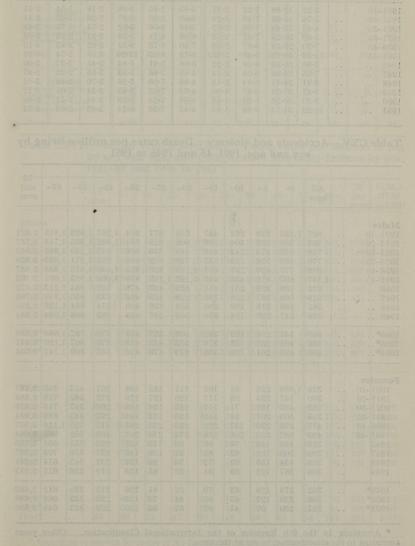


Table CXIVAccidents and violence : Proportion of dea	aths attributed
to violent causes per 100 deaths from all caus	ses, by sex and
age, 1901–45 and 1946 to 1951	

the death was	.s/s.	anterios	Males	7	Distort	Vacc	ngagd Peasies	emale	S	
	0	15	35	65 and over	All ages	0-	15-	35–	65 and over	All ages
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{c} 3 \cdot 22 \\ 3 \cdot 74 \\ 4 \cdot 43 \\ 5 \cdot 60 \\ 7 \cdot 30 \\ 10 \cdot 34 \\ 7 \cdot 86 \\ 7 \cdot 65 \\ 8 \cdot 91 \\ 9 \cdot 47 \\ 9 \cdot 20 \\ 10 \cdot 22 \end{array}$	$\begin{array}{c} 12{\cdot}88\\ 15{\cdot}69\\ 15{\cdot}49\\ 20{\cdot}29\\ 29{\cdot}58\\ 46{\cdot}29\\ 25{\cdot}39\\ 24{\cdot}86\\ 24{\cdot}61\\ 27{\cdot}04\\ 30{\cdot}36\\ 34{\cdot}74 \end{array}$	$\begin{array}{c} 7.22\\ 7.16\\ 7.06\\ 7.37\\ 8.67\\ 9.46\\ 6.09\\ 6.09\\ 6.04\\ 5.87\\ 5.93\\ 5.68\end{array}$	$\begin{array}{c} 2\cdot 31 \\ 2\cdot 29 \\ 2\cdot 37 \\ 2\cdot 55 \\ 2\cdot 89 \\ 2\cdot 85 \\ 2\cdot 22 \\ 2\cdot 14 \\ 2\cdot 13 \\ 1\cdot 96 \\ 1\cdot 94 \\ 1\cdot 85 \end{array}$	$5.05 \\ 5.69 \\ 5.48 \\ 6.05 \\ 7.30 \\ 9.13 \\ 5.08 \\ 4.89 \\ 4.88 \\ 4.62 \\ 4.56 \\ 4.42$	$\begin{array}{c} 2.85\\ 2.95\\ 3.06\\ 4.11\\ 5.73\\ 8.25\\ 5.91\\ 5.86\\ 7.06\\ 7.02\\ 7.24\\ 7.36\end{array}$	$\begin{array}{c} 3.06\\ 2.97\\ 4.02\\ 5.54\\ 9.52\\ 12.26\\ 5.84\\ 5.53\\ 5.56\\ 5.80\\ 6.59\\ 8.21 \end{array}$	$\begin{array}{c} 2\cdot 18\\ 2\cdot 26\\ 2\cdot 74\\ 3\cdot 31\\ 4\cdot 82\\ 5,58\\ 3\cdot 45\\ 3\cdot 55\\ 3\cdot 55\\ 3\cdot 70\\ 3\cdot 34\\ 3\cdot 44\\ 3\cdot 42\end{array}$	$\begin{array}{c} 1.54\\ 1.63\\ 1.79\\ 2.25\\ 2.83\\ 2.74\\ 2.27\\ 2.22\\ 2.18\\ 2.01\\ 2.13\\ 2.06\end{array}$	$\begin{array}{c} 2\cdot 31 \\ 2\cdot 31 \\ 2\cdot 49 \\ 3\cdot 04 \\ 4\cdot 10 \\ 4\cdot 56 \\ 3\cdot 00 \\ 2\cdot 97 \\ 3\cdot 02 \\ 2\cdot 72 \\ 2\cdot 72 \\ 2\cdot 80 \\ 2\cdot 73 \end{array}$

Table CXV.—Accidents and violence : Death rates per million living by sex and age, 1901–45 and 1946 to 1951

								1		1			
		All ages	0	5	10-	15	20-	25-	35	45-	55	65-	75 and over
					1					•			
Males		Summer Starte	Constant of the										
1901-10		827	1,231	329	262	447	555	677	914		1,623		2,621
1911-20	•••	857	934	395	304	596	902	828	894		1,395		2,757 2,842
1921-30	•••	709	683	375	243	449	584	536 602	658 640		$1,259 \\ 1,271$	1,599	3,358
1931-35	••	770	697	370	228	533	$739 \\ 1,121$	826	825			1,835	3,887
1936-40	•••	968	775	420 612	297 435		1,121 2,192	1,263	870	1.008	1,323	1,691	3,183
1941-45	••	$1,167 \\ 622$	897 688	328	251	414	565	453	478	582		1,213	2,612
1946 1947	••	628	664	381	228	398	528	465	465	633		1,210	2,786
1947	::	562	585	318	179	350	458	398	406	\$ 574	844	1,136	2,320
1949	•••	569	547	299	194	386	509	387	433	583	805	1,084	2,554
1949*		567	541	298	193	386	508	387	431	579	797	1.085	2,556
1949* 1950 <b>*</b>	••	562	461	252	153	376	555	423	418	579	807	1,120	2,451
1950*	•••	591	489	261	188	363	619	476	426	587	809	1,142	2,754
The second second					A MARKAN								
Females			GLEC.			1.00	1000			COMP.			
1901-10		329	1,059	226	81	103	111	135	198	307	423	752	2,287
1911-20		300	767	234	98	117	120	127	179	272	382	728	2,364
1921-30	••	283	487	182	71	117	127	126	168	268	397 443	716 878	3.044
1931-35	••	346	505	201	81	142	155 233	161 235	194 281	412	595	1.116	3,707
1936-40	••	477	570	230 322	137 206	222 256	233	235 276	307	404	A DECK TO DESCRIPTION OF	959	3.064
1941-45	••	499 326	687	149	70	83	86	116	152	225		661	2,725
1946	••	334	503	149	63	82	81	109	145	237		703	2,707
$1947 \\ 1948$	•••	306	434	153	63	72	76		137	231	347	614	
1948	· · ·	306	387	128	63	81	92	Contraction and second and	128	212	336	617	2,513
1949*		302	378	128	63	79	92	81	126	212		612	2,492
1950*		308	338	127	47	80	81	79	125	223			
1951*		321	350	97	45	87	87	86	125	229	327	649	2,850
a series and the		1 Sector	-	1. Date				No.					

\* According to the 6th Revision of the International Classification. Other years according to the classification in use at the time.

Table CXVI.—Motor vehicle and other road vehicle accidents. Numbers of deaths in 1951

Age group	Мо	otor vehi	cle traf	fic accid	ents	non-	vehicle traffic tents		road vo	
rates per million is and population	Total	Pedes- trian	Pedal cyclist	Motor cyclist or pas- senger	Others	Total	Pedes- trian	Total	Pedes- trian	Pedal cyclist
Males Pre-school age, 0-4 School age, 5-14 Working ages, 15-64 Retirement, 65 and over Total	194 310 2,178 611 <b>3,293</b>	179 213 448 462 <b>1,302</b>	5 76 316 76 <b>473</b>	1 2 1,002 14 <b>1,019</b>	9 19 412 59 <b>499</b>	6 12 74 11 <b>103</b>	6 5 27 5 <b>43</b>	3 22 157 56 <b>238</b>	3 22 32 32 <b>59</b>	20 122 18 160
FemalesPre-school age, 0-4School age, 5-14Working ages, 15-64Retirement, 65 and overTotal	110 107 499 383 <b>1,099</b>	99 90 197 339 <b>725</b>	9 65 6 <b>80</b>	92 2 94	11 8 145 36 <b>200</b>	6 4 5  15	6 3 1  10	1 2 34 31 68	1 12 30 43	

# Table CXVII.—Motor vehicle accidents : Death rates per million living by sex and age, and Comparative Mortality Indices by sex, 1931–45 and 1946 to 1951

00 4461 11	All ages	0-	10-	15-	20-	25-	35-	45-	55-	65	75 and over	C.M. (1938 =1·0
Males	13	50	044	303	701	136	811	dis"				NY ICK
1931-35	208	184	93	204	368	210	133	153	206	363	678	1.12
<b>1936–4</b> 0	216	159	86	176	363	209	152	171	257	411	749	1.01
1941-45	199	198	113	152	227	193	149	160	228	353	556	0.92
1946	153	144	109	161	205	139	109	102	160	241	498	0.73
1947	146	134	75	127	209	139	106	111	147	246	460	0.70
1948	126	135	63	122	173	112	79	97	142	194	400	0.60
1949	140	123	80	147	226	117	103	101	137	229	451	0.67
134 61	<u></u>	51	150	533	121	1.52	98		appylbl	58: 300	7 America	Egst
1949*	142	126	83	150	232	118	105	101	100			
1949* 1950*	151	104	.60	177	232	164	$   \begin{array}{c}     105 \\     106   \end{array} $	101 102	138	232	454	0.68
1951*	161	112	87	178	313	175	100	102	153 159	242 232	439 507	0·72 0·77
165 59	101	an	221	110	010	110	811	110	109	232	507	0.77
Females	28.	11	881	608	1.4.1	222	80				10(12)	itasti
1931-35	68	106	34	49	50	31	29	49	95	181	267	1.17
1936-40	64	84	30	49	48	29	27	45	85	173	279	1.02
1941-45	56	106	42	42	40	29	26	37	61	107	172	0.86
1946	47	72	30	36	27	21	20	27	56	100	185	0.70
1947	47	71	26	37	23	17	22	33	54	100	177	0.69
1948	43	79	31	25	16	14	19	21	49	101	157	0.64
1949	41	65	32	32	30	10	16	22	44	95	151	0.60
									<del>a</del>			
1949*	41	66	32	32	30	10	16	22	44	95	151	0.61
1950*	46	64	25	40	30	17	19	35	48	84	200	0.67
1951*	49	58	22	47	37	19	23	35	54	101	201	0.71

\* According to the 6th Revision of the International Classification. Other years according to the classification in use at the time.

# Table CXVIII.—Motor vehicle accidents : Death rates per million living by sex and age in standard regions and population density aggregates, 1951

			Male	S		100	. <b>F</b>	ema	les	
	0-	15-	45-	65 and over	All ages	0-	15-	<b>4</b> 5→	65 and over	Allages
ENGLAND AND WALES	105	173	134	316	161	48	27	43	135	49
Conurbations (excluding Greater London)	120	140	140	334	152	50	25	42	157	50
Greater London	65	133	117	363	134	34	29	44	184	53
Areas outside conurbations	111	196	138	299	172	51	27	44	113	48
Urban areas with populations of 100,000 and over	101	150	114	331	146	55	25	41	146	50
Urban areas with populations of 50,000 and under 100,000	113	136	107	303	140	50	21	45	124	47
Urban areas with populations under 50,000	100	174	123	286	155	48	26	35	115	45
Rural areas	130	267	183	293	220	52	33	55	85	49
Regions : Northern	147	153	117	264	154	60	18	52	91	44
East and West Ridings	89	152	137	333	150	51	26	59	134	53
North Western	128	132	128	360	151	48	20	35	157	47
North Midland	123	188	117	342	170	60	22	43	123	48
Midland	118	214	144	384	188	66	35	47	165	59
Eastern	98	232	144	303	188	44	29	46	101	46
South East (excluding Greater London)	174	176	155	259	180	33	21	40	130	46
Southern	63	221	176	269	180	31	41	33	89	44
South Western	75	209	158	242	170	32	29	40	70	38
Wales	109	198	127	216	162	66	33	34	128	52

\* According to the oth Revision of the International Classmoation. to the classification in use at the time.

Table CXIX.—Deaths of pedestrians, pedal	cyclists, motor o	cyclists, motor vehicle	occupants and others in motor
vehicle traffic accidents, mo	tor vehicle non-tra	affic accidents and othe	r road vehicle accidents, by sex,
1936–40, 1941–45 and 1946 to 19			000'T 070 070 1 070

	Suleide or self-inflicted injury	(An:	6–40 nual cage)	1941 (Anr aver	nual	194	<b>4</b> 6	194	17	19	948	194	<b>1</b> 9	19	50	19	51000
	tona	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	М.	F.	M.	F.
241	Pedestrians : Motor vehicle traffic accidents } Motor vehicle non-traffic accidents } Other road vehicle accidents	2,148 194	1,010 79	2,073 166	898 70	1,404 82	714 42	1,339 77	712 50	1,210 89	720 { 45	1,214 13 67	$674 \\ 2 \\ 51$	1,140 32 76	726 6 51	1,302 43 59	725 10 43
	<b>Pedal cyclists :</b> Motor vehicle traffic accidents} Motor vehicle non-traffic accidents} Other road vehicle accidents	777 249	131 44	557 230	140 51	481 159	97 30	417 160	81 25	461 158	86 { 30	496 	78 	475 1 168	80 	473  160	<b>80</b> 18
	Motor cyclists : Motor vehicle traffic accidents } Motor vehicle non-traffic accidents }	1,018	77	651	27	681	46	696	62	520	26 {	733 6	56 —	979 7	79	1,019 3	94 
	Motor vehicle occupants and others : Motor vehicle traffic accidents Motor vehicle non-traffic accidents Other road vehicle accidents	631 36	191 3	762 47	167 11	592 24	178 8	583 28	181 4	474 20	141 { 5	498 50 32	118 1 7	$505\\48\\50$	150 2 13	499 57 19	200 5 7

Motor cyclists : Motor wencip traffic accidents Motor vehicle non-truthe accidents	in the	Fracture of skull	Fracture of spine or trunk	Fracture of limb	Head in- jury other than fracture	Internal injury	Laceration and open wounds	Poisoning	Others	Total
Motor vehicle accidents	∫M.	611	65	52	123	108	7		34	1,000
Motor vehicle accidents	ĹF.	560	88	79	128	90	6	-	49	1,000
Other transport accidents	∫M.	372	55	45	105	102	38	26	257	1,000
other transport accidents	∫ F.	410	68	68	136	121	30	68	99	1,000
Falls	∫M.	335	111	380	80	35	4	× -	55	1,000
	LF.	85	50	729	76	9	7		44	1;000
Suicide or self-inflicted injury	∫M.	27	11	2	55	12	76	486	331	1,000
	े F.	16	2	2	5	1 8	21	714	232	1,000
Others	∫ M.	106	49	14	44	80	23	143	541	1,000
1936-40, 1941-45 and 10	े F.	20	4	17	20	8	7	275	649	1,000

Table CXX.—Proportion of deaths per 1,000 violent deaths according to nature of injury, 1951

# Table CXXI.—Aircraft accidents : Average annual deaths, 1949-51

21 H 22 P P 22 2 2 2 2 2 2 2 2 2 2 2 2 2 2	ze der s	100 M	Average number of deaths	Per cent of total
Occupant of commercial transport aircraft Occupant of other aircraft	··· ·· ·· ··	··· ·· ··		35 57 2 2 4
Total aircraft accidents	•• ••	•••	249	100

# Table CXXII.—Deaths from accidental poisoning according to the poisoning agent, 1942 to 1951

				State of the P			and the second second			
Poisoning agent	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951
Barbituric acid and {M. derivatives {F.	12 21	12 15	15 18	18 22	20 34	30 47	34 41	27 50	47 80	40 77
Aspirin and salicylates $\begin{cases} M \\ F. \end{cases}$	5 5	8 3	5 11	10 15	5 15	6 16	16 16	10 17	14 17	18 19
Other analgesic and ${M. \atop {\rm soporific drugs } \ldots }$	10 11	11 6	5 4	11 11	6 6	14 13	10 10	10 9	8 4	11 10
Other and unspecified { M. drugs { F.	8 6	9 7	36	11 16	10 8	8 13	$\begin{array}{c} 12\\ 10 \end{array}$	9 8	8 7	12 11
Total, all drugs $\dots  \begin{cases} M. \\ F. \end{cases}$	35 43	40 31	28 39	50 64	41 63	58 89	72 77	56 84	77 108	81 117
Corrosives, aromatics, acids and caustic alkalis {H. F.	13 9	12 9	13 5	12 13	14 10	13 6	10 4	10 4	15 9	89
$\begin{array}{c} \text{Other solid and liquid}\\ \text{substances} & & \left\{ \begin{array}{c} \text{M.}\\ \text{F.} \end{array} \right. \end{array}$	28 17	17 7	18 12	21 7	30 6	21 11	34 18	27 13	21 25	32 17
Utility (illuminating) $\begin{cases} M. \\ F. \end{cases}$	$\left.\right\}_{136}^{136}$		141	171 197	152 199	$\begin{array}{c} 170\\ 250 \end{array}$	166 195	195 226	158 248	215 300
		124	152	25 5	14 9	20 15	14 7	20 3	34 3	27 3
Other gases and $\begin{cases} M. \\ vapours \\ f. \end{cases}$	14 2	24 2	14 3	18 2	19 5	21 4	15 5	14 6	16 4	10 1
Total gas poisoning $\left\{ egin{matrix} M.\\ F. \end{array}  ight.$	150 133	125 126	155 155	214 204	185 213	211 269		229 235	208 255	252 304

SU C	N.C.							Nu	mber of deat	ths		000	Perce	ntage distrib	ution	
			Poisoni	ing agent			Home	Mine or quarry	Industrial places	Other	Total	Home	Mine or quarry	Industrial places	Other	Tota
Barbiturates						$ \begin{cases} 1949 \\ 1950 \\ 1951 \end{cases}$	42 71 59	-	111	36 56 58	78 127 117	54 56 50			46 44 50	100 100 100
Aspirin	20'00	ci ci	. 10		si is	$ \begin{cases} 1949 \\ 1950 \\ 1951 \end{cases}$	13 17 25		111	14 14 12	27 31 37	48 55 68		=	52 45 32	100 100 100
Other drugs	C13. 84	22 		··· ••		$ \begin{cases} 1949 \\ 1950 \\ 1951 \end{cases}$	22 20 36			14 7 7	36 27 44	61 74 82			39 26 16	100 100 100
Corrosives	P2 • • • •	10				$ \begin{cases} 1949 \\ 1950 \\ 1951 \end{cases}$	6 14 10			8 10 6	14 24 17	43 58 59			57 42 35	100 100 100
Other solids a	nd liquids	s		··· ::	····	$ egin{cases} 1949 \\ 1950 \\ 1951 \end{cases}$	19 24 24		$\begin{array}{c}1\\2\\2\end{array}$	20 20 23	40 46 49	47 52 49		3 4 4	50 44 47	10 10 10
Utility gas	:					$ \begin{cases} 1949 \\ 1950 \\ 1951 \end{cases}$	385 389 459		14 4 8	23 13 48	423 406 515	91 96 89		3 1 2	6 3 9	10 10 10
Other carbon	monoxide	••••	·· : @·			$ \begin{cases} 1949 \\ 1950 \\ 1951 \end{cases}$	7 6 11	1 1 -	9 24 11	6 6 8	23 37 30	31 16 37	43	39 65 37	26 16 26	10 10 10
Other gases.	• • •	to could			in the second se	$ \begin{cases} 1949 \\ 1950 \\ 1951 \end{cases}$	4 6 3	3 8 1	7 6 4	$\frac{7}{3}$	21 20 11	20 30 27	14 40 9	33 30 37	$\frac{33}{27}$	10 10 10
	Dente L'àst	tion 1	ty (t	T and	all'a an	eve	al, al	afe Louis		bit out	Pol	tors	. 2310			

Numbers of deaths according to the poisoning agent, and percentage

Table CXXIV.—Accidental poison	ning: Deaths of children at ages under
15 according to the p	oisoning agent, in the periods 1931-39
and 1940–49	8 8 4 4 m Periodo 1/01 0/

	1931	1–1939					. 1940	)-1949				
		Total under 15	Under 1 year	1-	5-	10- 14		Total under 15	Under 1 year	1-	5-	10-14
Berries of belladon Hemlock Henbane Horse chestnuts "Poisonous" berr Privet berries Water dropwort Woody Nightshade	 ies 	4 1 1 2 1 1 1		B 4 			FUNGI, etc. Amanita phalloides Deadly nightshade Dropwort Fungi Hemlock Woody nightshade berries	$     \begin{array}{c}       1 \\       5 \\       1 \\       4 \\       5 \\       3     \end{array} $		$\begin{array}{c} - \\ 4 \\ - \\ 1 \\ 1 \\ 2 \end{array}$	1 1 1 3 3	
Total		12	1	8	1	2	Total	19		8	9	2
Aspirin Barbiturate Belladonna Corrosive Digitalin Easton syrup table Ferrous sulphate, solate Irritant pills Luminal Meta tablets Nux vomica tablets ", ", and bella; Quinine tablets Strychnine (pills	, fer-   s	3 1 1 4 3 2 1 1 1 1 3		<b>P</b> 3 1 1 3 2 2 1 1 1 3 2 2 1 1 3 2 2 1 1 3 2 2 1 1 3 2 2 1 1 3 2 2 1 1 3 2 2 1 1 3 2 2 1 1 3 2 2 1 1 3 2 2 1 1 3 2 2 1 1 3 2 2 1 1 3 2 2 1 1 3 2 2 1 1 3 2 2 1 1 3 2 2 1 1 1 3 2 2 1 1 1 3 2 2 1 1 1 3 2 2 1 1 1 3 2 2 1 1 1 3 2 2 1 1 1 3 2 2 1 1 1 3 2 2 1 1 1 3 2 2 1 1 1 3 2 2 1 1 1 3 2 2 1 1 1 3 2 2 1 1 1 3 2 2 1 1 1 3 2 2 1 1 1 3 2 2 1 1 1 3 3 2 1 1 1 3 3 2 1 1 1 3 3 3 2 1 1 1 3 3 2 1 1 1 3 3 3 3 3 2 1 1 1 3 3 3 3 3 3 3 3 3 3 3 3 3		AN	DTABLETS         Anæmia tablets         Aspirin         Benadryl         Copper sulphate tablets         Digoxin, digitoxin         Ferrous sulphate, fersolate         solate         Iron, copper and manganese tablets         Iron tablets         Luminal         Whenobarbitone         Quinine pills         "Sleeping" tablets	1 13 1 1 4 17 1 2 2 6 1 1		$     \begin{array}{r}       1 \\       12 \\       1 \\       1 \\       4 \\       15 \\       1 \\       2 \\       2 \\       4 \\       1 \\       1   \end{array} $		
tablets) Total		9 32	<u>1</u> 2	8	- 3	-	Total	1 51	1	45		
Acetic acid Ammonia Bichromate of pota Bichromate of pota Bilue vitriol Camphorated oil Chlorodyne Cleansing fluid Disinfectant Easton's syrup Hydrochloric acid (pecacuanha Paraffin Paraffin Paraffin Soldering fluid Strychnine (Eas syrup) Curpentine Dil of wintergreen	       	4 5 2 1 4 1 1 1 2 3 1 1 1 2 3 1 1 1 7		$ \frac{3}{2} \frac{2}{2} \frac{1}{14} \frac{1}{11} \frac{1}{11} \frac{1}{13} \frac{1}{11} \frac{1}{16} $			A.B.C. liniment Accumulator acid Accumulator acid Accetic acid Benzine Camphorated liniment Camphorated oil Camphorated oil Camphorated oil Camphorated oil Camphorated iniment Camphorated iniment Camphorated iniment Cresolen Cresolen Cresolen Cresolen Dichlorethylene Eucalyptus Hydrochloric acid Iodine Kerosene Lethane Liniment Lysol Methyl alcohol Methyl alcohol Methyl alcohol Paraffin Paraffin Paraffin Paraffin Paraffin Soldering fluid Sulphane Sulphane Tar preparation Tar preparation Tarpentine Window polish	$1 \\ 1 \\ 2 \\ 6 \\ 1 \\ 2 \\ 2 \\ 6 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 2 \\ 1 \\ 1 \\ 1 \\ 1$		$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		
Total		41	5	32	2	2		100	9	80	5	6
OTAL, THESE AND OTHER FORMS OF POISONING	} <u>M.</u> F.	74 56	and the second	56 46		7	FORMS OF F.	161 116		26 91	13 12	9 6
1 OIDOIMING	1	Sector Man	S. Contraction				POISONING J				1	

Table UXXIV.—Accidental poisoning : Deaths of children at ages under 15 herording to the prisoning agent, in the periods 1931-39

			BROK	eligie	NE ICA				in the second		- det	······································	C.M.I
		All ages	0-	10-	15–	20-	25–	35-	45-	55-	65-	75 and over	(1938 = 1.00)
				R <sup>1</sup> ) El Messio	TELEVILLE La com	err ens		ALC: N					Assistin
Males		84	45	25	23	24	39	69	119	209	420	1,253	1.06
		107	38	30	39	36	56	93	155	254	454	1,373	1.29
001 00		85	25	18	31	31	37	56	93	161	352	1,306	0.92
001 05		93	25	18	31	33	37	47	79	146	338	1,609	0.92
		120	31	24	34	40	51	58	95	177	414	1,910	1.05
Contraction of the second s		109	35	26	40	30	41	58	87	157	$\frac{337}{245}$	1,448	0.93
	•••	86	27	21	25	26	30	43	57 68	$\frac{107}{108}$	$\frac{245}{254}$	1,203 1,352	0.75
	•••	97	31	26	33 22	42 27	36 37	50 41	49	85	211	1,352	0.66
	••	80 78	$\begin{array}{c} 27 \\ 20 \end{array}$	22 18	22 28	31	33	38	45 57	68	185	1,162	0.63
1949		10	20	10	20	51							tables
1949*		79	25	18	27	28	32	35	55	71	191	1,174	0.66
a work		74	14	18	19	25	29	34	50	71	183	1,139	0.61
	•••	86	17	17	17	34	35	39	51	84	242	1,279	0.71
Females			TALALAS Y	a bat bis	a national a national a national							. Doul	Canada ana ana ana ana ana ana ana ana an
1001 10		68	27	6	4	4	10	26	64	132	389	1,657	0.88
0011 00		69	20	6	5	5	8	20	50	108	356	1,752	0.83
001 00		73	13	4	4	4	5	10	31	85	318	1,845	0.75
		100	14	5	3	3	6	8	30	92	388	2,283	0.90
1000 10		136	18	6	4	5	6	12	34	123	476	2,714	1.11
1941-45		118	17	8	5	6	6	11	26	81	346	2,135	0.85
	•••	110	15	4	3	5	6	6	11	59 58	260 286	2,037	0.75
	••	111	11	7	9	4	43	5 4	15 18	51	231	1,947	0.75
	••	$100 \\ 105$	$\begin{vmatrix} 11\\10 \end{vmatrix}$	4	4 3	42		4	13	50	232	1,840	0.69
1949	•••	105	10	0	0	2	2	T	10	00			
1949*		105	12	6	4	1	2	5	15	51	230	1,822	0.69
1050*	••	103	8	2	2	1	3	5	14	45	230	1,994	0.73
1951*	· · ·	117	10		2	5	3	3	12	46	240	2,068	0.75

Table CXXV.—Accidental falls : Death rates per million living by sexand age, and Comparative Mortality Indices by sex, 1901–45 and 1946 to 1951

\* According to the 6th Revision of the International Classification. Other years according to the classification in use at the time.

2.8	120	i idi dik	TVCAL, BUESS AND OTHER FORMS OF POISONENC		36. 46		
	6.7 1-	642	 Seconder				

Table CXXVII.—Accidental falls : Death rates per failuon avenue of and age in commutations and population density aggrege 1951

# Table CXXVI.—Numbers of deaths from falls, distinguishing those at work and at home, showing percentage at ages 65 and over, 1951

	5	To	otal	41	Consecutor	188 4397.	I CONTRA	
Specification of fall	Nun	nber		ortion 1,000	At v	vork	At	home
94 - 285 205 COT 05 - 18	M.	F.	M.	F.	M.	F.	M.	F.
Falls on stairs          Percentage aged 65 and over         Falls from ladders          Percentage aged 65 and over         Other falls from one level to another          Percentage aged 65 and over         Falls on same level          Percentage aged 65 and over         Unspecified falls          Percentage aged 65 and over	320 70 95 33 607 32 516 84 278 77	502 89 5 40 423 86 1,111 94 616 95	176 52 335 284 153	189 2 159 418 232	14 36 67 19 295 11 21 38 9 22	5 60 	255 75 37 46 168 65 218 91 143 91	457 89 4 25 307 90 791 96 370 95
Total Percentage aged 65 and over	1,816 <i>61</i>	2,657 92	1,000	1,000	$406\\15$	$\frac{16}{31}$	821 79	1,929 93

CEDEAR ARROCHERTE DOTALISTIONE (28, 86, 23, 19, 10, 23, 20, 80, 98, 200, 1.140) CONTRACTOR ARROCHERTE (17, 430, 13, 6, -3, -4, 11, 43, 238, 2.28)

distinctioning share at	n falls.	All ages	0	5-	15-	25 -	35	45	55-	65	75 and over
ENGLAND AND WALES	$\dots \begin{cases} \mathbf{M} \\ \mathbf{F} \end{cases}$	86 117	17 13	17 3	26 4	35 3	39 3	51 12	84 46	242 240	1,279 2,068
Conurbations : Tyneside	$\cdots {M. \atop F.}$	100 94	26	<u>16</u>	20	117	136	36 17	51 64	192 219	<i>1,300</i> 2,143
West Yorkshire	$\cdots  \Big\{ \begin{smallmatrix} M. \\ F. \end{smallmatrix} \Big.$	131 157		27	12 19	9 8	79	109 15	108 73	389 321	2,143 2,778
South East Lancashire	$\dots \left\{ \begin{smallmatrix} M.\\ F. \end{smallmatrix}  ight.  ight.$	77 95	10 20	6	24 7	83	27 5	42 5	52 53	257 270	1,148 1,717
Merseyside	$\dots \left\{ \begin{smallmatrix} M.\\ F. \end{smallmatrix}  ight.  ight.$	101 95	15 31	55 9	85 19	53	31 10	24 21	207 65	167 200	1,643 1,917
West Midlands	$\cdots \begin{cases} M. \\ F. \end{cases}$	76 88		18 6	23	28 11	40	48 13	63 51	259 175	1,500 2,026
Greater London	$\cdots \begin{cases} M_{\cdot} \\ F_{\cdot} \end{cases}$	82 110	17 150	13 4	23 2	22 1	38 1	44 21	67 51	335 252	1,260 1,902
Areas outside the conurba Urban areas with populatic of 100,000 and over	tions: $M_{\rm ms} \begin{cases} M_{\rm ms} \\ F_{\rm ms} \end{cases}$	98 121	12 8	20	32	43 5	28 5	49 10	99 . 47	326 270	1,589 2,264
Urban areas with population of 50,000 and under 100,000 and under 100,0000 and under 100,00000 and under 100,0000 and under 100,0000 and under 100,00000 and under 100,00000 and under 100,00000 and under 100,0000000000000000000000000000000000	ons $\begin{cases} M. \\ F. \end{cases}$	109 144	14 15	13	43 9	56	58 4	50 8	168 45	190 276	$1,574 \\ 2,378$
Urban areas with populatic under 50,000	ons $\begin{cases} M. \\ F. \end{cases}$	86 130	25 18	18 6	16 2	38 3	50 4	66 11	68 43	205 238	$1,140 \\ 2,156$
Rural areas	$\cdots \ \left\{ \begin{matrix} M.\\ F. \end{matrix} \right.$	68 106	22 3	14 3	24 4	13 4	18	39 5	71 <i>31</i>	153 188	1,000 1,839

# Table CXXVII.—Accidental falls : Death rates per million living by sexand age in conurbations and population density aggregates,1951

		the second	STATES OF				Place of	occurrence				
h and	Current of	Total	Home	Farm	Mine and quarry	Industrial place and premises	Place for recreation and sport	Street and highway	Public building	Resident institution	Other specified places	Places not specified
Accident caused by fire or explosion of combustible material (E.916)	{ M. F.	311 440	158 418	2	95 —	41 3		a ar in	4 3	2 4	8 4	1 8
Burns by clothing	$\Big\{ {}^{M.}_{F.}$	64 294	50 277		I I	9 1			1 3	1 3	2 4	1 6
from domestic fire	$\left\{ {{}^{M.}_{F.}}\right.$	22 91	20 88	11		d bay	Ξ	1	1		10	
from gas fire	$\Big\{ {}^{M.}_{F.}$	6 43	5 41	-		1	-		1		191	_
from electric fire	$\Big\{ {}^{M.}_{F.}$	9 79	9 79			teres in			-		The state	_
other specified	$\left\{ \begin{matrix} M.\\ F. \end{matrix} \right.$	20 55	11 46	-		7		-	2	1 1	1 4	2
not specified	$\left\{ \begin{smallmatrix} M.\\ F. \end{smallmatrix} \right.$	7 26	5 23		I	1		_	-		11	1 3
Burns by falling into fire	$\left\{ \begin{matrix} M.\\ F. \end{matrix} \right.$	31 49	30 49	101		1						-
Burns by other specified means	$\left\{ {}^{\rm M.}_{\rm F.} \right.$	215 93	78 89	2	95	<b>3</b> 0 2			3	1	6	
Burns, means not specified	{ M. F.	1 4			Later and	1					AHD	1

# Table CXXVIII.—Accidental burns : Deaths by sex according to place of occurrence, 1951

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# MEDICAL CERTIFICATION OF CAUSE OF DEATH

#### **Multiple Cause Analysis**

In the Appendix to the 13th Annual Report of the Registrar General (1850) Farr mentioned the "secondary affections that supervene in the course of measles, scarlatina, phthisis and other diseases" and concluded that "at some subsequent period it will be right to investigate these double causes." It was not until 1911, however, that a tabulation of multiple or secondary causes was published by the General Register Office. The Annual Reports for the years 1911–14 contained tables showing the secondary conditions associated with causes assigned to numbers 1–19 of the International List then in use (the second, 1909, revision). The war of 1914–18 prevented publication of similar tables dealing with the remaining causes of the List but the work was practically completed at a later date and the results were kept in manuscript form.

A similar tabulation was made of deaths registered during 1921-30, and the results were published in Part IV of the Registrar General's Decennial Supplement, 1931. This analysis was based on the third revision of the International List (1919) and the rules in force at that time for the selection of one from two or more jointly stated causes.

A limited tabulation, of deaths registered during February, 1945, in certain areas of England and Wales, was produced by the General Register Office as part of the preparations for the international conference on causes of death in 1948. This analysis has not been published but exists in manuscript form. It was based on the fifth revision of the International List (1938), and on the form of medical certificate of cause of death and the methods of selection which were in use in England and Wales at that time and which were substantially the same as those adopted for international use by the Sixth Decennial Revision Conference in 1948.

This Conference put forward a "suggested form of Multiple-Cause Tabulation" which appeared on page 368 of Volume 1 of the International Statistical Classification of Diseases, Injuries and Causes of Death, 1948. A number of countries have prepared or are preparing tabulations of multiple causes. A paper has been published by the Central Institute of Statistics in Rome which deals with deaths in Italy in 1949 and 1950, classified according to the fifth revision of the International List.\* In France, the "Institut National de la Statistique et des Etudes Economiques" has published two reports on the use in Paris hospitals of a multiple-cause death certificate similar to the International Form of Medical Certificate of Cause of Death.<sup>†</sup> Canada and the United States are other countries known to be working on statistics of multiple causes.

The present analysis was undertaken by the World Health Organization Centre for Classification of Diseases<sup>‡</sup> in collaboration with the General Register Office and is a preliminary investigation intended as much to explore the problems of this type of tabulation as to provide useful results. It deals with a 10 per cent sample of deaths registered in England and Wales during the first

(\*) Barberi B. "Some preliminary figures on the joint causes of death in Italy".

(†) "Rapport statistique sur lar mise en service du certificat de causes complexes de décès dans les hôpitaux de Paris," 1952 and 1953.

(‡) Tables prepared by the World Health Organization Centre have been distributed to National Committees on Vital and Health Statistics in document WHO/HS/Nat. Com/45.

six months of 1951. The "underlying cause" is that selected by the General Register Office coders according to the normal rules of selection, including rules in the Tabular List linking certain causes when jointly mentioned. Other causes on a certificate were each coded as a separate entity, without applying the linking rules, distinguishing those in Part I of the certificate, "complications," and those in Part II, "other contributory conditions." Second and subsequent mentions of terms in the same category were ignored.

Three tables were prepared from this material. Table CXXIX (page 252) is in the form suggested in the International Classification but without distinction of sex or age. It shows the frequency with which each three-digit category (and a few four-digit sub-categories) of the Detailed List appeared on the certificates of the sample as underlying cause, as complication and as other contributory condition. The absence of a three-digit category from Table CXXIX means that it did not occur at all in the sample. Table CXXX (page 260) is a cross-tabulation showing the occurrence of certain conditions as underlying cause with the same conditions, plus some residual groups, as complications or other contributory condition. Table CXXXI (page 266) analyses the " combination categories " occurring as underlying cause, i.e. those categories to which are assigned terms in two or more different categories when jointly mentioned on the certificate. It shows the total number of deaths assigned to each combination category, the number directly assigned to inclusion terms in the category, and the numbers assigned to combinations of jointly-mentioned terms in other categories. Combination categories to which no terms are directly assignable and whose components are obvious are not shown (e.g. 056.1, Whooping cough with pneumonia ; 392 Otitis media with mastoiditis ; 450.1 General arteriosclerosis with gangrene; the "with immaturity" sub-divisions of 760-773, certain diseases of early infancy).

In Tables CXXIX and CXXX, some of the categories or groups of categories shown as underlying cause are or include one of these combination categories. Their components do not appear separately in these tables, either as underlying cause, complication or other contributory condition. To this extent, therefore, Tables CXXIX and CXXX overstate the actual mention on certificates of the combination categories and understate mention of the component categories, and the explicit reference in Table CXXX to some combinations of underlying cause with secondary condition also understates the actual occurrence of such combinations. Table CXXXI provides the additional information about the hidden component categories.

For example, Table CXXX gives the total deaths assigned to 422 (Other myocardial degeneration) as 5,245 and its occurrence with 450 (General arteriosclerosis) as only 19. Table CXXIX shows the sub-categories of 422 and gives the deaths assigned to 422·1 (With arteriosclerosis) as 1,829. Table CXXXI shows that, of the deaths assigned to 422·1, only 467 were directly assignable there (cardiovascular degeneration, etc.) ; the other 1,362 deaths were linked combinations of 422·2 with 450. Table CXXIX, therefore, on account of this combination category, overstates mention of 422·1 and understates mention of 422·2 and 450, each by 1,362, and Table CXXX understates joint mention of 422 and 450 by the same amount.

This method of dealing with linked terms is necessary if the "underlying causes" of a multiple-cause analysis are to be those selected for the normal mortality analysis. It need not lead to any great difficulty since the combination categories are few, though their effect may be great. From Table CXXXI, the overstatements and understatements of Tables CXXIX and CXXX can be ascertained in the same manner as for the example of category 422·1 quoted above. All categories or groups of categories in Tables CXXIX and CXXX which are affected by Table CXXXI are marked with an asterisk—\*.

Detailed List No.	Title	Underlying	Complication	Other contributory	Detailed List No.	Title in solution	Underlying	Complication	Other contributory
	culosis of respiratory system: With mention of occupa-	IdsT	.lsir	mate	Diseas	es attributable to viruses-contd. Chickenpox	e tab	Ehre	1
001* 002*	tional disease Pulmonary	13 651		2 61	088 092	Herpes zoster Infectious hepatitis	$1 \\ 13$	3	3 4
003 005	Pleural Tracheobronchial glandular, with symptoms	8 2	7	9	Malar 116	Other and unspecified forms	our-o sam	tew f	
007 008	Other respiratory Unspecified site	( <del></del> ()]	3	1	Other	of malaria infective and parasitic	1	n <del>to</del> ne	T
	culosis, other forms : Meninges and C.N.S.	59	25	8	di	seases :			
010 011	Intestines, peritoneum and	1 2 2 2 2 3	1. 1. 3. A. 1	111111111	125 131	Hydatid disease Dermatophytosis	$\begin{vmatrix} 2\\ 1 \end{vmatrix}$		=
012	mesenteric glands Bones and joints, active and	13	7	5	132	Actinomycosis	1	11 <u>11</u> 11	-
1. 617	unspecified	11	2	2	134 138	Other fungus infections Other infective and parasitic	1.1	1.1.	-
013	Late effects, bones and joints	01_85	11000	2	ODI :	diseases	3		1
014	Skin and subcutaneous	TO CT	1	pr da	Malig	nant neoplasm of buccal	01, 10	0401	11
015	cellular tissue Lymphatic system	I	12 1	hoogik	ca	vity and pharynx :	als av	roste d	
016	Genito-urinary system	16 1	1	2	140	Lip Tongue	9 39	1	1 6
017 019	Adrenal glands Disseminated	10	19	4	142	Salivary gland	7		- 11
	the free states and said and	marie	316	Parto	143 144	Floor of mouth	5	1	3-
Syphi 020	lis and its sequelæ : Congenital syphilis	2			144	mouth unspecified	23	NTT TO	1
022	Aneurysm of aorta	25	* <u>2010</u> - 7		145	Oral mesopharynx	10		-
023	Other cardiovascular syphilis		1	10	147 148	Hypopharynx Pharynx, unspecified	13 14	11.000	_
024 025	Tabes dorsalis	72	1	5	TIME	That yin, and poole -	131163	TED:	12
026	Other syphilis of C.N.S	5	_	-	Malig	nant neoplasm of digestive	10. 8	iseas)	5
027	Other forms of late syphilis	1				gans and peritoneum :	95	3	4
029	Syphilis, unqualified	13048	350 33	0.101	150 151	Esophagus Stomach	803	11	30
	occal infection and other	these	lo of	ide of	152	Small intestine, including	2.5 11	1177512	
030 ver	nereal diseases : Acute or unspecified gonor-	31 329	113 n.	f vien	153	duodenum Large intestine, except	5	1101	1
000	rhœa	1	di <del>Ta</del> na		1. Tim	rectum	507	6	30
Trefact	ious diseases commonly	maner	Larries	La della	154 155	Rectum	321	4	34
ari	sing in intestinal tract :	the think		and the second	100	(stated to be primary)	76	2	4
042 ,	Other salmonella infections	2	201-11	1	156	Liver (secondary and un-	50	228	23
044 045	Brucellosis (undulant fever) Bacillary dysentery	2	102.0	2	157	specified) Pancreas	151	6	3
046	Amœbiasis	2	1. 1. <del></del>	1000	158	Peritoneum	18	30	4
048	Unspecified forms of dysentery	main	pl <u>in</u>	2	Malia	nant neoplasm of respiratory	ation	idan	3
	A LEAD STREAM AND			1 A States		stem :	0000	report	12
Other 050	bacterial diseases : Scarlet fever	2	-	-	160	Nose, nasal cavities, middle	23	2	2
051	Streptococcal sore throat	2			161	ear, and accessory sinuses Larynx	55	4	1
052	Erysipelas	36	28	$\begin{vmatrix} 1\\ 3 \end{vmatrix}$	162	Trachea, and of bronchus	1300	Loui II	13
053 056	Septicæmia and pyæmia Whooping cough	44	1		e 7.1.	and lung, specified as	202	2	3
THE	·0 without mention of	5 4310	1	1	163	Lung and bronchus, unspe-	1 21 DE	ob si	1
18.2	pneumonia 1 with pneumonia	14 30	-	1	and the	cified as to whether pri-	401	19	5
057	Meningococcal infections	21	-	1	164	Mediastinum	481	13 2	1
061 062	Tetanus Anthrax	3	1		165	Thoracic organs (secondary)	1	97	9
	No managere (2101)	, fille,	ALL.	Fard of	CLA L	nent peoplem of breast and	101111	1.1111	
Spiroc	hætal diseases, except	AR I.	Sec. 1	0 0.01		nant neoplasm of breast and nito-urinary organs :	AUL AL	nician	12
072 Sy	philis : Leptospirosis icterohæmor-	erebr	13 22	K.Z.D.	170	Breast	330	-	48
	rhagica (Weil's disease)	2		-	171 172	Cervix uteri Corpus uteri	1700	1	37
Dises	ses attributable to viruses :			100	172	Uterus, unspecified	-	7	3
080	Acute poliomyelitis	7	18-21	1	175	Ovary, fallopian tube, and	1.3 ML	0	5
081	Late effects of acute polio-	chose	od i	2	176	broad ligament Other and unspecified	10	3	00
082	Myelitis	35	Samo	Z	110	female genital organs	it- al	si10	1
	Late effects of acute infec-	in river .	disc.	1	177	Prostate	Tratilat	1010	28
083	tious encephalitis	12	a general france	6	178 179	Testis Other and unspecified male	I TA MARY	1	1.2
( A. C. A.		9							
084	Smallpox	3 25	1	3	a service of a	genital organs		- 1	1
( A. C. A.			1	3	180 181		b-d		1 2

# Table CXXIX.—Multiple Cause Analysis. Frequency of statement of causes as underlying cause, complication, or other contributory condition

Table CXXIX.—contd.

....

Detailed List No.	Title	Underlying	Complication	Other contributory	Detailed List No.	Title	Underlying	Complication	Other contributory
	ant neoplasm of other and		win, where	anti) a		ses of other endocrine glands	lis engi		an't '
190 191	Malignant melanoma of skin	10	and the second second	111	270	Disorders of pancreatic in- ternal secretion other	oudoeni ad davo	na più 1976 - 1	936) 831
191	Other malignant neoplasm of skin Eye	34 5	3	15	272 273	than diabetes mellitus Diseases of pituitary gland	1 5	1	2
193	Brain and other parts of nervous system	62	40	5	274	Diseases of thymus gland Diseases of adrenal glands		5	2
194 195	Thyroid gland	15 4	2		Avito	minoses, and other metabolic			199
196	Bone (including jaw bone).	37	22	13	S. Starting	diseases :	. singer		088
197 198	Connective tissue Secondary and unspecified	6	tonches	an <u>t</u>	286	Other avitaminoses and nutritional deficiency	on tess Bind		242
	malignant neoplasm of lymph nodes	3	13	0.93	287	states	4	6	7
199	Other and unspecified sites	54	687	88	288	endocrine origin		5	27 2
	asms of lymphatic and	annargar. Sgalseilt	La.		289	Other metabolic diseases	4	4	189
200	matopoietic tissues :   Lymphosarcoma and reti-	rai ea	1.		Disso	and of blood and blood	and son		
201	culosarcoma Hodgkin's disease	35 33			for	ses of blood, and blood- rming organs :	61.000.00. 9 - 200.000		1989
202	Other forms of lymphoma	12 100			290	Pernicious and other hyper- chronic anæmias	58	6	57
203	(reticulosis) Multiple myeloma (plasmo-	5		1	and the	·0 Pernicious anæmia	54	6	51
204	cytoma)	6 89	1	1 4	in the second	·1, ·2 Spinal cord degene- ration and other hyper-			
	·0 Lymphatic	41	-	-	291	chromic anæmias Iron deficiency anæmias	4		6
	·1 Myeloid	37	-	4	292	(Hypochromic anæmias) Other anæmias of specified	9	1	1004
205	fied leukæmia	11 1	1	-		type	20	3	6
			e disea	Oth	293 294	Anæmia of unspecified type Polycythæmia	63	50 7	66
Benig 210	n neoplasm : Buccal cavity and pharynx		1.00/1.	USE	295 296	Hæmophilia	3	0:	-
211	Other parts of digestive		1007			Purpura and other hæmor- rhagic conditions		1.	-
214 215	system Uterine fibromyoma Other benign neoplasm of	4 9	28:37. 28	2	297 298	Agranulocytosis Diseases of spleen	3 9	1	12
216	uterus Ovary	1 3	ul <del>T</del>	5	Psych	ioses :			a det
219	Kidney and other urinary organs	11		9	<b>3</b> 00	Schizophrenic disorders	2	adan.	T
222	Other benign neoplasm of		Hangler 131	PERSONAL ST	301	(dementia præcox) Maniac-depressive reaction.	7		4
223	skin	in <del>ac</del> in na faitr	tod	1	303	Paranoia and paranoid states	1		1
224	nervous system	9 1	1000-1	-	304	Senile psychosis	48	8	68
225	Bone and cartilage	1	CLOTE I	1	305 306	Presenile psychosis Psychosis with cerebral	lies 1 an	atro	3.
229	Other and unspecified organs and tissues	1		1	309	arteriosclerosis Other and unspecified	-73	20	1
22	we heart dispuse 785 19	eated tech	12			psychoses	2	3	12
Neopl 230	asm of unspecified nature :   Digestive organs	4	No.	2		· The second sec	n in the state		210
231	Respiratory organs	4	-	3	Psych 310	oneurotic disorders : Anxiety reaction without	of a state	dint	225
237	Brain and other parts of nervous system	32	3	5		mention of somatic symp-	and of a	din	878
238	Skin and musculo-skeletal system	2	INTE .	*10 <u>2.6.</u>	311	toms Hysterical reaction without		10-	1
239	Other and unspecified	ingosci.			an h	mention of anxiety reac- tion	2	unseily:	0410
	organs	3	1	10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	315	Psychoneurosis with so- matic symptoms (somati-	3 (334) ·	Gall 1	1788
	tic disorders:				3	zation reaction) affecting.	28000	all's	888
241 243	Asthma	261	179	189	317	circulatory system Psychoneurosis with somatic	- beata	1	Titeen
	Te dobligat in	rolling.	0.		and the second	symptoms (somatization	abom i	DEG 1	393
Diseas 250	ses of thyroid gland :   Simple goitre	is dire	1	3	144. 1	reaction) affecting other systems	3	1	1200
251	Non-toxic nodular goitre	1	130-	3	318	Psychoneurotic disorders, others mixed and un-	1	ili ten M	00.00
252	Thyrotoxicosis with or with- out goitre	39	1	19	-	specified	3	all -	1
253 254	Myxœdema and cretinism.	16	1	23	i i		Ni your	aitan	in dist
204	Other diseases of thyroid gland	2	1	1534	Disor	ders of character, behaviour	mario	Rock	4000
	DI II.	sed into	113	a cite	322	and intelligence : Alcoholism	1	1 I	I
D' .	tes mellitus :	STREET.	And a state of the	1 22 2	323	Other drug addiction	1 1	A CONTRACTOR OF	an average

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# Table CXXIX.—contd.

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Table CXXIX.	-contd.
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Detailed List No.	Title	Underlying	Complication	Other contributory	Detailed List No.	Title	Underlying	Complication	Other contributory
Vascu 330	lar lesions affecting C.N.S.:   Subarachnoid hæmorrhage	132	23	3	Chron 410	ic rheumatic heart disease : Diseases of mitral valve	436	29	60
331 332	Cerebral hæmorrhage Cerebral embolism and	2,090	182	40	411	Diseases of aortic valve, specified as rheumatic	23	2	1911
	thrombosis Other and ill-defined vas-	1,678	299	161	412 414*	Diseases of tricuspid valve Other endocarditis specified	2	2	1
334*	cular lesions affecting	261	180	42	415	as rheumatic	99	7	8
	C.N.S	201	100	44	416*	as rheumatic Other heart disease specified	25	Call I	de G T
Inflan 340	Meningitis, except meningo-				410	as rheumatic	56	37	9
341	coccal and tuberculous Phlebitis and thrombo-	26	35	5	Arter	iosclerotic and degenerative heart disease :	A CARDON	area a Donalda	201 - 1
	phlebitis of intracranial venous sinuses	our <del>rea</del> l	1	THE .	420	Arteriosclerotic heart dis- ease, including coronary	eres estis Alexadaria		
342	Intracranial and intraspinal abscess	3	8	81244	A PA	disease	3,241	275	98
343	Encephalitis, myelitis, and encephalomyelitis (except	atami z	- CHER	482		disease (so described)	25	1	3
344	acute infectious) Late effects of intracranial	13	6	2		·1 Heart disease specified as involving coronary		000	000
014	abscess or pyogenic in-	1	6	A.		2 Angina pectoris with-	3,144	202	74
345	fection Multiple sclerosis	56	2	38		out mention of coro- nary disease	72	72	21
	diseases of C.N.S. :		1: ·		421	Chronic endocarditis not specified as rheumatic	126	183	53
350 351	Paralysis agitans Cerebral spastic infantile	73	6	96	422*	Other myocardial degenera- tion	5,245	2,261	766
352*	paralysis	3 34	7 136	10 127	6	·0 Fatty degeneration ·1 With arteriosclerosis.	33 1,829	18 122	10 72
353 355	Epilepsy Other diseases of brain	55 13	14 24	53 7		·2 Other ·· ··	3,383	2,121	684
356	Motor neurone disease and muscular atrophy	16	10	10		diseases of heart : Acute and subacute endo-	and a start	and and the	
	·0 Progressive muscular	11	10	9	430	carditis	26	37	2
	atrophy ·1-·3 Other and unspeci-	nien nitige	10		431	Acute myocarditis, not spe- cified as rheumatic	7	44	2
357	fied manifestations Other diseases of spinal	5	all and a line	1	432	Acute pericarditis specified as non-rheumatic	1	1	A (8)
	cord	.8		3	433 434*	Functional disease of heart Other and unspecified di-	224	554	102
	ses of nerves and peripheral nglia :	fiordate	1 Hizor	NYE H BOB	01	seases of heart	207	1,512	103
362 364	Brachial neuritis Polyneuritis and polyradi-	edi) ce <del>nn</del> a Gigelenne	1	105	Hype: 440*	rtensive disease : Essential benign hyper-	tara Persia	Lio-	032
365	culitis Erythrædema polyneuritica	53	-	1	441*	tension with heart disease Essential malignant hyper-	11	1	200
366	Other and unspecified forms	thursd o	Call Ro	2	442*	tension with heart disease Hypertensive heart disease	14	nn <del>-</del>	200
367	of neuralgia and neuritis Other diseases of cranial	ekapa	and i	0.00	442*	with arteriolar nephro-	en lins	numi .	ALC: NO
	nerves	night 3	1	308	443*	sclerosis Other and unspecified	41	20	00
Inflam 370	matory diseases of eye : Conjunctivitis and ophthal-	2			444*	hypertensive heart disease Essential benign hyperten-	735	18	22
377	mia Inflammation of optic nerve	elli oite	extra news	methil	2	sion without mention of heart	205	1,422	317
379	and retina		1.2.1 () 1.1 10	011	445*	Essential malignant hyper- tension without mention	ban s	Engle Strong	799
5.0	of eye	1	1000	10.700	446*	of heart	31	40	3
	diseases and conditions of eye:	1		5	110.	nephrosclerosis without mention of heart	76	3	4
385 387	Cataract	(3.57% <del></del> d	ay and	6	447*	Other hypertensive disease	102	5	2
388 389	Other diseases of eye Blindness			1 6	D!	without mention of heart	102	5 S	Alla
Diseas	es of ear and mastoid process:	and a land		and o	Diseas 450*	ses of arteries : General arteriosclerosis	783	3,131	435
891	Otitis media without men- tion of mastoiditis	19	2	_()	~	•0 without mention of gangrene	714	3,131	435
892	Otitis media with mastoid- itis	2		2	451	·1 with gangrene Aortic aneurysm specified	69	and E	0.29
393	Mastoiditis without men- tion of otitis media	4	1		G	as non-syphilitic; and dissecting aneurysm	28	17	6
	The second s				452	Other aneurysm, except of heart and aorta	1	2	2
Rheun 400*	natic fever : Rheumatic fever without	spectra	la ezair	entration.	453	Peripheral vascular disease	3	and	3
2	mention of heart involve- ment	and the state of t	14	121	454	Arterial embolism and thrombosis	11	10	4
401*	Rheumatic fever with heart involvement	26	2	2	455	Gangrene of unspecified cause	4	59	81
402	Chorea	2	-	1	456	Other diseases of arteries	7	2	

Detailed List No.	Title	Underlying	Complication	Other contributory	Detailed List No.	Title	Underlying	Complication	Other
Dise	ases of veins and other diseases				Oth	er diseases of respiratory			
460	of circulatory system : Varicose veins of lower	. Since	nearson Martin		525	stem—contd. Other chronic interstitial	al antiti in	and and	il with
461	extremities	19		and the state of the state of the		pneumonia	1. 2. A. C. A. C. M. L. P. L.	33	1
462	Varicose veins of other			1	526 527	Bronchiectasis Other diseases of lung and	103	62	4
463	specified sites Phlebitis and thrombo-	4	3		5	pleural cavity	69	131	20
	phlebitis of lower extre- mities	約40 Azras		VER 7	A. S. S.	·1 Emphysema without mention of bronchitis	64	95	19
464	Phlebitis and thrombophle-	16	6	9	N. S. S. S. S.	·0, ·2, other diseases of lung and pleural cavity	5	36	
465	bitis of other sites Pulmonary embolism and	1	11	7	34	J and picural cavity		00	1
466	infarction	32	199	31	Dise	ases of buccal cavity and	Pileti S	-	
400	Other venous embolism and thrombosis	25	52	18	532	œsophagus :   Other inflammatory diseases		MAS DUN	
467	Other diseases of circulatory system	a prese			1	of supporting structures		E2 2	
468	Certain diseases of lymph-	3	76	4	533	of teeth	2	The state	1000
	nodes and channels	2	-	2	536	and tooth development Stomatitis	1	- 10	0000
Acute	e upper respiratory infections:	and a	1 Othe	144	537	Diseases of salivary glands		100	how.
470	Acute nasopharyngitis (common cold)	2	-	11	539	Diseases of œsophagus	3	4	358
472 473	Acute pharyngitis	5	1 1	11	Dise	ases of stomach and duodenum:	a deliter a		1
474	Acute tonsillitis Acute laryngitis and	5	2		540	Ulcer of stomach	181	13	8
475	tracheitis Acute upper respiratory	6	2	102 (	541 542	Ulcer of duodenum	148	5	3
110	infection of multiple and	ANTER	Parts .	1000 - 1	543* 544	Gastritis and duodenitis	7	21	2
	unspecified sites	1	1	1		Disorders of function of stomach	2	2	E.I.d.
Influe	enza:	- unot	- 10. 2. States		545	Other diseases of stomach and duodenum			The Party
480* 481*	Influenza with pneumonia Influenza with other respira-	733	12752	12		and duodendin	6	50	1
	tory manifestations and	to a set	2012	907 1		ndicitis :	AND AND		
482*	influenza unqualified Influenza with digestive	796	11	190	550* 551	Acute appendicitis	61 10	2	1 7
	manifestations but with-	in the second	12		553	Other diseases of appendix		1000	1
	out respiratory symptoms	6	A	100 - 1		and rectains in a	N. Agab	i gis	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Pneun 490*	nonia :	and particula	12.25 N	837 1	Hern 560	ia of abdominal cavity :   Hernia of abdominal cavity	a Classification of the second	and the second	TUTTE
490*	Lobar pneumonia	262 1,132	46	25 151		without mention of	15	2	16
492* 493*	Primary atypical pneumonia	6		101	561	obstruction Hernia of abdominal cavity	(accurate)		
490.	Pneumonia, other and un- specified	104	79	27		with obstruction .,	69		22
 Bronch	bitte : 20	a o Tanta a		1215 ·	0.1	a aray	10 Anna	13	
500	Acute bronchitis	510	351	145	Other	diseases of intestines and peritoneum :	0 1000.23 2 1071.24	A EVER A	(332)
501* 502*	Bronchitis, unqualified Chronic bronchitis	266	227	224	570	Intestinal obstruction with-	knov en	and i	1005
	·0 Bronchitis with	2,046	298	978	571*	out mention of hernia Gastroenteritis and colitis,	62	247	45
	emphysema	559		1		except ulcerative, age 4		ditto 1	123
ł	The second s	1,487	298	977	572	weeks and over Chronic enteritis and ulcera-	83	7	17
Other	diseases of respiratory tem :	Elsynaxor	Cardina 1	085	573*	tive colitis Functional disorders of	50	7	21
10	Hypertrophy of tonsils and	ten seut	della -			intestines	1	and -	0.55
11	adenoids	4	-	36 <del>1</del>	575	Abscess of anal and rectal regions	4	1 1	3
	(quinsy) .	2	1 1	88-1	576* 577	Peritonitis	4	235	13
15	Chronic sinusitis	5	1	-1	578	Peritoneal adhesion Other diseases of intestines	1	1	
16	Chronic larvngitis	21	Disco	-		and peritoneum	10	38	5
19199	Other diseases of upper respiratory tract	3	1	245	Discos	es of liver will ble 11	. anditra	i nadiri bd Alla	
18 19	Empyema	7	15	3	I	es of liver, gall bladder and pancreas :	Superior		
20	Pleurisy Spontaneous pneumothorax	8	16 10	13	580	Acute and subacute yellow	-		
21 .	Abscess of lung Pulmonary congestion and	4	34	6	581	atrophy of liver	7 60	6 13	18
	hypostasis	53	1,085	70	582	Suppurative hepatitis and	2	ENCT I	
23*	Pneumoconiosis due to silica and silicates (occu-	unition .	La l'ente	150	583	Other diseases of liver	$\begin{bmatrix} 2\\1 \end{bmatrix}$	24	1
	pational)	51	1	21	584 585	Cholelithiasis Cholecystitis without men-	44	2	17
24 0	Other specified pneumo- coniosis and pulmonary	CONTRACTOR OF				tion of calculi	39	13	23
	fibrosis of occupational	TT T	RO I		586	Other diseases of gall bladder and biliary ducts	7	41	19
A HAL	origin	1		-	587	Diseases of pancreas	22	4	19

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# Table CXXIX.-contd.

Nephritis and nephrosis :

Title

Acute nephritis . . . . Nephritis with œdema, in-cluding nephrosis . .

Chronic nephritis .. .. Nephritis not specified as

Hydronephrosis . . . . Calculi of kidney and ureter Other diseases of kidney and

Other diseases of bladder..

Other diseases of urethra..

urinary system ..

Stricture of urethra

Diseases of male genital organs :610Hyperplasia of prostate ...611Prostatitis ...612Other diseases of prostate ...614Orchitis and epididymitis ...617Other diseases of male<br/>genital organs ...

Diseases of breast, ovary, Fallopian tube and parametrium : Other diseases of breast ... Salpingitis and oophoritis,

Diseases of uterus and other female genital organs : 630 Infective disease of uterus, vagina, and vulva ...

unqualified ...... Diseases of parametrium and pelvic peritoneum (female) .....

Utero vaginal prolapse ... Other diseases of uterus ...

Disorders of menstruation.

Other diseases of female

Anæmia of pregnancy ... Pregnancy associated with

Abortion without mention of sepsis or toxæmia ...

Delivery without complica-

Other postpartum hæmorr-

Other complications arising

from pregnancy..

... ..

other conditions..

Abortion with sepsis

Delivery without complication :

Delivery with specified compli-

tion

hage

cation

genital organs ...

Complications of pregnancy :640Pyelitis and pyelonephritisof pregnancy ...642Toxæmias of pregnancy ...

Cystitis

acute or chronic.

Other renal sclerosis

Other diseases of urinary system : 600 Infections of kidney ... 0 Pyelitis, pyelocystitis, and pyelonephritis ... 1, 2, Abscess and other infections of kidney ...

Detailed List No.

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Abortion :

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Title

Pyrexia of unknown origin

during puerperium ... Puerperal pulmonary em-

Cerebral hæmorrhage in the

Cellulitis of finger and toe... Other cellulitis and abscess

without mention of lym-

phangitis.. Other cellulitis and abscess with lymphangitis

Acute lymphadenitis ... Other local infections of

skin and subcutaneous

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Complications of the puerperium : 682 Puerperal phlebitis and thrombosis ......

holism

puerperium

Infections of skin and subcutaneous

Boil and carbuncle

tissue ..

cutaneous tissue : Eczema

orders

Other diseases of skin and sub-

Other dermatitis ...

Psoriasis and similar dis-

Pruritis and related con-

Corns and callosities ... Other hypertrophic and atrophic conditions of skin ...

Diseases of hair and hair

rheumatic fever : Acute arthritis due to

pyogenic organisms ... Rheumatoid arthritis and

Alternational artificial and allied conditions ... Osteoarthritis (arthrosis) and allied conditions ... Arthritis, unspecified ...

Muscular rheumatism ... Rheumatism, unspecified...

Osteomyelitis and other diseases of bone and joint : Osteomyelitis and periostitis

Osteitis deformans Other diseases of bone

Other diseases of musculoskeletal

system :

Displacement of interver-tebral disc

Other diseases of joint ...

Synovitis, bursitis, and teno synovitis, without men-of occupational origin ... Other diseases of muscle,

Monstrosity Spina bifida and meningocele Congenital hydrocephalus.

Other congenital malforma-

and sense organs

tions of nervous system

tendon and fascia

Curvature of spine

Congenital malformations : 750 Monstrosity 751 Spina bifida and meni

Other deformities ...

follicles .. .. Chronic ulcer of skin

Arthritis and rheumatism, except

Detailed List No.

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# Table CXXIX.—contd.

Detailed List No.	Title	Underlying	Complication	Other contributory	Detailed List No.	Title	Underlying	Complication	Other
Con 754	genital malformations—contd.					ptoms referable to systems or			
	Congenital malformations of circulatory system	107	4	19	780	rgans :   Certain symptoms referable			
755 756	Cleft palate and harelip Congenital malformations	1	-	2		to nervous system and special senses	6	185	
757	of digestive system Congenital malformations	30	-	4	782	Symptoms referable to cardiovascular and lym-			
758	of genito-urinary system Congenital malformations	26	-	5	783	phatic system	22	4,091	1
759	of bone and joint Other and unspecified con-	1	-	-	784	spiratory system Symptoms referable to	-	57	
	genital malformations not elsewhere classified	19	3	4		upper gastro-intestinal tract	Contraction and the	183	
Birt	h injurice contrarie and infer				785	Symptoms referable to abdomen and lower		100	
	h injuries, asphyxia and infec- tions of newborn :				786	gastro-intestinal system Symptoms referable to	1	26	
760	Intracranial and spinal injury at birth	85	-	1	788	genito-urinary system Other general symptoms		78	
	·0 without mention of immaturity	64	_	1	789	Abnormal urinary consti-	-	2	
761	•5 with immaturity Other birth injury	21 21	2	1		tuents of unspecified cause	1	2	T d.s
	·0 without mention of immaturity	7	2	1	Senili	ity of ill-defined diseases :			-
762	5 with immaturity Post-natal asphyxia and	14	_	1016	790 792	Nervousness and debility Uræmia unqualified	5	219 875	.07
80	atelectasis	137	18	8	794*	Senility without mention of psychosis.	597	1,811	1,0
6	immaturity	82	18	8	795	Ill-defined and unknown causes of mortality	4	418	-,.
763	Pneumonia of newborn	55 50	13	4	E800-	Railway accidents	12	110	in ene
	·0 without mention of immaturity	34	13	4	E802 E810-	Giadanases-essenatio	14	It is y	11/29 0.)
764	·5 with immaturity Diarrhœa of newborn	$\begin{array}{c} 16 \\ 6 \end{array}$	14 <u>-</u>	9857	E825 E830-	accidents.	220	1	ate
	·0 without mention of immaturity	2	_	_	E835	Motor vehicle non-traffic accidents.	5	19900	-48 029
767	·5 with immaturity Umbilical sepsis	42		_	E840- E845	Other road vehicle accidents	10		102 CE
08	·0 without mention of	1			E850- E858	Water transport accidents.	4	ra <u>a</u>	
768	5 with immaturity Other sepsis of newborn	1	-	-	E860- E866	Aircraft accidents	39		-18
100	·0 without mention of	4			E870- E888	Accidental poisoning by solid and liquid substances	19	Edec	-408
700	immaturity	$\frac{2}{2}$	307	=	E890- E895	Accidental poisoning by	FW YOR	Editor	-130
769	Neonatal disorders arising from maternal toxæmia	14	a de la companya de la	3	E900- E904	Accidental falls	25 276	3	
	·0-·4, without mention of immaturity	3	_	3	E910-	Other accidents	205	6	
	·5-·9, with immaturity	11	-	-	E936 E950-	Therapeutic misadventure			
Other	diseases peculiar to early				E959	and late complications of therapeutic procedures.	_	1	
770	infancy : Hæmolytic disease of new-				E960- E965	Late effects of injury and poisoning	8	_	
	born (erythroblastosis) $\cdot 0 - \cdot 2$ , without mention	25	1	-	E970- E979	Suicide and self-inflicted injury	228		
	of immaturity •5–•7, with immaturity	21 4	1	_	E980- E985	Homicide and injury pur- posely inflicted by other	220		
771	Hæmorrhagic disease of	-			N800-	persons (not in war) Fracture of skull, spine and	5	-	
	newborn	17	-	-	N809	trunk	235	9	1
	immaturity	13			N810- N819	Fracture of upper limb	12	-	
772	Nutritional maladjustment.	4 2	2	-	N820- N829	Fracture of lower limb	183	1	e
	0 without mention of immaturity	1	2		N830- N839	Dislocation without fracture	3	-	-
773	·5 with immaturity Ill-defined diseases peculiar	1	-	-	N850- N856	Head injury (excluding skull fracture)	91	21	
	to early infancy 0 without mention of	12	14	5	N860- N869	Internal injury of chest, abdomen and pelvis	49	1	
	immaturity •5 with immaturity	3 9	14	5	N870- N879	Laceration and open wound		1	
774	Immaturity with mention of any other subsidiary	0			N880-	of face, neck and trunk. Laceration and open wound	13	-	-
775	condition	12	-	_ 1	N888 N890-	of upper limb Laceration and open wound	1	-	-
775	Immaturity subsidiary to some other cause		1	4	N898 N900-	of lower limb	5	-	-
776	Immaturity unqualified	187	5	6	N908	of multiple location	9	1	-

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- 6)	E	L
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Table CXXX.—Multiple Gause Analysis. Occurrence of certain conditions as underlying cause with the same conditions, plus some residual groups as complication or other centribu-

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			sir -		

Table CXXIX .- contd.

1.12 - 2 - 15 - 16	adapted to durate a designed					
Transa		puletestrait				
	ntal radiomiatanos-conta Cengratial matterio conta el controlidados vezera in claito pelare cad itarello controlital multicamatione o regnstive concesso controlidal multicamatione o pendo-context envices of been anno west of been anno west of the sensioned out- cate and transcentes out- tained and context of the contextial multicated out- tained anno west			toms televable to spintena at (orans for arrest states on series at to arrest states and to arrest scales and to arrest scales and boards system potents steles and to arrest states arrest arrest arr		
				al betraken and kinen Bastan-kitekinak seperan Printaken tederahan Printaken tederahan		

# Table CXXIX.—contd.

Detailed List No.	Title	Underlying	Complication	Other contributory	Detailed List No.	Title	   Underlying	Complication	Contributory
N910- N918 N920- N929	y of ill-defined diseases—contd. Superficial injury Contusion and crushing with intact skin surface.	2 8	-		Senilit N990– N999	y of ill-defined diseases—contd. Other and unspecified in- juries and reactions TOTALS	165	35	17
N930- N936	Effects of foreign body entering through orifice.	22 48	8	18		001-795	va Landel	25,231	2.2.9.2.2
N940- N949	Burns	10	1	acient in		E800-E999	1,056	11	96
N950- N959	Injury to nerves and spinal cord without bone injury	5	-2		a second	N800-N999	1,056	81	132
N960- N979	Effects of poisons	201	2		R. ANTER	· · · · · · · · · · · · · · · · · · ·	ana Color M		
N980- N989	Effects of weather, exposure, and related conditions	4	1	E 4000-		32,631			

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OBS.

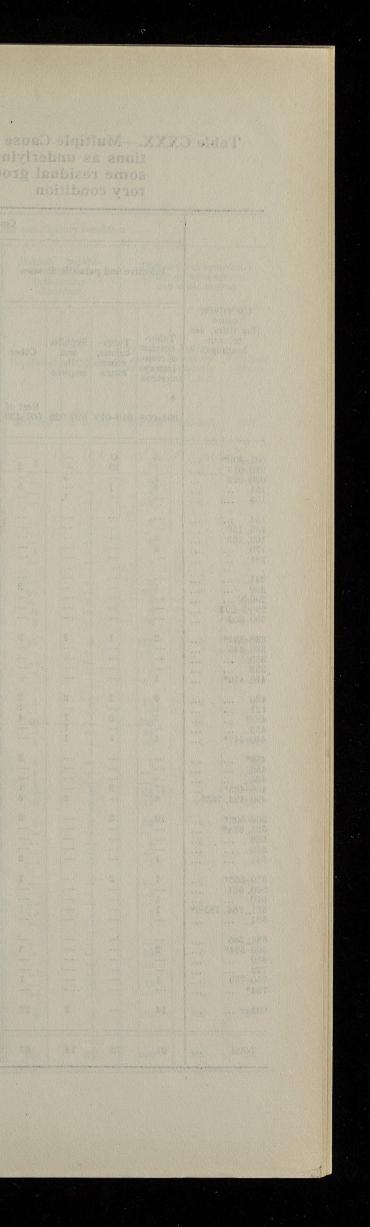


Table CXXX.—Multiple Cause Analysis. Occurrence of certain conditions as underlying cause with the same conditions, plus some residual groups as complication or other contributory condition

					Cor	nplication	or other	contrib	utory cone	dition			
		Infect	ive and pa	arasitic dis	seases	C			Neoplasm	S			
Underlyi cause	as all the							Malig	nant neop	lasm of			
(for titles, column heading	n	Tuber- culosis of resp- iratory system 001–008	Tuber- culosis, other forms 010-019	Syphilis and its sequelæ 020-029	Other Rest of 001-138	Stomach 151	Large intes- tine, except rectum 153	Rec- tum	Biliary passages and liver 155, 156	bron- chus	Breast 170	Blad- der and other urinary organs 181	
001-008* 010-019 020-029 151 153		5 1 1 3 —	$ \begin{array}{c} 41\\ 23\\ -\\ 1\\ -\\ \end{array} $	 	2 	   4	 		  24 41		· [- [- ]- [-]- [-]- [-]- [-]- [-]- [-]-		 1 154 96
154          155, 156       162, 163         162, 163          170          181							$\frac{2}{1}$		24 10 5 28 1	2  4 			55 18 59 197 18
241 260 290·0 290·1–293 300–309	···· ··· ···				3 — —	1111	1	1111			2		3  
330-334* 340-345 350 353 410-416*	··· ··· ···	2   1	1 	3 	3 — —		7 	5			4	0	28    14
420 421 422* 433 440-447*	··· ···	$\begin{array}{r} 6\\1\\7\\-4\end{array}$	$\frac{2}{2}$	$\begin{array}{c} 2\\ \hline 1\\ 1\\ 1\\ 1 \end{array}$	$\begin{array}{c}2\\1\\-\\-\\-\\-\end{array}$	$\frac{2}{4}$	$\frac{1}{\frac{8}{2}}$	$\frac{2}{8}$ $\frac{1}{1}$	$\begin{vmatrix} 1\\ -1\\ 1\\ 1 \end{vmatrix}$	$\frac{1}{2}$ $\frac{1}{1}$	$ \begin{array}{c} 3 \\ -12 \\ 1 \\ 3 \\ 0 \end{array} $	$\frac{3}{1}$	
450* 455 465 480-483* 490-493, 76	···· ··· 33*		 2 	  2	2 — 1 6	$\begin{array}{c}1\\-\\2\\6\end{array}$	$\frac{1}{\frac{1}{2}}$	$\frac{1}{\frac{3}{3}}$			2 		5 1 2 13
500-502* 523, 524* 526 540 541	  	10   1	3 		3  -  2	1 	1  1	2 			4		9  2  1
550-553* 560, 561 570 571, 764, 78 581	 85·6*	1 1 1	2 — — —		1  1 								
584, 585 590-594* 610 722 750-759 794*							1 	2	2		1		
Other		14	-	2	27	15	1	11	117	11	4	6	443
Total		91	78	18	67	41	36	38	257	23	48	15	1,171

Allergic, endocrine syst nutritional diseases ; dise blood-form Underlying cause (for titles, see column headings) Perni-cious anæmia Asthma Diabetes mellitus 241 260 290.0 001-008\* 010-019 020-029 151 ... 153 ... 16 2 3 ... ···· ···· \_\_\_\_\_2 1 

 154
 ...

 155, 156
 162, 163

 160, 160
 ...

 181
 ...

 | | | | 3 1 2 2 ···· ··· 241 ... 260 ... 290·0 ... 290·1–293 300–309 ···· ··· ··· 49 \_\_\_\_\_\_ \_\_\_\_\_2 330-334\* 340-345 350 ... 353 ... 410-416\* 4 ···· ··· ··· 11  $\frac{1}{7}$ 52 53 4 24 420 ... 421 ... 422\* ... 433 ... 440-447\*  $\begin{array}{c}
 11 \\
 2 \\
 57 \\
 3 \\
 7
 \end{array}$  $9 \\ 15 \\ 1$ ···· ··· ··· 450\* ... ... 455 ... ... 465 ... ... 480-483\* ... 490-493, 763\* 500-502\* 523, 524\* 526 ... 540 ... 541 ... 4 ···· ··· ··· 
 550-553\*
 ...

 560, 561
 ...

 570
 ...

 571, 764, 785.6\*
 581
 \_\_\_\_\_ \_\_\_\_\_ \_\_\_\_\_ 584, 585 590-594\* 610 ... 722 ... 750-759 794\* ... 285 ···· ··· ··· 3 32 25 Other ... 4 ...

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Table CXXX.—contd.

	Compli	cation or oth	her contribut	tory conditio	n		
sea	em, metabo ases of the b ing organs	olic, and blood and	Mental, neurot persor disor	ic and nality	of the	es and sym nervous sy l sense orga	vstem
a	Other anæmia	Other Rest of	Psychoses	Other Rest of	Vascular lesions affecting C.N.S.	Inflam- matory diseases of C.N.S.	Paralysis agitans
	290.1-293	240-299	300-309	300-326	330-334	340-345	350
	$\frac{1}{\frac{1}{10}}$	4 2 3	2	2 1 	4	1 5 	
	 2 	$\frac{1}{2}$		1	2 	1111	
	2 3 3	2 3			2 21 2 2 2 2	- - -	
	5  	8 1 	10 	3  1	172 1 4 1 51	6 2 1 	16 
	$\frac{6}{23}$	$     \frac{9}{17}     \frac{2}{6} $	$\frac{1}{40}$	1	51 8 238 24 50	3  1	
	1 	5 	9 1 7 8		1  28 17		1 — 
	8  - 7 2		e       	2 	36 -4 -1	2 3 1	7
		1 1 1 1	9	3 4 2 	2 		
		$     \begin{bmatrix}             1 \\             1 \\         $	and the second	6	28 10 15 		2 4 1 -
	40	18	9	1	134	33	10
	136	126	106	29	930	103	102

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# Complication or other contributory condition

261

57

368

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Total

# Table CXXX.—contd.

# Table CXXX .-- could.

Table CXXX.—contd.

10

			and then	an an a that	Comp	lication of	r other co	ontributo	ory condit	ion	19 fan e di mara		-249-24		
samia salvan site		sympton nervous and sens	tes and ins of the system se organs atd.)		Diseases and symptoms of the circulatory system										
Under cau (for titla colu headi	se es, see mn	Epilepsy 353	Other Rest of 330-398, 780, 781	Chronic rheu- matic heart disease 410-416	Arterio- sclerotic heart (coro- nary) disease 420	Chronic endo- carditis not spe- cified as rheu- matic 421	Other myo- cardial degen- eration 422	Func- tional disease of heart 433	Hyper- tensive disease 440-447	General arterio- sclerosis 450	Gan- grene of un- speci- fied cause 455	Pulmo- nary embol- ism and infarc- tion 465	Other Rest of 400-468 782		
001-008* 010-019 020-029 151 153		 	2 1 5	3  1 1	1 1 3 1	3 3 2 -	$\begin{array}{c} 34\\1\\-\\20\\8\end{array}$		3 1 1 7 [6	6 	 1	3 	50 7 43 59 51		
154 155, 156 162, 163 170 181		1	1 2 5 1		4 	1	9 4 12 7 1	1 1 4 1	1 7 1 4	5 1 6 1 3	1 	4 1 4 1 2	11 6 35 15 7		
241 260 290·0 290·1–293 300–309			2 17 2 2 2		$ \begin{array}{r} 5\\23\\2\\-\\-\\1\end{array} $		81 39 12 9 7	4 	1 8 1 1	8 29 — 1			121 34 15 11 7		
330-334* 340-345 350 353 410-416*		15 — 3 1	216 5 3 4 10	14   50		4 — 80	153 3 11 5 79		1,032 - - 1 13	1,702 1 8 3 13	$\frac{13}{1}$	1   14	$     \begin{array}{r}       140 \\       7 \\       10 \\       6 \\       322     \end{array} $		
420 421 422* 433 440-447*		$\begin{array}{c} 1\\ -6\\ -1 \end{array}$	24 1 58 11 35	6 5 4 1	82 13 	10 9 20 1 7	545 18 25 4 12	44 7 236 1 55	385 4 2 8 20	1,141 10 19 8 211	$     \begin{array}{r}       12 \\       \overline{} \\       39 \\       6 \\       11     \end{array} $	19 2 15 5 7	489 56 1,259 113 393		
450* 455 465 480-483* 490-493, 7	···· ···· ····	1 	30 — 17 31	11  13 10		$\frac{26}{1}$ 18 7		$\frac{37}{1}$ 15 19		1 53 54	 	8 	367 10 368 287		
500-502* 523, 524* 526 540 541		7	21   1	19 1 2 -	42 2 4 4		1,083 9 21 13 7	$\frac{30}{1}$	78 1 3 3	136 2 3 4 3	3	$ \begin{array}{c} 5\\ -1\\ 4\\ 4 \end{array} $	1,100 23 36 15 26		
550-553* 560, 561 570 571, 764, 7 581	 785.6*					$\frac{2}{1}$	6 5 1 7 3	1	2 3 1 2 5	1 1 2 —	1 		13 15 9 8 23		
584, 585 590–594* 610 722 750–759 794*			1 9 5 3 3	2	5 2 4 		$ \begin{array}{c} 12 \\ 53 \\ 21 \\ 2 \\ 2 \\ - \\ - \\ - \\ - \\ - \\ - \\ - \\ - \\ - \\ -$	$\frac{-3}{2}$ -1 -	3 76 10 1 4 	2 19 11 — —		3 5   	15 50 24 9 31 72		
Other		13	23	8	47	21	188	47	58	83	15	103	427		
Total		67	556	155	373	236	3,027	656	1,837	3,566	140	230	6,195		

		-11			
		tim message	s and syr	nptoms o pneumor	ft
Underl caus (for title colun headin	s, see	Influ- enza	Pneu- monia	Bron- chitis	
,2837-4320 817-009	100 730 201	480-483	490–493 763	500-502	2
001-008* 010-019 020-029 151 153		5 	29 1 4 14 21	13 3 1 10 6	
154            155, 156         162, 163           162, 163            181	···· ···		8 5 44 14 6	$     \begin{array}{c}       1 \\       1 \\       15 \\       2 \\      \end{array} $	
241 260 290·0 290·1–293 300–309		3 4 1 2 —	21 14 3 6 1	97 8 4 1 	
330-334* 340-345 350 353 410-416*	···· ···	9  14	$130 \\ 11 \\ 15 \\ 4 \\ 20$	116 2 3 1 68	
420 421 422* 433 440-447*	  	24 2 92 4 15	47 4 153 8 55	190 9 607 22 104	
450* 455 465 480-483* 490-493, 70	  63*	9 1 6 	35 1 4 9 6	$ \begin{array}{r} 63\\ -1\\ 464\\ 69 \end{array} $	
500-502* 523, 524* 526 540 541		2  2 1	298 8 13 15 10	143 13 17 9 11	
550-553* 560, 561 570 571, 764, 78 581	 5.6*		7 13 6 5 2	1 - 1 1	
584, 585 590-594* 610 722 750-759 794*	···· ···		5 15 24 7 21	1 18 8 4 7	
794* Other		11	323	108	
Total		213	1,465	2,223	

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# Complication or other contributory condition

Diseases and symptoms of the digestive system (including diarrhœa of the newborn) the respiratory system (including a of the newborn) Pneumo-coniosis and pul-monary fibrosis Hernia of abdo-minal cavity Ulcer of duode-num Bronchi-Ulcer of stomach Appen-dicitis Other ectasis (occupa-tional) Rest of 470–527, 783 523, 524 526 540 541 550-553 560, 561 1 \_\_\_\_\_\_ \_\_\_\_\_2 \_\_\_\_\_ \_\_\_\_\_1 1 52 |||||  $\frac{3}{11}$ 13 1 1 4 1 I I I I I 2 2 37 11 4 ||||| 1 143 FILLI -3 | | | | | 47 1 1 2 5 134 8 2 3 32 9 \_\_\_\_\_\_ \_\_\_\_\_1 3 1 \_\_\_\_\_  $\frac{1}{2}$ 1 1 76 9 306 13 99 1 1 \_\_\_\_\_ 8 1 10 1 6 2 10 4 | | 2 | 39 2 - 56  $\frac{1}{6}$   $\frac{3}{1}$   $\frac{1}{1}$ 2 87 69 98 6 23 12 8 5 1 1 1 1 ||||| 1111 1 2 1 544 ||||| 1 2 LILL 1 6 19 16 6 5 1 1 1 1 1 \_\_\_\_ ----2 74 7 435 3 1 -22 108 98 1,726 41 10 40

# Table CXXX.—contd.

# Table CXXX .- could.

Table CXXX.—contd.

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			nordiption de	Compli	ication or ot	her contribu	tory condition	on		
si the Harriton	national paritari (aux)	ang box en all stars of carset to	Diseases a digestive diarrhœa of	nd sympton system (inc the newborn	luding	obrigest se Nos sos ini	Diseases a genito-u		Maternal causes;	
Underly caus (for title colum headin	e s, see nn	Intestinal obstruc- tion without hernia	Gastro- enteritis and colitis, except ulceration, and diarrhœa	Cirrhosis of liver	Chole- lithiasis and chole- cystitis	Other Rest of 530–587,	Nephritis and nephrosis	Hyper- plasia of prostate	Other	diseases of the skin and cellular tissue
	0-600	570	571,764, 785·6	581	584,585	784, 785 exc. 785·6	590-594	610	Rest of 590–637, 786, 792	640–689, 690–716
$\begin{array}{c} 001-008^{*}\\ 010-019\\ 020-029\\ 151\\ \dots\\ 153\\ \dots\\ 155\\ 156\\ 162\\ 163\\ 170\\ \dots\\ 181\\ \dots\\ 241\\ \dots\\ 290\cdot 1\\ 290\cdot 0\\ \dots\\ 290\cdot 1\\ -293\\ 300-309\\ 330-334^{*}\\ 340-345\\ 350\\ \dots\\ 353\\ \dots\\ 353\\ \dots\\ 353\\ \dots\\ 410-416^{*}\\ 420\\ \dots\\ 421\\ \dots\\ 422\\ \dots\\ 433\\ \dots\\ 440-447^{*}\\ 450^{*}\\ \dots\\ 455\\ \dots\\ 480-483^{*}\\ 490-493,\\ 500-502^{*}\\ 523\\ 524^{*}\\ 526\\ \dots\\ 541\\ \dots\\ 550-553^{*}\\ 560, 561\\ 570\\ \dots\\ 571, 764,\\ 581\\ \dots\\ 584, 585\\ 590-594^{*}\\ 610\\ \dots\\ 722\\ \dots\\ 750-759\\ 794^{*}\\ \dots\end{array}$	785 6*	$ \begin{array}{c}                                     $			$ \begin{array}{c}         \\         \\         \\         $	$\begin{array}{c} 4\\ -\\ 1\\ 57\\ 39\\ 16\\ 10\\ 5\\ 1\\ 7\\ 1\\ 1\\ 1\\ 1\\ -\\ 12\\ 1\\ 1\\ 1\\ -\\ 12\\ 1\\ 1\\ 1\\ 1\\ -\\ 4\\ 18\\ -\\ -\\ 10\\ 13\\ 15\\ 1\\ -\\ 10\\ 13\\ 15\\ 1\\ -\\ 115\\ 104\\ 41\\ 15\\ 18\\ 3\\ 18\\ 44\\ 5\\ 4\\ 1\\ 3\\ -\\ 118\\ \end{array}$	$ \begin{array}{c} 3\\-\\-\\2\\1\\-\\2\\1\\-\\-\\-\\-\\-\\-\\-\\-\\-\\-\\-\\-\\-$	$ \begin{array}{c}         \\         \\         \\         $	$ \begin{array}{c} 1\\ 1\\ 2\\ -5\\ 15\\ -5\\ 2\\ 4\\ 52\\ 2\\ 6\\ 1\\ 2\\ 1\\ 26\\ 5\\ 2\\ -4\\ -1\\ 1\\ 28\\ 2\\ 122\\ 48\\ -1\\ 11\\ 23\\ 31\\ -1\\ 11\\ 23\\ 31\\ -1\\ 11\\ 23\\ 31\\ -1\\ 11\\ 23\\ 31\\ -1\\ 11\\ 23\\ 31\\ -1\\ 11\\ 23\\ 31\\ -1\\ 11\\ 23\\ 31\\ -1\\ 11\\ 23\\ 31\\ -1\\ 11\\ 23\\ 31\\ -1\\ 11\\ 23\\ 31\\ -1\\ 11\\ 23\\ 31\\ -1\\ 11\\ 23\\ 31\\ -1\\ 11\\ 23\\ 31\\ -1\\ 11\\ 23\\ 31\\ -1\\ 11\\ 23\\ 31\\ -1\\ 11\\ 23\\ 31\\ -1\\ 11\\ 23\\ 31\\ -1\\ 11\\ 23\\ 31\\ -1\\ 11\\ 23\\ 31\\ -1\\ 11\\ 23\\ 31\\ -1\\ 11\\ 23\\ 31\\ -1\\ 11\\ 23\\ 31\\ -1\\ 11\\ 23\\ 31\\ -1\\ 11\\ 23\\ 31\\ -1\\ 11\\ 23\\ 31\\ -1\\ 11\\ 23\\ 31\\ -1\\ 11\\ 23\\ 31\\ -1\\ 11\\ 23\\ 31\\ -1\\ 11\\ 23\\ 31\\ -1\\ 11\\ 23\\ 31\\ -1\\ 11\\ 23\\ 31\\ -1\\ 11\\ 23\\ 31\\ -1\\ 11\\ 22\\ 31\\ -1\\ 15\\ 16\\ 320\\ 320\\ 320\\ 320\\ 320\\ 320\\ 320\\ 320$	$ \begin{array}{c} 1\\ 1\\ -\\ 2\\ 1\\ -\\ -\\ -\\ -\\ -\\ -\\ -\\ -\\ -\\ -\\ -\\ -\\ -\\$
Other Total	01		25	13 	55	769	206	114	1,350	103

		a a	
2	6	4	

Diseases and symptoms of the bones and organs of movement Underlying cause (for titles, see column headings) Rheuma-toid arth-ritis and allied conditions Other Rest of 720–749, 787 722 001-008\* 010-019 020-029 151 ... 153 ... 1 --1 1 6 ···· ··· ··· 5 

 154
 ...

 155, 156
 162, 163

 170
 ...

 181
 ...

 1 1 1 ···· 241 ... 260 ... 290·0 ... 290·1–293 300–309 ··· ··· ··· 1  $\begin{array}{r} 330-334*\\ 340-345\\ 350\\ \ldots\\ 353\\ 410-416* \end{array}$ 4 ···· ··· ··· 26 420 ... 421 ... 422\* ... 433 ... 440-447\* 19 10 ... ... 70 36 2 5 9 450\* ... ... 455 ... ... 465 ... ... 480-483\* ... 490-493, 763\*... 5 \_\_\_\_\_\_ 11 9 4 - 777 

 500-502\*
 ...

 523, 524\*
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 526
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 540
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 541
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 19 1 21 23 1 

 550-553\*
 ...

 560, 561
 ...

 570
 ...

 571, 764, 785.6\*

 581
 ...

 1111 

 584, 585
 ...

 590-594\*
 ...

 610
 ...

 722
 ...

 750-759
 ...

 794\*
 ...

 2 2 2 Other ... 11 15 ... Total 214 148 · ...

Complicati	on or other cor	tributory co	ndition	012102021	.000
ting cent	Certain	lity and	otoms, seni- ill-defined litions	Other and	134.
Congenital malforma- tions	diseases of early infancy except pneumonia and diarrhœa of newborn	Senility	Other	Total in 001–795	Total certificates assigned to underlying cause
750–759	760–762, 765–776	794	Rest of 788–795	Rhaumat Directly	.104
1 		$\frac{1}{1}$	32 10 1 84 55	350 68 77 512 445	674 111 77 803 507
	nyo India	6 2 9 10 6	21 8 30 11 6	$222\\84\\302\\334\\128$	321 126 683 330 140
	ore — anen beni do — wra ben — by	5 14 6 4 10	3 14 1 	420 278 59 51 50	261 200 54 39 61
4	eon Tth h e ga mailiga mailignant	345 	$ \begin{array}{r} 15 \\ 5 \\ 2 \\ -3 \\ 3 \\ -5 \\ -5 \\ -3 \\ -5 \\ -5 \\ -5 \\ -5 \\ -5 \\ -5 \\ -5 \\ -5$	4,554 58 77 39 991	4,161 99 73 55 641
2 1 		120 5 1,251 18 86	5 28 2 9	3,549 166 5,030 293 1,445	3,241 126 5,245 224 1,215
	   	168 2 2 147 127 229	29 1 1 22 34	952 5 32 1,867 1,237	783 4 32 1,535 1,554
6  1	111	6 5		3,747 71 133 258 222	2,822 52 103 181 148
 	$\frac{3}{6}$	1 3 5 9 1	10 9 5 6 1	120 120 89 76 66	71 84 62 89 60
   		5 15 26 11 —	1 7 4 4 5	$     \begin{array}{r}       135 \\       599 \\       527 \\       53 \\       216 \\       96 \\     \end{array} $	83 377 269 36 254 597
3	8	190	145	3,936	3,968
64	71	2,881	669	34,139	32,631

Table CXXXI.-Multiple Cause Analysis. Compos

# Table CXXXI.—Multiple Cause Analysis. Components of combination categories occurring as underlying cause

001.	Respiratory tuberculosis with mention of occupational disease of lung 13
	Directly assignable to 001.(e.g. collier's phthisis, silicotuberculosis)3002,523(pulmonary tuberculosis with silicosis)10
334.	Other and ill-defined vascular lesions affecting central nervous system 261
	Directly assignable to 334. (e.g. cerebral arteriosclerosis) 233 352, 444 (hemiplegia due to hypertension) 8 352, 444, 450 (hemiplegia due to hypertension and arterio-
	sclerosis)
401.	Rheumatic fever with heart involvement
	Directly assignable to 401 (e.g. active rheumatic endocarditis)
	400,414(rheumatic fever with rheumatic endocarditis)2400,416(rheumatic fever with rheumatic carditis)400,434(rheumatic fever with other heart disease)
422.1	Myocardial degeneration with arteriosclerosis
	Directly assignable to 422.1. (e.g. cardiovascular degeneration) 467 422.2, 450 (myocardial degeneration with arteriosclerosis) 1,362
440.	Essential benign hypertension with heart disease 11
	Directly assignable to 440. (e.g. benign hypertensive heart disease) 444, 422.2 (benign hypertension with myocardial
	444, 434        (benign hypertension with other heart disease)
441.	Essential malignant hypertension with heart disease I
	Directly assignable to 441. (e.g. malignant hypertensive heart disease) (malignant hypertension with myocardial
	445, 434(malignant hypertension with other heart disease)
442.	Hypertensive heart disease with arteriolar nephrosclerosis 4
	Directly assignable to 442. (e.g. cardiorenal sclerosis) 2 446, 422.2 (arteriosclerotic nephritis with myocardial degeneration)
	446, 434 (arteriosclerotic nephritis with other heart disease)
	446, 443 (arteriosclerotic nephritis with hypertensive heart disease)
	422.1, 592 (cardiovascular degeneration with chronic nephritis)
	422.2, 450, 592 (myocardial degeneration with arterosclerosis with chronic nephritis)
443.	Other and unspecified hypertensive heart disease 73
	Directly assignable to 443. (e.g. hypertensive heart disease) 9 444, 422.2 (hypertension with myocardial degeneration) 45
	444, 434.1 (hypertension with congestive heart failure) 19
446.	Hypertension with arteriolar nephrosclerosis without mention of heart7Directly assignable to 446.(e.g. arteriosclerotic nephritis)450,592(arteriosclerosis with chronic nephritis)

Table CXXXI.—contd.

447.	Other hypertensive disease v	vithout mention of heart	10
	Directly assignable to 447.	(e.g. arteriosclerotic hypertensive vaso disease)	The second second second
	444, 450	(hypertension with arteriosclerosis)	9
480.	Influenza with pneumonia	ing and Indand for each commenter	73
100	Directly assignable to 480. 481, 490 481, 491 481, 492 481, 493	(e.g. influenzal pneumonia) (influenza with lobar pneumonia) (influenza with bronchopneumonia) (influenza with primary atypical pneumoni (influenza with other or unspecified pneumoni	onia) 56
482.		ifestations, but without respiratory sympton	ns (
	Directly assignable to 482.           481, 543           481, 571           481, 573	(e.g. gastric influenza)	
502.0	Bronchitis with emphysema		55
	Directly assignable to 502.0. 501, 527.1 502.1, 527.1	(e.g. emphysematous bronchitis) (bronchitis with emphysema) (chronic bronchitis with emphysema)	··· 7
502.1.	Other chronic bronchitis	·· ·· ·· ·· ·· ··	1,48
	Directly assignable to 502.1 501, 794	(e.g. chronic bronchitis, senile bronchitis) (bronchitis due to senility)	
550.1.	Acute appendicitis with peri-		5
	Directly assignable to 550.1 550.0, 576	(e.g. appendix abscess) (acute appendicitis with peritonitis)	44

# **Proportion of Bodies Seen after Death**

The usual summary of the percentage of deaths for which the body was seen after death by the certifying practitioner or which were investigated by a coroner is given below. The figures for 1950 and 1951 are based on an examination of a sample of one medical certificate in seven.

- 21 a - 1 - 2929 - 1 - 2842	1928	1933	1947	1950*	1951*
Seen after death Inquest or Coroner's P.M. without	51.0	53.7	60.9	66.8	67.9
inquest or other cases reviewed by Coroners	11.2	11.2	14.0	19.0	19.7
titioners	39.8	42.5	46.9	47.8	48.2
Not seen after death	48.5	46.1	38.8	33.8	31.8
No statement	0.5	0.2	0.3	0.4	0.3
Total	100.0	100.0	100.0	100.0	100.0
Total deaths in year	460,389	496,465	517,615	510,301	549,380

\* Estimated from a sample of medical certificates.

Both the proportion seen by certifying practitioners and the proportion investigated by coroners continued to increase. The statement by a certifying practitioner is made when he signs the medical certificate of cause of death and since there are likely to be occasions when he subsequently sees the body the proportion seen after death may be understated.

Table GXXXI.

# GREAT BRITAIN AND IRELAND

# **Vital Statistics**

Table A1 shows the census populations, by sex, of the several countries of Great Britain and Ireland for each census since 1821, and mid-year estimates for each of the last 35 years. Population estimates, marriages, births, deaths and infant deaths for the current year are shown in Table W and repeated, with comparative figures for earlier years, in Table CXXXII.

Table CXXXII.—Great Britain and Ireland.	Vital Statistics, 1938 and	
1946 to 1951		

	18 Tambre	Great Bri- tain and Ireland	England and Wales	Scotland	Northern Ireland	Irish Republic
·····	Estim	ated Mid-Yea	r Home Popu	ulation (in the	ousands)	1040 2010/2019
$1951 \begin{cases} Males \\ Femal \\ Person \end{cases}$	es	25,670 27,576 53,246	$21,049 \\ 22,751 \\ 43,800$	2,445 2,669 5,114	669 704 1,373	$1,507 \\ 1,452 \\ 2,959$
URA	(RACE>ETTA)	ma titi er utitu	Marriages	a ser a se	. 1.726	1.206
1951	1	427,281	360,624	41,383	9,414	15,860
Persons marrie	ed per 00 living:	ese diratsues Agrificas ou	ng chronic ga	1.308 or e	tly assignabl	Dire 501.
1000		16.8	17.6	15.5	13.4	10.1
		17.6	18.0	17.7	14.5	11.8
		18.0	18.6	17.2	14.1	11.0
		17.6	18.2	16.8	- 13.7	10.8
		16.6	17.1	16.0	13.4	10.9
		15.8	16.3	15.5	13.2	10.9
1951	•••	16.0	16.5	16.2	13.7	10.7
119(98) 840 W (11)			Live Births*	the perce	TRANSITIES .	tar daugh
1951		859,232	677,529	90,639	28,477	62,587
Per 1,000 living	g:	CALLS IN SAL 2813		an Canibard	and malorie	en a in ac
1938	••••	15.7	15.1	17.7	20.0	19.4
1946		19.6	19.2	20.2	22.3	22.9
1947		20·8 ·	20.5	21.9	23.2	23.2
1948		18.3	17.8	19.3	21.7	22.0
1949		17.2	16.7	18.4	21.2	21.5
1950		16.5	15.8	17.7	20.9	21.3
1951		16.1	15.5	17.7	20.7	21.2
* .03 KAM	0.000000	G.1.4 9	Deaths†	benetrer.	ar othot charses	horo 2 ml
1951		675,198	549,380	65,778	17,628	42,412
Per 1,000 living	g :	8-86 B.	A State			STODOUTU
TOOT OOL		12.4	12.0	13.3	14.4	14.2
1010		12.3	12.0	13.1	12.5	14.0
1947		12.3	12.0	12.9	12.6	14.8
1948		11.0	10.8	11.8	11.2	12.1
1949		11.8	11.7	12.3	11.4	12.7
1950		11.7	11.6	12.4	11.6	12.7
1951		12.7	12.5	12.9	12.8	14.3

\* England and Wales : occurrences ; remainder : registrations.

† Deaths include those of non-civilians registered in the country. Death rates, except for the Irish Republic, are based on civilian deaths and populations for 1946. From 1947 to 1949 inclusive, the death rates for England and Wales and for Northern Ireland are based on total deaths and populations, and those for Scotland on total deaths and populations excluding armed forces overseas in 1939. The 1950 and 1951 death rates are based on total deaths and home populations.

‡ Crude death rates in 1938 were rather lower than in adjacent years.

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# Table CXXXII.—contd.

and and and			Great Bri- tain and Ireland	England and Wales	Scotland	Northern Ireland	Irish Republic
		14 V3	Deaths of	Infants und	er 1 year§	T.W.M.H.	a Kur
1951	GUL.	1.6.1	27,627	20,223	3,391	1,173	2,840
Per 1,000 liv	e birth	s:					
1938		1	55	53	70	75	67
1946			44	43	54	54	65
1947	annita	K .hal	45	41	56	53	68
1948	A		37	34	45	46	50
1949			35	32	41	45	51
1950	910 <u>11</u> V	ed pe	32	30	39	40	45
1951			32	30	37	41	45

§ England and Wales : deaths per 1,000 related live births ; remainder : deaths per 1,000 live births registered in the year.

**Population.**—The combined home population of Great Britain and Ireland at mid-1951 was estimated at 53,246,000, an increase of 5 per cent over 1939. The corresponding increase for England and Wales was about  $5\frac{1}{2}$  per cent, for Scotland 2 per cent, for Northern Ireland 6 per cent and for the Irish Republic 1 per cent.

Marriage Rates.—Crude marriage rates in 1951 rose slightly compared with 1950 in all the countries except the Irish Republic. All the rates are now near the pre-war level, slightly above it in Scotland and Ireland and slightly below in England and Wales. The crude rates, however, are somewhat misleading as they are based on the total population of which only the nonmarried component is at risk and this component has been reduced by high marriage rates for over a decade. The detailed analysis in the Marriage Chapter of this volume shows that in fact marriage incidence is now very much higher than before the war.

Birth Rates.—Crude birth rates, which have been declining from their post-war peak in 1947, showed a further slight drop in 1951, the combined rate for all four countries being 16.1.

**Death Rates.**—The number of deaths in Great Britain and Ireland in 1951 rose by about 47,000 compared with 1950, an increase associated with the influenza epidemic early in the year. The crude death rate rose from 11.7 to 12.7 per thousand, and similar rises occurred in each of the four countries.

Infant Mortality Rates.—The death rates of infants under 1 year of age per 1,000 live births were practically unchanged in 1951 compared with 1950. The combined rate for the whole of Great Britain and Ireland was 32 in both years, compared with 55 in 1938.

The Charter of the United Matians was signed at San Francisco on the "26th June, 1945. At the end of that year the Preparatory Commission made recommendations" on a form of organization designed to enable the aims of the Charter to be infilited. A Demographic Commission was proposed as an adviscry bady to the Economic and Social Council " on matters relating to Table CXXXII.-coald.

# INTERNATIONAL CO-OPERATION IN POPU-LATION AND HEALTH STATISTICS

# The Population Commission of the United Nations

As this is the first reference to the work of the United Nations Population Commission to be included in the Review, some account is given of the period from its formation until the end of 1951; it is prefaced by notes on earlier international co-operation in population studies.

# **Developments Prior to its Appointment**

Like other branches of scientific knowledge which are essential to national administration and international action, demography derives considerable advantages from co-operation between nations. Unlike some other sciences, the study of population questions is perhaps more dependent on the collaboration of governments than of individuals, because, in general, governments are better able to obtain, e.g. by means of the census and the registration of births, marriages and deaths, the information needed to elucidate them.

Variations in conditions in different countries at different times enable each to make a special contribution to a common pool of knowledge from which both governments and individual research workers can derive information not obtainable merely from the resources of any one of them. But the usefulness of such material depends upon the extent to which comparison is possible. Because conditions vary and the immediate needs of governments may differ, this can only be achieved by such measure of give and take as is necessary to enable national statistics to be presented in an internationally agreed form. This was the aim of governments who sent representatives to the First Statistical Congress, which was held in Brussels in 1853.

As a result of this initiative taken in the middle of the last century, the area of comparability in population statistics gradually increased so that it was possible to take co-operation a stage further when, under the auspices of the League of Nations, an international plan of population studies was inaugurated.

It was in 1938 that the Assembly of the League of Nations authorized the appointment of a *Committee of Experts for the Study of Demographic Problems*. The Committee met in April, 1939, and decided that studies of population problems should be made under three heads, according to whether they presented themselves in countries (a) with rapidly increasing population; (b) with, or threatened with, diminishing population; and (c) with a population which was small in relation to productive area or natural resources. Although the outbreak of the war prevented the Committee from meeting again, arrangements were made for the Office of Population Research of Princeton University to continue research on behalf of the League and a series of studies was published in due course.<sup>1</sup>

The Charter of the United Nations was signed at San Francisco on the 26th June, 1945. At the end of that year the Preparatory Commission made recommendations<sup>2</sup> on a form of organization designed to enable the aims of the Charter to be fulfilled. A Demographic Commission was proposed as an advisory body to the Economic and Social Council "on matters relating to:

(a) population growth and the factors determining it; (b) the effectiveness of policies designed to influence these factors; (c) the bearing of population changes on economic and social conditions; and (d) general population and migration questions."

When this proposal was considered by the Third Committee of the First General Assembly of the United Nations, which met in London at the beginning of 1946, several delegations emphasized the importance which they attached to it. In their Report<sup>3</sup> to the Assembly at its nineteenth session,<sup>4</sup> the Third Committee expressed the hope that the Commission would be set up by the Economic and Social Council at the earliest possible date.<sup>3</sup>

# The Terms of Reference of the Commission

The Population Commission was established at the third session of the Economic and Social Council, held in New York in the autumn of 1946, which the Registrar General attended as a member of the United Kingdom Delegation. The resolution of the Council,<sup>5</sup> was based on a draft tabled jointly by the United Kingdom and the United States.6 Briefly, it provided that the Commission should consist of one representative from each of twelve members of the United Nations selected by the Council and named in the resolution; that representatives of certain other Commissions and of the Interim Commission of the World Health Organization could take part in its proceedings, but without a right to vote ; that the Secretary-General of United Nations should consult governments before the representatives nominated by them were confirmed by the Council, in order that the composition of the Commission would be balanced with reference to the various aspects of its work ; that, except for special arrangements made to cover the initial period, the term of office of a member of the Commission should be three years; that the government concerned should nominate another for the residual period in cases where a representative was unable to serve for the full term of office ; and that the first task of the Commission should be to prepare for the Council's approval a programme of work which should take into account any modification in the terms of reference which the Commission might wish to recommend. The terms of reference were :

"The Population Commission shall arrange for studies and advise the Economic and Social Council on :

- (a) Population changes, factors associated with such changes, and the policies designed to influence these factors ;
- $\left( b\right)$  Inter-relationships of economic and social conditions and population trends ;
- (c) Migratory movements of population and factors associated with such movements ;
- (d) Any other population problems on which the principal or subsidiary organs of the United Nations or specialized agencies may seek advice."

Following a later recommendation by the Commission,<sup>7</sup> the terms of reference were modified by the Economic and Social Council in 1948<sup>8</sup> to read as follows:

"The Population Commission shall arrange for studies and advise the Economic and Social Council on :

- (a) The size and structure of populations and the changes therein ;
- (b) The interplay of demographic factors and economic and social factors ;
- (c) Policies designed to influence the size and structure of populations and the changes therein ;

(d) Any other demographic questions on which either the principal or the subsidiary organs of the United Nations or the specialized agencies may seek advice."

The functions of the Population Commission in the field of migration were covered by another Resolution<sup>9</sup> which the Council passed at the same Session.

# The following is the relevant paragraph of the Resolution :

"Decides that the Population Commission shall arrange for studies and advise the Council on the demographic aspects of migration, on the relationships between demographic, economic and social factors in migration and on the overall co-ordination of international research and study in this field by the United Nations and the specialized agencies. These studies shall cover the trends, causes and consequences of migration and shall take into account in this connexion the influence of economic and social factors, legislative and administrative measures, the social and economic conditions of migrants, and such other factors as are important determinants in or consequences of migration ;"

The appointment of the Commission was followed by the formation of a Population Division within the Social Affairs Department of the United Nations Secretariat. The Division was placed in the charge of Professor F. W. Notestein, Princeton University, with the status of Consultant-Director.

# Countries selected to nominate Representatives, 1947-51

The twelve countries selected to nominate representatives when the Commission was first set up were : Australia, Brazil, Canada, China, France, Netherlands, Peru, Ukrainian S.S.R., United Kingdom, United States, U.S.S.R., Yugoslavia. During the period under review, Australia and Canada ceased to be members from the end of 1949 when their places were taken by Sweden and Syria, while at the beginning of 1951 Belgium was elected in the place of the Netherlands.

# First Six Sessions : Dates and Places of Meeting

Up to the end of 1951 the Population Commission had held six sessions. Except for the fourth session, which was in Geneva, they were all held at the United Nations headquarters, at Lake Success, New York. The dates of meeting were : first session from the 6th to the 19th February, 1947, second from the 18th to the 27th August, 1947, third from the 10th to the 25th May, 1948, fourth from the 11th to the 21st April, 1949, fifth from the 22nd May to the 2nd June, 1950, and sixth from the 23rd April to the 4th May, 1951.

# United Kingdom Representation

The United Kingdom representative at the first five sessions of the Commission was Professor D. V. Glass, of the London School of Economics and Political Science. Mr. N. H. Carrier, a Statistician at the General Register Office, who attended the fourth session at Geneva in an advisory capacity, was the United Kingdom representative at the sixth session, 1951.

# Main Features of the First Six Sessions

The first session of the Commission was devoted to procedural matters, including relations with other Commissions and the specialized agencies, and to the formulation of instructions to the Secretariat on papers to be prepared for the second session, when a detailed programme of work was drawn up. In the Report<sup>10</sup> on this session, the Commission emphasized the importance of having a competent and adequate staff in the Secretariat to enable them to fulfil their responsibilities. The main features of the programme envisaged by the Commission were recommendations designed to encourage comparability in the reports on population censuses, the publication of an annual Demographic Year Book, the study of population of Trust Territories, the assessment of the interplay between economic, social and demographic factors, the improvement of migration statistics and the preparation of a multilingual demographic dictionary.

On the first of these, the Commission drew up a list of subjects considered suitable for comparable treatment in *population censuses* at the second session and suggested that it should be circulated to governments for comment. After the views of governments had been considered at the third session, the Commission prepared a series of recommendations on subjects considered suitable for inclusion in a census, on the kind of information which might be obtained on each subject, and on census methods. These were followed by other recommendations, made at the fourth session, on census tabulations, on the standardization of definitions and on industrial and occupational classification. Proposals for tabulating information about urban and rural population were included in the Commission's Report on the fifth session, which also noted the publication in 1949 of two handbooks prepared by the Secretariat : *Population Census Methods*.

From an extensive list of topics presented by the Secretariat at the second session, the Commission selected a minimum list of contents for publication in the first issue of the *Demographic Year Book*. At the third session the Commission was informed that substantial progress had been made in the preparation of the first issue and consideration was given to additional material which had been suggested for inclusion. When it met for the fourth session early in 1949, the Commission learned that the first issue was to be published later in the year and it considered tentative proposals for special subjects to be included in the second issue.

Preliminary consideration at the second session of the kind of demographic information which it would be desirable to have for the *Trust Territories* was followed, at the third session, by the review of a provisional questionnaire for Trust Territories which had been prepared at the instance of the Trusteeship Council. Two reports on Trust Territories appeared during the period under review : one on *The Population of Western Samoa* in 1948 and another on *The Population of Tanganyika* in 1949.

Specific plans for a study by the Secretariat of the interplay between economic, social and population changes were made at the second session and at the fifth session the Secretariat's report *Findings of Studies on the Relationships* between Population Trends and Economic and Social Factors was considered by the Commission and referred back to the Secretariat for revision in the light of observations made during discussion. At the fourth session the Commission considered proposals for a field study which had reached a more definite stage when they held their fifth meeting in 1950. By that time proposals for a pilot field survey and for a study of existing data on the interplay between demographic, economic and social factors in India had reached an advanced stage.

Draft recommendations for the improvement of *migration statistics* were published in the Report of the fourth session and the comments made by governments and others on them were reviewed at the fifth. *Problems in Migration Statistics* was published in 1949 as No. 5 in the United Nations series of Population Studies.

In the Report on the third session the Commission requested the Secretary-

General to begin work on two projects proposed by the United Kingdom representative, namely, a study of *vital registration systems* (and their effectiveness) in various countries, and an analysis of the then recent *rise in the birth rate*, this latter being required for many purposes, including the construction of realistic population estimates. It was at this session that the Commission first considered the possibility of encouraging the production of a *multilingual demographic dictionary*. The aims which the Commission had in mind in suggesting the dictionary and the methods which they proposed for its preparation were set out in an annex to the Report on the fourth session.

One of the subjects put on the agenda paper for the first session of the Commission was a proposal by the United Nations Educational, Social and Cultural Organization that a world conference should be held to consider population problems. The proposal was brought forward at successive sessions, but the Commission postponed detailed consideration of it on the ground that it would be inappropriate to hold a *World Population Conference* until at least the main results of the various censuses taken in and around 1950 were available—a view which coincided with that put forward in the Commission on behalf of the United Kingdom. At the sixth session (1951) the Commission recommended that preliminary enquiries as to the scope, emphasis, size and financial implications of the proposal should be made by the Secretary-General and that he should also obtain the views of governments.

## Increase in Membership of the Commission

In September 1951, during its thirteenth session, the Economic and Social Council of the United Nations approved a proposal that the membership of the Commission should be increased from twelve to fifteen. This was done in order to make allowance for growth in the number of states members of United Nations since the Commission was first established, the General Assembly having resolved that as many countries as possible should be invited to take part in the work of the functional Commissions.

# The World Health Organization

#### WHO Centre for Classification of Diseases

The introduction of the sixth revision of the International List of Diseases and Causes of Death, with its many changes from the previous revision, and of a form of medical certificate of cause of death which was new to many countries inevitably resulted in the posing of many problems in the use of the classification and the application of the rules for selecting the underlying cause of death. The need for some sort of clearing centre to give advice on these problems and to prevent the formulation of different national solutions to them was foreseen by the Expert Committee on Health Statistics at its first session in May 1949. The Expert Committee felt that such a body could also study other factors affecting international comparability, such as methods of collecting and recording basic data and of presenting tabulated material, and that much of this work could best be performed by an agency located at a national office of vital statistics, where the Classification and the Rules were being daily applied and where access to original records could be provided. It accordingly recommended :

"(3) That WHO set up within its Secretariat a clearing centre for problems arising in the application of the Manual, including arrangements for the use of such national skills as might be necessary to supplement those available in the WHO Secretariat."<sup>11</sup>

The Second World Health Assembly resolved to request the Director-General to set up such a centre. The sixth session of the WHO Executive Board gave

firm support to this proposal which was further endorsed by the Third World Health Assembly in 1950. The WHO Centre for Problems arising in the Application of the International Statistical Classification of Diseases, Injuries and Causes of Death was set up accordingly on 1st January, 1951, and was located in the General Register Office under the direction of Dr. Percy Stocks, who retired from the post of Chief Medical Statistician of the General Register Office in order to undertake the work. The material at the Southport branch of the Office, where the analysis of death registrations is carried out, was available for research under proper safeguards and a senior executive officer of the Department, Mr. H. G. Corbett, was seconded to the Centre for full-time duty, clerical assistance being supplied from the staff of the Department.

The work of the Centre during 1951, apart from replies to requests for advice from national offices, is understood to have consisted mainly of the preparation of studies which were later published as supplements to the Bulletin of the World Health Organization. Three of these were completed during the year; one dealt with continuity between statistics based on the fifth and on the sixth revisions and used the England and Wales death registration of 1950, which had been coded at the General Register Office according to both lists ; another listed a number of decisions and interpretations of the Classification which had been formulated after consultation with national offices in a number of countries and was issued as Addendum 1 to the Classification ; the third was a booklet "intended to assist physicians and surgeons in understanding the concepts involved and to guide them in writing death certificates." A fourth, dealing with amplification of death certification by means of enquiries to certifying practitioners, was commenced during the year. In addition to these studies, the Centre prepared documents for the WHO Conference on Morbidity Statistics. held in November, and for a Coders' Training Course for the European Region, held in Geneva in June, compared and commented on the assignments made by the national offices of Canada, England and Wales and the United States of America on about 900 " problem " certificates selected from Canadian experience, and commenced a study of the use in England and Wales of the International Form of Medical Certificate of Cause of Death.

# The Expert Committee on Health Statistics

The third session of the Expert Committee was held in Geneva from the 21st to the 29th November, 1951, in two parts, of which the first took the form of a Conference on Morbidity Statistics and the second dealt with more general matters, including a report from a Sub-Committee on Cancer to which reference is made below.

At the *Conference on Morbidity Statistics*, Professor Lowell J. Reed, then Vice-President (now President) of the Johns Hopkins University, Baltimore, U.S.A., was in the Chair and Dr. W. P. D. Logan, Chief Medical Statistician at the General Register Office, was rapporteur. In addition to members of the Expert Committee, the Conference was attended by a number of specialists, and Dr. D. Mackay, General Register Office, was present as a statistical consultant with reference particularly to hospital statistics.

The Conference reviewed the wide range of morbidity statistics already found in countries where they had been developed and considered their scope and uses. Detailed attention was given to the various kinds of sickness statistics, to the extent to which it was possible for countries in different stages of development to compile and use them and to the sources of material which would provide indicators of the general level of health and of the hazards peculiar to professional, industrial and other groups of the population. Recommendations were made on methods of registration and on follow-up procedure, on the definition of terms and on the measurements used in morbidity statistics. Emphasis was laid on the role of National Committees on Vital and Health Statistics, or their equivalents, in promoting comparability in morbidity statistics. It was recommended that a Conference of National Committees should be convened by WHO in 1953 to consider among other things :

- " (a) morbidity definitions of a general nature, definitions of hospital terminology and definitions of various rates of morbidity.
- (b) Adaptations and selected lists from the International Statistical Classification of Diseases, Injuries and Causes of Death."

The Conference also made various recommendations regarding the World Health Organization's responsibilities in the field of morbidity statistics.

The second part of the third session of the Committee was held from 27th to 29th November, with Dr. P. F. Denoix of the Institut National d'Hygiène, Paris, in the Chair and Dr. W. P. D. Logan of the General Register Office as Vice-Chairman. The report of the Cancer Sub-Committee was adopted with minor amendments. A report was made on the first year's work of the WHO Centre for Problems arising in the Application of the International Statistical Classification of Diseases, Injuries and Causes of Death. The Committee expressed its satisfaction at the Centre's work and recommended that it should be maintained as a regular and continuing activity. Various recommendations were made regarding future revisions of the International Statistical Classification, including a proposal that the revision should take place in the middle rather than at the end of a decennium in order to allow time for the revised list to be brought into use for the compilation of medical statistics required for occupational mortality and other special studies made in connexion with the population census which is usually taken in years ending with 0 or 1.

The proposed adaptation of the International Statistical Classification for the use of the armed forces, the need for a code of surgical, radiological and anæsthetic procedures, and the establishment of a list selected from the Classification for statistics of the mortality of young children were also discussed.

A recommendation made by the United Nations Population Commission that the United Nations should co-operate with the World Health Organization on the subject of the refinement of infant mortality rates was referred to the Expert Committee, which recommended that the Organization should study, from the medical point of view, the methods suggested by the Population Commission and should collect, study and report on published papers and other material relating to methods of refining infant mortality rates.

The Committee reviewed the progress which had been made in the setting up of national committees on vital and health statistics throughout the world and, in view of their growth and diverse development, recommended that the proposed international conference of these committees in 1953 should review the objectives, organizational patterns, programmes and working relationships of national committees with each other and with international agencies.

# The Sub-Committee on the Registration of Cases of Cancer as well as their Statistical Presentation

The Sub-Committee held its second session in Paris from the 18th to the 21st September, 1951 under the Chairmanship of Dr. J. Clemmesen, head of the Cancer Registry, Copenhagen. The Sub-Committee discussed the first general principles governing the statistical classification of neoplasms, agreed that such classification should distinguish the anatomical site, the histological type, and the degree of malignancy, and decided that, to make coding easy, a separate classification was required for each of these three aspects. When considering classification according to histological type, the Sub-Committee reviewed the *Manual of Tumour Nomenclature and Coding* which had just been published in the U.S.A. by the American Cancer Society. It was recommended that the Manual, or some modification of it, should be tried out in different countries with a view to making their experience available to WHO when the preparation of a standard classification of neoplasms by histological type and degree of malignancy was undertaken. The question of cancer registration was also considered and the Sub-Committee was informed of progress already made in England and Wales and other countries, as well as of plans for similar schemes in other parts of the world.

# **Executive Board**

The seventh and eighth sessions of the WHO Executive Board were held in Geneva in 1951. At the seventh session, which took place from the 22nd January to 5th February, the Board noted that the Director-General had been maintaining contact with governments and with non-governmental organizations on the subject of the establishment of WHO national committees and that he would "report to a future session on the results of his enquiries."<sup>12</sup> National committees there referred to include committees which would deal with health matters other than vital and health statistics. The part that WHO should take in studying population problems, both in collaboration with the Population Commission and on its own, was discussed when the Board held its eighth session from the 1st to 8th June ; a resolution was adopted requesting the Director-General to study the health aspects of the question, to report on the relative spheres of the Population Commission and WHO in this field<sup>13</sup> and to include the question on the agenda of the ninth session of the Board.

# Fourth World Health Assembly

The Registrar General and Mr. A. E. Joll and Dr. W. P. D. Logan of the General Register Office attended for various parts of the Fourth World Health Assembly, which was held in Geneva from the 7th to 25th May, 1951. The United Kingdom delegation submitted a paper with reference to the statement, made in the health statistics section of the programme for the year 1952, that "the first objective of the Organization is to help national health administrations improve their health statistics." The United Kingdom delegation proposed that a further declared aim should be for the Organization itself to build up, at headquarters, a body of sound statistical and other information by which its policy could be guided and progress measured. The delegation moved the adoption of a draft resolution which was supported by the United States and approved, after slight modification, by the Committee on Programme. It was subsequently adopted by the Assembly (Resolution WHA4.3) as follows :

#### HEALTH STATISTICS

The Fourth World Health Assembly

RESOLVES that, in future, general statements on the programme of the Organization should recognize, without prejudice to other objectives, that a main aim of the Organization should be :

(1) To build up gradually at headquarters a body of sound statistical information and advice, covering all parts of the world, by which the policy of the Organization, including the regions, can be guided and its operations and their results measured, and

(2) to encourage the various branches and regions of the Organization to make the fullest use of the statistical data and facilities so made available at headquarters.

# Conference of British Commonwealth Statisticians, 1951

The Conference of British Commonwealth Statisticians, held in Canberra from the 12th to 23rd November, 1951, was the third meeting of its kind. The first Conference met in London in 1920 and the second at Ottawa in 1935. Mr. W. J. Littlewood, of the General Register Office, was a member of the United Kingdom delegation

The Conference decided not to follow the precedent of adopting a series of formal resolutions, but instead to exchange views on statistical aims and methods. The General Register Office was particularly interested in the discussion on recent developments in census taking which included reference to the 1 per cent sample taken from census schedules in Great Britain in 1951. A paper on the occupational classification of labour force statistics, prepared by the General Register Office in collaboration with the Ministry of Labour and National Service, was the basis of a very full discussion in plenary session.

#### Visitors from Overseas

In the course of the year 1951 a number of visitors from abroad, including the Commonwealth and colonial territories, were shown something of the work of the General Register Office. Among the foreign countries represented were the United States of America, Belgium, Chile, Greece, Italy, Japan, Mexico, Norway ; there were also visitors from the Gold Coast, Sierra Leone and the West Indies. Some of these were students pursuing courses in population subjects as United Nations or WHO Fellows. Members of the United Nations Secretariat also visited the Office. Demonstrations, instruction and explanation were arranged to suit the needs and interests of each visitor. In several cases the tour of study included the Department's Southport branches as well as its London offices. These visits foster technical improvements, not least in the less developed countries, and also lead to continuous international liaison in the demographic field which is of mutual value to the General Register Office and to the individuals and institutions in other countries with which contact is maintained.

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# Membership of the Population Commission, Sixth Session

Representatives of Member States

Belgium : J. E. Mertens.
Brazil : G. Jardim. (Vice-Chairman).
China : H. Cha (alternate representative).
France : A. Sauvy. (Chairman).
Peru : J. A. Encinas P.
Sweden : C. E. Quensel.
Syria : N. Rifai.
Ukrainian Soviet Socialist Republic : V. A. Rabichko.
Union of Soviet Socialist Republics : T. V. Ryabushkin.
United Kingdom of Great Britain and Northern Ireland : N. H. Carrier.
United States of America : P. M. Hauser. (Rapporteur).
Yugoslavia : D. Vogelnik.

# Representatives of Specialized Agencies

International Labour Organization : A. A. P. Dawson.
United Nations Educational, Scientific and Cultural Organization : Mrs. A. Myrdal, M. S. V. Arnaldo.
World Health Organization : M. Pascua.

#### Observers

International Confederation of Free Trade Unions : John Brophy.
Catholic International Union for Social Service : Mrs. Grace V. Aieta, Mrs. Allys D. Vergara.

International Union of Catholic Women's Leagues : Mrs. Catherine Schaefer. International Union for the Scientific Study of Population : F. Lorimer. International Association of Penal Law and International Bureau for the Unification of Penal Law : Sabin Manuila.

Representatives of the Assistant Secretary-General

P. K. Whelpton, Director of the Population Division. John D. Durand, Assistant Director of the Population Division.

Secretary

George Sotirov.

# WHO Expert Committee on Health Statistics (Third Session)

# Part I Conference on Morbidity Statistics

#### Participants

- Professor R. Bachi, Director, Central Bureau of Statistics and Economic Research, Jerusalem, Israel (Vice-Chairman).
- Professor F. A. E. Crew, University of Edinburgh, Edinburgh, United Kingdom.
- Dr. P. F. Denoix, Chef des Services Techniques et de la Section du Cancer, Institut National d'Hygiène, Paris, France.
- Dr. H. F. Dorn, Chief, Biometrics Section, National Cancer Institute, National Institutes of Health (U.S. Public Health Service), Bethesda, Md., U.S.A.
- Dr. H. L. Dunn, Chief, National Office of Vital Statistics (U.S. Public Health Service), Washington, D.C., U.S.A.
- F. Fraser Harris, Director, Health and Welfare Division, Dominion Bureau of Statistics, Ottawa, Canada.
- Professor R. B. Lal, Acting Director, All-India Institute of Hygiene and Public Health, Calcutta, India.
- Dr. W. P. D. Logan, Chief Statistician (Medical), General Register Office, London, United Kingdom (Rapporteur).
- Dr. M. G. Neurdenburg, Medical Inspector, Amsterdam, Netherlands.
- Professor L. J. Reed, Vice-President, Johns Hopkins University, Baltimore, Md., U.S.A. (Chairman).

## Representative of the United Nations

F. E. Linder, Chief, Demographic and Social Statistics Branch, Statistical Office, United Nations, New York.

#### Observers

Miss L. E. Bodmer, Social Security Division, I.L.O.

L. Feraud, Actuarial Adviser, I.L.O.

Dr. B. Pirc, Head, Department of Health Statistics, Committee of Public Health Protection, Belgrade, Yugoslavia.

#### Statistical Consultant

Dr. D. Mackay, General Register Office, London, United Kingdom.

## Secretariat

- Dr. M. Pascua, Director, Division of Health Statistics, WHO (Secretary).
- Dr. Marie Cakrtova, Chief, International Statistical Classification of Diseases and Causes of Death Section, WHO.

Dr. M. Pizzi, Chief, Morbidity Statistics Section, WHO.

Dr. P. Stocks, Chief, WHO Centre for the Classification of Diseases, General Register Office, Southport, Lancs., United Kingdom.

#### Part II General Problems of Health Statistics

### Members

- Professor R. Bachi, Director, Central Bureau of Statistics and Economic Research, Jerusalem, Israel.
- Dr. P. F. Denoix, Chef des Services Techniques et de la Section du Cancer, Institut National d'Hygiène, Paris, France (Chairman).
- Dr. H. L. Dunn, Chief, National Office of Vital Statistics (U.S. Public Health Service), Washington, D.C., U.S.A. (Rapporteur).
- F. Fraser Harris, Director, Health and Welfare Division, Dominion Bureau of Statistics, Ottawa, Canada.
- Dr. W. P. D. Logan, Chief Statistician (Medical), General Register Office, London, United Kingdom (Vice-Chairman).

#### Representative of the United Nations

F. E. Linder, Chief, Demographic and Social Statistics Branch, Statistical Office, United Nations, New York.

#### Observer

L. Feraud, Actuarial Adviser, ILO.

#### Secretariat

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- Dr. Marie Cakrtova, Chief, International Statistical Classification of Diseases and Causes of Death Section, WHO.
- Dr. P. Stocks, Chief, WHO Centre for the Classification of Diseases, General Register Office, Southport, Lancs., United Kingdom.

# Sub-Committee on the Registration of Cases of Cancer as well as their Statistical Presentation

#### Members

- Dr. J. Clemmesen, Chief, Cancer Registry, Copenhagen, Denmark (Chairman).
- Dr. P. F. Denoix, Chef des Services Techniques et de la Section du Cancer, Institut National d'Hygiène, Paris, France.
- Dr. H. F. Dorn, Chief, Biometrics Section, National Cancer Institute, National Institutes of Health (U.S. Public Health Service), Bethesda, Md., U.S.A. (Rapporteur).

#### Secretariat

Dr. M. Pascua, Director, Division of Health Statistics, WHO (Secretary).Dr. P. Stocks, Chief, WHO Centre for the Classification of Diseases, General Register Office, Southport, Lancs., United Kingdom.

# THE REGISTRATION SERVICE

# Local Organization

A brief account of the local organization of the registration service was given in the Statistical Review, Civil Text Volume, 1946–1950, page 157. The number of fee-paid officers continued to decline during 1951 owing to retirements of officers and their replacement by salaried officers. The number of posts in the service at the end of 1951 is shown in the following table.

# **Registration Posts**

Division, Dominish Billenn an Sil), General Legister Office,	5510 5510	and w	altin is.: altis altis	Salaried Posts	Posts held by fee-paid officers	Total
Superintendent Registrars Registrars of Births and Deaths Additional Registrars Registrars of Marriages				497 1,197 166 —		$526 \\ 1,225 \\ 166 \\ 69$
Total				1,860	126	1,986

The process of centralizing offices in any registration district where it could be done with advantage to the public continued during 1951 with the result that at the end of the year registrars of births and deaths in England and Wales occupied just under 1,000 offices. In addition there were about 1,700 " outstations," i.e. addresses at which they attended at frequencies ranging from about twice a week to twice a month to register births and deaths. In about 230 districts the office of the superintendent registrar was housed in the same building as one or more of the registrars of births and deaths for the district.

#### Searches and Certificates

Table CXXXIII shows the extent to which the records in the General Register Office have been used since 1866.

$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Year*	Total Searches	Searches for Govt. Depts.	Searches paid for by the public	Certificates issued	Amount Received
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	1866	12,135	NO Destantion	12.135	10.017	
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	1875					
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	1885	36,450		36,450		
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	1895	53,289		53,289	35,727	7,200 12 6
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1905	65,142	fealth <del>2</del> attact	65,142	50,310	9,611 9 0
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1915	202,939	118,788	84,151	69,746	13,007 10 0
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		488,781	339,790		115,378	25,610 2 6
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	A DO NOT THE PARTY OF THE PARTY OF THE					26,221 9 6
1947 1,180,519 873,868 306,651 299,525 61,900 15 e						39,474 14 3
						56,676 8 9
19481 943.705 658.251 285.454 350.626 56.954.15	a state of the second second second				299,525	61,900 15 6
	1948†	943,705	658,251	285,454	350,626	56,954 15 9
	A PARTICULAR CONTRACTOR				310,723	52,728 3 6
		732,511	486,386	246,125	285,487	51,215 17 8
1951         809,702         555,067         254,635         312,595         52,966         8	1951	809,702	555,067	254,635	312,595	52,966 8 0

Table CXXXIII

\* These periods relate to 52 weeks except those marked † which relate to 53 weeks.

Table CXXXIV gives an indication of the scope of searches undertaken on behalf of Government Departments since 1946.

**Table CXXXIV** 

Year*	1946	1947	1948†	1949	1950	1951
Contributory Pensions and		i aini	I ni custo	regenere.		10.11102
National Insurance	301,937	415,294	411,897	264,344	300,050	354,952
Benefits :		100000000000000000000000000000000000000	and south the	自己,1991年(1913)		Martin a strain
Family Allowances	78,987	362,846	170,204	182,308	127,013	147,743
Non-contributory Pen-		( asso	al was prick	100008 2091	timate to	runaanda
sions	58,321	46,863	38,250	23,917	22,430	13,210
Ministry of Pensions	94.350	39.010	27.028	25,456	20.593	19.748
Navy, Army and Air	01,000	00,010			1 States	and the second
	11,248	9.855	8,872	10,932	7,612	12.339
	11,210	0,000	2,000	20.857	8,688	7.075
Others	F11.019	070 000	658.251	527,814	486,386	555.067
Total	544,843	873,868	000,201	021,014	400,300	000,001

Table CXXXV shows the numbers of birth and adoption certificates issued from the General Register Office since 1946 and includes the numbers of the short certificate introduced in 1947.

Table CXXXV

each	Bi	Birth Certificates			Adoption Certificates			
Year*	Standard	Short	Total	Standard	Short	Total	- Registered	
1946 1947 1948† 1949 1950 1951	195,163 211,000 176,631 158,510 143,135 153,935	1,060 62,662 59,167 55,307 67,697	$195,163 \\ 212,060 \\ 239,293 \\ 217,677 \\ 198,442 \\ 221,632$	$\begin{array}{r} 22,000\\ 18,600\\ 13,112\\ 13,464\\ 10,102\\ 10,080\\ \end{array}$	$1,150 \\ 32,331 \\ 20,370 \\ 15,824 \\ 15,688$	$\begin{array}{r} 22,000\\ 19,750\\ 45,443\\ 33,834\\ 25,926\\ 25,768\end{array}$	$\begin{array}{c} 21,280\\ 18,269\\ 18,550\\ 17,331\\ 12,748\\ 13,854 \end{array}$	

# Adoption of Children

During 1951 entries relating to the adoptions of 13,854 children were made in the Adopted Children Register maintained by the Registrar General under the Adoption Act, 1950. An analysis of adoptions recorded since 1927 is given in Table T3 of the Statistical Review for 1951, Tables Part II, Civil.

# Re-registration of Births under the Legitimacy Act, 1926

During 1951 the births of 2,596 legitimated persons were re-registered. The numbers of births re-registered since 1927 when the Legitimacy Act, 1926, came into operation are given in Table T2 of Part II for 1951.

# Registration of Births, Deaths and Marriages Abroad

An account of the various arrangements for registration of births, deaths and marriages of British subjects, including members of H.M. Forces, abroad, and for the registration of births and deaths at sea and in the air was given in the 1946–1950 Civil Text, pages 164–166.

<sup>\*</sup> These periods relate to 52 weeks except those marked † which relate to 53 weeks.

The numbers of events abroad recorded during 1951 are shown in the following table.

Form of Record	Births	Deaths	Marriages	
17 - 1946F 1946 1950	er alet	and the second second	ROT	
Consular Records	4,026	817	533	
Army and Air Force Registers	4.822	1.045	1,430	
Records of U.K. High Commissioners in India and Pakistan	822	51	atributory I	
Foreign Marriages registered at the General Register Office Certificates of Marriages according to Local	78,08 <del>6 -</del> 262.	wance-	16*	
Law overseas deposited at the General	15.K 1 100 27			
Register Office			115	
Marine Register	177	975	and the second	
	10 000 10	(1 death		
Air Register		{ 1 missing		
		person		

\* Includes 2 marriages which took place before 1st Feb., 1948.

# Offences against the Registration Acts

During 1951 two persons were prosecuted and convicted for failing to register a birth, and one person for giving false information for insertion in a birth register and forging a birth certificate. In four cases proceedings were instituted under the Perjury Act, 1911, against persons making false declarations for the purpose of procuring a marriage, and convictions were obtained in each case.

Deletered				
			105,163 211,000 1156,001 158,010 142,135 [153,935	

Adoption of Children

During 1951 entries relating to the adoptions of 13,554 children wrie made in the Adopted Children Register maintained by the Registrar General under the Adoption Act, 1950. An analysis of adoptions recorded since 1927 is given in Table 73 of the Statistical Register for 1951, Tables Part II, Civil.

Re-registration of Births under the Legitimacy Act. 1926

During 1001 the births of 2,596 h giffmated persons were re-registered. The numbers of births re-registered since 127 when the Legitimacy Act, 1926, came apto operation are given in Table T2 of Part II for, 1931.

Registration of Births, Meaths and Marriages Abroad

An account of the various arrangements for registration of births, deaths and, marriages of British subjects including members of H.M. Forces, abroad, and for the registration of births and deaths at sea and in the air was given in the 1946-1950 Civil Fext, pages 164-165.

These periods relate to 52 weeks except those marked † which relate to 53 weeks.

# NATIONAL REGISTRATION

During its last full year the National Register remained closely linked with the food rationing system. The National Registration Officer was also the Food Executive Officer and the joint National Registration and Food Offices continued in being. This arrangement was convenient for the public and saved duplication of work and records.

The Register continued to assist the Ministry of Labour and National Service in securing the registration of men under the National Service Acts. This resulted, for 1951, in 5,250 men who had failed to register being traced and required to fulfil their obligations.

Reference was made in the previous Review (Text, Civil, 1946–50) to the assistance which the Register was able to give to the new National Health Service, to the Social Survey Division of the Central Office of Information, to Associations concerned with the welfare of the Services and their families, and to British subjects living abroad. These various services continued in 1951. Verification of dates of birth for the purposes of Family Allowances and Postwar Credits continued to be made from the Register, and persons to whom benefits of some kind were due from various Government Departments were traced.

The Central Index of Service Voters was maintained at the Central National Registration Office. During the year 1951, 149,746 declarations of Service Voters under the Representation of the People Act, 1949, were received while in the same period 143,171 names were removed from the Index.

# Further Uses in 1951

In 1951, use was made of the National Registration records for the purpose of checking inflation in doctors' lists of patients. The National Health Service had adopted the National Registration number for the purpose of its records and this number was copied on to those index cards held by the N.H.S. Executive Councils where it did not already appear. Obsolete and duplicate entries revealed as a result of this procedure were removed from the N.H.S. records and the registrations with doctors in these cases amended accordingly.

In April, 1951, the Central Index of the National Register began to operate also as the Central Register for the National Health Service. This was a necessary part of the procedure for effecting the clearance of doctors' lists referred to above and also for preventing a recurrence of inflation. During the year under review over 20,000,000 postings of persons already registered with doctors were made and about 200,000 cancellations were notified to Executive Councils. From April particulars of registrations with doctors were received from Executive Councils who in turn were notified of all exits by removal to another area, death, embarkation or enlistment in H.M. Forces. During the nine months of its operation the Central Register was notified of 839,000 new acceptances and 822,500 transfers between Executive Councils.

The National Register contained a precise record of movement of population between administrative areas. Particulars of removals to and from each administrative area in the years 1948 to 1950 inclusive were extracted from National Registration records and a detailed analysis was made by sex and age of the persons migrating and the distance of their migration for 27 selected areas. The preliminary results, together with a commentary on the value and limitations of the information, were published in 1951 in "Studies on Medical and Population Subjects No. 5—Internal Migration—Some aspects of population movements within England and Wales, by Mary P. Newton, M.A., and James R. Jeffery" (London, H.M.S.O., 1s. 6d.).

Migration statistics obtained from National Registration records also appear in "Studies on Medical and Population Subjects No. 6—External Migration— A study of the available statistics, 1815–1950, by N. H. Carrier, M.A., and I. R. Jeffery" published in 1953 (London, H.M.S.O., 8s. 6d.).

## **Procedural Changes**

Further changes which were made in procedure for the convenience of the public included allowing callers to notify changes of address to, and effect registration with, *any* local National Registration Officer. This enabled a removal notice or application for new registration to be accepted in an area other than that of the person's residence, the notice or application being sent on to the National Registration Office concerned and the identity card despatched to the person by post.

The period of exemption from National Registration for visitors to the United Kingdom was extended to 91 days; and a special office for the convenience of overseas visitors was opened in London.

#### Enforcement

Table CXXXVI shows the numbers of persons convicted of offences under the National Registration Act since 1944, the last full year of war. The figures for 1951 show a further diminution in the number of convictions.

Table CXXXVI.—Persons convicted of Offences under the National Registration Act, 1939

	1944	1945	1946	1947	1948	1949	1950	1951
s angrosical accordingly.	12. C. S. S.	odi ni	830100	5 dition	REACHER	suad	on od	i Bas
Making false statements for National Registration purposes	189	120	50	87	121	81	15	8
Using an identity card for purposes of impersonation	483	462	213	179	143	111	53	30
Allowing another person to use one's identity card Forgery of an identity card	82 126	63 103	34 97	17 71	19 79	20 77	13 22	7 6
Defacement or destruction of an identity card	166	93	35	32	23	20	20	11
Failure to produce identity card to Police Failure to notify change of address	1,573 527	706 474	$\begin{array}{c} 211\\ 261\end{array}$	269 173	252 80	186 30	$\begin{array}{c} 122\\ 24 \end{array}$	89 10
Other offences against National Registration Regulations	1,527	532	722	562	150	92	93	104
Total	4,673	2,553	1,623	1,390	867	617	362	265

## Statistics of New and Cancelled Registrations

During 1951 over 1 million new registrations were made in the National Register (660,000 of new-born children and the remainder on entry to the country or release from the Services), bringing the total of new registrations made since the initial establishment of the Register to over 17 million.

Over 1 million entries in the Register were closed during the year, 540,000 by death, 270,000 by embarkation for abroad and the remainder on entry into the Services. This brought the total exits recorded since the commencement of National Registration to 14 million.

# Movement of the Population

Recorded removals from one administrative area to another in 1951 were well over 3 million and the total since September, 1939, was 59 million by the end of 1951. Records kept in 1951 showed that the number of removals recorded within administrative areas during that year was 2,870,000.

#### The end of National Registration

Although the National Register remained in being until 21st February, 1952, it is convenient to deal in this Review with its final phase. On that date the Government's decision to discontinue National Registration was announced in the House of Commons by the Minister of Health in answer to a question whether he would discontinue the use of identity cards. The Minister's reply was : "Yes, Sir. Her Majesty's Government have decided that it is no longer necessary to require the public to possess and produce an identity card, or to notify change of address for National Registration purposes, though the numbers will continue to be used in connection with the National Health Service. I will, with permission, circulate in the OFFICIAL REPORT more details of this decision—as they are a little long—and people should await those details before disposing of their cards." Thus came to an end a system which had closely affected all citizens of the United Kingdom, young or old, during nearly six years of war and for more than six years afterwards.

It seems appropriate in retrospect to attempt some evaluation here of this universal Register which was the creature of wars and was probably unique throughout the world in its comprehensive character and its system of continuous maintenance.

Experience gained earlier from the operation of the National Health Insurance (medical benefit) registration of 1912 and the National Registration Scheme of 1915 proved of great value to the Registrar General (Sir Sylvanus Vivian) in planning for the Register for World War II. The sustained executive preparations which were made during the uneasy period following Munich enabled a comprehensive National Registration system to be available immediately after the outbreak of war in September, 1939.

The initial register was set up by a house to house enumeration on the lines of a Census and the issue on the spot to every civilian of an identity card with an unique number linking him with the record obtained from the enumeration. A central record prepared by the enumerator in book form and in identity number order was set up at Southport (details of the method of compiling the Register were given in the Registrar General's Statistical Review of England and Wales, 1940–45 : Text, Vol. II, Civil). Thus in a little more than a month from the outbreak of war a local record of residents and their addresses was available, and also a central record to act as a clearing house. National Registration Headquarters in London at Somerset House maintained a general control of the machine at Southport and in local offices and co-ordinated the requirements of the several Departments using it.

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Provision for notification of removals, deaths, enlistments into H.M. Forces and embarkations on the one hand, and births, discharges from H.M. Forces and entrants to the United Kingdom on the other enabled the Register to function as a "live" and up-to-date record of all civilians in the country.

Almost immediately after its establishment the first large demand was made upon the Register. Its local records were used as the basis for the issue of the first food ration books (over 40,000,000 documents) in October and November, 1939.

It had long been foreseen that a legal sanction alone would probably be insufficient to ensure the full and smooth discharge of the obligation on individuals to notify changes of address, and that support of some kind was advisable if not essential. The reliance placed on food rationing for the purpose of keeping the Register fully alive was amply justified by the results obtained, and the indebtedness of the Department to the full and free co-operation of the Ministry of Food throughout in enabling the utmost benefit to be obtained from this sanction is gladly acknowledged. The Ministry of Food for their part found that the requirement to produce an identity card with a person's old ration book provided both a safeguard against duplicate issues at the annual issue of new ration books and also a simple and effective basis for this big annual task. The identity card became the voucher for the new ration book. The eventual establishment in 1943 of joint local National Registration and Food Offices in the same premises and the considerable integration of their respective functions in matters of common interest also benefited both systems. It was, too, of great benefit to the public who were able to transact the business of food and national registration at one point. The food sanction was still operative in the last full year of the National Register, when 6,000,000 removals were notified.

The Register was planned not only to be ready to function in the very early days of the war but to supply indefinitely the multifarious needs—mostly unknown—of a national emergency. The National Registration Act, 1939, in fact made no express provision whatever for any services to be rendered by the Register, but the Bill and the plans were sufficiently widely drawn and the Register met all the demands made upon it though many of them were wholly unforeseen. These included the duty of administering Defence Regulation 20 relating to change of name and the creation in war-time of a complete electoral register kept continuously up-to-date.

It was its dual features of universality and continuous maintenance which enabled the National Register to be used for the purpose of electoral registration, a large and complicated undertaking involving the compilation of entirely new electors' lists containing over 29,000,000 names. This was the most onerous of all the tasks imposed upon the National Register. The electoral register previously in use could not be adapted to meet a movement of population such as war conditions created. Some adjustment of National Registration machinery was necessary to cope with the new obligation, particularly in regard to absences from the United Kingdom, but this in itself strengthened the National Register. Codes denoting age were included in the particulars inserted on identity cards to distinguish easily persons qualified for inclusion in the electoral register ; and the endorsement on their identity cards enabled aliens to be excluded from the register. The electoral register thus built up from National Registration sources in 1944 was kept up-to-date, by means of continuous notification from the National Register to Electoral Registration Officers of removals, exits, new entrants and attainments of majority, until mid-1948. (The Government then decided to revert to the canvassing machinery in use before the war.)

Another important service in war-time and thereafter consisted of recording in the Register those persons who had reported for service under the National Service Acts and the Employment Orders and notifying the Ministry of Labour and National Service of those who had failed to report and of their current addresses.

Mention should also be made here of the use of the National Register for the National Health Service from the inception of the latter in 1948. The Government decided in 1952 that to save the labour and expense of allotting separate numbers when National Registration came to an end, the series hitherto used for both National Registration and the National Health Service would continue to be used for the latter. The National Registration number has therefore now become the National Health Service number and the Central Index has been suitably adapted for use as the Central Register for the National Health Service.

Apart from these large-scale national operations the Register was used also in individual cases for the benefit of the person concerned or where national security or serious crime was involved. For example, information obtained from the National Register enabled the police to identify, trace and very speedily arrest a murderer. As the potentialities of the Register came to be realized more fully by Government Departments, local authorities and others, applications for help in many directions were continually received and the Register was eventually used in providing information of various kinds, with proper safeguards where necessary, for more than 100 different projects. The last extension of its uses was in December 1951, viz. notification to the National Assistance Board of deaths of blind non-contributory pensioners.

Some further examples of the variety of purposes served are given below :

- National Assistance Board : endorsement of identity cards, when payment made to air raid victims, to prevent unwarranted claims.
- Board of Trade : by obtaining N.R. particulars of purchasers fraudulent and duplicate applications under the Utility Furniture scheme and other abuses were detected.
- British Empire Cancer Campaign : follow-up of former hospital patients was facilitated by availability of current address.
- Central Office of Information : selection from local registers of samples of population for interview for various Social Survey purposes.

Treasury Solicitor : tracing of next-of-kin to whom payments due.

- Post Office Savings Bank : production of identity card in "on demand" withdrawal cases to prevent fraud ; this new safeguard simplified the procedure for withdrawals on demand without undue risk.
- Commonwealth Gift Scheme : speedily identifying addresses of children born on Prince Charles's birthday.
- Insurance Companies : tracing individuals to whom matured policy payments were due.
- Passport and Permit Office : issue of passports made simpler and safeguards provided.

National Insurance : verifications of ages on claims for Family Allowances.

Ministry of Labour and National Service : residence on identity card accepted for lodging allowance claims.

Lost Property Offices : identity card provided means of restoring property, e.g. handbags or wallets, lost in buses, etc.

Salvation Army : tracing missing relatives.

- War Office : tracing next-of-kin of Army personnel.
- British Red Cross : tracing relatives and friends of persons in enemy occupied territory.
- Royal Commission on Population : for present address of 10 per cent sample of married women for Sample Family Census.
- Home Office : notification of deaths of aliens.
- Ministry of Pensions : notification of deaths of pensioners holding expensive appliances such as wheeled chairs or cars.
- Ministry of Town and Country Planning: incidence of migration between 1948 and 1950.
- General Register Office : 1947 count of local populations by sex and age (last done in 1939). Measurements of movement of population for local area estimates.

Social Medicine Research Unit : notification of deaths of infants.

Billeting Officers: notification of removals.

Inland Revenue : verifying ages on claims for Post-war Credits.

The contribution which the Register was able to make in such a variety of ways was due to three main factors, viz. its universality, its system of continuous maintenance and its link, centrally and locally, with every individual through his unique identity number on the identity card issued to him.

An important and increasingly valuable feature was the allocation to every child born in the country of a personal number linked permanently to the particulars given on registration of birth. When the Register ended a number so derived and linked was held by 20 per cent of the population. This method of numbering children is being continued in the National Health Service.

The preceding paragraphs deal primarily with uses actually made of the Register. As against that, there were many occasions when use of the Register was denied to individuals or organizations including local authorities and government departments. The general line followed as regards new uses was that facilities were not given unless the purpose was in the interests of the individual registered and not to his detriment. Thus, information from the Register was refused in cases such as pursuit of debtors, follow-up of maintenance orders, claims for possession of houses. Applications took various forms, mainly for information as to the current address or as to the address or area of residence at a given date. If a national registration officer was subpœnaed in civil proceedings to produce the information, counsel were if necessary instructed to appear on behalf of the Registrar General and make a submission to the effect that the information should not be given and that to do so would constitute an offence under Section 8 (2) of the Act of 1939. Such submissions were invariably upheld by the courts whenever the proceedings reached that point. This issue was argued at some length in a divorce case (Everitt v. Everitt) in the Court of Appeal in June 1948. In that case counsel concerned decided, after the adjournment, not to press further for the information. The learned President then observed that, although the Court was not now obliged to decide the point, counsel for the Registrar General was quite justified in putting forward his argument which on the face of it appeared to be wellfounded ; he added "we want to make it quite clear that we are treating it quite seriously although not now called upon to decide the point." (Reference was also made in this case to a similar section in the Agricultural Marketing Act, 1931, and to the case Rowell v. Pratt in the House of Lords in 1939.)

The retention after the war of the liability to produce an identity card to a police officer, which led to much criticism, was not occasioned by any needs of the Register itself.

For each of the two major wars of this century a national register was found to be necessary. The Register of 1915 was conceived for the very limited purposes of recruiting and national service functions and to meet what was considered to be a short-lived emergency. It originally included only persons who, at the time of the enumeration in 1915, were between the ages of 15 and 65. In 1918 it was extended to males who had become 15 or been discharged from the Forces since the enumeration. Its two principal defects were thus remedied (though at a late stage) but others remained, such as the lack of provision for the removal from the register of persons who died or left the United Kingdom. The Register of 1939 was, however, more broadly based and capable of serving any general Departmental demand which might arise. It was indeed part of the Government plans for the purpose of properly mobilizing the whole of the nation's manpower in the event of an emergency ; from the outset it also provided a basis for food rationing. It was a comprehensive National Register obtained by a national stock-taking on one day, through which an identity card was issued to every individual on the spot and a running account was kept of him from then on.

While it was in being the National Register was naturally, as a matter of economy and all-round convenience, put to various administrative uses which had little or nothing to do with the main war purposes for which it was primarily needed. Thus it served for a time in the post-war period in particular, when various social services were being built up or extended for the benefit of the whole population, to reduce the number of occasions on which it was necessary to obtain the same (or much the same) basic information from the individual citizen. It was used, too, for statistical purposes. It was not to be expected that its discontinuance would be unaccompanied by incidental inconvenience to the citizen or of an administrative kind. An example of the latter is that the information available to the General Register Office for framing local population estimates is now less than it was. There is no longer a continuous record of interarea movement and the migration element in the calculations has to be derived from study of other sources such as the Electoral Register, housing and education returns and, until the end of rationing, ration book figures. For analogous reasons it has also become more difficult to control inflation of doctors' lists through the National Health Service Central Register.

For the record, and to show the scale on which it operated, a list is given below of the main items recorded in the National Register, and the main types of notifications from it, during the whole period of its existence :

1. Notification of removals :

(a) External, i.e. from one administrative area to another	60,000,000
(b) Internal, i.e. within administrative areas	50,000,000
2. New registrations, i.e. births, new entrants from abroad, discharges from H.M. Forces (including demobilizations) and Mercantile Marine	17,500,000
3. Replacement of lost or destroyed identity cards	5,200,000

1. 1.	Changes of name, including change of name on	
	marriage	5,300,000
5.	Exit notifications, i.e. deaths, enlistments in H.M.	
	Forces and Mercantile Marine, and embarkations	14,250,000
6.	Recording registrations for employment and national	
o abba	service	21,500,000
7.	Notifications of failure to register for employment	Register itsel
-	and national service	2,275,000
	Posting "Z" class reservists	2,650,000
9.	Recording applications and issuing green photo-	rooses of reen
10	bearing identity cards	350,000
10.	Recording holders of special appliances issued by	10.000
11	Ministry of Pensions and notifying deaths	48,000
11.	Recording Cancer cases and notifying deaths and removals	116,000
19	Recording Blind Pensioners and notifying National	110,000
12.	Assistance Board of deaths	10,000
		10,000
		179,199,000
In add	lition to the recordings made in the National Register,	whole of the n
he follo	lition to the recordings made in the National Register, wing notifications were also made from it :—	whole of the n it also provide
he follo	wing notifications were also made from it :	whole of the n it also profide gister obtained
he follo 13.	wing notifications were also made from it :	1,700,000
he follo 13. 14.	wing notifications were also made from it : Notifying change of address, death, or emigration of reservists Family allowance verifications of date of birth	1,700,000 1,300,000
he follo 13. 14.	<ul> <li>wing notifications were also made from it :—</li> <li>Notifying change of address, death, or emigration of reservists</li> <li>Family allowance verifications of date of birth</li> <li>Notification to Ministry of National Insurance of</li> </ul>	and the second
he follo 13. 14.	<ul> <li>wing notifications were also made from it :—</li> <li>Notifying change of address, death, or emigration of reservists</li> <li>Family allowance verifications of date of birth</li> <li>Notification to Ministry of National Insurance of latest address of persons to whom National In-</li> </ul>	and the second
he follo 13. 14.	<ul> <li>wing notifications were also made from it :—</li> <li>Notifying change of address, death, or emigration of reservists</li> <li>Family allowance verifications of date of birth</li> <li>Notification to Ministry of National Insurance of latest address of persons to whom National Insurance contributions statements could not other-</li> </ul>	1,300,000
he follc 13. 14. 15.	<ul> <li>wing notifications were also made from it :—</li> <li>Notifying change of address, death, or emigration of reservists</li> <li>Family allowance verifications of date of birth</li> <li>Notification to Ministry of National Insurance of latest address of persons to whom National Insurance contributions statements could not otherwise have been delivered</li> </ul>	1,300,000 750,000
he follc 13. 14. 15. 16.	<ul> <li>wing notifications were also made from it :—</li> <li>Notifying change of address, death, or emigration of reservists</li> <li>Family allowance verifications of date of birth</li> <li>Notification to Ministry of National Insurance of latest address of persons to whom National Insurance contributions statements could not otherwise have been delivered</li> <li>Verifying date of birth of Post-war Credit claimants</li> </ul>	1,300,000
he follc 13. 14. 15. 16.	<ul> <li>wing notifications were also made from it :—</li> <li>Notifying change of address, death, or emigration of reservists</li> <li>Family allowance verifications of date of birth</li> <li>Notification to Ministry of National Insurance of latest address of persons to whom National Insurance contributions statements could not otherwise have been delivered</li> <li>Verifying date of birth of Post-war Credit claimants Notifying Medical Research Unit of deaths of children</li> </ul>	1,300,000 750,000 354,000
he follc 13. 14. 15. 16. 17.	<ul> <li>wing notifications were also made from it :—</li> <li>Notifying change of address, death, or emigration of reservists</li> <li>Family allowance verifications of date of birth</li> <li>Notification to Ministry of National Insurance of latest address of persons to whom National Insurance contributions statements could not otherwise have been delivered</li> <li>Verifying date of birth of Post-war Credit claimants</li> <li>Notifying Medical Research Unit of deaths of children under 1 year of age</li> </ul>	1,300,000 750,000
he follc 13. 14. 15. 16. 17.	<ul> <li>wing notifications were also made from it :—</li> <li>Notifying change of address, death, or emigration of reservists</li> <li>Family allowance verifications of date of birth</li> <li>Notification to Ministry of National Insurance of latest address of persons to whom National Insurance contributions statements could not otherwise have been delivered</li> <li>Verifying date of birth of Post-war Credit claimants</li> <li>Notifying Medical Research Unit of deaths of children under 1 year of age</li> <li>General address enquiries from Government Depart-</li> </ul>	1,300,000 750,000 354,000 58,000
he follc 13. 14. 15. 16. 17.	<ul> <li>wing notifications were also made from it :—</li> <li>Notifying change of address, death, or emigration of reservists</li> <li>Family allowance verifications of date of birth</li> <li>Notification to Ministry of National Insurance of latest address of persons to whom National Insurance contributions statements could not otherwise have been delivered</li> <li>Verifying date of birth of Post-war Credit claimants</li> <li>Notifying Medical Research Unit of deaths of children under 1 year of age</li> </ul>	1,300,000 750,000 354,000

+ł

# Grand Total

.. .. 183,461,000

It will be seen from the above that during the 12<sup>1</sup>/<sub>4</sub> years it was in use 110,000,000 removals were recorded in the National Register, this constituting the most important single maintenance element in a total of over 150,000,000 maintenance entries. There were periods in which the movement of the population was without precedent in the history of this country, the first during the evacuation from the South coast in July and August, 1940, following Dun-kirk, when over 1,500,000 inter-area or "external" removals (see above) were recorded, followed immediately by the "blitz" removals from September to December, 1940, during which time 3,600,000 "external" removals were notified, and the second during the V1 and V2 operations of August 1944, when the figure reached nearly 950,000 followed by nearly 1,500,000 in the next two months. Despite the enormous total number of maintenance items, indeed perhaps because of it, it is true to say that, when the account was closed on 21st February, 1952; the Register contained an accurate, up-to-date record of the movements and the current name and residence of practically the whole of the 43 million civilians then living in England and Wales. Such a result could be secured only by precise and detailed planning of the Register ab initio, strict control of local operations, complete uniformity of procedure and a high degree of co-operation between all concerned.

# PARLIAMENTARY AND LOCAL GOVERNMENT ELECTORS

The considerable legislative and other changes affecting the statistics of electoral registers during the war and immediate post-war years were fully recounted in the Civil Text Volume of the Statistical Review for 1946–50, pages 170–172.

#### **Electoral Registers**

The procedure, as established by the Electoral Registers Act and the Representation of the People Act, 1949, is that a local register based on a canvass is prepared in the autumn of each year, distinguishing between (a) those who are parliamentary and local government electors by virtue of residence on the qualifying date and (b) local government electors who on the qualifying date had a non-resident qualification by occupying as owner or tenant any rateable land or premises of not less than  $f_{10}$  rateable value per occupier. There is also a service register for any member of the forces and other persons employed in the service of the Crown in a post outside the United Kingdom (and for their wives if with them). The qualifying date was 20th November in England and Wales and the registers were to be published not later than 15th March of the following year. A provision affecting the numbers on the register is that a person not of full age on the qualifying date but of full age on the following 15th June is to be included on the register though there is no entitlement to vote in any election before 2nd October of the latter year ; the 1951 register was the first to be affected in this way.

# Table CXXXVII.—Parliamentary and Local Government Electors. England and Wales, 1918 to 1951

	(including	that a riso of so.		
Register	Total	Business Premises qualifications (Included in Total)	Persons on Absent Voters' List (included in Total)	Local Government Register
1918 (Autumn) 1928 (Autumn) 1929 (Spring) 1939 (Autumn)	17,222,983 19,866,649 25,095,793 28,348,555	159,013 205,793 371,594 354,831	3,362,028 154,432 174,731 168,480	13,930,130 17,179,487 18,620,395 21,685,772
(Qualifying date in brackets)	Total	Business Premises Register (included in Total)	Service Register (included in Total)	Local Government Register
1945 (30th June) 1946 (30th June) 1947 (30th June) 1948 (30th June) 1949 (10th June) 1950(20th Nov.1949) 1951(20th Nov.1950)		55,164 51,645 54,162 49,575 — —	$\begin{array}{c} 2,749,531\\ 1,015,259\\ 478,085\\ 284,004\\ 127,334\\ 164,743\\ 216,749\end{array}$	$\begin{array}{c} 29,216,823\\ 30,591,738\\ 31,105,904\\ 31,455,419\\ 30,258,862\\ 30,306,024\\ 30,501,306\end{array}$

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#### **Total Electorate**

The particulars recorded in Tables U and V for 1951 have been taken from statements furnished to the Register General by the Registration Officers of the several areas, and relate to the register which came into force on 16th March, 1951.

Table U refers to Parliamentary and Table V to Local Government electors and elections. From these tables has been extracted the summary in Table CXXXVII showing the total electorate at various dates, selected to demonstrate the changing franchise. Comparison of the registers of 1928 and 1929 shows the effect of the commencement of the Act of 1928, the first to give to women the same franchise as to men, and comparison of the registers of 1939 and 1945 indicates the effect of the Act of 1945, which increased the local government electorate by the addition of those qualified for the parliamentary electorate but previously not entitled to vote at local government elections.

The total Parliamentary Electorate included prior to 1949 plural representation in the case of those persons registered in more than one constituency by reason of their possessing the necessary residence or business qualification or being entitled to be registered in respect of a University constituency. The percentages which this total electorate represented of the estimated total population in 1938 and 1939 and from 1945 to 1950 were :

1938	193 <b>9</b>	1945	1946	1947	1948	1949	1950	1951
68.4	68.4	68.9	72.0	72.6	72.7	68.9	68.6	69.1

The changes made in Parliamentary franchise between 1939 and 1945–48 did not affect sufficiently large numbers of persons to exert a significant influence on the percentages, but the lower proportion of minors in the age structure of the post-war population compared with that of the pre-war population was such that a rise of some 1–2 per cent in the electoral proportion was to be expected on this account alone. The low proportion in 1945 is probably to be attributed in part to a degree of incompleteness in the service register of that year. The fall in the proportion in 1949 was due to the elimination of business premises and university qualifications.

In contrast there was a considerable increase in the Local Government franchise in the post-war as compared with the pre-war period. Reference should be made to the Acts concerned, in particular to those of 1928, 1943, 1944 and 1945, for a precise appraisal of the changes made, but in brief the *parliamentary* qualification had previously been based on *residence* and the *local* qualification on *occupation* of property ; the Act of 1945 changed the basis of *local* qualification to residence or occupation. The change resulted in a substantial rise in the proportion of the total population included in the local electorate from 51-8 per cent and 52-3 per cent in 1938 and 1939 respectively to 71-6 per cent in 1946 and 69-3 in 1951, the latter proportions being virtually the same as those for Parliamentary electors.

# **Redistribution of Seats**

A Committee on Electoral Machinery was set up in 1942 to consider the problem of readjustment of procedure when the war ended and especially to consider what might be done to remedy the maldistribution of parliamentary seats which had developed since the previous redistribution of 1917 and 1918. In 1944 a Speaker's Conference on Electoral Reform and Redistribution of Seats advised on the principles by which the proposed Boundary Commissions should be guided. There followed the House of Commons (Redistribution of Seats) Act, 1944, setting up permanent Boundary Commissions with the primary function of performing the longer term and major task of a full redistribution, but who were required first to carry out a temporary redistribution in the constituencies with the most severe under-representation. The twenty single-member constituencies, named in the Act, with electorates in 1939 exceeding 100,000 were to be divided, seventeen of these with electorates under 150,000 were each to be divided into two new single-member constituencies, one with between 150,000 and 200,000 electors into three and the remaining two with between 200,000 and 250,000 electors into four.

The improvement effected by this temporary measure may be judged in two ways. The largest single-member constituency in England before the redistribution had an electorate of 208,609 ; the constituency which became the largest after the redistribution had 97,603. Alternatively it may be seen in Table CXXXVIII that the average size of the constituencies concerned in the redistribution was reduced from 126,480 to the more normal average size of 56,213.

# Table CXXXVIII.—Average size of Constituencies per member before and after Temporary Redistribution under the House of Commons (Redistribution of Seats) Act, 1944

Parliamentary Boroughs and Counties*	Total Electorate (1939)	Total Number of Members	Average Electorate per member
The twenty divided con- stituencies { Before division After division	2,529,606 2,529,606	20 45	$126,480 \\ 56,213$
Other English constituencies :         With 1 member          With 2 members          Welsh constituencies	{23,036,352 1,000,213 1,652,712	$\begin{array}{c} 443\\22\\35\end{array}$	[52,001 45,464 47,220

\* The twenty constituencies which were divided were all in England.

The division of these 20 single-member constituencies into 45 similar constituencies raised, by 25, the number of geographical constituencies and the number of members they returned, which had been 509 and 520 respectively in 1939. Thus the new division of England and Wales, employed in Table U for the years 1945–47, consisted of 534 geographical constituencies, of which 11 were represented by 2 members each, and 5 university constituencies, 3 of which were represented by 2 members each ; making in all, 539 constituencies and 553 members. In 1949 (as a result of legislation in 1948) the University constituencies were abolished.

The House of Commons (Redistribution of Seats) Act, 1949, which consolidated previous legislation provided for permanent Boundary Commissions (one eaca for England, Wales, Scotland and N. Ireland) whose duty it was to keep parliamentary representation under constant review and to make recommendations to the Secretary of State from time to time as to any redistribution of seats which might seem to be desirable. All the 2-member constituencies have been divided and other adjustments of boundary have been made. At the end of 1951 there were 542 constituencies each with 1 member. The average electorate per member in England and Wales was 56,075 ; the highest was 79,730 and the lowest 27,831. followed the House of Commons (Redistribution of Seats) Act, 1944, setting up permanent Boundary Commissions with the primary function of performing the longer retrached major casklot a full redistrict thiom, and whow we required fact to carry out a temperature and the twenty suggestion between the same and a second under representation. The twenty suggestion between constitution is a model in the Act, with electorates in 1939 exceeding 100,000 who to be divided seventes of these twich electorates under 150 (20 were constituted and two new single member constitution care, one with het were 150,000 and 200,000 electors into three and the remaining two with between 200,000 electors into three and the remaining two with between 200,000 and 200,000 electors into three and the remaining two with between 200,000 and 200,000 electors

The improvement enected by this temporary maximum now he indeed in two ways. The largest single-minister constituency in England where the redistribation had an electorate of 203, 509 ; the constitueacy which secame the test and after the redistribution had 07,603. Alternatively it may be seen in Table CXXXVIII to at the average size of the testimotricits concerned to the redistribution was reduced from 128,460 to the more more large size of 56,213.

Table CXXXVIII. Average size of Constituencies per maniper before and after Temporary Redistribution under the House of Commons (Redistribution of Seats) Act. 1944

126.400 TTS:08		
	1. 100,000,82 11,000,1 10,000,1 10,000,1	Office, English constituencies : With A member Welsh constituencies : 

" The twenty constituencies which were divided were all in England.

The advector of these 20 surgle-member consultances into 15 similar consttransports raised, by 25, the number of recertainical constituences and the number of members they returned: which had been 503 and 520 respectively in 1939. Alms the new division of England and Wales, encloyed in Table U for the years 1940-47, consisted of 534 geographical constituencies, of which 11 write requestited by 2 members each, and 5 university constituencies. Sof which 553 members, In 1949 (as a result of legislation in 1948) the University constituencies were abolished.

The House of Commons (Redistribution of Sects) Act. 1949, which consolidated previous legislation provided for permanent Boundary Commissions (one each for England, Wales, Scotland and N. Ireland), whose duty if was to keep parliamentary representation under constant review and to make recommendations to the Secretary of State from time to time as to any redistribution of sects which might seem to be desirable. All the 2-member constituencies have been divided and other adjustments of boundary have been made. At the end of 1951, there were 512 constitutiones each with 1 member. The average electorate per member in England and Wales was 56,076 ; the highest was the lowest 37 SM.

#### APPENDIX A

#### Estimated Total, Civilian and Home Populations by Sex and Age. England and Wales, 31st December, 1951

(Thousands)

Age Group	Total	Civilian	Home
	MA	LES	
0	- anishuna tud ziba		Bloris shirt
5	Contraction of the second second	1,853	
0	in the second	1,700	
0		1,433	
5	1,391	1,112	1,323
0	1,480	1,223	1,325
5	1,603	1,525	1,580
0	1,572	1,516	1,552
5	1,618	1,580	1,607
·	1,682	1,660	1,677
5	1,583	1,575	1,583
50	1,346	1,343	1,385
5	1,107	1,106	1,106
0	952	952	952
5	104	781	10 10 20 20 10 10 10 10 10 10 10 10 10 10 10 10 10
0		590	
5	11	378	The second second second
0	1. 201	176	
5 and over		63	
ll Ages	21,308	20,566	21,085
193 20 20	1	<u>r 50 1938-45</u>	an at ages unde
	FEM	ALES	ohan ananow ha
)	age a	1,768	
5		1,622	
	man Martin .	1,382	
Mal 22 184-186			., 06-0401
j	1,386	1,381	1,386
)	1,479	1,470	1,478
	1,607	1,605	1,606
	1,594	1,593	1,594
and the second second	1,668	1,667	1,668
172-174	1,709	1,708	1,709
		1,636	1. (100-0aux
)	MAI	1,499	
· · · · ·	.038	1,347	
	1005	1,212	
		1,046	1938-45
	individue a se	850	1940-50
i	Real Market	566	
		284	
and over		139	
l Ages	22,794	22,775	22,792
	PERS	ONS	
ll Ages	44,102	43,341	43,877

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#### APPENDIX A

Estimated Total, Civilian and Home Populations by Sex and Age England and Wales, 31st December, 1951

LE PROPERSIONES

#### APPENDIX B

Note.—Tables similar to those in this Appendix, but covering earlier years, have been published as follows :

858. I	1.112		Sta	atistical Revi	ew
Tj	ype of data		Text, 1938–39	Text, Civil 1940–45	Text, Civil 1946–50
ITO I.	. 000,1		page	page	page
Female population at a 1938	202		232-233	· · · · · · · · · · · · · · · · · · ·	
Female populations at Male populations at a 1946	ges 15-50 for year	rs prior to	} -	161-162	
1946 Male and Female popu years 1946-50	lations at ages	15–50 for	· -	· · · · · · · ·	181
Marriages: Women at ages und Women at ages und	er 50 prior to 193		234		All A <u>s</u> va
Men at ages under 5 Men and women und	0 prior to 1946		}	163	182
Estimated years of li groups: 1938-45	ife spent within	given age		164-167	-0 -6
1946-50	100 5		888.1		184–186
Maternities by legitim. 1938-45 1946-50		··· ··	474.1 1.607 1.007	168–170	 188–190
Maternity rates per ye 1938-45 1946-50	Table P		1,088	172-174	102 104
Legitimate maternitie	s (classified by m	other's age,		· · · · · · · · · · ·	192–194
duration of marria children(: 1938-45	e and number o	••••••••••••••••••••••••••••••••••••••		176–191	
1946–50	088 · · · · · · · · · · · · · · · · · ·	•• ••	-		200-209
			1.000.000		
22,792	22,275				893A IU

# Table 1.—(a)Population in thousands at ages 15-501951.(b)Annual Marriages at ages under 50

#### England and Wales

Notes.— (i) For records of earlier years, see notes on page 298. (ii) In section (e), not stated ages have been rateably distributed.

1 2 A		P	opulation in	n thousands	6 200 Bloc		tooline .		n suizzo		N. A.	
Age	cond	narital litions (a)		cried b)	[Single, w dive	narried idowed and orced] (c)	$\begin{bmatrix} \mathbf{M} \\ \mathbf{a} \end{bmatrix}$	ortion rried ÷ (a)] d)	of marr hunc	nber iages in lreds e)	non-marr age [ (e	s per 1,000 ied at each $) \div (c)$ ] f)
te a ca	М.	<b>F</b> .	М.	F.	M.	F.	М.	F.	М.	F.	М.	F.
15-20	1,389	1,384	7	58	1,382	1,326	.0050	•0419	86.1	541.4	6.2	40.8
20-25	1,481	1,487	335	706	1,146	781	·2262	.4748	1451.0	1721.8	126.6	221.0
25-30	1,626	1,633	1,049	1,260	577	373	.6451	.7716	1025.6	623-3	177.7	167.1
30-35	1,549	1,575	1,242	1,308	307	267	·8018	.8305	399.3	254.2	130.1	95.2
35-40	1,638	1,687	1,402	1,408	236	279	·8559	·8346	213.7	156.8	90.6	56.2
40-45	1,688	1,711	1,472	1,391	216	320	·8720	·8130	130.8	106.0	60.6	33.1
45-50	1,569	1,629	1,380	1,270	189	359	·8795	•7796	91.8	74.5	48.6	20.8
15-50	10,940	11,106	6,887	7,401	4,053	3,705	·6295	·6664	3398-3	3478.0	83.8	93.9
20-40	6,294	6,382	4,028	4,682	2,266	1,700	·6400	.7336	3089.6	2756.1	136.3	162-3

	1				2. 162 ·			the mean in			
Age	Non-	25		1	MARRIED	, the Marri	iage Durat	ion† bein	g	9	
woman	married	All dura- tions	0-21/2 months	2 <del>1</del> -5 <del>1</del> months	5 <del>1</del> -81 months	0-81/2 months	8 <u>1</u> -11 <u>1</u> months	11 <u>1</u> -14 <u>1</u> months	141-171 months	17 <u>1</u> -20 <u>1</u> months	20 <del>1</del> -231 months
15-19 20-24 25-29 30-34 35-39 40-44 45-49	132600 78100 37300 26700 27900 32000 35900	5800 70600 126000 130800 140800 139100 127000	$1012 \\ 3492 \\ 1330 \\ 540 \\ 331 \\ 224 \\ 159$	1032 4234 1722 686 408 275 194	858 4264 1844 727 423 280 196	2902 11990 4896 1953 1162 779 549	680 4249 1951 765 440 288 201	562 4174 2019 784 444 287 200	445 4110 2188 841 464 298 203	356 4104 2374 902 488 314 209	256 4024 2517 947 503 324 212
15–44 15–49	334600 370500	613100 740100	6929 7088	8357 8551	8396 8592	23682 24231	8373 8574	8270 8470	8346 8549	8538 8747	8571 8783

## Table 2.- Estimated years of life spent within given age groups in the calendar year

Table 3.—Maternities by legitimacy showing numberst of

Age	Illegiti-			LEGITIM	ATE MATE	RNITIES, t	he Marriag	ge Duratio	n† being.		
of woman	mate mater- nities	All dura- tions	0-2 <del>1</del> months	$2\frac{1}{2}-5\frac{1}{2}$ months	5 <del>1</del> -8 <del>1</del> months	0-8½ months	81/2-111/2 months	11 <del>1</del> -141 months	14 <u>1</u> -17 <u>1</u> months	17 <del>1</del> -20 <del>1</del> months	201-231 months
15-19 20-24 25-29 30-34 35-39 40-44§	4,924 9,763 7,916 5,703 3,669 1,469	24,608 179,367 212,680 135,567 74,780 23,961	1,422 2,002 768 392 190 93	6,182 8,998 2,371 850 377 131	6,856 13,792 3,881 1,454 593 125	14,460 24,792 7,020 2,696 1,160 349	3,034 20,100 8,616 3,069 1,043 221	1,898 15,436 6,815 2,370 958 212	1,366 12,000 5,623 1,965 827 193	1,167 11,047 5,366 1,868 726 178	874 10,600 5,658 1,864 681 165
15-44	33,444	650,963	4,867	18,909	26,701	50,477	36,083	27,689	21,974	20,352	19,842

## Table 4.-Maternity Rates (per year of exposure, see Table 2), showing

Age	Illegiti- mate	ELF.	L	EGITIMATE	MATERNI	ITY RATES	s,   the Ma	rriage Dur	ation† be	ing	* 14 10 10
of woman	mater- nity rate	All dura- tions	0-2 <del>1</del> months	21/2-51/2 months	51-81 months	0-8½ months	8 <del>1</del> -11 <del>1</del> months	11 <u>1</u> -141 months	14 <u>1</u> -17 <u>1</u> months	171-201 months	201-231 months
15-19 20-24 25-29 30-34 35-39 40-44 §	-0037 -0125 -0212 -0214 -0132 -0046	·424 ·254 ·169 ·104 ·053 ·017	·141 ·057 ·058 ·073 ·057 ·042	·599 ·213 ·138 ·124 ·092 ·048	·799 ·323 ·210 ·200 ·140 ·045	·498 ·207 ·143 ·138 ·100 ·045	·446 ·473 ·442 ·401 ·237 ·077	·338 ·370 ·338 ·302 ·216 ·074	·307 ·292 ·257 ·234 ·178 ·065	·328 ·269 ·226 ·207 ·149 ·057	·341 ·263 ·225 ·197 ·135 ·051
15-44	·0100	·106	•070	·226	•318	·213	•431	·335	·263	·238	·232

\* For records of earlier years, see notes on page 298.
† Durations shown in years, e.g. 1-, 2-, etc., should be read as strictly meaning 11<sup>1</sup>/<sub>2</sub> m.-1 y. 11<sup>1</sup>/<sub>2</sub> m., 1y. 11<sup>1</sup>/<sub>2</sub> m.-2y. 11<sup>1</sup>/<sub>2</sub> m., etc.

‡ "Not stated " cases have been distributed as in Table 1 of this Appendix.

300

(a) Non-married women

Age o	nommai age.													
woma	10 years and over	9– years	8– years	7– years	6– years	5– years	4– years	3– years	2– years	1- year				
15-19 20-24 25-29		 1 7391			 1459 14899		1 6934 16378	96 11114 15173	502 14479 11883	1619 16412 9098				
23-2 30-3 35-3 40-4	57629 110453 122934	$     \begin{array}{r}       7391 \\       15359 \\       5881 \\       2453 \\     \end{array} $	10461 3786 1824	7886 2924 1519	8036 2883 1515	8100 3165 1735	6793 3063 1760	5900 2865 1663	4444 2279 1407	3474 1899 1223				
45-4 15-4 15-4	117237 296861 414098	1315 31085 32400	1042 26007 27049	926 24136 25062	937 28792 29729	1042 33705 34747	1026 34929 35955	996 36811 37807	905 34994 35899	824 33725 34549				

# (a) Illegitimate Maternities by Mother's Age ; (b) Legitimate Maternities by Mother's Age and Males, Marriage Duration combined ; England and Wales, 1951\*

Age o	1 01-8	2 10	1-2 1-1	0 . 141						
woma	10 years and over	9– years	8– years	7– years	6- years	5- years	4- years	3- years	2- years	1– year
15-19 20-2 25-29 30-3 35-3 40-4	6,854 42,161 46,720 18,161	38 8,123 12,984 3,480 554	$ \begin{array}{r}    $	649 13,825 7,902 2,142 373	2,427 20,117 9,260 2,425 446	6,961 28,206 11,247 3,066 632	$11 \\ 14,441 \\ 30,803 \\ 10,656 \\ 3,136 \\ 663$	276 25,421 29,546 9,454 3,085 657	1,522 35,292 24,838 8,107 2,794 716	5,305 49,083 23,462 8,067 3,192 748
15-4	113,896	25,179	24,375	24,891	34,675	50,112	59,710	68,439	73,269	89,857

#### (a) Illegitimate rates by Mother's Age; (b) Legitimate rates by Mother's Age and Marriage England and Wales, 1951\* Duration combined ;

	LEGITIMATE MATERNITY RATES,    the Marriage Duration theing												
1- year	2- years	3- years	4- years	5– years	6- years	7- years	8- years	9– years	10 years and over	Age o woma			
·328 ·299 ·258 ·232 ·168 ·061	·303 ·244 ·209 ·182 ·123 ·051	·288 ·229 ·195 ·160 ·108 ·040	·208 ·188 ·157 ·102 ·038	-197 •164 •139 •097 •036	-166 -135 -115 -084 -029	·179 ·121 ·100 ·073 ·025	·243 ·114 ·095 ·067 ·024			15-19 20-24 25-29 30-34 35-39 40-44			
·266	·209	·186	·171	·149	·120	·103	·094	·081	·038	15-4			

§ The few maternities to women over 45 years of age have been included in the 40-44 age group. || The table rates per year of exposure are the same as the rates per woman except where the marriage duration is less than a full year, in which case the rate per woman is the table rate multiplied by the fraction of the duration year involved.

) England and (b) Married women at successive marriage durations J Wales, 1951\* (Figures in tens)

Table 5.—Total Maternities achieved per 1,000 Women marrying under age 45 by successive cohorts of marriages by the end of successive durations of marriage

Note.—(a) Each cohort associated with two calendar years represents the number of married (b) The nominal age at marriage is more precisely the age at the time of exposure in the nominal age. PART I. Total Maternities.

women exposed to risk at durations under one year in the second of the associated years. first year of marriage. The actual age at marriage is approximately half a year less than the PART II. Total Maternities excluding the effect of pre-nuptial conception from the Maternities of the first year of marriage in respect of each cohort.

Original cohort	ni	12 13	a ja	• 599.(	Marr	iage Dura	ation *	8- 8- 8-075	1897	ar set		Original cohort	4	81	1	10 10	Marr	iage Dura	ation *			18	Tazit
of new mar- riages	8½ mths.	l year	2 vears	3 years	4 years	5 years	6 years	7 years	8 years	9 years	10 years	of new mar- riages	8½ mths.	l year	2 years	3 years	4 years	5 years	6 years	7 years	8 yea <b>r</b> s	9 years	10 years
	1905 	hal age a				All ages							Nomi	nal age a	at Marri	age :	96. 877	All ages	under 4	15	<u>ess lano</u> ABS	104	1937-3
$1937 - 38 \\ 1938 - 39$	187 164	285 256	527 487	711 656	852 825	999 978	1,138 1,132	$1,275 \\ 1,254$	$1,384 \\ 1,404$	1,511 1,531	1,620 1,623	1937 <b>–3</b> 8 1938 <b>–3</b> 9		121 110	$\begin{array}{c} 363\\ 341 \end{array}$	547 510	688 679	835 832	974 986	$1,111 \\ 1,108$	1,220 1,258	1,347 1,385	1,456 1,477
$1939-40 \\ 1940-41 \\ 1941-42 \\ 1942-43 \\ 1943-44 \\ 1944-45$	104     117     109     110     124     134     113	199 188 189 211 240 226	409 411 421 473 492 509	597 592 610 651 704 750	762 762 760 843 919 941	922 898 947 1,053 1,089 1,105	1,050 1,077 1,139 1,211 1,233 1,244	1,222 1,249 1,278 1,352 1,352 1,361	1,374 1,372 1,392 1,462 1,451	1,481 1,463 1,486 1,552	1,565 1,544 1,564	$1939-40 \\1940-41 \\1941-42 \\1942-43 \\1943-44 \\1944-45$		93 89 89 99 122 127	303 312 321 361 374 410	491 493 510 539 586 651	656 663 660 731 801 842	816 799 847 941 971 1,006	944 978 1,039 1,099 1,115 1,145	1,116 1,150 1,178 1,240 1,234 1,262	1,268 1,273 1,292 1,350 1,333	1,375 1,364 1,386 1,440	1,459 1,445 1,464
$\begin{array}{c} 1945-46\\ 1946-47\\ 1947-48\\ 1948-49\\ 1949-50\\ 1950-51\\ \end{array}$	$     117 \\     159 \\     162 \\     164 \\     158 \\     151   $	237 310 292 274 267 259	569 605 574 540 532	798 826 781 747	993 1,012 964	1,162 1,179	1,306	i sgeh	Mar			1945-46 1946-47 1947-48 1948-49 1949-50 1950-51		136 180 155 132 129 127	468 475 437 398 394	$697 \\ 696 \\ 644 \\ 605$	892 882 827	1,061 1,049	1,205				
1937–38	261	365	639	855	1,022	Unde	er 25 1,354	1,514	1,642	1,798	1,933	1937-38	100 100	141	415	631	798	Und 970	er 25	1,290	1,418	1,574	1,709
1937-38 1938-39	201 225	324	586	785	978	1,150	1,325	1,465	1,643	1,796	1,908	1938-39	8778.	128	390	589	782	954	1,129	1,269	1,447	1,600	1,712
$1939-40\\1940-41\\1941-42\\1942-43\\1943-44\\1944-45$	151 134 129 143 154 132	239 218 213 234 266 252	478 468 466 520 - 540 551	688 666 672 715 771 821	869 854 838 927 1,016 1,036	1,048 1,006 1,051 1,169 1,211 1,222	1,192 1,216 1,277 1,352 1,380 1,382	$1,395 \\ 1,422 \\ 1,440 \\ 1,517 \\ 1,522 \\ 1,518$	$1,576 \\ 1,568 \\ 1,574 \\ 1,647 \\ 1,639$	1,704 1,679 1,688 1,755	1,807 1,778 1,783	1939-40 1940-41 1941-42 1942-43 1943-44 1944-45	185 185 185	104 97 96 106 132 138	$343 \\ 347 \\ 349 \\ 392 \\ 406 \\ 437$	553 545 555 587 637 707	734 733 721 799 882 922	913 885 934 1,041 1,077 1,108	$\begin{array}{c} 1,057\\ 1,095\\ 1,160\\ 1,224\\ 1,246\\ 1,268\end{array}$	$1,260 \\ 1,301 \\ 1,323 \\ 1,389 \\ 1,388 \\ 1,404$	$1,441 \\ 1,447 \\ 1,457 \\ 1,519 \\ 1,505$	1,569 1,558 1,571 1,627	1,672 1,657 1,666
$1945-46\\1946-47\\1947-48\\1948-49\\1949-50\\1950-51$	140 196 204 208 198 187	265 363 350 331 318 304	630 692 667 628 614	887 944 904 865	1,108 1,159 1,118	1,302 1,355	ates by nicisso	jatate nate r ation c	Leghin			1945-46 1946-47 1947-48 1948-49 1949-50 1950-51	•	$145 \\ 208 \\ 183 \\ 155 \\ 150 \\ 144$	$510 \\ 537 \\ 500 \\ 452 \\ 446$	767 789 737 689	988 1,004 951	1,182 1,200	1,352 5- <b>29</b>				1945-4 1946-4 1947-4 1948-4 1948-4 1940-5 1950-5
1937-38	112	208	437	607	735	25- 876	1,013	1,148	1,255	1,376	1,479	1937-38	21	108	337	507	635	776	913	1,048	1,155	1,276	1,379
1938–39	98	189	409	559	723	878	1,032	1,151	1,299	1,422	1,508	1938-39	i De	101	321	471	635	790	944	1,063	1,211	1,334	1,420
$1939-40\\1940-41\\1941-42\\1942-43\\1943-44\\1944-45$	74 77 81 96 103 86	154 155 159 184 218 206	341362379440464507	521 541 567 613 677 738	685 708 713 805 882 922	841 842 892 1,000 1,040 1,082	968 1,011 1,065 1,149 1,173 1,215	1,129 1,167 1,194 1,281 1,278 1,324	1,270 1,280 1,301 1,380 1,368	1,370 1,364 1,382 1,458	1,446 1,437 1,447	$\begin{array}{c} 1939 - 40 \\ 1940 - 41 \\ 1941 - 42 \\ 1942 - 43 \\ 1943 - 44 \\ 1944 - 45 \end{array}$		86 85 97 128 131	$273 \\ 292 \\ 305 \\ 353 \\ 374 \\ 432$	453 471 493 526 587 663	617 638 639 718 792 847	773 772 818 913 950 1,007	900 941 991 1,062 1,083 1,140	$1,061 \\ 1,097 \\ 1,120 \\ 1,194 \\ 1,188 \\ 1,249$	$1,202 \\ 1,210 \\ 1,227 \\ 1,293 \\ 1,278$	1,302 1,294 1,308 1,371	1,378 1,367 1,373
$\begin{array}{c} 1945-46\\ 1946-47\\ 1947-48\\ 1947-48\\ 1948-49\\ 1949-50\\ 1950-51\\ \end{array}$	96 136 127 120 111 101	228 298 262 233 225 211	$565 \\ 595 \\ 542 \\ 494 \\ 480$	791 814 748 694	984 1,000 926	1,150 1,166 * Th	1,289 e duratio	onsiden	tified ar	e more r	recisely	1945-46 1946-47 1947-48 1948-49 1949-50 1950-51 111 mon	ths, 1 x	146 188 155 128 128 122 7r. 11 <del>1</del> n	483 485 435 389 383 nonths,	709 704 641 589 2 yrs. 1	902 890 819	1,068 1,056	1,207				1946-4 1946-4 1946-4 1948-4 1948-4 1940-5
Continued	on page	e 304		30	)2	III	e quiatio		ernoù alt	o moro p					, , , ,				03		Continu	ed on pa	ge 305.

## APPENDIX B Table 5 (continued)

## PART I—(continued)

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#### by Mother's Age. Frevious Children. PART II—(continued) (See notes on pages 302 and 303)

(See notes on pages 302 and 303)

				nasonada S		usin dis	-96 1611 	The act	. all faith	COLLECTION TH							ob on pe	Ŭ	and and a si				
Original cohort of new	our d				Marr	iage Dur	ation *					Original cohort		Tople.	298.	onand in	Marr	iage Dur	ation *	gainey an	epidat o	r similar	ort (I)
mar- riages	$8\frac{1}{2}$ mths.	l year	2 years	3 years	4 years	5 years	6 years	7 years	8 years	9 years	10 years	of new mar- riages	8 <del>1</del> mths.	l year	2 years	3 years	4 years	5 years	6 years	7 years	8 years	9 years	10 years
They a	Nomir	al age	at Marri	age :	yeasey	30	-34	MILES (	2009	edato (			Nomir	hal age a	t Marri	age :	ldinges	30	-34	ana States	nhers of	ton to a	namorale Statoment
$1937 - 38 \\ 1938 - 39$	$\begin{array}{c}101\\92\end{array}$	$\begin{array}{c} 204 \\ 184 \end{array}$	$\begin{array}{c} 416\\ 377\end{array}$	$\begin{array}{c} 559 \\ 515 \end{array}$	$\begin{array}{c} 668 \\ 648 \end{array}$	778 775	886 896	986 990	1,060 1,079	1,128 1,149	1,177 1,192	1937– <b>38</b> 1938– <b>3</b> 9	r statioù	115 101	$\frac{327}{294}$	470 432	579 565	689 692	797	897 907	971 996	1,039 1,066	1,088 1,109
$\begin{array}{c} 1939{-}40\\ 1940{-}41\\ 1941{-}42\\ 1942{-}43\\ 1943{-}44\\ 1944{-}45\end{array}$	$71 \\ 76 \\ 80 \\ 89 \\ 101 \\ 85$	$153 \\ 156 \\ 157 \\ 175 \\ 203 \\ 193$	330 347 359 397 420 452	$\begin{array}{r} 482 \\ 502 \\ 519 \\ 550 \\ 607 \\ 642 \end{array}$	$\begin{array}{c} 621 \\ 645 \\ 649 \\ 705 \\ 765 \\ 791 \end{array}$	753 761 787 847 891 913	855 885 909 957 988 1,012	965 987 996 1,045 1,060 1,085	1,051 1,060 1,059 1,102 1,116	1,108 1,104 1,101 1,144	1,145 1,136 1,131	1939-40 $1940-41$ $1941-42$ $1942-43$ $1943-44$ $1944-45$		88 87 84 94 113 118	265 278 286 316 330 377	$ \begin{array}{r} 417\\ 433\\ 446\\ 469\\ 517\\ 567\\ \end{array} $	556 576 576 624 675 716	688 692 714 766 801 838	790 816 836 876 898 937	900 918 923 964 970 1,010	986 991 986 1,021 1,026	1,043 1,035 1,028 1,063	1,080 1,067 1,058
$1945-46\\1946-47\\1947-48\\1948-49\\1949-50\\1950-51$	$     \begin{array}{r}       85 \\       108 \\       106 \\       103 \\       105 \\       98 \\     \end{array} $	202 239 216 196 207 198	481 486 444 420 430	668 655 603 577	818 793 732	945 907	1,042					1945-46 1946-47 1947-48 1948-49 1949-50 1950-51	34 75 0 0 V 0 15 0 15 0 15 0	$128 \\ 147 \\ 123 \\ 104 \\ 114 \\ 111$	407 394 351 328 337	$594 \\ 563 \\ 510 \\ 485$	744 701 639	871 815	968				
						35	-39				1349141 (34-132)		- 1					35-	-39				
$\begin{array}{c} 1937 - 38 \\ 1938 - 39 \end{array}$	85 74	$\begin{array}{c} 156\\ 140 \end{array}$	$\begin{array}{c} 295\\ 269 \end{array}$	387 357	453 436	506 493	545 531	573 559	591 578	601 590	606 597	193 <b>7–38</b> 1938– <b>39</b>		78 71	217 200	309 288	375 367	428 424	467 462	495 490	513 509	523 521	528 528
$\begin{array}{c} 1939-40\\ 1940-41\\ 1941-42\\ 1942-43\\ 1943-44\\ 1944-45\\ \end{array}$	$     \begin{array}{r}       64 \\       64 \\       67 \\       74 \\       78 \\       69 \\       \end{array} $	122 127 124 138 144 142	251 262 263 293 296 311	344 359 362 392 402 427	420 436 434 480 485 504	479 490 495 549 540 557	518 535 540 585 572 589	546 565 565 614 591 608	566 583 579 628 602	575 589 585 634	580 592 588	1939-40 1940-41 1941-42 1942-43 1943-44 1944-45	144 1.15851	62 67 61 69 72 78	191 202 200 224 224 224 247	284 299 299 323 330 363	$360 \\ 376 \\ 371 \\ 411 \\ 413 \\ 440$	419 430 432 480 468 493	458 475 477 516 500 525	486 505 502 545 519 544	506 523 516 559 530	515 529 522 565	520 532 525
1945–46 1946–47 1947–48 1948–49 1949–50 1950–51	69 81 77 82 77 71	145 162 148 145 143 130	327 318 299 293 289	433 417 388 385	511 489 452	564 536	599					1945-46 1946-47 1947-48 1948-49 1949-50 1950-51		82 88 77 69 72 64	264 244 228 217 218	370 343 317 309	448 415 381	501 462	536				
						40-	-44				Complete P							40-	-44				
1937-38 1938-39	40 38	68 64	$\begin{array}{c} 111\\ 103 \end{array}$	133 126	$\begin{array}{c} 145\\ 138\end{array}$	$\begin{array}{c} 150\\ 144 \end{array}$	$\begin{array}{c}153\\147\end{array}$	$\begin{array}{c}154\\149\end{array}$	155 150	$\begin{array}{c} 155 \\ 150 \end{array}$	155 	1937 <b>-38</b> 1938- <b>39</b>		29 27	72 66	94 89	$\begin{array}{c} 106\\ 101 \end{array}$	$\begin{array}{c} 111\\ 107 \end{array}$	114 110	$\frac{115}{112}$	116 113	116 113	116 113
1939–40 1940–41 1941–42 1942–43 1943–44 1944–45	28 33 31 43 44 34	$50 \\ 56 \\ 51 \\ 66 \\ 64 \\ 60$	89 98 95 110 112 108	111 124 119 134 135 136	124 138 132 149 150 150	131 145 137 158 157 156	134 148 140 160 160 158	135 150 142 162 162 162 159	137 151 143 163 163	137 151 144 163	137 151 144	1939–40 1940–41 1941–42 1942–43 1943–44 1944–45		23 24 21 24 21 27	62 66 65 68 69 75	84 92 89 92 92 103	97 106 102 107 107 117	$104 \\ 113 \\ 107 \\ 116 \\ 114 \\ 123$	107 116 110 118 117 125	108 118 112 120 119 126	110 119 113 121 120	110 119 114 121	110 119 114
194546 194647 194748 194849 194950 195051	30 35 35 36 33 32	54 61 58 55 55 51	$     \begin{array}{r}       106 \\       112 \\       105 \\       96 \\       97 \\       97     \end{array} $	130 137 128 121	143 147 138	149 154	152	284 684 284 088 888				1945-46 1946-47 1947-48 1948-49 1949-50 1950-51		25 27 24 20 23 20	77 78 71 61 65	101 103 94 86	114 113 104	120 120	123	4,7890 4,7890 4,784 4,784 8,784 8,784 8,784 8,784 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,487 1,48			

#### Table 6.—Legitimate Maternities of 1951 classified by Mother's Age, Duration of Marriage and Number of Previous Children. England and Wales

Note :---(i) For similar tables covering earlier years, see note on page 298.

(ii) Table for 1951 already published as SS in Part II of the Statistical Review of that year but here adjusted by an ordered distribution of all Not Stated records. The adjusted figures by age, for all durations and numbers of previous children combined, differ to a slight and unimportant extent from those shown in Table EE of Part II.

(iii) Statements of numbers of children which were incompatible with the duration of marriage were not questioned and are recorded without modification. Such children, if incorrectly stated, were presumably illegitimate or offspring of a previous marriage.

Marriage duration	LEGITIMATE MATERNITIES : the number of previous children (surviving, dead or stillborn) by present husband being												
	Total	0	1	2	3	4	5	6	7	8	9	10-14	15 & over
Mothers	of all Ag	es					ije.	761 839	865 015	4.02 162	1		
All durations	650,963	252,658	203,590	101,917	45,014	21,432	10,967	6,102	3,600	2,317	1,468	1,815	83
0-8 mths. 9-11 ,, 0- yrs. 1- ,, 2- ,, 3- ,, 4- ,, 5- ,, 6- ,, 7- ,, 8- ,, 9- ,, 10- ,, 15- ,, 20- ,, 30 & over	50,477 36,083 86,560 89,857 73,269 68,439 59,710 50,112 34,675 24,891 24,375 25,179 81,555 25,307 6,408 615 11	49,915 35,431 85,346 73,572 34,979 21,589 12,678 7,911 4,394 2,434 2,267 4,665 584 65 7 -	$\begin{array}{c} 441\\ 602\\ 1,043\\ 15,307\\ 33,558\\ 35,089\\ 30,270\\ 23,882\\ 15,017\\ 9,571\\ 8,744\\ 8,609\\ 19,809\\ 2,409\\ 2,409\\ 2,666\\ 16\\\end{array}$	$\begin{array}{c} 73\\ 36\\ 109\\ 831\\ 4,285\\ 10,247\\ 13,235\\ 12,811\\ 9,829\\ 7,474\\ 7,500\\ 23,082\\ 4,565\\ 586\\ 28\\ 1\\ 1\end{array}$	$\begin{array}{r} 29\\8\\37\\99\\365\\1,274\\3,014\\4,340\\3,895\\3,560\\3,645\\3,949\\15,353\\4,652\\782\\48\\1\end{array}$	12 4 16 28 58 193 437 986 1,210 1,376 1,210 1,376 1,529 1,818 9,015 3,902 811 52 1	$\begin{array}{c} 4\\ 2\\ 6\\ 13\\ 15\\ 32\\ 48\\ 145\\ 249\\ 365\\ 606\\ 761\\ 4,929\\ 2,938\\ 795\\ 63\\ 2\end{array}$	$\begin{array}{c} 2\\ -\\ 2\\ 5\\ 5\\ 11\\ 18\\ 24\\ 64\\ 77\\ 194\\ 286\\ 2,479\\ 2,179\\ 696\\ 61\\ 1\end{array}$	$\begin{array}{c}\\\\ 1\\ 2\\ 2\\ 4\\ 3\\ 6\\ 17\\ 40\\ 70\\ 1,236\\ 1,581\\ 579\\ 59\\\\ \end{array}$	$ \begin{array}{c}\\\\ -\\ -\\ 1\\ 5\\ 6\\ 5\\ 12\\ 10\\ 13\\ 569\\ 1,044\\ 585\\ 65\\ 1\\ 1 \end{array} $		$ \begin{array}{c} 1 \\ -1 \\ -1 \\ -1 \\ -4 \\ 3 \\ 2 \\ 4 \\ 3 \\ 159 \\ 747 \\ 754 \\ 134 \\ 3 \\ 3 \\ \end{array} $	
Mothers a	aged 16-1	.9			38	9	1 ()#1 ////#	24.5	348 843	264 244 244	. 88 86		
All durations	24,608	21,193	3,133	270	12	-	-	- 1		- 6512 - <del>7</del> 12	400	-	-
0-8 mths. 9-11 ,, 0- yrs. 1 ,, 2- ,, 3- ,, 4- ,,	$14,460 \\ 3,034 \\ 17,494 \\ 5,305 \\ 1,522 \\ 276 \\ 11$	$14,413 \\ 2,968 \\ 17,381 \\ 3,497 \\ 290 \\ 23 \\ 2 \\ 2$	47 64 111 1,771 1,091 153 7	$\begin{array}{c} - \\ 2 \\ 37 \\ 137 \\ 93 \\ 1 \end{array}$							111111		111111
Mothers a	nged 20-2	4 00	öft	801	10	1	and the second s	70	581		1 88		
All durations	179,367	108,947	51,630	14,841	3,183	658	89	17	1	1	k	-	-
$\begin{array}{c} 0-8 \text{ mths.} \\ 9-11 \\ y \\ 0- \text{ yrs.} \\ 1- \\ y \\ 2- \\ y \\ 3- \\ y \\ 4- \\ y \\ 5- \\ y \\ 6- \\ y \\ 6- \\ y \\ 8- \\ y \\ 9- \\ y \end{array}$	24,792 20,100 44,892 49,083 35,292 25,421 14,441 6,961 2,427 649 163 38	24,595 19,840 44,435 39,904 15,080 6,510 2,138 656 188 22 10 4	$172 \\ 250 \\ 422 \\ 8,824 \\ 17,872 \\ 13,624 \\ 6,974 \\ 2,871 \\ 815 \\ 174 \\ 40 \\ 14 \\ 14$	23 10 33 2,220 4,789 4,147 2,243 806 205 48 11	2 15 104 461 1,052 937 428 142 37 5	$ \begin{array}{c}\\\\ 1\\ 15\\ 36\\ 122\\ 228\\ 153\\ 83\\ 18\\ 2 \end{array} $	$ \begin{array}{c}\\\\ -\\ -\\ -\\ -\\ -\\ -\\ -\\ -\\ -\\ -\\ -$						

Marriage duration Total 0 1 Mo thers aged 25–29 All durations 212,680 76,167 78,925 36 0-8 mths. 9-11 ,, 0- yrs. 1- ,, 2- ,, 3- ,, 5- ,, 5- ,, 6- ,, 7- ,, 8- ,, 10-14,, 6,859 8,420 15,279 20,048 13,422 10,512 7,102 4,568 2,471 1,160 854 521 230  $117 \\ 179 \\ 296 \\ 3,136 \\ 9,956 \\ 14,722 \\ 15,822 \\ 13,700 \\ 8,753 \\ 5,126 \\ 3,752 \\ 2,332 \\ 1,330 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\ 100 \\$ 7,020 8,616 15,636 23,462 24,838 29,546 30,803 28,206 20,117 13,825 11,270 8,123 6,854 Mothers aged 30–34 All durations 135,567 30,893 46,373 0-8 mths. 9-11 ,, 0- yrs. 1- ,, 2- ,, 3- ,, 4- ,, 5- ,, 6- ,, 7- ,, 8- ,, 9- ,, 10- ,, 15-19,,  $\begin{array}{c} 2,602\\ 2,976\\ 5,578\\ 6,768\\ 4,285\\ 3,228\\ 2,510\\ 2,010\\ 1,287\\ 924\\ 1,053\\ 1,174\\ 2,054\\ 22\end{array}$ 66 76 142 1,098 3,284 4,791 5,566 5,571 4,251 3,280 3,843 4,825 9,574 148 2.696 3,069 5,765 8,067 9,454 10,656 11,247 9,260 7,902 9,964 12,984 40,120 2,041 Mothers aged 35-39 All durations 74,780 12,174 19,358 0-8 mths. 9-11 ,, 0- yrs. 1- ,, 2- ,, 3- ,, 4- ,, 5- ,, 6- ,, 7- ,, 8- ,, 9- ,, 9- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,, 10- ,,  $\begin{array}{c} 1,160\\ 1,043\\ 2,203\\ 3,192\\ 2,794\\ 3,085\\ 3,136\\ 3,066\\ 2,425\\ 2,142\\ 2,537\\ 3,480\\ 29,615\\ 15,843\\ 1,262\\ \end{array}$  $1,114 \\ 1,010 \\ 2,124 \\ 2,700 \\ 1,469 \\ 1,037 \\ 732 \\ 522 \\ 362 \\ 269 \\ 290 \\ 406 \\ 1,944 \\ 305 \\ 14$  $\begin{array}{r} 30\\ 29\\ 59\\ 405\\ 1,122\\ 1,508\\ 1,584\\ 1,465\\ 1,024\\ 845\\ 938\\ 1,279\\ 7,694\\ 1,380\\ 55\end{array}$ Mothers aged 40 and over All durations 23,961 3,284 4,171 0-8 mths. 9-11 " 0- yrs. 1- " 2- " 3- " 4- " 5- " 7- " 8- " 9- " 10- " 15- " 20- " 25- " 30 & over 349 332 217 549 655 433 279 194 155 86 59 60 62 437 257 51 7 9 4 13 73 231 291 317 275 174 146 171 1,211 881 211 16  $\begin{array}{c} 221 \\ 570 \\ 748 \\ 716 \\ 657 \\ 6632 \\ 446 \\ 373 \\ 441 \\ 554 \\ 4,966 \\ 7,423 \\ 5,146 \\ 615 \\ 11 \end{array}$ 

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## Table 6.—1951 (continued) (See notes on first page of table)

S	tillborn)	by prese	nt husba	nd being			a same	Miner.	
2	3	4	5	6	7	8	9	10–14	15 & over
6,624 26 12 38 236 1,293 3,725 6,336 7,061 5,741 4,277 3,523 2,488 1,906	$13,596 \\ 13 \\ 2 \\ 15 \\ 32 \\ 143 \\ 486 \\ 1,327 \\ 2,306 \\ 2,276 \\ 2,161 \\ 1,849 \\ 1,527 \\ 1,474 \\ 1,474$	4,942 3 2 5 6 17 83 187 486 709 839 831 767 1,012	1,648 2 1 3 4 5 12 20 76 142 215 327 327 517	569   2 6 7 9 22 38 114 126 245	135 	55 	12 	7             1114	
29,477 13 11 24 148 442 1,150 2,006 2,627 2,526 2,288 2,909 3,817 1,247 293	14,729 9 4 13 32 73 221 464 792 884 946 1,347 1,892 7,708 357	7,235 4 1 5 111 17 49 89 203 231 338 522 806 4,601 363	3,550 1 1 2 7 5 10 15 33 57 87 210 319 2,513 292	$ \begin{array}{c c} 1,741 \\ -1 \\ -1 \\ 2 \\ 1 \\ 3 \\ 4 \\ 9 \\ 20 \\ 28 \\ 58 \\ 116 \\ 1,312 \\ 187 \\ \end{array} $	865 	410 	171 	123 — — — — — — — — — — — — — — — — — — —	
6,536 7 1 8 63 160 426 635 740 636 605 752 1,017 8,605 2,788 101	10,140 $2$ $2$ $4$ $15$ $32$ $86$ $136$ $264$ $262$ $274$ $347$ $430$ $5,250$ $2,894$ $146$	$\begin{array}{r} 6,269\\ 4\\ 1\\ 5\\ 6\\ 7\\ 20\\ 35\\ 55\\ 103\\ 100\\ 137\\ 201\\ 2,928\\ 2,506\\ 166\end{array}$	3,870 1 1 1 1 2 7 5 11 18 32 47 97 1,595 1,885 169	2,435 $1$ $-1$ $2$ $1$ $1$ $2$ $1$ $1$ $5$ $3$ $14$ $7$ $19$ $36$ $775$ $1,440$ $131$	1,586	1,041 	663 	691 1 - - - - - - - - - - - - -	
4,169 4 4 8 33 64 110 140 120 99 99 102 167 1,324 1,484 485 28 1	3,354 3 - 3 5 9 13 34 41 45 37 65 95 921 1,401 636 48 48	2,328 1 - 1 4 2 5 4 14 14 16 21 42 474 1,033 645 52 1	$ \begin{array}{c} 1,810\\\\\\ 1\\ 2\\ 3\\ 2\\ 3\\ 11\\ 13\\ 16\\ 304\\ 761\\ 626\\ 63\\ 2 \end{array} $	$ \begin{array}{c c} 1,340 \\ \\ \\ 1 \\ 1 \\ \\ \\ 1 \\ 1 \\ 2 \\ 8 \\ 147 \\ 552 \\ 565 \\ 61 \\ 1 \\ 1 \end{array} $	$ \begin{array}{c} 1,013\\\\ -\\ -\\ 1\\ 1\\ 1\\ -\\ 1\\ 2\\ 4\\ 4\\ 71\\ 410\\ 458\\ 59\\ -\end{array} $	810 	622 	994   1  3 2  3 1 12 211 624 134 3	66 

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LEGITIMATE MATERNITIES: the number of previous children (surviving, dead or stillborn) by present husband being

#### APPENDIX C

#### MEDICAL STATISTICS BRANCH OF THE GENERAL REGISTER OFFICE, 31st DECEMBER, 1951

- Administrative : S. G. Holloway (Assistant Secretary). R. M. Blaikley (Principal).
- Professional : W. P. D. Logan, M.D., Ph.D., B.Sc., D.P.H. (Chief Medical Statistician).
  D. MacKay, M.A., M.B. (Medical Statistician). Miss E. M. Brooke, M.Sc. (Statistician).
- Executive : P. A. Phillips (Senior Executive Officer).
  P. J. Cook (Higher Executive Officer).
  A. A. Cushion (Higher Executive Officer).
  Miss R. M. Loy (Higher Executive Officer).
  Miss E. Pond (Higher Executive Officer).

#### POPULATION STATISTICS BRANCH OF THE GENERAL REGISTER OFFICE, 31st DECEMBER, 1951

- Administrative : S. G. Holloway (Assistant Secretary). H. E. Millbank, M.B.E. (Principal).
- Professional : V. P. A. Derrick, C.B.E., F.I.A. (Chief Statistician).
   N. H. Carrier, M.A. (Statistician).
   Miss M. P. Newton, M.A. (Statistician).
   J. R. L. Schneider, B.Sc.(Econ.) (Assistant Statistician).
- Executive : J. R. Jeffery (Senior Executive Officer).
  E. Graver, D.F.C. (Higher Executive Officer).
  C. F. James (Higher Executive Officer).
  Miss N. C. Jones (Higher Executive Officer).
  T. C. Williams (Higher Executive Officer).

#### APPENDIX D

#### MEMBERSHIP OF THE REGISTRAR GENERAL'S ADVISORY COMMITTEE ON MEDICAL NOMENCLATURE AND STATISTICS AND ITS SUB-COMMITTEES, 1951

Sir Ernest Rock Carling, LL.D., F.R.C.S., F.R.C.P., F.F.R. (Chairman).
E. W. Bedford-Turner, Esq., M.R.C.S., L.R.C.P. (from 16th November, 1951).
J. Boyd, Esq., C.B.E., M.D., F.R.C.P.I.
S. Cieman, Esq., M.R.C.S., L.R.C.P. (from 16th November, 1951).
Sir Allen Daley, M.D., F.R.C.P.
Sir Ernest Finch, M.D., M.S., F.R.C.S.
F. H. K. Green, Esq., C.B.E., M.D., F.R.C.P.
Professor F. Grundy, M.D., M.R.C.P., D.P.H. (from 16th November, 1951).
C. F. Harris, Esq., M.D., F.R.C.P.

Professor A. Bradford Hill, C.B.E., D.Sc., Ph.D.
A. E. Joll, Esq.
Professor A. J. Lewis, M.D., F.R.C.P.
W. P. D. Logan, Esq., M.D., Ph.D. (from 7th June, 1951).
E. K. Macdonald, Esq., O.B.E., M.D., D.P.H. (from 16th November, 1951).
A. Massey, Esq., C.B.E., M.D., K.H.P.
P. L. McKinlay, Esq., M.D., F.R.S.(Ed.).
Professor W. C. W. Nixon, M.D., F.R.C.S., F.R.C.O.G.
W. N. Pickles, Esq., M.D., M.R.C.P.
Professor R. Platt, M.D., F.R.C.P. (from 16th November, 1951).
A. H. T. Robb-Smith, Esq., M.D., M.R.C.P.
Percy Stocks, Esq., C.M.G., M.D., F.R.C.P.
Miss A. L. Winner, O.B.E., B.Sc., M.D., M.R.C.P.

#### Secretary :

R. M. Blaikley, Esq. (General Register Office).

Sub-Committee on the Reporting and Indexing of Hospital Diagnoses

A. H. T. Robb-Smith, Esq., M.D., M.R.C.P. (Chairman).
B. Benjamin, Esq., B.Sc., F.I.A.
T. E. Cowan, Esq.
D. G. Davies, Esq.
W. B. Fletcher, Esq.
E. Lewis-Faning, Esq., D.Sc., Ph.D., F.S.S.
D. MacKay, Esq., M.A., M.B., Ch.B.
P. L. McKinlay, Esq., M.D., F.R.S. (Ed.).
J. D. N. Nabarro, Esq., M.D., M.R.C.S.
Miss A. L. Winner, O.B.E., B.Sc., M.D., M.R.C.P.

Joint Secretaries : Miss E. Brooke. F. Rooke-Matthews, Esq. } (General Register Office).

Sub-Committee on the Adaptation of the International Statistical Classification to the Needs of the Armed Services

Sir Ernest Rock Carling, LL.D., F.R.C.S., F.R.C.P., F.F.R. (Chairman).
Squadron-Leader M. A. Heasman, M.R.C.S., L.R.C.P.
Professor A. Bradford Hill, C.B.E., D.Sc., Ph.D.
Surgeon-Commander James Lees, M.R.C.S., L.R.C.P., R.N.
W. P. D. Logan, Esq., M.D., Ph.D.
A. E. Martin, Esq., M.D., D.P.H.
S. Rosenbaum, Esq., M.A.
A. Sandison, Esq., O.B.E., M.D.

Joint Secretaries : Miss E. Brooke. F. Rooke-Matthews, Esq.

(General Register Office).

#### APPENDIX E

#### COMMITTEES ON MEDICAL AND NON-MEDICAL SUBJECTS ON WHICH OFFICERS OF THE GENERAL REGISTER OFFICE SERVED DURING THE YEAR 1951

Accidents in the Home,

Standing Inter-Departmental Committee.

Boundary Commission for England.

Boundary Commission for Wales.

Committee for Research on Social and Environmental Health, Sub-Committee on Mass Miniature Radiography.

Government Local Offices Working Party.

Medical Nomenclature and Statistics Advisory Committee.

Ministry of Health,

Working Party on Hospital Statistics.

Ministry of Pensions,

Committee on Cardio-vascular disease and Mortality rates among Amputees. National Health Service Records,

Ministry of Health Committee.

Social and Economic Research, Inter-Departmental Committee.

Statistics of Passenger Movement

Inter-Departmental Working Party. World Health Organization,

Expert Committee on Health Statistics.

#### APPENDIX F

#### ARTICLES BY OFFICERS OF THE GENERAL REGISTER OFFICE PUBLISHED DURING 1951

Logan (W. P. D.)	Medical Significance of the Census. British Medical Journal No. 4709: 720 ff., 1951.
Logan (W. P. D.)	Mumps and Diabetes. Monthly Bulle- tin of the Ministry of Health, Vol. 10, 136 ff., 1951.
Logan (W. P. D.)	Incidence of congenital malformations and their relation to virus infections during pregnancy. <i>British Medical</i> <i>Journal</i> No. 4732 : 641, 1951.
Logan (W. P. D.) and Conybeare (E. T.)	The Incidence and Prevention of Tetanus among Civilians. British Medical Journal No. 4705 : 504-8, 1951.
Logan (W. P. D.) and MacKay (D. G.).	Development of Influenza Epidemics. The Lancet No. 6649 : 284–7, 1951.
Brooke (E. M.)	Death-Rates and Sickness-Rates of Married and Single Women in 1948. <i>The Lancet</i> No. 6667 : 1272-6, 1951.

#### APPENDIX G

#### NOTES ON THE WEATHER IN ENGLAND AND WALES DURING THE YEAR 1951

#### (Note :-- See page ii for a note about the omission of this Appendix in future.)

The year 1951 was notably wet, being the wettest year since 1912. The first five months were rather cold while the summer months were characterized by the absence of any very warm days. Other notable features of the weather were the excessive rainfall from January to May inclusive, the mainly dry and sunny June, the severe thunderstorms accompanied by widespread heavy rain on July 22nd, the frequent heavy falls of rain in September, the very dry October and the exceptionally wet and unusually mild November. Snow occurred frequently during the first three months and snowfall was considerable at times in January.

Mean temperature for the year was equal to the average for the period 1906–35, the deviations from the average for the districts ranging from  $-0.4^{\circ}$  F. in north-east England to  $+0.3^{\circ}$  F. in eastern England. The first five months were all rather cold and in the summer months there were no very warm days. The last two months were mild in most areas, particularly November which was the mildest November since that of 1939. Extreme temperatures in the screen were 86° F. at Southend on July 28th and 8° F. at Houghall on January 2nd. The monthly deviations in ° F. from the average mean temperature or the period 1906–35 were as follows :

The general precipitation expressed as a percentage of the average for the period 1881-1915 was 124 and it was the wettest year since 1912. More than 130 per cent of the average occurred in three areas between Cader Idris and the Cleveland Hills, over practically the whole of south-east England, parts of Essex and locally in the Midlands and North Riding of Yorkshire. Between Weymouth and the London area totals exceeding 140 per cent were widespread and near Salisbury, Calshot and Petersfield they exceeded 150 per cent. The first five months were all very wet, February exceptionally so in south-east England where many places registered more than three times their average, while March, apart from March 1947, was the wettest since 1919. June was dry in most places ; locally on the south-west coast and around Cheltenham less than 25 per cent of the average rainfall was received. July also was mainly dry but the distribution was variable due to thunderstorms. August was excessively wet in south-east, east and Midland districts although less than the average occurred locally in northern England and inland in Wales. In September there were frequent heavy daily falls and it was very wet in parts of southern England. In strong contrast October was the second driest October in a record going back to 1869. November was excessively wet, being the wettest November since 1940. December was very wet in north-west England and north Wales with rainfall mostly below the average elsewhere. The table gives the monthly rainfall expressed as a percentage of the average :

Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. 127 186 175 135 140 55 67 156 141 31 207 100

Among heavy falls in 24 hours were 3.19 in. at Cardiff Water Works (Brecknockshire) on August 25th, 3.76 in. at Blaenau Festiniog (Merionethshire) on September 3rd, 3.34 in. at Oxford on September 6th and 4.53 in. at Thirlmere (Cumberland) on September 24th.

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Thunderstorms occurred locally in each month of the year. They were rather frequent for the time of year in February, March, November and December. In April and May local thunderstorms occurred on many days and they were rather widespread on April 13th and 30th and May 2nd, 24th and 26th. Local thunderstorms were frequent from June to September and were somewhat widespread on June 9th, 10th, 12th, 17th–19th, 22nd and 25th, July 8th, 10th, 11th, 22nd, 30th and 31st, August 9th, 27th and 31st and September 13th and 27th. The storms on July 22nd were severe with widespread heavy rain ; in the south of England four people were killed by lightning.

Considerable snowfall occurred in January and snow lay 12 in. deep at Buxton, 10 in. at Malham Tarn and 8 in. at Lake Vyrnwy and Bellingham on the 1st and  $11\frac{1}{2}$  in. at Whipsnade and 9 in. at Birmingham on the 3rd. In February and March snow or sleet showers occurred frequently and level snow lay 7 in. deep at Bwlchgwyn on March 13th. In December snow or sleet occurred rather frequently on high ground and on the 26th snow lay to a depth of 3 to 4 in. at Malham Tarn.

The general sunshine expressed as a percentage of the average for the period 1906-35 was 100, the values for the districts ranging from 97 per cent in the Midland counties to 102 per cent in both north-east and south-east England. With regard to individual months over the country as a whole compared with the average the sunniest months were April, June and December and the dullest March, May and September. In January there was a marked deficiency in western and Midland districts. In February high values on individual days included 9.2 hours at Sandown and Ventnor on the 12th and 9.6 hours at Holyhead on the 28th. March was dull almost everywhere while April, in contrast, was almost universally sunny. May was dull particularly in eastern and midland districts. June was a sunny month generally while July was sunny in the south and east. In August and September the duration of bright sunshine was generally below the average particularly in southern and midland districts in the latter month. October was mainly rather sunny being the sunniest October since that of 1931. In November more than the average occurred locally in the south and Midlands but there was a substantial deficit in north-west England. In December a considerable excess was almost general in eastern districts and in the Midlands but in the west amounts were more variable. The table gives the monthly sunshine expressed as a percentage of the average :

Jan.	Feb.	Mar. 83	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
93	96	83	125	88	116	108	91	79	111	97	123

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