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THE REGISTRAR GENERAL'S

STATISTICAL REVIEW
OF ENGLAND & WALES

FOR THE SIX YEARS
1940-1945

TEXT, VOL. II, CIVIL



LONDON: HIS MAJESTY'S STATIONERY OFFICE

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1942 Part I Medical Part II Civil		5s. (5s. 4d.) 1s. 6d. (1s. 8d.)
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1951

The Registrar General's Statistical Review for England and Wales consists, in normal years, of three parts; Parts I and II contain respectively the Medical and Civil Tables; the third part (the Text Volume) is primarily a commentary on the vital statistics revealed in the tables but also contains additional data. In view of the delay in preparation and printing caused by the war, a single Text Volume was issued in 1947 covering the two years 1938 and 1939. This departure from the normal has been carried even further in the recently published Text Volume, confined to medical statistics, which covered the six years 1940–1945, and in the present volume, which covers the same period and is confined to civil statistics. Such an arrangement, though involving some delay, has provided a unique conspectus of an unusual period, all the years of which were affected directly by the war.

Arrears of publication of the Statistical Review are now being fast overtaken. Medical and Civil Tables have been published for the years 1946, 1947 and 1948, whilst those for 1949 are in the Press. Commentary on the statistics for the two-year period 1946-1947 is being prepared in two volumes (Vol. I Medical and Vol. II Civil).

Every effort is being made to recapture the position when the tables will be published during the year following that to which they relate and followed shortly afterwards by the Text Volume.

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## INTRODUCTORY

In peace-time the Registrar General's estimates of the population of England and Wales have related to the home population (i.e., have excluded members of the Armed Forces and Mercantile Marine serving abroad), this basis being the most convenient for general administrative purposes in times of peace. War-time conditions necessitated a change, and the estimates dealt with in the present Volume, which cover practically the whole of the period of the second world war, are in two forms, viz.: (a) the total population of England and Wales, inclusive of the whole of the Armed Forces and Mercantile Marine at home and abroad but exclusive of Dominion, Colonial and Allied Armed Forces temporarily within the country, and (b) the home civilian population (i.e., exclusive of all Armed Forces). This must be borne in mind when comparisons are made between the figures in the present Text and those in earlier ones.

The period of six years reviewed in this Text Volume presented many difficulties in respect of the preparation of civil statistics. Normally a Census would have been held in the year 1941, the results of which would have provided a new datum line upon which to base estimates thereafter. The war prevented this and 20 years will have elapsed since the date of the last Census (1931) before any of the invaluable information derived from a census enumeration is again available. On the other hand, the National Register enumeration of the civilian population, taken on 29th September, 1939, provided to some degree a substitute for this information and enabled the mid-1939 estimates to be reviewed.

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Other peace-time records ceased to be available during the war, but the loss of these was more than compensated by new records during the war which were additional to, or in substitution for, peace-time records. As hitherto, advantage was taken during the war of all available sources of information.

Certain changes which have been introduced since 1938 in the design of the tables analysing fertility statistics are referred to and explained in this Volume, together with the steps taken to improve serial comparability.

Over the six years 1939 to 1945, after allowing for over 300,000 fatal war casualties, the total population of England and Wales is estimated to have increased by 994,000, or 2·39 per cent. This percentage figure is only a fraction less than those for the two preceding periods of six years; indeed, but for the casualties, the figure would have been a fraction greater than either of the preceding figures. The first world war presented a far different picture. The percentage increase in population during the five years covering the war (1·07, after allowing for casualties, or 2·81, if the casualties had not occurred) was considerably below those for the five years 1904 to 1909 (5·31) and 1909 to 1914 (4·36).

It is of some significance that, in spite of adverse factors, the population continued to grow during the second world war and that, even after allowing for war casualties, the net rate of increase was twice as high as during the first world war; and was only slightly below that of the twelve preceding peace years.

In 1939 there were 1,072 females per 1,000 males in the population of England and Wales, and in 1945 the corresponding figure was 1,075; but this increase is not of great significance, particularly as it is less than half that accounted for by war casualties alone. In 1921 the corresponding figure was 1,096. Between the ages of 15 and 45, the excess of females, which was 1,174,000, or 14-2 per cent. in 1921 after the first war, was only 181,000, or 1-9 per cent. in 1945. The change would seem to be due to three factors. First, the higher proportion of males to females among new births since 1918—1,048 males to 1,000 females in that year compared with 1,061 in 1945; secondly, the improvement in infant mortality rates (which have always been heavier for males than females) as shewn by rates of 46 per 1,000 births in 1945, compared with 97 in 1918; and thirdly, the change in recent decades from a considerable outward to a small inward balance of migration.

During the years of the second world war, the increase of population resulting from migration was estimated at 377,000, of which figure a gain from other parts of the United Kingdom accounted for 86,000.

The number of inter-area movements in respect of the civilian population of England and Wales during the war was shewn by National Register records to be of the order of 33 millions, to which should be added over 2 millions occurring in the period between the outbreak of war and the 29th September, 1939, when those records were begun.

Owing to the very large number of these internal movements and to their capricious nature, figures of local populations during the war were prepared at quarterly intervals and, from these, mean populations were calculated each year. These figures were confined to the civilian populations, as it was thought that no useful purpose would have been served by attempting to allocate non-civilians to local areas, even if such allocation had been practicable.

A general impression of the broad changes in the distribution of the civilian population during the war is given later in this Volume.

The highest point attained by the birth rate of England and Wales since the beginning of civil registration in 1837 was reached during the period 1865 to 1880, when it exceeded 35 (per 1,000 population). Thereafter it fell continuously for about 50 years, until it reached 23.8 at the outbreak of war in 1914. Allowing for war-time fluctuations, the birth rate fell continuously and drastically during that war and the fall continued thereafter until a figure of 14.4 was reached in 1933. That year seemed to mark a turning point. A slight but steady increase brought the rate to 15.1 in 1938, when a deterioration again set in which continued during the first two years of the war. In 1941 the birth rate was 13.9, marking the lowest point ever recorded in the registration history of England and Wales. From 1941 an unexpected and substantial improvement began and, with a break between 1944 and 1945 (following "D" Day and the transference to foreign service of large numbers of troops), the improvement continued in the immediate post-war years.

Over the whole period of six years from 1940 to 1945 there were 3,936,500 live births as compared with 3,648,000 during the immediately previous six years, 1934 to 1939. Of the abnormal number of births which have occurred since the end of the war, many must be regarded as postponements from the war years, from which it can be argued that the trend in those years was really even more satisfactory than the actual figures indicate. In contrast, as stated above, the position during the first world war was that the birth rate fell continuously and drastically throughout the whole war period.

From a study of the year-to-year course of the Effective Reproduction Rate, it seems clear that the fertility of the years from 1940 to 1948 indicates a substantial rise in the trend of the reproduction rate from its last established position in 1939, and the view is put forward, though with the utmost reserve, that its behaviour is consistent with the expectation that fertility will not be likely to fall materially below the replacement standard in the next five years or so.

The illegitimate birth rate in this country in normal years of peace has shewn a steady decline over the past eighty years. It rose steadily and markedly during the war years, in contrast with that of the previous war which was accompanied by little change in the recorded incidence of illegitimacy.

Records collected under the Population (Statistics) Act, 1938, show that from 1st July, 1938, to 31st December, 1945, there were 59,300 cases of twins, 496 of triplets and 9 of quadruplets out of a total of 4,978,343 confinements. From these figures it emerges that during the period under review the chance of an expectant mother having twins was 1 in 84, triplets 1 in 10,000 and quadruplets 1 in 550,000.

The number of deaths from mid-1939 to mid-1945 was 3,285,000, as compared with 2,931,000 in the six years of peace immediately prior to the war. If allowance is made for 312,000 fatal war casualties, it will be seen that the fight against normal mortality was as successful during the war as in the last six peace years. This is a most satisfactory position, particularly when it is borne in mind that the average age of the population is continuing to increase. The actual increase during the war years was from 34.4 to 35.6 years. The figure in 1921 was 30.6 mails of bornes need even bluow economic linear and solve the state of the peace of the peace

Stillbirth and infant mortality rates improved during the years 1940 to 1945. In 1938, out of every thousand children born, 38 were dead at birth and a further 28 died in the next four weeks. In 1945 the corresponding figures were 28 and 25.

The annual marriage rates, maintained at about 15 to 16 per 1,000 population for many years, rose steadily and continuously after 1932 to 17.6 in 1938 and then, under the stimulus of the outbreak of war, rose sharply to 21.2 in 1939 and to 22.5 in 1940. The latter is still a record high rate. After 1940, a reaction set in and the marriage rate fell as sharply as it had risen. The figure of 14 in 1943 was almost the lowest on record. From that year, the rate again recovered and in the post-war years has been roughly maintained at about 18 to 18.5.

These phases of boom, slump and recovery in marriage rates during and immediately after the years of the second world war are similar to, but much sharper than, those occurring in the corresponding years of the first world war. The contrast between the two periods is enhanced by the fact that in 1939 marriage rates had reached an intensity higher than that experienced for many years, and also because in the later period the marriageable population had been more heavily depleted as a result of the higher marriage rates.

The large number of marriages between women from the home population and members of the Armed Forces of the Dominions, Colonies and Allies was a feature of the marriages of the second world war. The exact number of such marriages in England and Wales is not known, but it might be as high as 100,000.

The higher marriage rates during the years 1940 to 1945 coincided with a decline in the age of marriage. In respect of both sexes, the number of marriages of minors per 1,000 marriages at all ages rose sharply during the war. Of even greater significance is the considerable increase in the marriage rate for both sexes in the age group 20–24.

The tendency over the last 40 years for more and more women to marry and for the marriages to take place at ever decreasing ages is of paramount importance to the fertility of the community. In 1911, of every 1,000 men in the total population aged 15 to 45, 458 were married; in 1945 the figure was 567. For women the corresponding figures were 477 per 1,000 in 1911 and 600 per 1,000 in 1945.

In 1939 and 1940 the number of divorce petitions filed shewed a decline from the 1938 figure, but thereafter it rose sharply. There were 7,139 petitions in 1940 and 25,789 in 1945. In the latter year the number of petitions filed by husbands was 34.8 per cent. higher than that of petitions filed by wives. This is an indication of the upheaval in marital relations caused by the war. The rate of re-marriage of divorced persons also rose rapidly.

This Text contains a brief account of the method of compiling the National Register immediately after the outbreak of war, the means employed to maintain the register and the valuable uses to which it has been put.

In this Text Volume, as in the recently published Medical Text Volume covering the same period, an Index is provided to help readers to find their way about the contents.

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## POPULATION 1940-1945

Preceding records in the series of mid-year estimates of population in England and Wales hitherto published in the Registrar General's Statistical Review have related to peace-time conditions and have been constructed on the basis of the records available under the peace-time administration of the country. The method employed in the construction of such estimates has been described in the earlier reports and may be briefly restated as consisting of the projection forward of the last enumerated census population (1931) by adding the births and immigrants and deducting the deaths and emigrants of the period elapsing between the census and the estimate date. So far as births and deaths are concerned the information is complete and is obtained from current registration records, but in respect of migration, the movements are only partially recorded and such information as has been available either from the Board of Trade returns of overseas migrants or from Service Department records of the movements of the Armed Forces has had to be supplemented by estimates, based on more general experience, of the unrecorded movements taking place between England and Wales and other parts of the United Kingdom.

The last published estimate in the peace-time series was that of the position at mid-1939 when the population of England and Wales was estimated at 41,460,000 persons of which 19,920,000 were males and 21,540,000 females. As described in the Registrar General's Statistical Review, 1938–1939, Text. page 154, the 1939 construction was reviewed in the light of the National Register enumeration of the civilian element of the population taken on the 29th September of that year and though the nature of the comparison was not such that precise confirmation of the estimate was possible, it was sufficient to suggest that no alternative would be of any demonstratively greater validity. A minor limitation attaching to the published figures for 1939 and earlier years to which attention needs to be drawn arises from the fact that they were derived basically from the 1931 census and were conditioned by the census position in that they purported to represent the population within England and Wales at the time and thus excluded members of the Armed Forces and of the Mercantile Marine temporarily stationed abroad or serving on the high seas. The peace-time numbers so excluded (about 182,000 males as at mid-1939) were not large in relation to the total population and while they remained small their exclusion had little significance in relation to the series provided by the successive estimates of the home population, which were preferable for the more general administrative and social purposes they were intended to serve.

With the onset of war conditions, both the nature of the populations to be identified and the records available for their identification were changed. The population actually within England and Wales from time to time ceased to have any national significance; large and varying numbers of the home population, recruited to the Armed Forces, were sent abroad to various theatres of war and this was accompanied by similarly capricious inward movements of allied nationals, first as refugees and later as part of the allied fighting forces operating from the United Kingdom as a temporary base. To meet the needs of the new conditions it was decided that for the war period and for so long thereafter as might be found necessary, the total numbers within the country should be disregarded as of no immediate public interest and that in lieu thereof the population to be identified in the series of estimates constructed

and furnished by the Registrar General should be of two types, viz., (a) a total population of England and Wales inclusive of the whole of its Armed Forces and Mercantile Marine at home and overseas, but exclusive of Dominion, Colonial and Allied Armed Forces temporarily within the country and (b) the civilian population excluding throughout all the Armed Forces and from 1943 onwards the Mercantile Marine.

In the construction of the estimates of the total population, the last published figure of the peace-time series (41,460,000 as at mid-1939) was taken as the starting point after first being increased to 41,642,000 so as to include the overseas element of the Armed Forces and Mercantile Marine; and the estimates for succeeding years have been continuously built up therefrom by the customary method of modification in respect of births, deaths and migrants, fatal war casualties occurring outside the country being incorporated in the death record for this purpose. The parallel estimates of the home civilian population have been obtained from corresponding items in the series of total populations by deduction of the England and Wales share of the total strength of the Armed Forces at the successive estimate dates.

For the assessment of the several contributory movements of population occurring from time to time, advantage has been taken, as far as possible, of all available sources of information, some of them additional to those forthcoming under peace-time conditions and others in substitution for records

which were suspended for the war period.

The machinery devised to maintain the Register set up by the National Registration Act of 1939 provided that, from the date of the original enumeration of civilians in each borough and county district on the 29th September, 1939, the record of each area should thereafter be maintained in an up-to-date condition by a system of notifications covering all relevant movements affecting the civilian population, thus providing material for the continuous addition of births and immigrants and deduction of civilian deaths and emigrants, a like system of debits and credits operating in respect of enlistments into the Armed Forces or their return to civilian status upon demobilization or discharge.

In addition to the National Registration records which have been of particular service in the assessment of inter-area movements within the country, returns of births, marriages and deaths under their independent and long-established registration procedure have also continued to be available as

heretofore.

For the losses of population due to war casualties amongst the Armed Forces as well as for the overall strength of the non-civilian element of the population from time to time, the records of the Service Departments are only available for the United Kingdom as a whole without distinction of its several parts. For the share assignable to England and Wales with which the present estimates are concerned, the United Kingdom figures have throughout been reduced on the basis of fixed proportions adopted in the light of less direct information, amongst which the regional records of medical examinations of persons called up under the National Service Acts were of particular bearing. The inevitable degree of approximation arising from the use of such proportion is not believed to have been material in its effect on the estimates of the total population, while as regards the estimates of civilians, an additional overall check was available from the records of food ration books exchanged each year. Though the latter were not precisely comparable with a count of the population at the middle of the year owing to the fact that the exchange operations were spread over a period of months and also because ration books were not issued in respect of inmates of certain institutions, allowance for these differences could be made and in general served to confirm the civilian totals within a negligible margin of difference.

The estimates of the total and the civilian populations of England and Wales as constructed and published for each of the war years are set out in the following table.

Table I.—Estimated Total and Civilian Populations of England and Wales, mid-1939 to mid-1945.

(Figures in thousands)

as to include and the ray-biM	cluding and Me	Populat g Armed erchant S ae and o	Forces	Ноторя	se or De (—) tal Popu (²)	off the	Civilian Population		
rated in the	Persons	Males	Females	Persons	Males	Females	Persons	Males	Females
1939 (¹) 1940 1941 1942 1943 1944 1945	41,642 41,862 41,748 41,897 42,259 42,449 42,636	20,102 20,216 20,141 20,180 20,397 20,473 20,549	21,540 21,646 21,607 21,717 21,862 21,976 22,087	220 -114 149 362 190 187	114 -75 39 217 76 76	106 -39 110 145 114	39,889 38,743 38,243 37,818 37,785 37,916	18,243 17,228 16,802 16,334 16,188 16,200	21,646 21,515 21,441 21,484 21,597 21,716

(1) The 1939 population differs from that published in the 1939 Annual Review, the latter having now been increased by the addition of 182 thousands to include Armed Forces and Merchant Seamen serving overseas.

(2) Prisoners of war are included amongst population losses up to 1942 but have been restored by the inclusion of 116 thousands in the male increase 1942-43.

(\*) Females serving with the Armed Forces were not separately identified and excluded from the civilian population in 1940.

(\*) Merchant Seamen are excluded from the civilian population from 1943 inclusive at which date they numbered approximately 122 thousands.

The latest population figure shown, namely 42.636 thousands for 1945, is the highest thus far assigned to England and Wales and is almost exactly one million in excess of the corresponding total six years ago at the beginning of the war when it was 41,642 thousands. During the first year of the war, the records indicate a substantial increase in population which appears to have been due to an abnormal inward balance of migration, accounted for no doubt by the return home of Britons scattered over Europe and elsewhere or an influx of refugees from countries overrun by the enemy. The said 1939-40 increase is in contrast with the change shown for the succeeding year 1940-41, which is the only year in the series for which an actual decline in population is indicated, the development in subsequent years being that of a continuous and comparatively steady increase. The decline between 1940 and 1941 was the product of a somewhat fortuitous conjunction of a low birth rate, a high death rate, and a loss of population by migration, all three factors being relatively exceptional in their intensity; the birth rate was lower than any recorded in this country before or since; deaths were abnormally numerous, partly by reason of adverse climatic conditions and partly through enemy air attack on the home population which was at a maximum in this period; likewise this year was the only one of the war years in which civilian migration was outward on balance, much of it representing the temporary evacuation to Scotland and Ireland of mothers and children and others able to get away from areas exposed to air raids. From 1941 to 1945 the movement generally has been one of continuous and more or less steady growth, though in its presentation in Table I the orderliness of the progression is slightly marred by the fact that prisoners of war were not at first separately identified and are debited as war losses up to 1942, their accumulated total being recredited to the population in 1943.

Over the war period 1939-45 as a whole, the total population increased by 994 thousands representing a growth of 2·39 per cent. in six years, and this after full allowance for fatal war casualties, which, though less than half the number associated with the first world war of 1914-1918, are estimated to have exceeded 300 thousands altogether (approximately 252 thousands in the Armed Forces and 60 thousands civilians in respect of England and Wales). The said war casualties represent 0·75 per cent. of the 1939 population so that, but for them, the net effect of the more normal movement factors would have been to increase the population by 3·14 per cent. The experience of the second world war may be compared with that of immediately preceding periods and also with that of the first world war as follows:—

#### Percentage Population Increase Comparisons

Second World War, 1939–45 (six-year periods)	First World War, 1914-19 (five-year periods)
1927 to 1933 1933 to 1939  2.71  2.75  3.14 exclusive of war casualties  2.39 inclusive of war casualties	$   \begin{array}{c cccccccccccccccccccccccccccccccccc$

From this arrangement it will be seen that the operation of normal movement factors (i.e., births, deaths from normal causes, and migration) during the recent war period has been to raise and to accelerate the rate of population growth in comparison with those of preceding periods, and that in this respect the experience is in contrast to that associated with the first war period when the successive increases, though on a higher scale, were subject to a declining tendency which was aggravated during the war period itself. It is not to be supposed, of course, that the so-called normal movement factors were not themselves influenced by war conditions, but the contrasting evidence tends to discount any surmise that the more favourable movement trend of recent years is likely to have been indirectly due to such war conditions. The prime fact to be noted is that despite adverse factors the population continues to grow, and that even when the full loss through direct war casualties is brought into account the net rate of increase during the late war is twice as high as it was during the preceding war, and is only slightly below that of the 12 preceding peace years.

The components of the comparative movements of recent periods are set out in Table II.

Table II.—Analysis and Population Movements, 1939-45, and comparison with preceding six-year periods. England and Wales.

Six-Year Period	Population Increase or Decrease (—)								
(Mid-year to Mid-year)	SECTION A	Total	te expectable	Births	Deaths	Natural	Migra-		
	Persons	Males	Females	Dirths	Deaths	Increase			
Na American Control	(a)	Amoun	t in thousan	ds	n water	15.001 (2) MALE	daret to		
1921–1927	1,353	704	650	4,425	-2,829	1,596	1-243		
1927–1933	1,065	555	509	3,818	-2,911	907	158		
1933–1939	1,110	563	547	3,627	-2.931	696	414		
1939–1945	994	447	547	3,901	-3,285	616	377		
The second second	(b) S	ix-year per	vcentage inc	rease					
1921-1927	3.57	3.89	3.28	11.67	-7.46	4.21	-0.64		
1927-1933	2.71	2.95	2.48	9.72	-7.41	2.31	0.40		
1933–1939	2.75	2.91	2.61	8.99	-7.26	1.72	1.03		
1939–1945	2.39	2.22	2.54	9.37	-7.89	1.48	0.91		

From this statement it will be observed that the total population gain of 994 thousand persons between 1939 and 1945 is compounded of a natural increase of 617 thousands, representing the excess of 3,902 thousand births over 3,285 thousand deaths, and a gain by a net inward balance of migration of 377 thousands.

The largest component element is the increment due to births which amounts to 9.37 per cent. of the initial 1939 population and which, in a percentage form, shows a small but gratifying rise over the 8.99 per cent. increase from this factor during the immediately preceding period of six years. The full nature of the improvement is masked in this comparison, however, partly because the birth rate fell during the first two years of the war and only recovered after 1941 so that the later phase of increase was more intensive than that indicated by the six years movement as a whole, and also because many of the abnormal number of births that have been registered since the end of the war must be regarded as postponements from the war years, to which they should properly be restored in any wider appreciation of the trend position. In contrast to the recent not unfavourable experience, it may be observed that during the first world war, the birth rate fell continuously and drastically throughout the whole period.

The second largest element of movement is the decrement through death by a total of 3,285 thousands of which about a tenth (312 thousands) are specifically assignable to war casualties (non-civilian and civilian combined). Including the war casualties, the number is 7.89 per cent. of the initial 1939 population, but when they are excluded the percentage is reduced to 7.14 in which form it is to be compared with 7.26 in 1933–39 or 7.41 in 1927–33.

That the war period should have registered as great an advance in the combat of normal mortality as was recorded in preceding peace years is a matter of satisfaction no less than of surprise for it has been achieved in spite of indirectly adverse effects of war conditions which must have been reflected in many deaths that would not otherwise have occurred, quite apart from those specifically identified and excluded as war casualties. Moreover, as with similar previous secular comparisons the full scale of vitality improvement is materially understated by the progress of the crude proportions of deaths which make no allowance for the ageing of the population and its consequent increasing proneness to mortality.

The excess of births over deaths thus results in a natural increase of 1.48 per cent. in the six years as compared with 1.72 in the preceding period, the fall being more than accounted for by war casualties, but for which, the rate of natural increase would have been little below that of the earlier period 1927–33.

As regards the remaining element of movement, a net balance of inward migration over the war period as a whole is shown in the table as accounting for a gain of 377 thousands or 0.91 per cent. of the 1939 population and is thus responsible for about the same proportion of the total population increase as was being recorded prior to the war. The migration figure must, however, be accepted with some reserve in view of the difficulties attending the initiation of the system of National Registration records from which the numbers are derived, for whereas a failure to record an immigrant on landing would be automatically rectified by the necessity to obtain a food ration book, no such corrective procedure operated in the case of an unnotified exit, and it is thus possible that the net population gain by migration is overstated, though the amount of over-statement would be negligible in relation to the total population estimate.

This is the first occasion, through the machinery of the National Register, on which it has been possible to identify the migration movement between England and Wales and other parts of the United Kingdom, and it is of interest to record that it resulted in a net gain of population to this country of

86 thousands in the six years. This figure is included in the total migration gain of 377 thousands previously referred to.

#### National Sex-Age Estimates

Estimates of the sex-age distribution of the national population, total and civilian, have been constructed for each of the war years by the survivorship method customarily used as described in previous reports; this briefly consists of (1) obtaining or estimating where necessary the year's deaths among the males and females at each age as at the middle of one year and treating the survivors as the population at the next higher age at the middle of the succeeding year, (2) completing the record by the addition of the numbers at age 0-1 represented by the survivors of the births which occurred during the year, and (3) adjusting the whole in respect of migrants again after consideration of all the sex-age evidence that could be obtained in respect of them.

The sex-age estimates of the civilian element of the populations have been published in Parts I of the successive Annual Reviews and of the total populations in the said Annual Reviews from 1943 inclusive. They are set out in Table III.

Table III.—Estimates of Total and Civilian Populations by Sex and Age.
England and Wales, 1940 to 1945.

Note.—The figures are given in thousands and are subject to the qualifications set out in the footnote to Table I.

Age Group	Mid-1940	Mid-1941	Mid-1942	Mid-1943	Mid-1944	Mid-1945
	Total Civilian	Total Civilian	Total Civilian	Total Civilian*	Total Civilian*	Total Civilian*
			MALES	A THURSDAY		10 mg
0—	1,469	1,449	1,460	1,491	1,542	1,600
5	1,417	1,399	1,398	1.417	1,438	1,446
10-	1,506 1,737 1,588	1,482 1,651 1,444	1,467 1,592 1,350	1,450 1,553 1,195	1,427 1,521 1,157	1,410 1,496 1,145
15— 20—	1,608 763	1,636 580	1,652 542	1,716 491	1,743 513	1,496 1,145 1,633 478
25—	1,735 1,280	1,691 879	1,635 781	1,589 645	1,494 518	1,536 535
30—	1,737 1,501 1,636 1,497	1,732 1,241 1,647 1,431	1,717 1,100 1,664 1,319	1,726 966 1,696 1,229	1,717 896 1,710 1,181	1,703 857
35— 40—	1,365 1,288	1,415 1,333	1,475 1,332	1,542 1,341	1,590 1,350	1,714 1,135 1,619 1,323
45—	1,240 1,193	1,239 1,202	1,249 1,206	1,265 1,203	1,287 1,215	1,333 1,263
50-	1,168 1,147	1,171 1,161	1,179 1,158	1,188 1,154	1,190 1,153	1,190 1,154
55—	1,056 1,052	1,054 1,052	1,059 1,056 932	1,066 1,058 936 933	1,073 1,061 935 932	1,085 1,074 937 934
65—	724	728	741	756 755	764 763	772 771
70—	487	500	517	534	546	557
75— 80—	259 110	268 113	279 119	295 126	308 132	321 138
85 and over	40	42	45	51	56	59
All Ages	20,216 18,243	20,141 17,228	20,180 16,802	20,397 16,334	20,473 16,188	20,549 16,200
			PERMITE			
0-	1.410	1,393	FEMALES	• 1,430	1,476	1,527
5—	1,412	1,358	1,355	1,370	1,390	1,397
10—	1,488	1,461	1,446	1,425	1,398	1,375
15— 20—	1,712 1,566	1,636 1,617 1.617 1.574	1,580 1,517 1,672 1,531	1,541 1,472 1,737 1,516	1,507 1,460 1,791 1,559	1,482 1,443 1,699 1,483
25—	1,762	1,718 1,704	1,672 1,633	1,591 1,540	1,500 1,439	1,549 1,474
30—	1,773	1,767 1,760	1,765 1,747	1,758 1,738	1,754 1,731	1,746 1,721
35—	1,684	1,696 1,691	1,717 1,709	1,736 1,726	1,747 1,738	1,751 1,742
40— 45—	1,558 1,455	1,570 1,567 1,463 1,462	1,590 1,585 1,477 1,475	1,610 1,605 1,492 1,490	1,632 1,628 1,508 1,505	1,655 1,650 1,523 1,521
50—	1,356	1,362	1,373	1,386	1,397	1,409
55—	1,244	1,251	1,262	1,276	1,286	1,298
60— 65—	1,085 869	1,103 882	1,124 903	1,140 928	1,152 947	1,163 972
70—	631	641	662	684	702	720
75—	390	401	416	434	449	462
80— 85 and over	194 87	199 89	208 95	219 105	226 114	238 121
All Ages	21,646	21,607 21,515	21,717 21,441	21,862 21,484	21,976 21,597	22,087 21,716
Average Age	22.5		10 10			
Male Female	33·6 35·6	33·8 35·9	34·0 36·1	34·2 36·3	34·3 36·4	34·4 36·6
CANADA TO DE	Control of the second	CHARLES OF		Children of the Party of	Tropic lives	A STATE OF THE STA

<sup>•</sup> Excluding Merchant seamen at home and overseas.

ar years by the survivorship	w 5/1921) no	1931	1939	1945
Average age of Male population	29.9	31.8	33.4	34.4
Average age of Female population	236 31-23id	200 33·5 16 11	116 35:4 g ad	1 85 36:6   VIUS

The general effect of the sex-age changes upon the broad socio-economic structure of the population may be gathered from the following statement.

s and of the total popula- ve. They are set out in quorg easexee	toreview	al Population thousands)	succe keviev	edi le Propor	rtion per delidic 0 total
	1939	1945		1939	1945
Under 15, Male and Female 15-44 Male School School Female	8,729 9,741 10,022	8,753 9,696 1 of a 19,877	PHOFIL	210 210 234 241	205 227 232
45–64 — Male	4,350 5,078 3,722	5,393	3 tres	104 122 89	107 126 102
Total set, i	41,642	83.1. <b>42,</b> 636	1 0	1,000	1,000

The shift of population from the younger to the older ages is indicated by the declines in the proportions below age 45 and their increases above that age. It marks a further stage in a process that has been in operation since the annual numbers of births began to fall in the first decade of the present century, a process that in one way or another was bound, sooner or later, to intervene and modify the extreme age unbalance which had developed from the rapid rise in births during the nineteenth century. It may be observed that not withstanding the changes now registered, the proportion at the younger ages is higher and that at the older ages, particularly in the oldest section above 65, lower than it would be in a balanced stationary population, recruited by a constant annual supply of births.

The slight fall in the proportion of children at ages under 15 is not of great significance in view of the many births which can be regarded as having been subject to temporary postponement until after the war, and but for which there might have been little or no fall at all.

The reduction in the proportions at the early adult ages represents a change from the immediate pre-war period when they were advancing rather than declining. The present fall in this important section of the population is thus of immediate practical significance though as already indicated, the proportions here are still well in excess of those which would be found in a stabilized population subject to the low mortality levels likely to be experienced in this country. It is of course upon the male element of this age section of the population that the bulk of the direct war losses has fallen.

Complementary increases in the proportions are shown for two age periods over 45, the biggest relative increase being in the elderly "dependant" group over 65, the rates here having advanced from 89 per 1,000 in 1939 to 102 per 1,000 in 1945 on the way to the considerably higher levels that are inevitable in the future.

In regard to sex distribution the estimated overall excess of females has risen from 1,438 thousands in 1939 to 1,538 thousands in 1945, or, in terms of proportions, from 1,072 to 1,075 females per thousand males in the six war years. The relative decline in the male element will hardly be regarded as of great significance and is less than half that occasioned by war casualties alone. In broad age groups the proportions at the beginning and end of the period are as follow, the 1921 census proportions being added for comparison with the position after the first war.

#### Females per 1,000 males

	All ages	Under 15	15–24	25–34	35–44	45-64	65 and over
1939 1945	1,072 1,075	976 965	977 1,017	1,021 1,018	1,099 1,022	1,167 1,186	1,335 1,361
1921	1,096	987	1,095	1,198	1,142	1,086	1,337

Besides the changes registered during the present war years, the comparison of 1945 with 1921 is of probably greater interest as evidence of the longer term trend of change which has taken place since the first war in the sex balance of the population. Though females still outnumber males at all groups after age 15, the proportionate excess from that age up to 45 is now only of the order of 2 per cent. and for all groups up to 45 the excess has fallen since 1921; very considerably so at the adult ages, the excess at ages 15-24 having declined from 9.5 per cent. in 1921 to 1.7 per cent. in 1945, at ages 25-34 from 19.8 to 1.8 and at ages 35-44 from 14.2 to 2.2 per cent. Two general factors would seem to have been mainly responsible for this tendency. First, the proportion of males to females amongst new births which had been below 1,040 males per 1,000 females for decades prior to the last war, rose considerably after 1918 and has been maintained at an average in excess of 1,050 over subsequent vears to date; at the same time the higher masculinity of the later births has been subject to less redress from the effect of infant and child mortality which has fallen steeply since the first war, the combined effect of birth and death changes thus favouring the proportionate survival of males at present age groups up to 25. A second factor also operating in favour of males over early adult ages has been the change that has been recorded in migration movements. Prior to the first war, the movement on balance had been consistently outward for several decades, and since as a class, males were more strongly represented than females, the net effect was one of a steady, if small, drain on the male proportions in the home population; more lately the direction of the movement has altered and since 1930 has been inward on balance and has thus favoured the male proportions of 1945 at the migration ages in comparison with those of 24 years ago.

The steady improvement in the male proportions at ages under 45 will be seen to have persisted throughout the recent war period except in the age group 15–24 where the losses from war casualties were at a maximum and were more than sufficient to offset the growing male excess which amounted to 79,000 in 1939 and was reduced to a deficiency of 52,000 in 1945, the proportion of females per 1,000 males being thereby raised from 977 to 1,017 in the six war years. War losses in the 25-34 age group, though considerable in themselves, were not sufficient to reverse the fall in female proportions, which after declining from 1,198 in 1921 to 1,021 in 1939, fell still further to 1,018 per 1,000 males in 1945. Changes in the immediately older ages will also have been influenced by the effects of the first world war which was responsible for an immediate depression of the male population at the fighting ages that

disappeared as younger generations came forward to take their place, the same type of depression and restoration being now re-enacted at correspondingly later ages as reached by the groups originally affected. The continued increase in the female proportions at the oldest ages will generally be ascribed to the greater improvement in survivorship mortality that has been consistently recorded in respect of them.

#### National Sex-Age Marital Condition Estimates

To meet the increased need for population estimates distinguishing marital condition—a need which has been stimulated by the fertility data regularly obtained as a result of the Population (Statistics) Act of 1938—the populations of each sex above 15 years of age are now analysed to show their component divisions of Single, Married and Widowed (including Divorced). The division, which has entailed the increased use of assumptions to cover the marital condition distribution of elements of the population movement for which direct information was not forthcoming, will have increased the margins of error attaching to the estimate items particularly in the male section, but they have been reconciled as far as possible with all available factual records and should suffice for most purposes for which they are likely to be used. The estimates are shown in Table IV.

## Table IV.—Estimates of Total Population by Sex, Age and Marital Condition. England and Wales, 1940 to 1945.

Note.—The figures are given in thousands and are subject to the qualifications set out in the footnotes to Table I.

Single   Married   Divorced   Single   Married   Divorced   Divo	Gidowed and ivorced
Single   Married   Single   Married   Single   Married   Divorced   Mid-1942	and ivorced
0—	14 21 29 35 54 73
15-	14 21 29 35 54 73
0-   4,358   -   -   4,407   -   -   4,456   -	133 129 204 <b>802</b>
70— 51 349 134 51 359 136 51 368 75 and over 40 221 211 43 235 218 46 249	
All Ages 9,114 10,477 806 9,148 10,513 812 9,154 10,577	810

## Table IV.—Estimates of Total Population by Sex, Age and Marital Condition. England and Wales, 1940 to 1945—(continued).

Note.—The figures are given in thousands and are subject to the qualifications set out in the footnote to Table I.

	FEMALES								
Age Group	Single	Married	Widowed and Divorced	Single	Married	Widowed and Divorced	Single	Married	Widowed and Divorced
To be an in the same		Mid-194	0	F TO LEGG	Mid-194	1	EN YOUR	Mid-194	2
0-	4,280	100-00	T YELLS	4,212	100	1884-000	4,201	1 -	THE PERSON
15—	1,646.4	65.6	6 -	1,571.6	64.4	CARL THE STATE	1,516	64	March 1
20—	972-5	591.5	2	967.4	645.6	4	965	703	4
25—	543.9	1,208-1	10	483	1,224	11	452-	1,207	13 23
30—	404.9	1,343.1	25	384	1,359	24	365	1,377	50
35—	337.8	1,298-2	48	338	1,309	49	337	1,330 1,242	71
40—	273.5	1,208-5	76	272	1,223	75 124	249	1,109	119
45—	247.4	1,081.6	126 194	219	950	193	221	962	190
50— 55—	218 195	808	241	196	810	245	197	820	245
60—	169	623	293	172	629	302	174	641	309
65—	139	417	313	140	419	323	143	429	331
70—	103	239	289	104	248	289	106	262	294
75 and over	113	116	442	116	116	457	120	119	480
All Ages	9,643-4	9,943-6	2,059	9,422	10,089	2,096	9,323	10,265	2,129
Busines of SUR		Mid-194	3		Mid-194	91012111	- SPACE	Mid-19	45
0—	4,225	WIIG-171		4,264		_	4,299	1 -	
15—	1,481	60		1,451.5	55-5		1,424-1	57.9	
20—	985	745	7	1,031.8	750-2	9	959.3	727.7	12
25-	427	1.148	16	389.7	1,089-3	21	428.6	1,094.4	26
30—	349	1,384	25	337	1,388 1,369	29	331	1,380	35
35—	334	1,354	48	328	1,369	50	317	1,383	51
40—	281	1,261	68	285	1,279	68	294	1,289	72
45—	249	1,130	113	253	1,144	111	251	1,165	107
50	221	978	187	221	992	184	223	1,006	180 245
55—	199	833	244	199	842	245	199	854 668	315
60—	176	652	312	178	659	315 353	180 149	457	366
65—	145 115	-440 273	343 296	147 117	276	309	119	276	325
70— 75 and over	121	131	506	127	145	517	133	162	526
			Process		10,436	2,211	9,307	10,520	2,260
All Ages	9,308	10,389	2,165	9,329	10,430	2,211	9,307	10,520	2,200

Apart from the increased proportions in the married sections of the male and female populations due to the high marriage rates of the war years which are referred to in the Marriage section of this report, a feature which attracted much interest after the first world war and for which figures will no doubt be sought in respect of the present period, is the effect the war losses of males at the young adult ages have produced on the numbers and balance of what may be called the marriageable population in the two sexes, the population for this purpose being the non-married, that is, the numbers of single, widowed and divorced combined. The relevant figures from the estimates of 1939 and 1945 are shown in the annexed summary together with corresponding figures from the 1921 census just after the first war.

Non-married Population (i.e., Single, Widowed and Divorced).

	Total , over age 15	15—	20-	25-	30-	35—	40-	45 and over
Excess or deficiency [1939] (-) of Females [1945] (thousands) [1921]	1,515 1,752 1,691	-75 -57 23	$     \begin{array}{r}       -302 \\       -318 \\       \hline       51     \end{array} $	$ \begin{array}{r} -201 \\ -206 \\ 93 \end{array} $	59 11 147	112 141 151	175 175 144	1,747 2,006 1,082
Females per 100 males $\begin{cases} 1939 \\ 1945 \\ 1921 \end{cases}$	125 132 132	96 96 101	76 75 104	75 69 115	115 103 147	142 162 165	198 192 172	236 253 203

The remarkable feature of the present position is the very considerable excess, not of females but of males at the marrying ages under 30, an excess which not only contrasts with the position after the preceding war when nonmarried females were in the majority, but which has even increased during the recent war years despite the war losses amongst the males. Between the ages of 20 and 30, at which about three quarters of all brides normally marry, their non-married sisters are now more than half a million fewer in numbers than the non-married men of the same ages, and the difference is hardly disturbed by taking in the next higher age group 30-34, the proportionate female deficiency apparently being at a maximum between 25 and 30 where the females are but two-thirds of the corresponding males. The explanation is a relatively simple one and must be largely due to the fact that at the earlier marrying ages, husbands are usually older than their brides, so that in addition to the more general factors which have been referred to as favouring an increased representation of males at early adult ages, marriage itself has exerted a powerful contributory influence towards the depletion in the ranks of the remaining non-married section of females as compared with males. The position is also influenced by the fact that possibly as many as 100,000 young women had married members of the Armed Forces of the Dominions, Colonies and Allies.

The figures as quoted may be treated with some reserve since they are based on estimates made under somewhat difficult circumstances but they should be of service in displaying an important aspect of the change in sex balance which has been imparted to the population by the events of recent years.

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

A supplementary analysis showing estimates of the mean numbers of married women exposed to risk of child-bearing at separate years of marriage duration for use with the recorded legitimate maternities at those durations as given each year in Table OO of the Annual Reviews, Parts II, was provided for the years 1938 and 1939 in Table XCVI of the Text for those years. The estimate formula as set out in that report was described as provisional and in view of the detailed interest that has been evidenced in fertility rates and changes in fertility rates at different durations of marriage, the opportunity has been taken to subject the analysis to a more refined degree of treatment, relating the married women exposures more exactly to the recorded maternities and at the same time extending the analyses to cover quarter years of marriage duration for the first two years of married life. The method of analysis is more complex than would be suitably included here and for the benefit of those interested, a detailed description of the process employed is given in Appendix II on page 192, and the constructed estimates for each year from 1938 to 1945 (revised figures for 1938 and 1939 being included so as to cover the whole of the new fertility data) in Appendix I, Table III, on page 164.

#### Local Populations

Mean estimates of the civilian populations of all boroughs, urban districts and rural districts in England and Wales for each of the years 1940 to 1945 are shown in Table 17 of Part I and Table E of Part II of the respective Annual Reviews for those years; the 1940 record being supplemented in an appendix to Part II in respect of a few changes in boundary which took place during that year. No changes in the boundaries of Local Government areas occurred in the years 1941 to 1945. The estimates differ in two respects from those employed in normal years.

In the first place they are limited to civilians and therefore tend to diminish at progressive intervals throughout the war as increasing numbers of men and women joined the Armed Forces. In so doing, they left their home areas in a physical sense and could properly be disassociated from them for the time being, but apart from this, local administrative requirements were primarily concerned with the civilian elements of the population within the several areas from time to time and no sufficient object would have been attained by attempting a specific allocation of non-civilians to local areas, even had it been possible to do so. In these circumstances, local birth and civilian death rates in Tables 17 and E and marriage rates in Table F (Annual Review, Part II) have throughout been calculated in relation to the civilian population. For the death rates, this course was appropriate since the local classification of deaths was confined to the deaths of civilians; but for births and marriages the treatment, though inevitable, is not altogether adequate since rates based on a civilian population could be regarded as subject to statistical overstatement in view of the facts that the parents in the case of births and the partners in the case of marriages include non-civilians as well as civilians. For the country as a whole the ratios of the estimated civilian population to the total population in the several years are as follows:-1940, 0.9529\*; 1941, 0.9280; 1942, 0.9128; 1943, 0.8949; 1944, 0.8901; 1945, 0.8949, and it is suggested that these ratios be applied as corrective multipliers when required, to transform the published birth and marriage rates based on civilian populations to corresponding total population rates in the several areas, thereby rendering them comparable with one another over the war years and also with the similar total population rates as published in earlier years.

The other innovation referred to lies in the adoption of calculated mean populations in preference to the mid-year estimates hitherto employed in this series of records. Population movements in normal times are not necessarily inconsiderable but they are to a large extent continuous and tend to conform to recognizable trends which in themselves alter but slowly; in such circumstances the mid-year figure can be accepted as sufficiently representative of the mean position and a yearly revision, itself a complex operation, while sufficing for all practical needs, avoided the hazardous and laborious extension involved in endeavouring to obtain a calculated mean based on an attempted measurement of the movements over a series of successive intervals throughout the year.

The circumstances of the recent war years presented a very different picture. An outstanding feature of internal population conditions has been that produced by the rapid and kaleidoscopic changes in population distribution

\* In 1940, the live birth occurrences were significantly fewer than the numbers registered and the published local rates which are based on registrations need further correction to make them comparable with rates of other years, the combined adjusting ratio for the 1940 birth rate adjustment being 0.9263 instead of 0.9529 shown above.

In the main, the quarterly records of local changes derived from National Registration sources provided the material wherewith to pass from one estimate to the next. Experience showed, however, that the notification procedure thereunder was by no means free from defects, arising from delay and omission, particularly in the early stages of the Register, and each fresh quarterly estimate had to be reviewed and adjusted before final adoption by references to other available material such as the independent birth and death registrations and the records of enlistments and discharges maintained by the Service Departments, in order to ensure that the local figures aggregated to the independently calculated and generally more reliable estimate for the country as a whole. Advantage has also been taken of the additional check upon local populations provided by the numbers of food ration books issued at about the middle of each year; though not embodied in the construction process, the comparison has served the purpose of disclosing anomalies justifying more specific treatment for a number of areas than that provided by the standard procedure.

The local estimates of civilian populations published in Tables 17 and E are in all cases mean populations of each year derived from the quarterly constructions by adding together one-eighth of the two terminal December estimates and one-quarter of the intermediate March, June and September estimates.

As already described, war-time changes in the civilian populations of local areas, from quarter to quarter or from year to year, have been due to the collective operation of births, deaths, enlistments into and discharges from the Armed Forces, together with a final factor which from the point of view of magnitude and variability has been of greater significance than all the others, namely removals due to change of residence within the country. Statistics of the latter have not been available before and now that they have been the subject of regular record under the National Registration Act of 1939, a brief summary of the movements will be of interest.

As stated, all changes of address other than those of a temporary nature, were compulsorily notifiable under the Act, the notification in the first instance being made to the National Registration Office of the area of the new address. If the change was a local one, that is, wholly within the local area, the record was completed by its posting in the local register. If it was a non-local change, the local National Registration officer of the new area transmitted the information to the Central National Registration Office which recorded the change and notified the local office of the transferor area.

The recorded statistics which are referred to below relate solely to non-local removals, i.e., changes in which the local National Registration area\* of origin was different from that of destination. Local removals did not alter the population content of an area and records of them are not available in statistical form; from small dispersed tests made both during and since the war, their general order of magnitude would seem to be in the region of 60 per cent. of non-local removals on the average, but the proportion is not a firm one and, as was to be expected, there was considerable variation according to whether the area was large or small. Temporary movements such as those covering holidays or periods of like extent were not notifiable and are not represented.

It may be recalled that in the report on the National Register Statistics of Population, 29th September, 1939, it was estimated that some two and a quarter million persons (or 5 per cent. of the total population) left their homes for safer areas in Great Britain in the month which elapsed between the outbreak of war and the setting up of the Register. These are not included in the following record which dates from National Registration day, 29th September, 1939.

In the six and a quarter years which have since elapsed, that is up to the end of 1945, nearly 33½ millions of inter-area removals have been registered in respect of the civilian population of England and Wales. The following table analyses this total by calendar quarters and shows the percentage of the population involved in each case.

Table V.—Non-local Removals registered in England and Wales.

Calendar Quarter	Number in Thousands	Percentage of Population	Calendar Quarter	Number in Thousands	Percentage of Population	Calendar Quarter	Number in Thousands	Percentage of Population
1939: 4th Qr.	1,283	3.2	aldog anor	sirroq i	astivio	lo solumius	e local e	
1940 : 1st Qr.	1,254	3.1	1942: 1st Qr.	1,032	2.7	1944: 1st Or.	809	2.1
2nd ,,	1,422	3.5	2nd ,,	1,539	4.0	2nd ,,	922	2.4
3rd ,,	2,141	5.4	3rd ,,	1,178	3.1	3rd ,,	2,098	5-5
4th ,,	2,746	6.9	4th ,,	1,031	2.7	4th ,,	1,555	4.1
1941 : 1st Qr.	1,865	4.8	1943: 1st Or.	794	2.1	1945: 1st Qr.	936	2.5
2nd ,,	1,757	4.5	2nd ,,	906	2.4	2nd ,,	1,197	3.2
3rd ;,	1,552	4.0	3rd ,,	979	2.6	3rd ,,	1,081	2.8
4th ,,	1,321	3.4	4th ,,	936	2.5	4th ,,	1,065	2.7

What these figures mean in relation to peace-time standards it is difficult to say owing to the absence of earlier records. It may be noted, however, that the removals were never less than 2 per cent. of the population in any quarter during the war and have only been below that figure on one occasion up to the end of 1947 so that a normal level may well be as much as 8 or 9 per cent. per

During the first three quarters following the outbreak of war when there was little or no direct enemy action over the country, the non-local removals were more or less steady at a level between 3 and  $3\frac{1}{2}$  per cent. of the population, an amount of movement which on the previous showing would seem to have been 50 per cent. above normal, due probably to the early return home of many of those who had precipitately evacuated themselves at the outset.

In the latter half of 1940, when aerial bombardment was at its height, the removals rapidly increased to the maximum recorded in the whole of the war, viz., 6.9 per cent. in the fourth quarter of 1940, a rate more than three times the suggested normal figure and involving the movement of nearly three million persons in that quarter. With the diminution of night bombing as the days lengthened in 1941, the movement subsided but in its reversed direction as evacuees once again tended to come back to their home areas, it remained relatively high throughout 1941, though on a falling scale. There was a moderate recrudescence in the Spring of 1942, but thereafter the removals seem to have assumed normal proportions until the Summer of 1944 when renewal of attack by self-propelled bombs of the V1 and V2 types again stimulated evacuation movements from the areas exposed, this time more exclusively confined to the south-eastern corner of the country.

For individual areas within the country, the quarterly removal percentages differed very widely from the national averages shown above, as would be expected from the different degrees to which they were exposed to enemy attack. For example, from Eastbourne C.B. 21 per cent. of the civilian population moved out in the third quarter of 1940 and 34 per cent. in the fourth quarter, or to cite a London borough, the removals from Shoreditch amounted to 26 per cent. of its population in the fourth quarter of 1940. A notable feature of the experience of all areas including the more extreme types was that the movement was never all one way; in evacuation areas, it was outward on balance, but the gross outward element was always accompanied by a material inward movement which itself was sometimes wholly abnormal. Thus from Hampstead Met.B. the outward movements in the third quarter, 1940 and the two subsequent quarters were 13, 28 and 11 per cent., but they were accompanied by simultaneous inward movements amounting to 15, 12 and 9 per cent. of the population. Or again, Reading C.B. received increments of 10 and 21 per cent. in the last two quarters of 1940, but at the same time lost 5 and 6 per cent. by movements in an outward direction.

A general impression of the broad changes in the distribution of the civilian population during the war years is provided in the following table which shews the proportions per 1,000 of the total national population located in the main geographical regions and density aggregates at successive quarterly dates following the last recorded peace-time estimate of mid-1939.

<sup>\*</sup> N.R. areas were usually coterminous with individual Boroughs or County Districts but in a number of cases, two or more of the latter were grouped to form a single N.R. area.

Table VI.—Regional and Density Distributions per 1,000 civilian population in England and Wales.

	England	CI T			· 是		GEOGRA	PHICAL	REGION	S				40.0		DENSITY GREGAT	
Date	and Wales	Greater	London	Re- mainder of	N.I	N.II	N.III	N.IV	M.I	M.II	E.	s.w.	Wales	Wales	C.B's outside	U.D's outside	R.D's outside
+C		A.C.	Ring	S.E.	100							1 2 3	**	II	Greater London	Greater London	Greater London
Mid-1939	1,000	97	114	139	54	31	84	150	117	60	45	50	43	17	310	305	174
29th September 1939	1,000	74	102	157	52	32	84	148	120	62	48	56	45	19	302	324	198
31st December 1939	1,000	77	106	153	52	32	84	148	120	62	47	55	44	18	307	324	186
31st March 1940 30th June ,,	1,000	80 80	109 109	151	52 52	32 32	83 83	148 149	119 120	62 62	46 46	55 55	44 45	18 18	307 307	322	183
30th September ,, 31st December ,,	1,000	78 64	110 101	143 148	52 53	32 33	84 86	150 152	122 124	63 66	44 46	57 62	46 47	18 19	304 305	321 322 333	182 187 197
31st March 1941 30th June ,,	1,000	60 58	100 101	149 150	53 53	32 32	86 87	151 151	124 124	66 67	47 47	62	47	20	303	337	199
30th September ,, 31st December ,,	1,000	59 60	104 105	149 148	53 53	32 32	87 87	150 150	125 125	66 66	46 46	62 61 60	47 47 47	20 20 20	299 297 298	339 338 337	202 202 199
31st March . 1942 30th June ,,	1,000	62 63	107 108	147 146	53 53	32 32	87 86	150 150	126 126	66 65	46 46	59 59	46	20	300	335	197
30th September ,, 31st December ,,	1,000 1,000	64 65	109 109	146 145	53 53	31 31	87 87	150 150 150	126 126 127	65 65	46 46	58 58	46 46 46	20 20 20	299 301 303	335 333 334	196 194 189
31st March 1943 30th June ,,	1,000	66 66	109 109	145 145	53 53	31	87 87	150 150	127 127	65 65	46	57	46	20	303	340	183
30th September ,, 31st December ,,	1,000	66 68	110 111	145 143	53 53	30 30	87 86	150 150 149	127 127 128	65 65	46 46 46	57 57 55	46 45 45	20 19 19	302 302 306	349 349 346	174 172 168
31st March 1944 30th June ,,	1,000	68 68	111 111	144	53 54	30 30	86 86	149 149	128 128	65 65	46	55 56	45 45	19	306	346	168
30th September ,, 31st December ,,	1,000	59 63	99 105	147 146	55 54	31 30	88 87	152 151	130 129	67 66	47 46	59 57	47 46	19 19 19	306 313 312	347 356 351	169 174 170
31st March 1945 30th June ,,	1,000	64 69	106 110	147 146	54 54	30	87 86	151 149	128 127	66 65	46	56	46	19	312	350	168
30th September ,, 31st December ,,	1,000	71 74	113 114	147	54 54	30 30	85 85	148 148	126 125	64 63	45 45 45	55 54 54	45 44 44	18 18 18	310 309 310	346 343 341	166 163 161

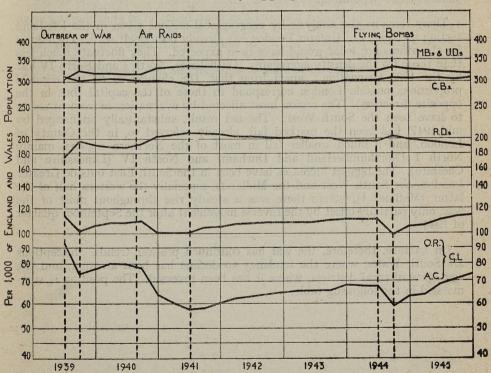
The figures, especially for density aggregates, are slightly affected by the grouping of some administrative areas for Food Office purposes at various times (e.g., the apparent rise in the urban at the expense of rural district proportions in the first half of 1943 is due to that cause)\*. This effect has been removed from Diagram A and from the following summary table, which gives the proportions for density aggregates at selected dates throughout the period.

Table VII.—Distribution per 1,000 of the Civilian Population of England and Wales between Density Aggregates at Selected Dates, 1939-45.

(Corrected to eliminate the effect of grouping)

and the Ourer Win	England	Greater	London	Outsid	de Greater I	London
Date	and Wales	Admin. County	Outer Ring	C.Bs.	M.Bs. & U.Ds.	R.Ds.
30th June, 1939	1,000	97	114	310	305	175
30th September, 1939	1,000	74	102	302	324	198
30th September, 1940	1,000	78	110	301	318	193
30th June, 1941	1,000	58	101	296	336	209
30th June, 1944	1,000	68	111	301	323	197
30th September, 1944	1,000	59	99	307	332	203
31st December, 1945	1,000	74	114	305	320	187

DIAGRAM A.—Distribution of the Civilian Population of England and Wales between Density Aggregates, 1939-45.



<sup>\*</sup> This does not apply to the annual mean population estimates published in Table E.

As with the volume of removals, the figures clearly shew the impact of the varying circumstances of the war on the civilian population. This is particularly true of the analysis by density aggregates. Six stages can be distinguished: the evacuation movement at the outbreak of war (largely completed by the end of September, 1939); the gradual reflux until the Summer of 1940; the further evacuation during the heavy air raids in the last part of 1940 and the first half of 1941; the slow and gradual reverse movement lasting until the middle of 1944; the sudden evacuation due to the flying bomb attacks on London; and the resumption, at a slightly faster pace, of the return to the capital during the remainder of the period.

The changes in the Greater London proportions dominate all the rest. Within Greater London, the Administrative County and the Outer Ring followed very much the same course, the movements of the former being somewhat more marked. The proportion of the population in county boroughs, taken as a whole, also moved in the same direction (except during the flying bomb attacks), but its fluctuations are much smaller. The proportions in the smaller towns and rural areas are complementary to those in the big cities, and shew the same movements in the opposite direction. Since the end of 1945 these proportions, as well as the regional ones, have moved much as during that year, but not to alter their level to any great extent. Compared with mid-1939, the net result has been a reduction in the proportion of the population who live in the County of London, amounting to a quarter by the end of 1945 (a fifth by mid-1947), and an increase in the proportions living in rural districts and small towns. The Outer Ring of Greater London and to a lesser extent the county boroughs have approximately regained their pre-war shares of the population.

There remains the analysis by geographical regions given in the left-hand section of Table VI. Greater London has already been dealt with. The figures for the others are what would have been expected. They fluctuate much less than those for the density aggregates. On balance, North I and North IV lost by the 1939 evacuation; apart from that, the changes in all the regional proportions outside London correspond to those of the capital (but in the opposite direction). The region most affected by evacuation movement seems to have been the South West. The net result, substantially unchanged by mid-1947, has been the marked fall, already referred to, in the County of London, and a much smaller fall in most of the Northern regions, mainly North I (Northumberland and Durham) and North IV (Lancashire and Cheshire). The biggest increases have been in the South East outside Greater London, the South West and the Midlands, especially the western half of the latter (Midland I), where there was a steady rise throughout most of the war, only partially offset by the reverse movement after the September quarter of 1944.

On balance, therefore, the war has continued pre-war trends. Exceptions are South Wales, where the tendency to decline has been arrested, and the aggregate of rural districts, where it has been reversed. The position is summarised in the following table.

Table VIII.—Changes in the Distribution of the Population of England and Wales. 1931-39 and 1939-47.

or sold of	Gre			er Der					5 3 JE 500	Othe	r Reg	ions	de to	on s	自己基 的	
		Outer	C.Bs		R.Ds	Re- main-	Islan	No	rth		Mid	land	East	S'th West	Wa	les
	C'ty	Ring		U.Ds		der of S.E.	ı	II	III	IV	I	II		west	I	II
a of hel	rela	die ?	usd,	Local T	per 1,0	00 of E	ngland	and	Wales	Popul	ation.					
Mid-1931 Mid-1939 Mid-1941 Mid-1947	109 97 58 78	96 114 101 116	317 310 296 304	281 305 336 318	197 175 209 184	131 139 150 149	56 54 53 52	32 31 32 31	87 84 87 83	154 150 151 147	114 117 124 123	60 60 67 62	45 45 47 46	51 50 62 53	48 43 47 43	1 2 2 1
						Chang	ge over	8 ye	ars.							
1931–39 1939–47	$\begin{vmatrix} -12 \\ -19 \end{vmatrix}$	+18 + 2	- 7  - 6	+24  +13	-22  + 9	+ 8  +10	- 2   - 2	- 1 <sub>0</sub>	- 3  - 1	- 4  - 3	+ 3  + 6	+ 0	+ 1	- 1	- 5	
							entage								4	
1931–39 1939–47	$\begin{vmatrix} -11 \\ -20 \end{vmatrix}$	+19  + 2	- 2 - 2	+ 9  + 4	$\begin{vmatrix} -11 \\ + 5 \end{vmatrix}$	+ 6 + 7	- 4 - 4	- 3 0	- 3  - 1	= 3   = 2	+ 3  + 5	+ 3	+ 2	- 2  + 6	-10 0	197

#### Local Age Distributions

Estimates of the sex and age distributions in geographical regions and density aggregates for 1940 and 1941 were published in Table 2 of Part I of the Statistical Reviews for those years, since when this section of the estimates has been suspended. The recurrent flow and ebb of evacuation in response to the varying phases of the war, involved large and capricious population movements of abnormal sex and age incidence, the available particulars of which were too indefinite to be relied upon as a basis for a chain of successive annual estimates. The figures for 1940 and 1941 must be regarded as increasingly approximate and when the possibility of further projection was examined it was concluded that the construction would have been too hypothetical to warrant their preparation and inclusion as part of this series.

persons meaned per 1,900 copilation alies having been maintained maintained maintained and per 1,000 for many maintained the per 1,000 for many areas 1932 to 17-5 at 1938 and than the parallely and the many areas 1932 to 17-5 at 1938 and than the parallel strength of the outbreak of wer in September 1939.

#### MARRIAGES

The marriages registered in England and Wales during the six war years 1940 to 1945 numbered 2,225,986, a figure which may be compared with the not dissimilar total of 2,207,109 registered in the six preceding years 1934 to 1939.

Expressed in terms of the total population of all ages and marital conditions, the 1940–45 experience represents an average annual rate of 17·6 persons married per 1,000 population, suggesting a slight decline from the corresponding 1934–39 average of 18·0 per 1,000. But when the numbers are related to the population able to marry, viz., to the single and widowed population above the age of 15‡, a material rise is shown by the rates, the male average from 62·6 to 65·9 and the female average from 48·8 to 50·8 per 1,000 non-married; the rise is even more significant at the young ages where the bulk of marriages take place, as is described later.

The incidence of the marriages during the war period will be seen from the numbers and rates recorded for the successive calendar years and calendar quarters as appearing in Parts II of the Annual Reviews, the relevant extract being shown in adjoining Table IX. It is at once obvious that the series is characterized by an abnormal degree of fluctuation which can only be ascribed to the impact of war conditions. The effect of these must be expected to persist for some years after the termination of the war, and until sufficient time has elapsed it will not be possible to appraise the events of the war period itself in their true perspective. In order to obtain as balanced a view as is possible at the present time, the summary has been extended in both directions, repeating records of the pre-war period which have already appeared in earlier reports and adding those for the available post-war period.

Table IX.—Marriages and Marriage Rates. England and Wales.

Calendar Year	of the l	Numb (in	er of Mari thousand	riages s)	08.0	Pers	ons marrie	ed per 1,00 m of Annu	00 popula al Rates)	tion
	Year	1st Qr.	2nd Qr.	3rd Qr.	4th Qr.	Year	1st Qr.	2nd Qr.	3rd Qr.	4th Qr
1936	355	50	101	115	89	17·4	9·8	19·8	22·5	17·3
1937*	359	71	80	121	87	17·5	14·0	15·7	23·5	16·8
1938	362	52	102	117	91	17·6	10·3	19·9	22·4	17·5
1939	440	47	103	153	137	21·2	9·2	19·9	29·3	26·2
1940*	471	109	117	132	113	22·5	21·0	22·4	25·1	21·4
1941	389	81	106	105	98	18·6	15·7	20·3	19·9	18·6
1942	370	88	101	96	84	17·7	17·1	19·3	18·3	15·9
1943	296	63	83	82	70	14·0	12·0	15·7	15·3	13·1
1944	303	63	83	82	75	14·3	11·9	15·6	15·4	14·0
1945	398	77	100	119	101	18·7	14·6	18·8	22·2	18·9
1946	386	78	101	110	96	18·0	14·8	19·0	20·4	17·9
1947	401	75	109	119	97	18·6	14·2	20·3	22·0	18·0
1948*	397	95	93	123	85	18·2	17·6	17·2	22·5	15·6

\* In years so marked, Easter fell in the first quarter.

In the Text for the years 1938–39, it was shewn that the annual marriage rates (persons married per 1,000 population) after having been maintained at a comparatively stable level of between 15 and 16 per 1,000 for many years, rose steadily and continuously after 1932 to 17.6 in 1938 and then with the added stimulus given by the outbreak of war in September 1939 jumped in that year to 21.2, a point markedly higher than any similar rate recorded since official registration was introduced, more than 100 years ago.

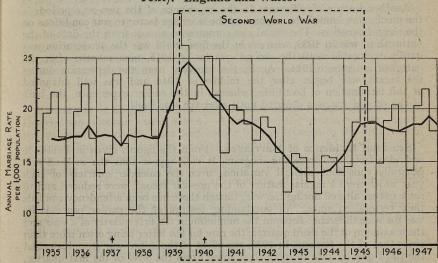
The high rate of 1939 was even further exceeded in the following year, 1940, when it reached 22.5 per 1,000 which now stands on record as the highest rate registered in this country either before or since. The immediate war impetus of 1939 and 1940 clearly had the effect of anticipating a number of marriages which would not normally have occurred until some years later and it was

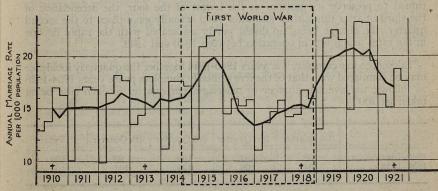
naturally followed by a reaction in the course of which the numbers and rates fell almost as sharply as they had risen, reaching a low level in 1943 and 1944 in which the numbers were less than two-thirds of the earlier maximum year and the crude rate per 1,000 population at 14·1 was amongst the lowest on record. From that point it recovered and rose once again reaching a point at the end of the war in 1945 materially higher than in preceding peace years, a general level which so far has been roughly maintained.

The phases of boom, slump and recovery to a secondary maximum which are clearly to be associated with the war and which reflect the abnormality imposed by the war on the more continuous peace-time tendencies are similar in general nature to the movements registered over the period of the first world war of 1914–18, as may be judged from the appended diagram from which the major similarities and dissimilarities will be readily seen.

The diagram covers a period extending some years before and after actual hostilities in each case, and shows the marriage rates recorded in successive

DIAGRAM B.—Marriage Rates per 1,000 Population (see Text). England and Wales.





+ Years in which Easter fell in the March Quarter

<sup>‡</sup> It should be noted that though, by the Age of Marriage Act, 1929, any marriage between persons either of whom is under 16 is void, marriages of persons under 16 were never other than insignificant, and the continued use of 15 as the commencing age has been retained as a matter of statistical convenience and continuity without prejudicing the interpretation of the record.

calendar quarters (thin lines) superimposed by more continuous thick lines on which each point represents the average of the four quarters of which it is the centre, thereby suppressing the effect of the cyclical variations produced by the high seasonal incidence associated with marriages.

The general scale of the war disturbance is seen to have been distinctly greater during the recent second war period. It is further enhanced by the fact that marriage rates had been rising for some years prior to the outbreak of war and had reached a peace-time intensity which was already higher than that experienced over many previous decades. Even so, the comparison provided by the crude population rates used in the diagram tends to understate the advance because the higher marriage rates of the later years have depleted the marriageable population to a far greater extent than formerly and the preferable rates relating the marriages to the population available for marriage enhance the contrast between the two periods; increasingly so as time goes on, as may be inferred from Diagram C on page 35 where the principal age rates for the non-married section of the female population are shewn.

Another feature of difference in the experience of the two war periods is the much more immediate response of the marriage factor to war conditions on the second occasion. The initial rise commenced almost from the date of the outbreak of war in 1939, whereas in the first world war the acceleration was hardly noticeable until the second quarter of 1915, nine months after the outbreak in August 1914. Again, the recovery from the depression during the recent war began after the middle of 1944 and was well advanced at the termination of hostilities, whereas in the earlier experience, the bulk of the second rise was deferred until after the war itself.

Seasonal Incidence of Marriages.—From the figures given in Table IX and also from the preceding diagram, it will appear that the marked and generally consistent cyclical variations over the calendar quarters of each year which were a regular feature of the pre-war record, were reduced and to some extent altered during the war, though there has been a tendency towards their restoration since. An outstanding feature of the earlier peace years was the wide difference between the minimum in the first quarter of a year and the maximum of the third quarter, the rate for the latter being often more than twice that of the former. In 1939, the effect of the initial war stimulus raised the third quarter rate to more than three times the level of the first quarter, but thereafter the gap was greatly narrowed and though the first quarter continued to preserve its position as the lowest of the four, the ascendancy of the third quarter diminished and after 1940 actually gave place to the second quarter, the change being no doubt partly associated with the rapid decline in the rates which was in operation between 1940 and 1943.

Taking the five complete war years 1940-1944 together the quarterly incidence may be compared with that of the five similarly complete peace years 1934-1938 as follows, the average number of marriages per quarter in each case being taken as 100:—

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Year
1940-1944	88	107	109	96	400
1934-1938	64	106	129	101	400

The reduction in the amount of quarterly variation is seen in the reduction of the peace-time maximum-minimum difference, viz., 65 (=129—64) to one-third, viz., 21 (109—88) over the war years.

It should be noted, however, that the impression, derived from the quarterly records, of a steady cyclical rhythm in marriages between a minimum in the winter to a contrasting maximum after midsummer is not a wholly accurate one since it fails to reflect the high concentrations which are known to be associated with the Christmas and Easter festival periods as well as with the summer holiday months. Monthly records of marriages are not so far available for England and Wales, but from the Scottish records, illustrated on page 195 in Appendix II, it will be seen that though, as in this country, the quarterly incidence was much diminished during the war years, the more detailed analysis by months shows that, whatever the gross effect on the quarters may have been, the characteristic festival and holiday concentrations persisted in a marked degree. From administrative experience associated with marriage preliminaries and procedure generally, there is no doubt that similar concentrations occur in England and Wales in much the same way as they do in Scotland; though the only evidence in the statistical records is that indicated by an apparent transfer of marriages from the second to the first quarter in years in which Easter falls in March, as can be seen in the diagram. In the more frequent circumstances when Easter falls in April, the marriages of the second quarter are far more numerous than those of the first quarter, whereas when Easter falls in March as in 1937, 1940 or 1948, the distribution is much more nearly equal.

Marriages of English brides to members of the Armed Forces of the Dominions, Colonies and Allies.—A feature of the marriage experience of the war years which has some significance both in relation to the future trend of population in this country and as a contribution to the development of future understanding and fellowship between the nations which fought together during the war, has been the marriages of comparatively large numbers of women from the home population to members of the Armed Forces of the Dominions, Colonies and Allies. The circumstances will have been unique in the history of the country, for there can never have been any previous similar occasion when so many men of essentially marrying ages have been stationed in this country as welcome visitors for so extended a period.

The marriages in question are included in the figures already discussed, but they have not been separately identified and counted so that their actual numbers are not known. In Scotland where the numbers were naturally fewer they were so identified and classified according to the home country of the husband and, in the 1944 Report of the Registrar General for Scotland, figures are given showing that they numbered in all 13,646 during the years 1940-1945 representing 5 per cent. of the total Scottish marriages registered in the period. A similar proportion applied to the 2,226 thousands marriages of England and Wales would yield a figure of rather more than 100,000 which from more general impressions of the period would seem to be somewhat higher than the actual numbers involved though it may well be taken as an approximate guide to the general magnitude of the class. The circumstances will mean a loss to the population of a large proportion of the brides concerned, mainly of the youngest and most fertile ages, as and when they leave the country for their future homes; this will not apply however to all the women so married, for their ranks will have been seriously depleted by heavy casualties amongst their husbands and numbers of the remainder will have remained in the country or even returned to it after a temporary sojourn abroad.

Marriage Frequencies in different Sections of the Country.—The numbers of marriages and the marriage rates in regions, counties and county boroughs for each year of the series are published in Table F of the successive issues of Part II of the Annual Review.

As has been frequently indicated in previous reports, the significance and comparability of marriage rates by localities is greatly discounted by the fact that in a considerable proportion of marriages the district of registration is the district of residence of only one of the parties and in some cases of neither. While a weakness of this kind would tend to be less conspicuous in comparisons between large sections of the country than between smaller local areas, it must have been aggravated during the current war years by the unprecedented numbers of short-term changes of residence which were involved in the alternating flow and ebb of evacuation and the transfer of workers for war production and which occurred between areas even as large as the regions of the country.

A statistical difficulty has also arisen in the presentation of local rates for the war years by reason of the fact that the tabulated marriages include those in which one or both of the parties represented were members of the Armed Forces, whereas the local populations with which they can be related, are perforce limited to civilians from which the Armed Forces element is excluded. Thus the marriage rates as published for successive years will be subject to a progressive degree of overstatement during the war period itself when the civilian populations were being steadily depleted by transfers to the Armed Forces and will only be restored to normal comparability conditions as and when the reverse process of demobilization restores the populations once more to stable peace-time levels.

The comparability difficulty has been avoided in the following regional summary, which shews, not the distorted marriage rates themselves, but the ratios of the local rates to the national rate for each year, the ratios in that form being comparable over the war years and also with those of the earlier peace-time experience.

Table X.—Ratio of Marriage Rates in Geographical Regions of England and Wales to that of the whole country: 1936 to 1945.

Region		84,11	gêr sid	Ratio o	f Region	al to Nat	tional rat	te taken	as 1,000		
		1936	1937	1938	1939	1940	1941	1942	1943	1944	1945
England and Wales		1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
South East County of London		1,023 1,241	1,029 1,251	1,034 1,256	1,080 1,278	1,085 1,462	1,075 1,518	1,047 1,440	1,032 1,382	1,050 1,344	1,067 1,356
North I North II North III North III North IV		983 948 948 1,017 989	977 937 943 1,017 983	966 955 938 1,000 960	925 877 910 972 920	958 915 919 975 970	980 970 945 990 990	979 1,047 953 984 964	987 1,096 943 987 962	1,006 1,100 981 1,006 975	1,005 1,034 995 1,038 981
Midland I Midland I Midland II	···	1,034 1,052 1,000	1,046 1,063 1,006	1,040 1,057 1,000	1,019 1,042 976	1,004 1,017 987	980 995 955	1,016 1,021 1,000	994 1,006 968	975 963 994	947 933 976
East		943	937	938	. 991	958	945	979	962	994	971
South West		914	920	943	981	877	856	896	898	894	885
Wales I Wales II		931 943 891	937 954 897	920 949 858	896 920 830	881 919 792	945 1,000 811	974 1,041 824	1,000 1,064 847	938 975 850	942 981 851

Generally speaking the main feature of the marriage experience of the war years, namely, the sharp rise to an initial maximum in 1940 followed by a decline to 1943 and 1944 and a secondary rise thereafter, has been common to all local areas of the country, large and small. Within this major feature of disturbance, however, Table X shews that changes in the regions as there identified have not been uniform and that their peace-time characteristics have been varied in greater or lesser degree by the different war conditions to which they were exposed. The outstanding feature of the summary is the increased predominance of the marriage incidence in London. The particular attraction of the Metropolis for the marriage setting has always been reflected by an abnormally high number of marriages in relation to its population and in the immediate pre-war years about one-eighth (12.4 per cent. in 1938 and 1939) of the total marriages of the country were celebrated in London giving it a marriage rate in relation to its population some 25 per cent. above the national average. In 1940 the percentage of London marriages fell from 12.4 to 11.3 and later to about 9 per cent. which was roughly maintained through the rest of the war, but the fall in population through evacuation and otherwise was considerably greater, with the effect shown in the table of enhancing its marriage rate in relation to the national marriage rate from the pre-war excess of 25 per cent. to a 52 per cent. excess in 1941, or an average excess of 42 per cent. for the six war years taken together.

The reverse experience of a recorded decline in the ratios of the South West and Wales II is probably of a complementary nature to that recorded by London. Here a large, if not the largest, factor is the increase of population by the reception and accommodation of evacuees with which these regions were particularly associated.

In regions less affected in their entirety by mass population shifts, the changes in the ratios will tend more nearly to reflect the economic and other factors directly influencing marriage changes and the rise in the ratios in Northumberland and Durham (N.1) and in South Wales (W.1) may be associated with their emergence from the depressed industrial conditions to which they had been subject in the inter-war years, the improved position of N.1 ranking it well above the level of all other regions outside London and South Eastern. In both the Midland areas the relative incidence indicates a decline.

Marriage Analyses by Sex, Age, etc.—Crude marriage rates, based on the total population, are of limited application in comparative measurements, though they claim a degree of prominence and usefulness from the facts that they are always the most readily ascertained and, in many circumstances, the only available measures. But the bulk of marriages are invariably located amongst the younger adult section of the population, and for a proper appreciation of the intensity and changes in intensity of marriage, it is necessary not only to have regard to the ages at which the marriages take place but to relate them to the appropriate age sections of the unmarried population since it is only amongst the latter that new marriages occur.

The customary analysis setting out the marriage age frequencies of Bachelors, Widowers, Spinsters and Widows for each of the years 1940 to 1945 is given in Table XI.

Table XI.—Annual Marriage Rate per 1,000 Bachelors, Widowers, Spinsters and Widows respectively at each of several age periods, 1921, 1931 and 1938 to 1945.\*

10 1	ene To en éro réoccia	Annual m	arriage ra age g		00 in each	ik zga eustk brisk or	Marriage rate per 1,000	Ratio to corresponding	Marriage rate which would have resulted	Ratio of actual marriage rate
Year	15-	20-	25-	35-	45-	55 and over	population over 15 in each class	rate for 1938 taken as 1,000	had the 1938 age rates been in operation	(Col. 8) to rate in column (10)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
			199 1.2		ВАСН	ELORS		Water S		
1921 1931	3·4 3·2	94.4 72.6	160·8 141·3	60.2	19·0 16·3	5·3 5·5	62·3 56·0	961 864	60.0	1,038 862
1938 1939 1940 1941 1942 1943 1944 1945	3·2 4·5 5·8 7·2 8·2 7·8 7·2 7·9	87·0 115·7 128·9 113·5 119·9 97·0 97·6 124·9	160·6 187·0 211·6 166·3 147·7 109·6 106·8 155·8	57·0 63·3 68·7 67·3 65·7 57·2 53·9 68·6	18·5 19·6 22·7 22·6 21·8 19·1 20·2 22·8	4·8 5·1 5·3 5·5 5·3 4·6 4·0 5·2	64·8 77·8 86·8 73·3 71·2 56·6 56·9 76·5	1,000 1,201 1,340 1,131 1,099 873 878 1,181	64·8 63·9 63·2 62·6 62·3 62·3 63·6 64·5	1,000 1,218 1,373 1,171 1,143 909 895 1,186
			Diction		WID	OWERS				
1921 1931	84.16	156·8 131·7	232·5 185·9	160·0 133·5	74·4 67·3	15·9 15·0	46·4 35·9	1,218 942	46.1	1,007 884
1938 1939 1940 1941 1942 1943 1944 1945		153.6 156.0 145.0 74.5 86.5 85.5 150.5 208.0	219·8 229·4 232·3 212·8 232·0 205·8 235·2 300·8	152.6 165.9 173.3 163.7 172.0 161.8 166.0 201.4	79·1 84·1 89·7 90·2 95·0 92·7 93·4 106·2	15·9 16·2 16·5 16·8 16·6 16·6 17·0 18·1	38·1 40·1 40·9 39·6 40·2 38·7 40·5 46·8	1,000 1,052 1,073 1,039 1,055 1,016 1,063 1,228	38·1 38·2 37·5 37·3 36·6 36·7 36·8 36·9	1,000 1,050 1,091 1,062 1,098 1,054 1,101 1,268
entre			ority d		SPIN	ISTERS				
1921 1931	14·8 17·0	114·4 106·4	99·6 96·6	25·0 21·3	8.8 7.8	2·0 2·2	54·0 51·6	879 840	67.6	799 768
1938 1939 1940 1941 1942 1943 1944 1945	22.6 32.0 38.4 36.3 38.8 34.2 33.1 40.0	147·9 197·6 222·7 188·7 187·4 141·2 143·1 200·6	117·9 142·5 150·2 117·6 101·8 80·3 83·8 119·0	22·0 28·8 31·0 28·6 27·6 23·3 22·9 28·1	8·6 9·3 9·7 9·5 9·6 9·2 9·2 10·6	2·0 2·0 2·0 1·9 2·0 1·8 1·8 2·1	61·4 75·7 83·4 70·1 67·5 53·5 54·6 72·6	1,000 1,233 1,358 1,142 1,099 871 889 1,182	61·4 58·6 58·4 57·5 57·1 57·0 57·3 56·4	1,000 1,292 1,428 1,219 1,182 939 953 1,287
so be	usci 89					Dows	zag rd		ringe A	
1921 1931	io <del>s d</del> e	195·2 121·9	124·5 107·0	52·1 36·5	17·8 14·1	2·5 2·2	18.7	1,833 961	18·4 11·9	1,016 824
1938 1939 1940 1941 1942 1943 1944 1945		197·1 191·8 190·0 151·0 261·8 175·0 206·7 241·4	131·2 144·3 158·8 155·0 162·5 151·2 147·0 187·0	50·1 56·1 62·1 61·0 60·5 60·5 60·4 71·0	14·7 16·0 17·4 18·6 18·5 18·9 19·0 21·9	2·5 2·4 2·6 2·7 2·6 2·5 2·5 2·6	10·2 10·8 11·3 11·4 11·4 11·3 11·9 15·1	1,000 1,059 1,108 1,118 1,118 1,108 1,167 1,480	10·2 10·0 9·6 9·7 9·5 9·8 10·4 11·1	1,000 1,080 1,177 1,175 1,200 1,153 1,144 1,360

<sup>\*</sup> In this table the divorced have been included with the widowed.

The general behaviour of the rate over the war period, as already described for marriages as a whole, namely the initial rise in 1940 followed by a depression in the intermediate years and a subsequent resurgence towards the end, is reflected in most of the sections identified in the table though with some differences in their respective degrees of intensity.

The general reactions of the several bachelor, widower, spinster and widow sections are brought out in column 11 of the table, in which the experience of each calendar year, standardized in the manner indicated by the headings of

columns 10 and 11 so as to eliminate the effect of differences in their age constitutions, is related to the corresponding rate for 1938, the last year unaffected by war conditions. The comparison in a somewhat shortened form may be set out as follows, shewing the standardized marriage rate for each year as a percentage of the rate for 1938.

a eviluate and in his	1938	1939	1940	1941	1942	1943	1944	1945	Average 1939-45
Bachelors Widowers Spinsters Widows	100	122	137	117	114	91	90	119	113
	100	105	109	106	110	105	110	127	110
	100	129	143	122	118	94	95	129	119
	100	108	118	118	120	115	114	136	118

This arrangement shews that the yearly variations in first marriages, that is in the bachelor and spinster rates, were greater than those of widowers or widows. Spinsters exhibit the most marked changes, commencing with a rise of as much as 43 per cent. between 1938 and 1940, followed by a decline to 6 per cent. below the 1938 level in 1943 and a subsequent recovery to 29 per cent. above in 1945. The corresponding changes amongst bachelors were only less striking with a 1940 maximum 37 per cent. above the 1938 level, a minimum of 10 per cent. below in 1944 followed by a rise to 19 per cent. above in 1945. The scale of variation was even greater in the early age groups of the two single classes as might be expected, since it is here that normal marriage possibilities must have been most disturbed by the segregation of large numbers of men in the fighting forces and their progressive transfers to the various theatres of war.

For widows and widowers, the war movements in their marriage rates, though considerable in themselves, have been less subject to the alternation of rise and fall. Following an initial rise to 1940 of 9 per cent. for widowers and 18 per cent. for widows, the levels then reached were little changed until after 1944, when a second increase in 1945 raised their rates to positions 27 and 36 per cent. in excess of their pre-war values. The last column of the summary indicates that, taking the war period as a whole, the average in all four classes has been substantially in excess of the high rates reached prior to the war, especially so in the case of women where the average excesses of 19 and 18 per cent. spinsters and widows respectively, compare with the average increases of 13 and 10 per cent. recorded for bachelors and widowers.

An indication of the incidence of the age factor is provided in the following extract which shews the 1939–1945 average rate experienced at successive ages by each of the four classes and the relationship of such average to the corresponding rate of 1938.

A	verage per	Annual 1,000 of 1939–	each a	ge Rage:	te		R	to 1		–1945 ken as		ge Man
15—	20-	25—	35—	45-	55 & over	nd and the	15-	20-	25-	35—	45—	55 & over
6·9 36·1	113·9 129·4 183·0 202·5	155·0 235·5 113·6 158·0	63·5 172·0 27·2 61·7	21·3 93·0 9·6 18·6	5·0 16·8 1·9 2·6	Bachelors Widowers Spinsters Widows	216 160	131 84 124 103	97 107 96 120	111 113 124 123	115 118 112 127	104 106 95 104

With some reservation, the considerable rise in marriage tendencies may be said to have been distributed over all sections of the age field. The most important exception to this generalization is to be found at the age period 25–34 where both in the case of bachelors and of spinsters slight declines are recorded which contrast with the behaviour at the immediately younger section 20–24 where a large proportion of the total marriages occur and where the high rates of increase recorded are the most important in the analysis. This shift in age incidence within the portion of the age field in which the main bulk of marriage takes place, repeats the experience reported in the 1938–39 Text, demonstrating that in addition to the large increase in the amount of marriage recorded, a reduction of the age at marriage is evidencing itself as an additional and independent factor.

Both in respect of widowers and widows, the rates of re-marriage continue to be markedly in excess of the corresponding rates of first marriage amongst bachelors and spinsters at every age, their ascendancy at ages over 25 having been still further extended by the higher rates of increase now accredited to them. Below age 25 where the numbers of widowers and widows in the population are relatively few, the excess in their re-marriage rates is less striking and has been lessened somewhat as a result of the high increases now

recorded in the marriage rates of young bachelors and spinsters.

The age analysis serves to call attention to the misleading nature of the crude marriage rates in which age is disregarded; owing to the concentration of the single population at the younger ages where marriages are numerous and the widowed population at the later ages where they are few, the crude rates (column 8 of Table XI) for the single of each sex appear to be vastly in excess of those of the widowed, whereas when regard is had to their age differences, the relative positions are reversed, and for all the male and female age groups are as markedly in favour of the widowed.

Marriages of Minors.—180,448 of the males and 578,343 of the females married during the war years 1940-1945, were under the age of 21, females as usual greatly outnumbering the males throughout with an average for the six years taken together of 3.2 females to each male. The proportions of the total marriages of each sex these numbers represent are 8.1 per cent. in the case of males and 26.0 per cent. in the case of females in which form they exhibit a spectacular advance over the corresponding proportions in the last peace year (3.4 per cent. males and 16.4 per cent. females in 1938) or indeed over any earlier period since the latter end of the last century. The experience is in contrast to that of the first world war, when the general level of minors' proportions was much lower and was reduced rather than raised during the war period itself. Although there were differences between the circumstances of the two wars, they do not seem sufficient to account for the contrast. It may be, therefore, that the explanation of the rise in minors' proportions does not lie primarily with the existence of war conditions. It seems likely that it is a feature to be associated with the more general rise in marriage rates which has been noticed since 1932, the cumulative effect of which has made an especial inroad on the female marriageable population at the former marrying ages above 21, reducing it to an extent insufficient to meet the continuing total marriage demand and thereby necessitating a widening of the range to include increased numbers from the ages below 21. Whatever the explanation, the fact that more than a quarter of the females who marry, do so before they reach 21-the proportion is nearer 30 per cent, if only first marriages are considered—is a fact of social importance, and if the proportion continues to remain high, as well it may, it must be expected to have a significant effect on ensuing fertility. In terms of marriage rates based on the unmarried population aged 15-21, the averages for the period 1940-1945 were 16.1 and 55.1 per thousand males and females respectively, and compare with

6.0 and 30.5 in 1938 or with 6.7 and 24.8 in 1931, thus registering a rise which is generally steeper than that associated with adult ages during this period Both the proportions and rates for the two sexes are shewn for the separate calendar years in the adjoining Table XII.

Table XII.—Marriages of Minors. Proportions to all Marriages, Marriage Rates and Ratio of those rates to that for 1938, 1921, 1931, and each year 1938-1945.

Year	per 1,000	of minors marriages l ages	1,000 un and w popu	rates per nmarried idowed lation 15–21	rates in and 5 to ing rat	f marriage columns 4 correspond- e in 1938 a as 100
d sald	Males	Females	Males	Females	Males	Females
1921	48·2	149·2	7·7	23·4	128	77
1931	43·5	158·5	6·7	24·8	112	81
1938	33·6	163·8	6·0	30·5	100	100 - 144 203 187 194 157 154 189
1939	44·5	197·0	9·3	43·8	155	
1940	64·1	246·1	15·0	61·8	250	
1941	84·0	263·8	16·9	57·1	282	
1942	92·7	278·8	18·4	59·2	307	
1943	95·2	277·3	15·4	48·0	257	
1944	87·0	262·5	14·6	46·9	243	
1945	72·3	239·4	16·3	57·7	272	

Marriage Incidence at Reproductive Ages

With the widespread interest now evinced in population development and trend, a special interest will attach to the behaviour and effect of the marriage rate in relation to its influence on fertility. The Population (Statistics) Act of 1938 made provision whereby all births taking place after the 30th June, 1938, could be related to the ages and dates of marriage of their mothers and in the last report dealing with the new records from the commencement of the Act up to the end of 1939, the occasion was taken briefly to review the nature of the marriage influence and 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 the several periods of their reproductive age field. In that report, the basic data, comprising the numbers of married and non-married women between the ages of 15 and 50, 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.

For the present report the current data in respect of females have been continued in similar form for years up to 1945 and at the same time a current and retrospective record for males has been added, the latter being shewn for decennial years between 1851 and 1931 and individual years thereafter to

1945. The data are set out in Appendix I on page 161.

In this assembly of data, the population within the age limits adopted is only distinguished as between the two classes, married and non-married, the latter embracing those whose marriages have terminated whether through widowhood or divorce, as well as those who have never been married. No differentiation is attempted between first and subsequent marriages or between population elements who have been married once only or more than once, it being sufficient to note here that first marriages are responsible for all but a

negligible fraction of the marriage history within the reproductive age field. Re-marriages of widows or divorced women were only 3.4 per cent. of the total women married under the age of 45 before the war (1938) and have since, partly as a temporary result of the war, increased to 6.0 per cent. in 1945; but these percentages, small as they are, overstate their influence because their average ages at marriage are so much higher than those of spinsters that the percentage of the total reproductive years of life contributed by them is less than half that indicated by the percentages marrying and even that small contribution is located at the latter and least fertile end of the period.

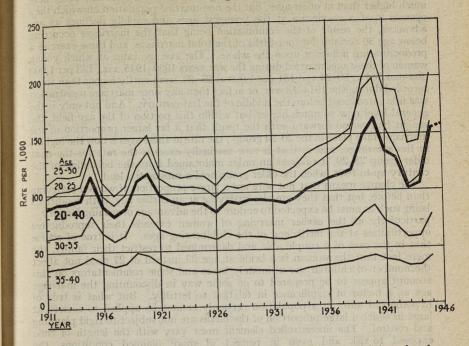
Another consideration to which regard must be paid is the fact that the disturbing effect of war conditions, which is strongly reflected in the events of the war years themselves did not cease with the war but is bound to influence the figures for a number of succeeding years. Though a final appreciation of the various changes may not be possible until sufficient time has elapsed for it to be seen that peace-time continuity has once more been restored, the experience of the immediate post-war years is of major significance and such partial or provisional records available for those years are taken into account in the present report.

It is further to be noted that in attempting to portray the events of recent years in the form of comparable rates or proportions, reliance has to be placed upon estimates of the various sections of the populations involved. In view of the time which has elapsed since the last factual count of the population and of the disturbance of trend continuity later imposed by the conditions of war, the possibility of error in the estimates and in the rates based on them is not such as can be disregarded; precision in the separate items of the presentation cannot be counted on though it is hoped, notwithstanding the reservation, that it has been possible to preserve a reasonably acceptable balance in the perspective of the whole.

Marriage Rates.—Dealing first with the incidence of new marriages, the general range and nature of the changes in the marriage rates of women which have taken place since 1938, the last complete peace year, will be understood from Section (b) of Table II, Appendix I, in which the numbers married in successive years are expressed as proportions of the numbers available for marriage, i.e., the non-married elements of the population from time to time. The main features of the records are further displayed by Diagram C which has been extended back to 1911 so as to cover the period of the first world war.

Table XIII.—Women marrying per 1,000 non-married women at each age. England and Wales.

Year	ICI of	of ot lose power en Age to the date of the ent of								
hada	15-20	20–25	25–30	30–35	35-40	40-45	45-50	20-40	15-50	
1911		95.9	109.8	62.6	35.5	22.0	14.8	86.9	54.0	
1932	17.8	105.3	117.0	58.6	30.4	17.4	11.9	91.4	57.7	
1938	22.6	148.1	154.4	69.9	37.9	21.5	13.8	119.0	71.2	
1939	32.1	197.6	188.5	81.3	42.3	24.2	15.4	149-2	88.1	
1940	38-4	222.6	199.1	87.8	44.4	27.2	16.5	163.0	97.8	
1941	36.4	188.7	155.9	74.3	40.0	27.5	17.3	135-4	83.4	
1942	38.9	187.4	134.7	68-1	38.5	26.8	17.3	129-3	81.1	
1943	34.2	141.4	104.1	59.8	33.8	24.3	16.9	101.2	65.5	
1944	33-1	143.6	112.7	60.0	34.1	23.4	16.3	105-1	67.1	
1945	40.0	201.1	159.6	79.9	42.9	27.6	19.2	145.5	89.8	
1946	34.3	190.7	169.8	96.9	52.8	30.7	20.5	149.7	88.4	
1947	37.7	207.7	188.9	107.8	59.7	32.3	20.6	161.7	95.3	



The most obvious feature of the recent experience is that which has already been noted in the reference to the crude marriage rates and which is now shewn in more precise form, namely the very wide fluctuations in the rates of all age groups which have occurred during the war and immediately succeeding period. The pattern of movement, so far as it has gone, is similar in form to that associated with the first war, consisting apparently of two pronounced waves, starting with a sharp initial rise at the beginning of the war to an early maximum followed by an immediate and even more pronounced decline to a low minimum and an almost as rapid turn round and renewed rise to a second maximum which, in the case of the first world war, was again succeeded by a recession which ultimately restored the rates to much the same levels as were in operation before the war started. In respect of the current experience the maximum to be associated with the second wave appears to be within sight, but there has been no secondary decline so far and though some recession must probably be expected, further years must elapse for it to be seen where the levels of the more permanent future are likely to be stabilized. Unlike the first war, the second wave of the recent experience appears to be the less marked of the two in which case the final recession may not be very great, an expectation which seems to be supported rather than otherwise by other aspects of the situation discussed hereafter. It was noted in the 1938-39 Text, for example, that the pre-war rise in marriage rates had been steady and continuous from 1932 and had shewn no slackening up to the time war broke out, so that there then seemed every prospect that the rising phase had not exhausted itself-a circumstance which may well be regarded as pointing to future peace-time levels higher than those already reached in 1938.

The most important feature of the present experience is the height of the marriage frequencies of females under age 30. Not only are the rates here much higher than at other ages, but the non-married population on which they operate is at a maximum at the youngest ages and rapidly declines as age advances, the result of the combination being that the marriages occurring below age 30 account for four-fifths of the total marriages, and these exercise a predominating influence upon the whole. The average rates at which young women of these ages married during the war years 1939-1945, viz., 183 per 1,000 non-married at 20-24 and 151 per 1,000 at 25-29, were vastly higher than those recorded during the 1914-18 war, or in fact than any since marriage registration was first introduced before the middle of the last century. And not only is the general level now so much higher but within this portion of the age field, the weight has moved forward with the result that a far larger proportion of the marriages take place in the 20-24 group; the rate at these ages is now the highest in the age range, and in that it now markedly exceeds the rate for the next older group 25-29, it reverses an order maintained from the beginning of the century up to 1938, when the older group held a substantial lead.

The change means that not only are a larger proportion of women marrying than before, but that they are also marrying at an earlier age, both conditions being such as must be expected to endure to the advantage of ensuing fertility—particularly as the earlier marrying of women extends their reproductive opportunities at the fertile end of the childbearing ages. It is true of course that in the case of a couple able and determined to restrict their family, the mere fact that the woman is a bride at age 23 instead of 27 need not affect

mere fact that the woman is a bride at age 23 instead of 27 need not affect the number of children she ultimately bears and some commentators on this account appear to be prepared to go some way in discounting the marriage age as a factor of significance in relation to fertility. But what is true of hypothetical units in a population certainly cannot be applied to society at large in which a large proportion of the births are not subject to rigid planning and control. The uncontrolled element must vary with the length of time exposed to risk and even in respect of more planned conditions, the planning will be subject to modification in the light of changing circumstances, and a lengthening of the exposure period will provide the greater latitude for implementing changes as and when they are decided upon. All the available

statistical evidence goes to show that, other things being equal, the earlier the marriage age, the greater is the average family, and there can be little hesitation in expecting the future families of the women marrying today to be significantly larger than they would have been if the said women were to have delayed their marriages to the ages which were more or less customary during the long

period prior to 1932 when the fall in the birth rate was so pronounced. An aspect of the earlier marriage tendency which has lately begun to assume a degree of prominence is to be seen in the greatly increased numbers and proportions of girls who now marry before they reach the age of 20 or 21. Of all the females who married in 1945 for example, as many as one-seventh were under the age of 20 while nearly one quarter of the total were under 21, such proportions being practically half as much again as they were in 1938. During the first part of the phase of increasing marriage tendencies noted since 1932. the marriage rates of minors rose with those of young adults but not disproportionately so, and it is only since 1938 that those of the youngest group have in this respect so outstepped their sisters in all the higher age groups. The reason is no doubt largely to be found in the fact that the higher marriage rates as a whole, operating as they have been for more than a decade, have so reduced the available non-married elements of the female population at the former marrying ages that the continuing marriage demand has had to be met by extended encroachment into the youngest age field where the available

supply of marriageable girls is largely untapped.

Notwithstanding the large increase in the numbers married under age 20, viz., from 29,000 in 1932 to 38,000 in 1938 and then to 57,000 in 1945, the number even in 1945 was only 4 per cent. of the non-married female population in the 15–19 group, and if the marriage pressure continues to be maintained, as well it may, it may easily be reflected by still larger encroachments on this section of the population.

Marriage rates in the case of males have in general followed a course not very dissimilar from those of females though the increases have been relatively lower at the early ages and higher at the middle adult ages. Of the total numbers marrying, about 95 per cent. of the males and 97 per cent. of the females are under age 50 and it will be sufficient here to record their aggregate experiences as the ratios the numbers marrying bear to the respective non-married populations between 15 and 50. Comparable increases in the rates are given in the columns relating each year's rate to that of 1911 used as the base.

Year 1 10 2 10	Numbers mar	rying per 1,000 ried 15–50	Year's rate con (1911 tak	npared with 1911 en as 100)
mak ander ani	Males	Females	Males	Females
1911	010	54·0 57·7	100 108	100 107
1932	79.1	71.2	128	132
1939		88·1 97·8	153 170	163 181
1940 1941	. 81.6	83·4 81·1	145 141	154 150
1942 1943	64.1	65.5	114	121 124
1945	96.7	89.8	154	166
Average 1939–45	. 79.9	81.8	142	151
1946 1947	90.1	88·3 95·2	149 159	164 176

The table illustrates in outline the scale of the remarkable changes in the marriage incidence which has taken place since 1911 and notably in the last 15 years. Commencing with a modest improvement of 7 or 8 per cent. over the 21 years between 1911 and 1932, the rise is seen to have rapidly accelerated in the following six years to a point in 1938 approximately 30 per cent. above the starting level. This was followed by a phase of violent fluctuation during the war years, 1939-1945, but with a still mounting tendency, the annual average for the period being 42 per cent. in the case of males and 51 per cent. females above the 1911 base. Later evidence available indicates that still higher frequencies have been associated with the post-war years; frequencies that are not quite so high as those associated with 1939 and 1940 but which otherwise are far in excess of the levels of any earlier normal conditions of which we have record. As part of the post-war adjustment, the latest rates must be expected to be abnormal and some recession therefrom may well be expected, but no evidence of such has yet come to hand and further years must elapse before it will be possible to see where and when the war disturbance will have come to an end. Some of the more enduring factors leading to the rise in the marriage rates and the prospects of their continuance are discussed in succeeding paragraphs.

One feature of importance in this respect is to be found in the change that has been gradually taking place in the relative numbers of men and women at the marrying ages. There will always be a number of individuals in both sexes who will never marry and amongst those who do, the urge to marry may be different as between the sexes, but it will nevertheless be generally accepted that, other things being equal, the actual numbers of either sex who do marry will to some extent depend upon and vary with the numbers in the opposite sex available to marry them. The important marriages from the point of view of fertility are those in which the age of the bride is under 45. Husbands tend to be rather older than their wives with a small average difference which varies under different circumstances, but the substance of the changes in the sex balance will be sufficiently shown by comparing the numbers within a common age group as is done in the following table in which the total numbers of each sex in the 15-45 age group are set out and compared for a series of years covering the period from 1871 to 1960. The figures for the year 1960 are of course projections dependent for their validity upon the assumptions\* used in their construction; they are, however, limited to survivors of persons already in existence so that the trend of the sex relationship they suggest should not be a distorted one and should be helpful in throwing some light on the marriage conditions likely to be experienced in the immediate future.

Table XIV.—Total Male and Female Populations aged 15-45. England and Wales.

(Figures in thousands)

Year	Males	Females	Males per 1,000 females
	15–45	15–45	15–45
1871 (Census)	4,857	5,240	927
1901	7,498	8,121	923
1911 ,,	8,326	8,989	926
1921 ,,	8,294	9,468	876
1931 ,,	8,983	9,825	914
1938 (Estimate)	ς 9,497	9,993	950
1996 (Estimate)	9.660	9,993	967
1945	9,701	9,882	982
1947	9,646	9,729	991
1950 ,,	9,587	9,552	1,004
1960 (Projection)	8,899	8,788	1,013

<sup>†</sup> Males in 1938 are shown both excluding and including Armed Forces and Mercantile Marine serving overseas, the former corresponding to earlier and the latter to later records in the table.

The interest in this table is in the last column, which shows the number of males per 1,000 females at successive dates over the 90-year period covered. The range divides itself naturally into two periods, namely, the first 40 years from 1871 to 1911 during which the male element was in a more or less constant minority of about 71 per cent. and the years subsequent to 1921 during which the male deficiency has disappeared and ultimately transformed to

The reasons for these conditions and for the change which set in after 1921 are generally understood and need not be examined in detail here. In the main they are to be associated with the factors of migration, mortality improvement and a rise since about 1915 of the masculinity at birth (males

per 1,000 females born).

During the early part of the period, the masculinity at birth was low compared with the more recent period and both mortality and migration operated to the relative disadvantage of the male population; the much higher male mortality during infancy and childhood quickly eliminated the birth excess and thereafter reduced the survivors, to the progressive disadvantage of the males; the process was further supplemented at the early adult ages by a regular loss from migration which during the period of Colonial development was predominantly male in character. In 1921 the regular deficiency of the male class was sharply increased to 12.4 per cent. (from 7.4 in 1911) by the

heavy loss of males during the 1914-18 war.

Since 1921 the sex ratio at these important ages has been gradually but completely transformed by a conjunction of changes in all these predisposing factors, all the changes being favourable to an increased male representation. Masculinity at birth rose after 1915 and has been maintained at the higher levels; at the same time there have been marked improvements in mortality at the younger ages with a consequent diminution in its sex-differentiating effect. Most important of all perhaps, the trend of migration changed so that the regular loss of males from this cause which had been so regular a feature for several decades prior to 1921, thereafter diminished and by 1931 had been converted to a gain that has been more or less maintained ever since. The exceptional deficiency of males in 1921 was rapidly neutralized and the sex ratio has continued to grow in favour of the males until there is now parity between the sexes. The records for 1938 to 1950 are based on estimates and not census counts; they indicate that the growth of the ratio continued notwithstanding the war losses amongst males which appear to have been more than countered by the somewhat special migration of the period. Further there seems to be no sign or likelihood at the present time of any significant change in the predisposing factors so that there may well be a still further advance in the male-female ratio in the immediately forthcoming years as is suggested by the population projection above.

The sex ratio comparisons discussed above for the total populations within the 15-45 age field are extended in the next table to show their incidence amongst the non-married elements of the sexes, the elements more directly

influencing the numbers of new marriages from time to time.

Table XV.-Non-Married Male and Female Populations, aged 15-45. England and Wales.

(Figures in thousands)

Visit rotted to the	Non- married	Non- married	Males per 1,000	Non-marrie per 1,00 fema	0 total
edi in the guest	males 15–45	females 15–45	females 15–45	15–20	20-45
1871 (Census) 1901 , 1911 , 1921 , 1931 ,	2,553 4,103 4,510 4,263 4,636 54,636	2,639 4,317 4,701 4,872 4,907 4,584	967 950 959 875 945 1,011	968 984 988 983 982	381 417 416 407 397
1945 , 1947 ,	4,753 4,204 4,088	4,584 3,950 3,721	1,036 1,064 1,099	961 962	301 282

<sup>\*</sup> See note to Table XIV on page 38.

<sup>\*</sup> In projecting the population from 1947, it has been assumed (a) that the fall in death rates will continue—at a rate of about 50% in 40 years for ages under 45 and (b) that there will be no loss or gain from migration.

The contrasts are sharpened somewhat when limited to the non-married. For the 60 years prior to 1931, it may be said that apart from the exceptional war depression reflected by the 1921 figures, the males available to marry were consistently a few per cent. lower than the corresponding numbers of females in the same age group. But the change which set in after 1921 rapidly transformed the position so that from their former position of numerical inferiority, the male representation was converted to an excess of about  $3\frac{1}{2}$  per cent. by 1938, to  $6\frac{1}{2}$  per cent. in 1945 and to the even higher and significant excess of nearly 10 per cent. in 1947. Marriage tendencies in the case of either sex must be directly influenced by the numbers and proportions of the opposite sex available to marry them, and though not the only influence, there can be little doubt that in the unprecedented rise in the marriage rates of reproductive females, the increased marriage pressure produced by the growing excess of males has been an important contributory factor.

An incidental though not unimportant aspect of the changed position is brought out by the last two columns of Table XV which show the fall that has taken place in the percentage of the female population which is non-married and therefore available to marry. Within the important age group 20–45, the proportion was formerly maintained at about the 40 per cent. level, but the effect of the high marriage demand of recent years has been to reduce this to 28 per cent. so that if, as seems not improbable, the marriage pressure continues to be maintained at a high level, it will be faced with a much reduced reservoir of non-married at ages over 20 and may involve still further encroachment into the as yet little tapped element at ages below 20.

The recruitment to the married population by new marriages as discussed above, is offset slightly by complementary losses from contemporaneous widowhoods and divorces. They have not been relatively important over the fertility age field in past peace-time periods, but there has been a temporary increase in the number of widowhoods during the war years as a result of war losses amongst married men and there has been a simultaneous growth in the numbers of divorces of a more continuing character. These are referred to in greater detail on pages 47 to 58.

Total Married Women of Reproductive Age.—So far as the marriage factor is concerned, the fertility of the community at any time is determined, not by the new marriages, but by the total married women of reproductive age; an aggregate which, if age 50 is taken as the conventional upper limit of fertility, represents the survivors of women who may have married at any time over the preceding 35 years or so. This primary stock of potentially childbearing women is continuously being replenished by new marriages; at the same time, it is being continuously depleted by exits, fractionally through widowhood and divorce, but in the main by the numbers passing out of the reproductive period by the normal process of age, and it is only to the extent of the difference between the increments and decrements that the total level is affected.

In relation to the total married class, the annual increment of new marriages never represents more than a small fraction; even with the high marriage rates of the war years the numbers of new marriages at ages under 45 in 1938 and 1945, for example, were only 6·4 and 6·5 per cent. of the total married women in the age group respectively. Changes in the marriage rates of successive years will accordingly be much diluted in their effect upon the corresponding changes in the total proportions of married women.

The latter are shewn for each of the war years by quinary groups of age up to 50 in the following table.

Table XVI.—Married Women per 1,000 total Female Population at each age. England and Wales.

that is, 22				Age		Aggregates			
Year	15–20	20–25	25–30	30–35	35–40	40-45	45–50	20-40	15–50
1911 1932	12 20	242 260	558 584	711 732	752 758	755 750	729 732	552 574	502 534
1938 1939 1940 1941 1942 1943 1944 1945 1946 1947	23 28 38 39 41 39 37 39	328 348 378 399 420 429 419 428	643 657 686 712 722 722 726 707	733 743 758 769 780 787 791 790	771 772 771 772 775 780 784 790	768 770 776 779 781 783 784 779	736 740 743 746 751 757 759 765	623 635 655 667 676 679 677 680 690 701	566 571 590 603 613 618 618 622 629 638

It will be seen that in each of the years identified, the proportions mount with advancing age, rapidly at first and then more slowly to a maximum which is reached about age 40 after which recruitment by further marriages is more than offset by widowhoods with a consequent decline which is not of great importance up to age 50. With some irregularity in the successive war years the trend of the change over the war period as a whole continues in an accelerated degree that of preceding years, the main feature of the change being the steady rise in the proportions throughout, but differentiated as between the separate age sections between really remarkable increases at the younger ages and a much more gentle upward movement at the later ages where the proportions are at their maximum. The difference in age behaviour reflects the operation of two tendencies which are different in essence though they are frequently associated with one another. The proportions at every age are cumulative in the sense that they are based on women who have married some time previously at ages ranging from the youngest marriage age up to that at which the proportion is measured. At the later ages where the maximum proportions are reached, the number of marriages in the generation of women concerned will have been nearly completed and changes in the proportions at these ages very largely reflect changes in the total numbers of women in successive generations who ultimately marry; the gentle growth of the proportions at the ages of 40 and over in the above table thus tends to shew that over the past 40 years there has been a steady growth in the proportion of females who ultimately marry, or to put it the other way round, a definite decline in the proportion of females who remain as spinsters throughout their childbearing period. The proportions at the younger ages are not to be interpreted in this way, for the bulk of the women concerned here would have married sooner or later in any event and the long continued and very much larger increases at these ages reflects not so much that more women are marrying but that those who do marry, are marrying at younger and younger ages.

Thus it may be said that in the course of the past 40 years or so, two tendencies have been operative, the one for more and more women to marry

and the other for their marriages to take place at ever decreasing ages. The effect of each has been to increase the amount of marriage in the community and the quantitive result of the combination emerges in the two aggregate columns of the table which shew for the several years identified the proportions married in the 20-40 and 15-50 age periods.

The figures in the aggregate form derive their main importance from the fact that though expressed in the terms of persons, they apply no less to their reproductive opportunities in showing as they do the proportion of the full reproductive period which is actually spent in the married state, that is, under the conditions expressly recognized by convention as appropriate to the bearing of children. If the period is regarded as that falling between the somewhat wide age limits of 15 and 50, the final column of the table shows that out of every 100 reproductive years of female life available in 1911 only one half (50·2) were hypothecated to the production of legitimate children, that the number has since been raised to 56·6 in 1938, to 62·2 in 1945 and that the rise is still continuing. Within the narrower but possibly more appropriate age limits of 20 and 40—since more than 90 per cent. of births take place within this range—the proportions have been slightly higher throughout, rising from 55·2 in 1911 to 68·0 in 1945, again with a still rising tendency.

Whichever age range is preferred, the progress represents an increase since 1911 of nearly 25 per cent. in marital reproductive opportunity, a truly remarkable rise and one for which there is no parallel in our recorded history. Nearly half the rise has occurred over the recent war years from 1938 and has no doubt been favoured by the conditions of the war period but it is not necessarily to be regarded as any less enduring on that account as is shewn by the history of the first world war when the rise then recorded was not only maintained but was increased in the course of the subsequent peace period.

The profound change which has thus taken place is sometimes referred to as a change in marriage habits, but it is at least doubtful whether such description does adequate justice to the circumstances even if it is not definitely misleading. Marriage is more than a mere custom; for most people it is the articulate and formal expression of their primordial desire for mating which develops at the attainment of puberty and there is certainly no evidence that such desire was any less strong in 1911 than it is to-day. If an adequate explanation of the change is to be sought, it will hardly be in the intrinsic factors which may govern mating but rather in extrinsic factors such as those imposed by the social, economic and other environmental conditions which make marriage practicable in the circumstances under which the community lives.

Before proceeding further it will be well to interject here a reservation and correction to the measure of the changes as so far discussed because these are not quite adequately portrayed by the aggregate proportions of Table XVI as they stand. Over the period covered, the population has been getting older, and within the 15 to 50 age range there has been a shift in weight from the younger half where the married proportions are smaller, to the older half where the proportions are high; this shift in age weight must itself have imparted an increasing tendency to the aggregate proportions apart from any other factor, so that the table change as shown will be a compound effect expressing the combined influence both of change in population distribution and change in marriage intensity and if the latter is to be isolated for attention it is first necessary to remove the former. This can be done by the familiar process of age standardization in which the intensity index for the year is expressed, not as the aggregate proportion married, but as the ratio the actual number of married bears to the number that would have emerged as married had the populations in successive age groups been subject to a series of common or standard age proportions married in those age groups.

Standardized indexes of marriage intensity have been calculated in this way and are shewn for a series of years in the following table in the form of the ratio they bear to the index of 1911, the year from about which the recent advance dates and which accordingly forms a convenient base year for the comparison of both earlier and later periods. The single age range of 15–45 has here been employed as representative of the female reproductive period and the calculations have been extended so as to cover a wider range of calendar years and at the same time to shew comparable index comparisons for males as well; the simple proportions of married to total of the type hitherto referred to are repeated for reference in adjacent columns.

Year	en presente Parago Parago		rried per 1,000 on of each sex 1 15–45					
		Males	Females	Males	Females			
1871	oznavelni	474	496	1,100	1,091			
1891	10.00 mm	454	471	1,061	1,048			
1911	1	458	477	1,000	1,000			
1921	THE MARK THE	486	485	1,057	1,007			
1931	FF101-101 HI	484	501	1,053	1,025			
1938	in house eight	512	540	1,070	1,078			
1945	1	567	600	1,125	1,169			
1947		576	618	1,135	1,187			

Justification for the standardization correction is provided by the last column of the table which shows that the true increase in the marriage intensity of females between 1911 and 1945 was 17 per cent. instead of the 25 per cent. previously suggested by the increase in the proportions married, nearly one-third of the latter now being shewn to have been due to the quite extraneous circumstance of the ageing of the population.

Looking at the last two columns of the table generally, it will be seen that marriage incidences fell significantly during the 40 years prior to 1911, the experiences of the sexes being not dissimilar with falls of roughly 10 per cent. in the case of males and 9 per cent. in the case of females. After 1911 or thereabouts the trend was reversed, and there began the rising tendency which has since been maintained and which at the end of 36 years has already achieved heights 19 per cent. above the 1911 level in the case of females and nearly 14 per cent. in the case of males.

The somewhat marked difference in the rise as between the two sexes is to be explained by the changes which have simultaneously been taking place in the sex ratio of the unmarried and which have already been discussed on a previous page. Between 1911 and 1921, for example, when the sex ratio moved adversely to the male section, the male increase in the marriage intensity index was far higher at 5.7 per cent. than that of the female increase of 0.7 per cent. as would be expected. Since 1921 the sex ratio has moved steadily in favour of the males and again as would be expected therefrom, the increase in marriage intensity has been as notably and continuously in favour of the females.

Apart however from the sex difference, the outstanding feature of the demonstration—of the highest significance and importance—is the magnitude of the rise in the index as a whole, or in less technical language in the fact that the nation as constituted today can and does sustain a degree of marriage amongst its younger adults as much as from 14 to 19 per cent. in excess of that which emerged from the conditions operating prior to the first war.

The forces responsible for so large a change will in all probability have been mainly economic in origin and from the timing of the increase, the beginning of which coincided so closely with the first Old Age Pensions and National Insurance Acts, they will almost certainly be associated with the wide expansion of social benefits and services together with the steady improvement

of living conditions that have been so characteristic of the period. Nor has the transformation yet come to an end; a fresh chapter has been opened with the comprehensive health and insurance legislation just recently placed upon the statute book and years must elapse before the fruits of the new extensions are

fully and finally reflected in our social records.

The latest proportions of married in the 15-45 age group (57.6 per cent. males and 61.8 per cent. females in 1947) are vastly higher than any that have been recorded so far, but there is obviously room for still further improvement, and if the foregoing diagnosis is anywhere near the correct one there would seem to be every prospect of the proportions reaching still higher levels; particularly so in the case of females, the primary medium of fertility and reproduction, since in their case the increasing marriage pressure would probably be intensified rather than otherwise by the further changes in the sex ratio amongst the unmarried that seem to be in prospect.

To achieve the contemplated future increase in the proportions of married females it would not be necessary for the rates of new marriages to be as high as those of the recent post-war period; these have undoubtedly been exceptional in including a certain number of marriages postponed from preceding war years and some recession is to be expected. On the other hand, new marriages at the rates experienced prior to the war would not be sufficient for the purpose, so that if and when the rates are stabilized once more, the analysis and examination would seem to point to the likely level as somewhere between those of the immediate pre- and post-war experiences.

### Buildings in which Marriages may be Solemnized

At the end of each of the years 1940 to 1945 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 follow:—

CORT SULTIME PORCE (888)	1940	1941	1942	1943	1944	1945
Number at End of Year	To locate	和 日 3	in Joseph		anily.	The State of the S
Established Church and Church in Wales All other Religious Denom-	16,642	16,659	16,681	16,698	16,714	16,729
inations	21,952	22,072	22,221	22,390	22,542	22,709
Total	38,594	38,731	38,902	39,088	39,256	,39,438
Established Church and Church in Wales All other Religious Denominations	22	17 120	22 149	17	16 152	15 167
Church in Wales	22	17	22	17	16	15
Total	186	137	171	186	168	182
	100	1000	Control of the Contro	CINTEROLINI,	ožga koji,	lo centraro

The number of these buildings belonging to the various denominations is shewn for the several geographical regions in Table N (Part II, Statistical Review), which thus provides some indication of the relative strengths of the various religious bodies in different parts of the country.

By the Places of Religious Worship Certifying Act, 1852, and the Places of Worship Registration Act, 1855, it was enacted that all places of religious worship not being churches or chapels of the Established Church, should, if the congregations desired, be certified as such to the Registrar General, certification for public worship being a necessary preliminary to the registration of a building for the solemnization of marriages.

The numbers of places of meeting for religious worship on the official register on the 31st December of each of the years 1940 to 1945 respectively, and the numbers of buildings registered for the solemnization of marriages are shewn in

Table XVII.

Table XVII.—Buildings certified as places for Worship\* and registered for Marriages, 1940 to 1945. England and Wales.

oned non preceding was	Green Green	1940	1941	1942	1943	1944	1945
Buildings certified to the	Regi	strar Gene	eral as mee	ting places	for Religio	ous Worshi	0.010
the analysis and examina-	3701	TO SERVICE STATE OF THE SERVIC	Numbers.	ann sain	1911 1190	tribus 11	That I've
- 0 11 11	ine I	2,176	2,209	2,222	2,230	2,239	2,261
Methodist Church	ART I	13,489	13,473	13,450	13,436	13,419	13,408
Congregationalists		3,571	3,570	3,583	3,592	3,596	3.610
Baptists	Pilia	3.513	3,516	3,526	3,527	3.541	3,553
Calvinistic Methodists		1,401	1,401	1,403	1,404	1,408	1,411
Presbyterians how man to low of	1.4	466	468	466	463	465	466
Unitarians	10000	188	189	190	191	191	191
New Church	112.	60	60	60	60	60	60
Catholic Apostolic Church	dia.	60	60	60	59	59 .	58
Countess of Huntingdon's Connexion	44.4	44	44	44	44	44	44
Salvation Army	fiol	1,556	1,558	1,558	1,561	1,560	1,564
Society of Friends		420	420	422	423	423	423
Jews Other Denominations		369	373	382	391	400	403
Other Denominations	out by London	6,567	6,712	6,862	6,964	7,103	7,157
All Denominations	er d	33,880	34,053	34,228	34,345	34,508	34,609
	Increa		ase (-) per				
Roman Catholics		39.5	41.6	42.4	42.9	43.5	44.9
Methodist Church		<b>—</b> 3·4	<b>—</b> 3·5	<b>—</b> 3·7	<b>—</b> 3·8	<b>—</b> 3·9	- 4.0
Congregationalists		6.2	6.1	6.5	6.8	6.9	7.3
Baptists		10.2	10.3	10.6	10.6	11.1	11.4
Calvinistic Methodists	100	7.9	7.9	8.0	8.1	8.4	8.6
Presbyterians 2	100	4.0	4.5	4.0	3.3	3.8	4.0
Unitarians		2.2	2·7 9·1	3.3	3.8	3.8	3.8
Catholic Apostolic Church	123	-14.3	-14.3	9·1 —14·3	<del>-15.7</del>	9.1	9.1
Countess of Huntingdon's Connexion	0	— 6·4	— 6·4	— 6·4	<del></del>	<del>-13.7</del> <del>- 6.4</del>	-17·1
Salvation Army	edie	37.0	37.1	37.1	37.4	37.3	37.7
Society of Friends		2.6	- 2.6	- 2.1	- 1.9	- 1.9	- 1.9
Iews		42.5	44.0	47.5	51.0	54.4	55.6
Other Denominations	E	96.9	101.3	105.8	108.8	113.0	114.6
All Denominations	10.5	15.5	16.1	16.7	17.1	17.6	18.0
Ruildings	redis	tered for th	he Solemni	zation of M	arriades		
Roman Catholics		2,004	2,034	2.047	2.060	0.065	0.000
of the arrangement of the same through the same through	2000	8,828	8,843	8,879	8,935	2,065 8,988	2,086
Congregationalists		3,305	3,306	3,315	3,322	3,329	9,053 3,343
Baptists	1	3.168	3.173	3,189	3,200	3,217	3.230
Calvinistic Methodists		1,153	1,156	1.161	1,167	1,176	1.184
Presbyterians		459	460	458	455	456	457
Unitarians	N. S. N	196	197	197	198	198	198
New Church	のでは	63	63	63	63	63	63
Catholic Apostolic Church	-	50	-50	51	51	53	51
Countess of Huntingdon's Connexion	Kie	39	39	. 39	39	39	40
Salvation Army		424	443	460	479	491	506
Society of Friends	(5)	1	1	t	1	7	
Jews		a act	1 2 2 2	2000	1	to	I Kell
Other Denominations	arts.	2,263	2,308	2,362	2,421	2,467	2,498
All Denominations		21,952	22,072	22,221	22,390	22,542	22,709

<sup>\*</sup> 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 shewn above.

<sup>†</sup> 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 increases of 209, 145, 150, 102, 139 and 54 in the years 1940 to 1945 respectively in the numbers of buildings certified as meeting places for religious worship under the heading "other denominations" in Table XVII were made up as follow:—

Christadelphians         7         2         2         1         —         —           Christians         5         4         9         2         3         —           Christians         6         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         0         0         1         0         .         1         —         —	TOOMETHOOD !		1940	1941	1942	1943	1944	1945
Assemblies of God	Apostolic Church	1.10	3	804381	6	6	on4(s	uO4
Brethren		3.07	19	- 13	9	13	20	14 4
Brethren	Baha'is		1	-		1		La Trans
Christadelphians         7         2         2         1         —         —           Christians         5         4         9         2         3         —           Christians gathered in the name of the Lord         1         —         —         1         —           Christians Spiritualists         8         3         4         10         9         2           Christian Spiritualists         15         5         8         5         10         1           Church of Nazarene         1         —         —         1         1         1           Church of Nazarene         1         —         —         1         2         4         1         1         1         1         1         1         1         1         1	Brethren	X	15	11		8		
Christians          5         4         9         2         3         ————————————————————————————————————	Calvary Holiness Church	100	18TH BB	01	3	2181	death	310
Christians gathered in the name of the Lord         1         —         —         —         1         1         8           Christians—not otherwise designated         45         31         21         15         13         8           Christian Scientists         8         3         4         10         9         2           Christian Spiritualists         15         5         8         5         10         1           Church of Nazarene         1         —         —         1	Christadelphians	3.0	7	2	2	1918	m-bee	no-ceb
Christians gathered in the name of the Lord         1         —         —         1         —         —         1         —         —         1         —         —         1         31         21         15         13         8           Christian Scientists         8         3         4         10         9         2           Christian Spiritualists         15         5         8         5         10         1           Church of Nazarene         1         —         —         1         2         4         1         1         1         1         1         2         4         1         1         1         1         3         3         1         2         2         1         1         1         3         <	Christians		5	4	9	2	3	0401
Christian Spiritualists         15         5         8         5         10         1           Church of Nazarene         1         —         —         1         1         —         —         1         —         —         —         —         1         1         —	Christians gathered in the name of the Lord	1			-		1	-2100
Christian Spiritualists         15         5         8         5         10         1           Church of Nazarene         1         —         —         1         1         —         —         1         —         —         —         —         1         1         —	Christians—not otherwise designated		45		21	15		8
Christian Spiritualists         15         5         8         5         10         1           Church of Nazarene         1         -         -         1         1         7         2         4         1           Elim Foursquare Gospel Alliance         6         1         7         2         4         1		190			4		9	2
Elim Foursquare Gospel Alliance   6	Christian Spiritualists		15	5	8	5	10	at 1d
Fellowship of Independent Evangelical			1	-	-	1	1	1
Fellowship of Independent Evangelical	Elim Foursquare Gospel Alliance		6	10	7	2	4	0111
Tellowship of Independent Evangencal Churches	Evangelican Lutheran Church of England .			=		DOMESTIC OF THE PERSON		
Full Gospel Testimony       4       2       1       2       4       4       3       1       1       2       4       4       3       1       1       2       4       3       1       1       2       4       3       1       1       2       4       3       1       1       2       4       3       1       1       2       4       3       1       1       2       4       3       1       1       2       4       3       1       1       2       4       3       1       1       2 </td <td>Fellowship of Independent Evangelical</td> <td>2025</td> <td></td> <td>SATURE BY</td> <td></td> <td>RODURED!</td> <td>REMINER</td> <td>Instact</td>	Fellowship of Independent Evangelical	2025		SATURE BY		RODURED!	REMINER	Instact
Independent Methodists		111		Wans	A TELL	FOLAT ST	1	318
Interdenominational				. 2	1 1	211	1	aulg
International Bible Students' Association			2	1	vo <del>rto</del> l	elimine	P. DECKE	ADD
The transformation of the students association			-		1	704	Acres 1	1
Latter Day Saints       —       4       3       1       2         Moslems       —       2       2       4       3       1         Pentecostal Mission       —       2       —       1       —       —       —       1       —       —       —       —       1       —       —       —       —       1       —       —       —       —       —       1       —       —       —       —       1       —       —       —       1       —       —       —       1       —       —       —       1       —       —       —       0       —       —       0       —       —       0       —       0       —       —       0 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>								
Moslems        —       2       2       4       3       1         Pentecostal Mission        1       —       2       —       1       —       —       1       —       —       1       —       —       1       —       —       —       1       —       —       —       1       —       —       —       1       —       —       —       1       —       —       —       1       —       —       —       1       —       —       —       1       —       —       —       1       —       —       —       1       —       —       —       1       —       —       —       1       —       —       —       1       —       —       —       1       —       —       —       0       —       —       —       0       —       —       0       —       —       0       —       0       —       0       —       0       —       0       —       0       —       0       —       0       —       0       —       0       —       0       —       0       —       0       —       0		1.3			CONTRACTOR OF THE PARTY OF THE			18
Pentecostal Mission			met s			collec		moini
Pentecostal Mission			- h	2	20	4	3	1
Seventh Day Adventists         4       6       4       2       5       3         Spiritualists         -       7       8       -       12       -         Undenominational Christians        -       2       -       -       4       -         Others (not specified)        10       7       9       3       4       -			THE I	2		1	-	
Spiritualists             7         8          12            Undenominational Christians           2         -         4         -          Others (not specified)          10         7         9         3         4         -				TO TO DE			C THE	
Undenominational Christians $\frac{-}{10}$ $\frac{2}{7}$ $\frac{-}{9}$ $\frac{4}{3}$ $\frac{-}{4}$ $\frac{-}{-}$		.V.A.	4			2		9 3
Others (not specified) 10 7 9 3 4 —			396		8	e v <del>ol.</del> e		and W
100 100 100 100 100 100 100 100 100 100			-		-	-		-
Totals 209 145 150 102 139 54	Others (not specified)	908	10	7	9	1 3 oi	1994	INT A
	Totals	hee	209	145	150	102	139	54

The Marriage Act, 1898, provided that under specified conditions marriages might be solemnized in registered buildings in the presence of duly authorized persons without the attendance of a Registrar of Marriages. The governing bodies of some of the registered buildings have availed themselves of this provision, and at the end of the years 1940 to 1945 the respective numbers of such buildings which had been brought under the operation of the Act, and so remained, were as follow:—

Meditions (Line rated ble design 19s, but the numbers in alwed	1940	1941	1942	1943	1944	1945
Methodist Church	4,922	4,940	4,953	4,976	4,993	5,033
Congregationalists	1,093	1,093	1,102	1,110	1,117	1,128
Baptists Calvinistic Methodists	807 172	802 173	803	820 176	820 177	835 183
Other Denominations and Un-		Dan (307)	100 TOU	East Of	Of Holdin	r office
sectarians	599	613	628	631	640	657
All Denominations	7,593	7,621	7,659	7,713	7,747	7,836
	1913 Of the	ALCOHOL:	10,250 8,900	149 A 154 154	Charge To	N Sent ne

Qualification of Statistics.—Prior to 1st July, 1938, when the Population (Statistics) Act, 1938, came into operation, the marital condition of deceased females could be inferred from the entry in the "Rank or Profession" column of the death register, but no indication was given of the marital condition of deceased males. Thus Table 15 of the Annual Reviews, Part I, for 1921 to 1930 and Table 19 for 1931 to 1938 showed numbers of deaths of all males only, but of females by marital condition, and the Decennial Supplement in 1931, Part I, Life Tables, gave, at Appendix IV, Table 2, differential life tables by marital conditions for females only.

Under the Population (Statistics) Act, 1938, marital condition of all deceased persons, not under 16 years of age, is recorded, and also the age of the surviving spouse. (See Annual Review, Part II, 1938, page 108, and Text 1938–39, page 178.) Thus in Part I of the Annual Review, 1938, an additional table—19A—was included shewing, by marital condition, deaths of males from the 1st July of that year, and in subsequent years Table 19 has been modified to give deaths of both males and females by marital condition. In addition, the information collected under the Population (Statistics) Act, 1938, permits the deaths of Table 19 for married persons to be distributed further by age of surviving spouse—and such tabulations have been included since 1938 at Table XX in Part II of the Annual Review, which also gives surviving widows and widowers by single years of age.

Imperfection in these statistics arises from omission, at death registration, of age or marital condition of deceased, or age of surviving spouse. It has been customary to estimate the age of the deceased, when not stated, taking account of the cause of death. (See footnote to Table 15, Part I, Annual Reviews, 1921–30, and headnote to Table 19, Part I, Annual Reviews, 1931–45, which also give the numbers and sex of the deaths which have been so distributed.) Thus whilst no reference appears in Table XX to cases when age of deceased was not stated, nevertheless if required the numbers may be found from the headnote to the associated Table 19.

From 1921 to 1930 the number of female deaths for which marital condition was not available was quoted in the footnote (to Table 15), though these deaths were rateably distributed amongst the various marital conditions. This rateable distribution was continued from 1931 to 1938 (in Table 19), but the numbers involved were so small that special mention of them was no longer made. However, the number of male deaths in which marital condition was not stated was found in 1938, when it first became available, to be very much larger (for the first full year-1939-males 18,423, females 250), and in Table 19A of Part I of the Annual Review, 1938, the "not stated" class is included. The modified Table 19 for 1939 and subsequent years has contained a "No Statement" column for both sexes, and the Table 19A has been introduced in which these cases are rateably distributed. Table XX is essentially an analysis of deaths of persons stated to be married and from 1938 to 1940 no mention was made in Table XX of the cases for which marital condition was not available (though these numbers can be found by reference to Table 19A of 1938, and Table 19 subsequently). However, from 1941 the proportion "not stated"

marital condition to "stated" has been quoted in Table XX. With reference to female deaths, the number not stated is negligibly small—a fraction of 1 per cent. of those stated—but for males the proportion is substantial. A figure as high as 40 per cent. was recorded in 1938 for males aged 20–24, and for the first two years of the war the proportions for all ages up to 44 were over 20 per cent. except in a few instances. Since then there has been a tendency for the proportion to decrease, but even in 1945 the proportions were 10 to 16 per cent. for ages under 50 and the lowest was 4·1 per cent. for age 75 and over.

Even when marital condition is given as "married", the age of the surviving spouse may not be stated, and statistics on this third category of omissions have

always been included in Table XX.

A final qualification to the statistics of Table XX to which attention should be drawn, is that male non-civilian deaths have been excluded since 3rd September, 1939, and female since 1st June, 1941; civilian war deaths were, however, included. Detailed information on these classes is not available, but in Table XVIII below, non-civilian male deaths have been included using the best available information. If it is desired to exclude civilian war deaths the numbers of these deaths by sex and age (but not marital condition or age of deceased spouse) may be obtained from Part I of the Annual Review—at International List No. 197 in Table 21.

Widowhood and Widowerhood Rates.—The breaking up of a marriage by the death of one of the participants may be viewed in two different ways, namely in terms of the deceased or of the surviving member. The number of husbands in a given age group who die, expressed as a proportion of all husbands in that age group, is nothing more than the death rate for married men. An alternative concept is that of widowhood rates, namely, 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; similarly a widowerhood rate may be defined. These rates combine in a useful form information on the prevailing level of mortality, the differential effects as between different ages, and the age structure of married couples.

At Table XVIII are given the widowhood rates per 1,000 married women in each age group for the wives of civilian husbands, and also for the wives of all husbands. In the accompanying Table XIX, widowerhood rates are given only for the husbands of civilian wives, since the numbers of deaths of non-civilian married women were so few [namely, 1941 (June-December), 8;

1942, 30; 1943, 33; 1944, 49 and 1945, 20].

Table XVIII.—Widowhoods per 1,000 Married Women in each age group.

Age of	By Death of Civilian Husband								高海		By De	All Hu	l Husbands†			
Married Woman	1938*	1939	1940	1941	1942	1943	1944	1945	1938	1939	1940	1941	1942	1943	1944	1945
All Ages	13.8	14.2	15.8	14-1	12.6	13.0	12.9	12.8	13.8	14.3	16.4	15-1	13.9	14.8	15.6	14.6
Under 25 25 - 30 - 35 - 40 - 45 - 50 - 65 - 70 - 75 & over	1·8 2·3 2·9 4·4 6·7 10·2 15·6 22·2 34·4 47·4 67·6 113·5	2·0 2·8 4·4 6·5 10·3 15·9 22·9 35·0 49·6 72·1	2.6 3.6 5.2 8.1 12.1 18.8 26.1 38.7 55.1 73.5	2·2 3·2 4·7 7·4 11·0 16·7 22·7 34·0 49·6 65·4	1·7 2·4 3·9 6·1 9·6 14·7 20·7 30·8 46·9 59·6	1·7 2·3 3·7 6·1 9·8 15·3 21·3 30·9 47·8 60·8	1·1 1·6 2·2 3·5 6·1 9·5 14·8 20·8 31·1 46·7 61·4 104·5	1·0 1·5 2·0 3·2 5·6 9·2 14·4 20·7 30·8 46·2 63·6 98·2	2·3 2·9 4·4 6·7 10·2 15·6 22·2 3·4 47·4 67·6	1·8 2·0 2·8 4·4 6·6 10·3 16·0 22·9 35·0 49·6 72·1 126·4	3·9 4·6 5·9 8·6 12·3	4·8 4·8 5·7 8·1 11·3 16·8 22·9 34·0 49·6 65·4	4.9 4.4 5.0 6.7 9.9 14.9 20.7 30.9 47.0 59.6	7·2 6·8 5·5 5·2 6·8 10·2 15·5 21·4 31·0 47·8 60·8 114·4	9·7 7·1 5·7 6·9 9·9 15·0 20·9 31·2 46·7 61·4	20·8 30·9 46·2 63·6

<sup>\*</sup> Based on second half-year's figures only. Rates increased by the ratio of the total male deaths, 1938, to the second half-year male deaths, 1938.

Table XIX.-Widowerhoods per 1,000 Married Men in each age group.

Age of	destants	ie al moi	By D	eath of	Civilian	Wife	12 62041	doin's
Married Man	1938*	1939	1940	1941	1942	1943	1944	1945
All Ages	8.8	8.7	9.6	8.5	7.7	8.0	7:7	7.6
Under 25	2.2	2.1	2.4	2.4	1.9	1.9	1.9	2001.8
25-0	2.3	2.3	2.6	2.4	2.1.1	2.1	2.0	1.8
30-	2.4	2.3	2.6	2.4	2.1	2.2	2.2	1.8
35—	2.8	2.8	3.1	2.8	2.4	2.5	2.4	2.1
40-	3.8	3.6	4.2	3.7	3.1	3.3	3.1	2.8
bluod 45 10 114	5.20	4.9	5.6	5.0	4-4	4.5	4.3	4.1
50-	7.5	7.4	8.1	7.2	6.4	6.6	6.2	6.0
55-	10.5	10.5	12.0	10.6	9.5	9.4	8.9	8.9
60-	16.7	16.5	18-5	16.4	14.3	14.6	14.3	13.7
65-	24.6	24.8	27.9	24.8	22.2	22.9	21.6	21.8
enieu 70 bul	36.7	37.3	40.1	35.3	32.4	34.6	33.0	33.1
75 & over	69.6	73.3	77.9	66.8	60-1	62.6	16 56.6	56.7

Based on second half-year's figures only. Rates increased by the ratio of the total female deaths, 1938, to
the second half-year female deaths, 1938.

These tables include all deaths: omissions of age of deceased have been dealt with as in Table 19A, and omissions of marital condition or age of deceased spouse have been appropriately distributed over the various ages of surviving spouse for deceased of the given age. For this latter distribution to represent the actual facts it is necessary that omission of marital condition at death registration should be no more likely for one marital condition than for another, and that omission of age of surviving spouse should be no more likely for one age than for another. The validity of these assumptions will be discussed later. When widowerhood rates are compared with female all-condition death rates for appropriate ages (for instance under an assumption that age of husband exceeds that of wife by some three to five years for young wives, and tends to equality for older wives) no marked inconsistency is apparent. But if widowhood rates are similarly compared with male all-conditions death rates it is observed that, for the lower age groups, the widowhood rates are substantially less than the death rates, and gradually approach them in the higher ages. A comprehensive study of this phenomenon must await the production of differential male mortality by marital condition and, since there is some doubt on the precision of population estimates by marital condition for the war years, conclusions drawn now must be somewhat tentative. Nevertheless there would appear to be evidence of a markedly lower mortality for young married males than for the single. If this is in fact so, the explanation is presumably not that the young married male is exposed to less risk than the single, but that he is a "selected life". Selection will also apply to females, but its influence is partially hidden by the additional effects caused by complex medical and social factors. However, a more detailed discussion of these factors is inappropriate at this juncture.

Alternatively, instead of comparing the absolute levels of widowhood and widowerhood rates with the absolute levels of death rates, their fluctuations between the years 1938 and 1945 may be compared. A convenient method of doing this is to rank the rates, that is, to allot the number 1 to the largest rate of a series, the number 2 to the second largest and so on, and to compare the rankings in the widow or widowerhood rates with those in the absolute death

<sup>†</sup> Non-civilian casualties are not classified by marital status, and an approximate allowance for them has been included, based upon war pensions awarded, supplied by the Ministry of Pensions.

rates series. At Tables XX and XXI such a comparison is made. In this comparison, rankings differing by  $1\frac{1}{2}$  or less are unmarked, those differing by 2 are printed in italics and those by more than 2 are in heavy type.

Table XX.—Ranking Comparison of Widowhood Rates and Allcondition Male Mortality.

#### Ranking of Widowhood Rates.

1	6		14		AG	E OF	WID	ow			686	2
Year 1 8 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Under 25	25-	30-	35-	40-	45-	50-	55-	60-	65-	70-	75 and over
1938 1939 1940	1 3 2	2 4	3 4	$\frac{3\frac{1}{2}}{3\frac{1}{2}}$	3 4	4 3	4 3	4 2	3 2	5 2½	3 2	5 2
1941 1942 1943	4 5	3- 5½ 5½	2 5	2 5	2 6	2 6 5	2 7	1 3 7½	1 4 7½	1 2½ 6	8 2	3.6
1943 1944 1945	7½ 6 7½	7 8	6 7 8	6 7 8	6 6 8	7 8	5 6 8	5 6 7½	6 5 7½	7 8	6 5	7 8

#### Ranking of All-Condition Male Mortality.

Year	Abelia de				BILL					
been ween wan	25-	35-	ton	45-	Snot	55-	65-	telid!	75-84	ale
1938 te en	7	108 9160f	vards-1	4	SWA	14 03	4	righton	131401	ones
Bood 1939 w 91	1080	teller is 7th	gnibal	3	ings	30 EW J	2	aquei	2	USIC
1940 1941	3	Post of these	Recition	1	dave	the each	1 3	Bunc	3	ais
1942	5	5151 5151	there su	7	ineni	7 page	6	Place of	6	138
1943	4	300	Lette In	5	pset	50	5	ELEGIQ!	5	CISA
1944 1945	$\begin{vmatrix} 2 \\ 6 \end{vmatrix}$	8	evedy	6 8	utan utan	8	8	BOULD	7	icai

Table XXI.—Ranking Comparison of Widowerhood Rates and All-Condition Female Mortality.

#### Ranking of Widowerhood Rates.

arties cannot	owi	AGE OF WIDOWER													
Year Vear	Under 25	25_*	30-	35-	40-	45-	50-	55-	60-	65-	70-	75 and over			
1938 1939 1940	3 4 1½	$\frac{3\frac{1}{2}}{3\frac{1}{2}}$	$\frac{2\frac{1}{2}}{4}$	3 3 1	2 4	2 4 1	2 3	$\frac{3\frac{1}{2}}{3\frac{1}{2}}$	2 3 1	4 2½ 1	3 2	3 2			
1941 1942	1½ 6	2 5½	2½ 7	3 6½	3 6½	3 6	6	5	4 6½	$\frac{21}{6}$	4 8	4			
1943 1944 1945	6 6 8	5½ 7 8	$   \begin{array}{c}     5\frac{1}{2} \\     5\frac{1}{2} \\     8   \end{array} $	$\begin{array}{c} 5 \\ 6\frac{1}{2} \\ 8 \end{array}$	5 6½ 8	5 7 8	5 7 8	6 7½ 7½ 7½	5 6½ 8	5 8 7	5 7 6	8 7			

<sup>\*</sup> If widowhood rates for widows aged 25-30 are compared with female mortality for ages 25-35 no discrepancies in ranking exceeding 1½ are found. It may be that the rankings of females aged 20-25 are misleading.

(continued on next page)

# Table XXI.—Ranking Comparison of Widowerhood Rates and All-Condition Female Mortality—(cont.nued)

#### Ranking of All-Condition Female Mortality.

Year	21 1110	AGE OF FEMALE													
to ewel	15-	20-	23	25-	oods	35-0	-ABV	45-	ARE	55-	(Z. 6	65-74			
1938	4	7	100000	3	with.	3	NIC.	4	Selve specimen model	3		4			
1939 1940	6	6	× Au	4		4		3	CONTRACTOR OF THE	2		2			
1941	- 2	2	10	2				2	25-	4		3			
1942 1943	5	3 41		5		6 5		6 5	DE	$\frac{5\frac{1}{2}}{5\frac{1}{2}}$		6 5			
1944	7	41/2		6		7		7	2	7		71			
1945	8	8	3	8		8		8	2-	8		71			

A marked feature of the comparison between widowhood rates and male death rates is the lack of agreement at the early ages, in the form of excessively high widowhood rates in 1938 and 1939 or excessively low in 1943 and 1944 (either effect would appropriately readjust the rankings). It is significant that in 1938 and 1939 the percentage "Not Stated" to "Stated" marital condition amongst young males was some 25 to 40, and it will be realized that, if in fact an unduly high proportion of the "Not Stated" cases were actually single, then the rateable distribution of these cases amongst the various marital conditions will have inflated the adjusted widowhoods, and thus the widowhood rates. Whilst this theory alone will not entirely explain the observed phenomenon, it will go a long way towards doing so, and seems sufficiently plausible to provide a warning against placing great reliance on the widowhood rates at young ages in the early days of application of the Population (Statistics) Act, 1938. It is doubtful whether the other discrepancies indicated are significant, except that the absence, in the comparison with young female deaths, of the phenomenon mentioned above, coupled with their low "Not Stated" proportion, lends some weight to the theory advanced.

The steady rise in the rates from 1939 to 1944 for the wives of all husbands is due to the growing proportion of the Armed Forces in each age group, and reflects the severity of war casualties amongst young males.

#### Age Structure of Married Couples

The joint distribution of existing marriages by ages of the two parties cannot be estimated intercensally with sufficient accuracy to be of value, certainly not as long after a census as the period under review, when the volume of migration (including married couples of unknown age structure) has had some time to accumulate and since joint ages at the death of the first partner was not known for the deaths of the first seven years after the last census. It might be thought, however, that variations in the age structure would be shewn by variations in the average age at death of the partners of survivors of each age group, though such a criterion would be expected to be crude, since age differential epidemics, or similar causes of mortality, would give rise to misleading variations. At Tables XXII and XXIII are such average ages at death. These average ages are calculated assuming the average age of an age group as its centre point, and that of deceased aged 75 and over as  $77\frac{1}{2}$ . The calculation was, however, only employed where the proportion aged 75 and over was small, that is, it was not continued up to the group of survivors aged 75 and over. It will be

observed that the variations are slight, and a comparison with the widow-hood and widowerhood rates of Tables XXIII and XIX will show little if any correlation between the two sets of figures. It must be stressed that these average ages at death are quite different from the average ages of partners of existing marriages, owing to the strongly differential mortality with age, and the former must not, therefore, be used as an indication of the latter.

Table XXII.—Average Age of Deceased Husband of Widows of specific age.

(III)	MOM	1000	0 8	HOA	AGE	OF WI	DO	MAG	A 18 18	LOY	
Year	Under 25	25-	30-	35-	40-	45-	50-	55-	60-	65-	70 and over
1938	28.2	32.0	37.7	43.3	49.0	53.6	57.8	62.0	66.0	69.9	73-5
1939	28.4	33.0	37.8	43.8	49.2	53.6	57.8	62.0	66.2	70.0	73-6
1940	27.9	32.1	37.4	43.0	48.9	53.4	57.6	61.7	65.8	70.0	73.6
1941	28.2	32.8	37.6	43.0	48.8	53.6	57.8	61.8	65.8	70.0	73.5
1942	28.2	32.9	38.1	43.4	49.0	53.6	58.1	61.8	66.0	69.9	73.5
1943	27.6	33.2	38.0	43.4	48.8	53.6	58.0	61.9	65.9	70.0	73-6
1944	27.7	33-2	38-1	43.7	48.9	53.8	58.0	62.0	65.9	70.0	73.6
1945	28.1	33.2	38.6	43.8	48.8	53.8	58.0	62.0	66-0	70.0	73-6
All years	28.0	32.8	37.9	43.6	48.9	53.6	57.9	61.9	65.9	70.0	73.6

Table XXIII.—Average Age of Deceased Wife of Widowers of specific age.

Rei (15)	auses a				AGE C	F WII	DOWE	R		Ho Pai	
Year	Under 25	25-	30-	35-	40-	45-	50-	55-	60-	65–	70 and over
1938	23.6	27.0	31.5	36.6	41.8	47.1	52.2	57.1	62.0	66.5	70.6
1939	23.2	27.0	31.4	36.6	42.0	47.0	52.0	57-0	62.0	66.6	70.8
1940	23.0	27.0	31.2	36.6	41.9	46.9	52.0	57.0	62.0	66.5	70.7
1941	22.8	26.8	31.3	36.3	41.9	46.8	51.9	57.0	61.9	66.6	70.8
1942	22.8	26.8	31.4	36.2	41.8	47.0	52.0	56.9	61.9	66.5	70-8
1943	22.8	26.8	31.3	36.3	41.8	47.0	52.0	56.8	61.9	66.6	70.9
1944	22.9	26.6	31.2	36.2	41.7	47.1	51.8	57.0	62.0	66-6	70.8
1945	23.2	26.6	31.4	36.4	41.8	47.2	52.0	56.8	62.0	66.6	70.9
All years	23.0	26.8	31.3	36.3	41.8	47.0	52.0	56.9	62:0	66-6	70-8

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DIVORCES AND RE-MARRIAGES OF DIVORCED
PERSONS

Table XXII - Average Age of Deceased Husband of Widows of

#### Divorces

The direct concern of the demographer with the actual number of marriages finally broken by divorce—that is the number of decrees nisi made absolute would hardly be disputed, since such marriages are patently removed from the possibility of producing children, at least in the ordinary sense. It might further be claimed that marriages in respect of which divorce proceedings are pending do not contribute to the full extent to the national fertility; but without invoking this claim it can be seen that the workings of the divorce laws should be studied to understand the underlying causes of variation in the divorce rate or to attempt to foresee future trends in the annual numbers of divorces. Particularly at the present time is it difficult to disentangle the effects of the several causes operating. The Matrimonial Causes Act, 1937, which came into operation on 1st January, 1938, increased the grounds on which a petition for divorce could be filed. Immediately, an abnormal number of suits arose from longstanding cases of hardship for which no redress was possible prior to the passing of the Act. It is therefore necessary to consider for how long after 1938, petitions in respect of such longstanding cases were being filed, when they were heard and when their decrees nisi were made absolute; for only after this last date will the volume of divorces reflect normality; but it must be expected that this stabilization will be to a higher level than the extrapolation of the earlier trend, the difference representing current cases on the additional grounds introduced by the Act. Secondly, after the experience of the first world war, the second world war must be expected to lead to a substantial number of disintegrated marriages. Again then, it must be considered when such cases first appeared, how many there have been and will be, and when a second stabilization after the war will be reached and to what level.

In the first place variations in the numbers of petitions filed each year may be studied, since these numbers will be influenced only indirectly by changes in the delay in dealing with cases. Secondly, the rate at which suits are disposed of and the numbers of outstanding cases may be examined to see how long a period elapses after the immediate cause before the effect in the numbers of decrees absolute will be seen. Decrees absolute are only granted for petitions in respect of dissolutions and annulment, whilst the only available statistics on outstanding divorce proceedings include cases for judicial separation.\* However, the number of petitions filed for such cases rarely exceeds 100 in any one year, and their inclusion thus does little to disturb the main trends.

<sup>\*</sup> In the High Court.

Table XXIV.—Divorce Petitions Filed and Suits Disposed of and Outstanding.

and the land	marker		J-Marine						90-	
ece 1 ,8801	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945
Petitions filed	5,868	6,016	10,304	8,770	7,139	8,357	12,082	15,470	19,035	25,789
Suits disposed of Suits out-	5,265	5,435	8,128	8,803	7,549	6,693	9,232	11,469	15,209	20,132
standing at end of year	4,596	5,177	7,353	7,320	6,910	8,574	11,424	15,425	19,251	24,908
(Estimated)	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	177 TH	1,001.91	III. Casil	dou A	Ces, 111,	movin, i	space d	ns prest	d gave

#### Notes

- 1. The source of these statistics is Table 56 of the Annual Abstract of Statistics, No. 84. 1935-46. H.M.S.O.
- 2. To obtain comparability it has been necessary to include judical separation with dissolution and nullity; the number of petitions for judical separation filed in a single year rarely exceeds, however, 100. (This refers to proceedings in the High Court and does not include proceedings for separation orders in Courts of Summary Jurisdiction).
  - 3. Suits disposed of out of court are included.
- 4. The number of outstanding suits has been estimated by a "Least Square" method; the figure published in the Annual Abstract of Statistics being only for outstanding suits for which a date of hearing has been fixed.
- 5. When petitions are filed by both husband and wife two petitions would be cleared by a single suit disposed of. In the tables each unit has been treated as clearing one petition only. It is, however, believed that such cases are comparatively few in number.

From Table XXIV, it would appear that petitions were filed in 1938 or 1939 in the bulk of cases of long-standing hardship, but it must be suspected that at least a few such cases were included in the petitions for 1940. Again, it is clear that the influences of the war have certainly appeared in the number of petitions filed for 1941; and it must therefore be suspected that the 1940 figure is inflated by a few such cases also. Table XXV, shewing the division between husbands and wives of petitions for dissolution, throws some light on this point.

Table XXV.—Division of Petitions for Dissolution between Husbands

- 4 MARCE SEA	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945
Number of petitions by husbands as a percentage of those by wives.	88.5	92·6	87.4	81.4	101.6	112.6	118.7	119.3	123-3	134.8

\* Table 56. Annual Abstract of Statistics, No. 84. 1935-46. H.M.S.O.

The increase in 1940 in the proportion of petitions filed by husbands is clearly seen, and may be taken as evidence of the inclusion of cases due to the war in the 1940 figure, since it would be thought that a preponderance of such cases will be brought by the husband. As opposed to the actual total number of divorce petitions filed in 1940—7,139—a figure of 6,655 is obtained if the number of petitions by husbands in 1940 is reduced† to give the average proportion of 1936 to 1939, namely 87.5 per cent. and the extrapolation to 1940 of the numbers prior to 1938 gives 6,000 to 6,500.‡

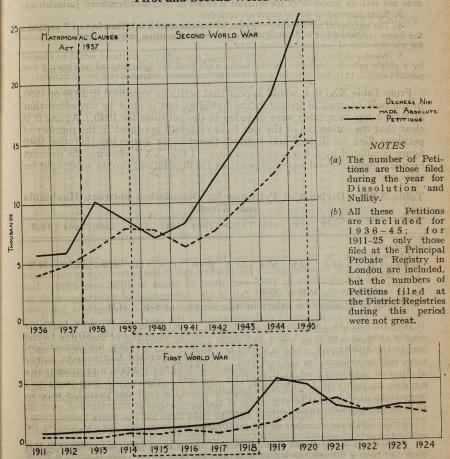
† This reduction is made entirely in petitions for dissolution, but the number for nullity and judicial separation together was only some 3 per cent.

† The linear extrapolation of the 1936–1937 figures gives 6,500, but previous to this there had been a marked slowing down in the rate of increase. This figure of 6,500 is therefore probably high, and the figure for 1937—some 6,000—may be taken as the lower limit.

Whilst these estimates must be considered as very approximate, and may only be used with great reserve, they do give sufficient indication that there was no "normal" year, for rate of petitioning, between the years affected by the 1937 Act, and those affected by the war; and that the former were 1938, 1939 and perhaps 1940, the latter 1940 and later.

The rapid rise since 1940, both in the number of petitions filed each year and in the proportion of petitions brought by husbands, make it clear how great has been the upheaval and confirms that at least most of it was due to the war. But since many petitions, really arising from the war, will probably be filed in the post-war years when the husband is demobilized, the full magnitude cannot be assessed until the statistics for these years come to hand. And even this first spate of divorces may not measure the full toll; it will be seen from Diagram D that after the first world war the extent of divorce proceedings never returned to the pre-war level, or anything like it, and it may be that a similar general rise will remain after the recent war.

#### DIAGRAM D.—Annual Numbers of Petitions and Decrees during the First and Second World Wars.



From the estimated number of petitions outstanding at the end of each year, shown at Table XXIV, it is apparent that administrative action to speed up proceedings, had, up to 1945, prevented the delay in dealing with cases exceeding, on the average, a year. Nevertheless the existence of this lag must be remembered, and it should be added to the minimum of six months which had legally to elapse before a decree nisi may be made absolute.\* The influences of the 1937 Act and of the war must therefore be looked for, in the number of decrees nisi made absolute, some two years in all after they actually operated.

Although the Act may be expected to have some small effect immediately in 1938, since the rise in the number of petitions for that year was so abrupt, it will probably continue to appear as late as 1942. Similarly the effect of the war may begin to appear in 1941, but will certainly continue influencing the incidence of decrees absolute for several years after the war.

From statistics appearing in Tables O and P of Part II of the Annual Review has been prepared Table XXVI, showing the number of decrees nisi made absolute and the percentage distribution, by duration of marriage and number of children, of petitions filed at the Principal Registry in London.

Table XXVI.—Decrees Nisi made Absolute and Distribution of Petitions filed at the Principal Registry in London, 1926–1945.

Period	Number of Dissolutions and Annulments	(ba	11/4/	14104	at th	e Princ	or Annul	Distribution ment compistry in I	menced	in the per	riod and f	iled 11-91
311	of Marriage (Decrees	P SI 1	Di	iration	of Marr	iage	tadmu	I LEI No	o. of chi	ldren of th	ie Marria	e nausi
11,911	made absolute)	Under 1 yr.	1-2 yrs.	2-5 yrs.	5-10 yrs.	10-20 yıs.	Over 20 yrs.	No children	1 child	2 children	3-6 children	Over 6 children
1926-30 1931-35 1936-40 1941-45	16,789 20,056 30,903 51,973	0·7 0·8 0·5 0·5	2·0 2·1 0·8 - 0·6	11.9 12.8 9.7 14.1	34·0 30·8 29·1 31·8	38·2 41·2 42·3 37·7	13·2 12·3 17·6 15·3	40·8 42·2 42·4 41·0	30·9 30·8 32·1 31·3	16·7 16·5 16·0 16·7	11·2 10·1 9·2 10·7	0·4 0·4 0·3 0·3
1936 1937 1938 1939 1940 1941	4,057 4,886 6,250 7,955 7,755 6,383	0.6 0.7 0.4 0.6 0.6 0.5	1.6 1.8 0.4 0.4 0.3 0.7	11·3 12·7 5·8 9·9 11·2 8·1	31·2 31·8 25·2 29·2 30·6 30·6	42·1 40·3 45·3 41·8 40·5 40·7	13·2 12·7 22·9 18·1 16·8 19·4	43·5 43·9 42·6 40·3 42·5 42·9	31·2 30·8 32·6 33·4 32·0	16·2 15·9 15·7 16·6 15·6	8·8 9·1 8·9 9·3 9·7	0·3 0·3 0·2 0·4 0·2
1942 1943 1944 1945	7,645 9,999 12,312 15,634	0.5 0.5 0.6 0.6	0·7 0·5 0·5 0·6	12·6 14·3 17·2 15·0	30·1 29·0 30·2 37·1	39·1 39·3 36·7 34·8	17·0 16·4 14·8 12·0	41.9 40.8 39.5 40.8	31·0 31·2 30·8 32·0 31·4	16·4 16·3 16·7 17·2 16·5	9·5 10·3 11·3 10·9 11·0	0·2 0·3 0·4 0·4 0·3

The inclusion, in the petitions for 1938 and 1939, of many cases of long-standing hardship is confirmed by the marked rise in the percentage of marriages of duration 10–20 years in 1938 and over 20 years in 1938 and 1939. For these years also there is a slight fall in the percentage of marriages with no children. Care must be taken in assessing from the distributions for 1940 onwards, the type of family disintegrated by the war. It must be expected that there was a tendency for the younger husbands to be in the Armed Forces and that they will thus not bring their petitions until they are demobilized after the war, but that the delay will not have operated to the same extent with the older men. If this is so, each year will not contain a representative sample of marriages disintegrated by the war; the actual war years will have an excess of those with older husbands and the post-war years the reverse. This phenomenon may be the cause of the proportion of marriages of over 20 years' duration being higher from 1940 to 1944 than for the years before 1938; whilst by 1945 the number of demobilizations had presumably become such

## Re-marriage of Divorced Persons

At Table XXVII, prepared from Table H of Part II, are given the annual numbers of persons divorced and those re-married. In spite of the rapidly increasing numbers of persons divorced each year (in 1944 there were over three times, and in 1945 nearly four times, as many persons divorced as in 1936), the annual number re-marrying has kept pace with those divorced, varying from some half to three-quarters of it during the period 1936-45. Since these re-marriages relate to all previously divorced persons who have not re-marrieda population which cannot be expected to keep pace with the vagaries of the recent rapid rise in the annual numbers of new divorces—it is apparent that the re-marriage rate amongst divorced persons has been rising rapidly and/or the bulk of divorce proceedings are instituted with a definite intention of subsequent immediate re-marriage. This latter explanation would imply that a tendency is present not to fly from marriage, but to rectify mistakes in choice of partner, rather than to perpetuate an unhappy marriage; and since this phenomenon has been evident to a steadily increasing extent since 1921-25, it may reasonably be expected to remain a feature of post-war behaviour.

Table XXVII.—Annual Number of Persons Divorced, and of Divorced Persons who Re-married, 1926-1945. England and Wales.

		annual of the second of	A	ctual Numb	er of Divorce	ed Persons w	no remarrie	I married to the same of	TO SHEET WAS DOING
Period	Number of Persons Divorced	Total	Men	Women	Divorced men marrying spinsters	Divorced men marrying widows	Divorced men and women inter- marrying	Divorced women marrying bachelors	Divorced women marrying widowers
1926-30 & 1931-35 & 1936-40 & 1941-45 \	{ 6,716	3,917	2,128	1,789	1,662	270	392	1,225	368
	8,022	5,154	2,777	2,377	2,179	302	592	1,597	484
	12,360	8,558	4,580	3,978	3,641	464	950	2,746	758
	20,790	12,548	7,093	5,455	5,453	874	1,532	3,587	1,102
1936	8,114	6,468	3,507	2,961	2,788	354	730	2,009	587
1937	9,772	6,988	3,759	3,229	2,964	374	842	2,192	616
1938	12,500	8,179	4,404	3,775	3,467	471	932	2,576	733
1939	15,910	10,698	5,715	4,983	4,558	550	1,214	3,480	896
1940	15,510	10,458	5,514	4,944	4,430	571	1,026	3,474	957
1941	12,766	9,378	5,091	4,287	4,028	575	976	2,900	899
1942	15,290	9,706	5,437	4,269	4,214	664	1,118	2,815	895
1943	19,998	11,049	6,157	4,892	4,712	797	1,296	3,237	1,007
1944	24,624	13,728	7,914	5,814	6,009	981	1,848	3,693	1,197
1945	31,268	18,879	10,867	8,012	8,303	1,355	2,418	5,292	1,511

The foregoing discussion has aimed at throwing light on the broad influences at work, and which visible phenomena each influence has caused. But in the same way that pure numbers of deaths throw little light on the general level of

<sup>\*</sup> Since August, 1946, the time between decree nisi and absolute has been reduced to six weeks, and the delay in dealing with cases has been reduced very considerably.

health until they are related to the population at risk, so mere numbers of divorces mean very little when unrelated to the base numbers of marriages at risk. Relating the divorces of each quinquennium from 1926–30 to 1941–45 to the marriages of 1913–17, etc.—the average duration of marriage at divorce is 10–15 years—the divorce rates obtained are 1·1, 1·2, 2·1 and 3·3 per cent.

Although these rates serve the most useful purpose of bringing the magnitude of the phenomenon into perspective, even they, as they stand, are deceptive. First, the sudden rise from 1931–35 to 1936–40 of 1·2 per cent. to 2·1 per cent. represents to a large extent, not a persisting tendency, but the initial reaction to the 1937 Act. Secondly, the high figure of 3·3 per cent. for 1941–45, whilst undoubtedly due to the war, certainly does not represent the bulk of the war cases which must be expected to appear in the 1946–50 rate. But in this connection it would be very misleading to draw a parallel between the substantial rise in the numbers of decrees nisi made absolute in 1941–1945, seen in Diagram D, and the small rise in 1916–18, and by analogy to deduce that, since there was a much greater rise in 1919–22 (about eight times as great), a proportionately greater rise must be expected after the recent war. The fact is that response to the end of the second world war was much quicker and in fact forestalled it.

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#### Live Births-Legitimate and Illegitimate Combined

The live births occurring in the six war years 1940 to 1945 numbered 3,936,463, a total which may be compared with 3,647,930 recorded for the six preceding years 1934 to 1939. The figures are taken from Table B of Part II of the 1945 Annual Review, from which it may be noted that the basis of the period assignment was changed after 1938, the record for that and preceding years being the numbers of births registered in the calendar year, while those for 1939 and later years refer to the numbers which actually occurred in each calendar year; reference is made on page 104 to the effect of registration time lag but it will not be of material significance in the comparisons made in this commentary.

Expressed in the customary crude rate form, namely, in terms of the total\* population of all ages, the 1940-45 experience represents an average annual rate of 15.57 live births per 1,000 population, making an increase of 4.8\* per cent. over the corresponding 1934-39 average of 14.85 per 1,000.

Averages thus expressed, however, fail to portray the important aspects of the war period which were essentially those of change and fluctuation and which, if not wholly due to the war, must have been influenced in their course by the varying phases of the conflict. The movements will be seen from the numbers and rates recorded for the successive calendar years and calendar quarters shown in Tables B and D of the Parts II of the Statistical Reviews from which the salient records are extracted in Table XXVIII. As with the marriage experience dealt with on a preceding page, it is clear that the disturbance to the earlier and slowly changing peace-time trend is not confined to the period of hostilities; the rates so far recorded in the post-war period continue to be little less abnormal and judging by the experience of the first world war, further years yet must elapse before it can be established that conditions are sufficiently stabilized to enable the full effect of the disturbance to be seen and its consequences measured. But the post-war phase, though as yet incomplete, forms an essential part of the total picture and in order to maintain as balanced a presentation of the war years as is possible at the present time, the summary of the main totals has been extended in both directions, repeating the records of pre-war years which have already appeared in earlier reports and adding those of post-war years from the records so far provisionally reported in the Quarterly Returns or otherwise available.

#### Table XXVIII.—Live Births and Live Birth Rates. England and Wales.

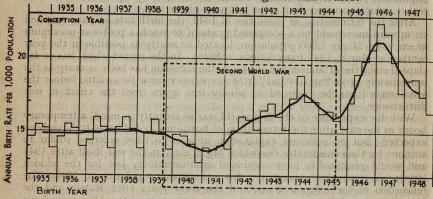
Calendar		Numl	ber of Live (thousands		for the	Live Births per 1,000 population (in the form of Annual Rates)					
Year  -	Year	1st Qr.	'2nd Qr.	3rd Qr.	4th Qr.	Year	1st Qr.	2nd Qr.	3rd Qr.	4th Qr	
1936	605	148	158	156	144	14·8	14·6	15·5	15·2	14·0	
1937	611	145	164	159	143	14·9	14·4	16·0	15·3	13·8	
1938	621	155	164	158	144	15·1	15·3	16·0	15·2	13·8	
1939	614	153	163	155	143	14·8	14·9	15·8	14·9	13·7	
1940	590	154	153	149	134	14·1	14·8	14·7	14·2	12·8	
1941	579	143	143	148	145	13·9	13·9	13·7	14·1	13·8	
1942	652	156	168	167	160	15·6	15·1	16·1	15·8	15·2	
1943	684	172	179	171	162	16·2	16·5	17·0	16·1	15·2	
1944	751	184	201	184	183	17·7	17·4	19·0	17·2	17·2	
1945	680	171	175	169	164	15·9	16·3	16·5	15·8	15·3	
1946	821	180	204	214	223	19·2	17·1	19·1	19·9	20·7	
1947	881	240	234	214	193	20·5	22·6	21·8	19·8	17·8	
1948	775	203	201	192	180	17·8	18·8	18·6	17·5	16·4	

<sup>\*</sup> The total populations on which the published rates are based, include non-civilians and merchant seamen at home and overseas from 1940, whereas up to 1939, the comparatively small numbers overseas were excluded (about 182 thousand at mid-1939). Allowance for this change of basis would raise the 4.8 per cent. increase in the average birth rate to nearly 5.3 per cent.

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The course of events thus set out will be more readily appreciated by their portrayal in the diagram annexed (E). The thin rectangular lines shew the live birth rates recorded in successive calendar quarters, in which form the progression will be seen to be dominated by the cyclical seasonal variations which have always been a feature of the birth experience. The prominence of this feature tends to obscure the underlying changes and to avoid this and to shew the progression in a more continuous form the thick line has been superimposed from which the seasonal movements have been averaged out, each point in the thick line representing the average of the four quarters of which it is the centre. From the point of view of association with contemporaneous events, it is the time of conception rather than the time of birth which is of relevance and the diagram has been drawn to shew the record in relation both to conception and to birth periods.

#### DIAGRAM E.—Birth Rates per 1,000 Population by Conception and Birth Periods, 1935-1948. England and Wales.



The birth rate in this country attained its highest values since the commencement of civil registration during the period 1865-1880 when it exceeded 35 per thousand population. From that time, it fell almost continuously for 50 years or more, to a point 60 per cent. below its original level; the rate had declined to 23.8 at the outbreak of the first world war in 1914 and then, after some marked fluctuation associated with that war, went on falling to reach an ultimate minimum of 14.4 per 1,000 in 1933. That year appears to have marked a turning point in the long history of decline, for the fall which up to then had been maintained at a steep gradient, was suddenly arrested and replaced by a rise which, if of no great substance, was more or less maintained, taking the rate to 15.1 per thousand in 1938.

After 1938 a renewed deterioration set in which in general will be associated with the early phases of the war. The first slight fall to 14.8 in 1939 was dealt with in the 1938-39 Text where it was suggested that, notwithstanding that all the relevant conceptions must have occurred in advance of the commencement of hostilities, they may well have been affected by the apprehension of war which arose after the German aggression in Czechoslovakia. With the actual outbreak of war, the decline was accelerated, taking the rate to 14.1 per 1,000 in 1940 and finally to 13.9 in 1941, a point which marks the lowest national rate ever to have been recorded in the registration history of this country. The physical separation of husbands and wives occasioned by the initial buildup of the Armed Forces may have played some part in the reduction of conceptions but it is more probably to be associated in the main with the more outstanding features of the first two war years which, it will be remembered,

marked the occasion of spectacular enemy successes and the heaviest aerial attack of the war upon the civilian population of this country with its tremendous interference in the normal habits and amenities of life.

From 1941 began a period of resurgence which has been as unexpected as it has been substantial in scale. In the first year, i.e., by 1942, the rate rose to 15.6, a point not previously attained since 1931, eleven years earlier; and this was followed by further substantial increments raising the level to 16.2 in 1943 and 17.7 in 1944. The increase of 3.8 per 1,000 in the three years 1941-44 was greater than the drop in the eight years between 1924 and 1932 when the

steepness of the earlier fall was at a maximum.

The rise was interrupted between 1944 and 1945 by a sharp decline of temporary character which, both as regards its scale and timing, can almost certainly be associated with the sudden transference of large numbers of the Armed Forces to the continent on "D" day (6th June, 1944), though it may have been aggravated to some extent by the renewed aerial attack on the population of the South-Eastern section of the country by flying bomb and rocket, which occurred during the last year of the war.

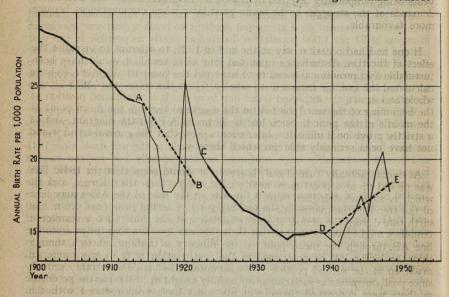
After the termination of hostilities in 1945, the birth rate at once resumed an upward movement on a steepened gradient to reach a post-war maximum in excess of 21 per 1,000 population, located as nearly as possible in the year centred at March, 1947 (conceptions in 1946). In the period which has so far elapsed since the attainment of the peak, the recession has been as sharp as the immediately preceding rise and further experience must be awaited before the serial record can be regarded as wholly free again from the effect of war

disturbance.

With the experience of the first world war so recently in mind, a temporary boom in the rate after the termination of hostilities in 1945 was to have been expected; but no sufficient explanation appears to have emerged so far to account for the considerable rise which began early in the war itself after 1941 and would presumably have continued uninterruptedly but for the sudden large-scale removal of young men from the home population in 1944. The relaxation of the extreme tension of the early years after Russia and the United States of America entered the war on the side of the Allies may have had some influence towards the making good of births postponed from 1940 and 1941. Again it was popularly suggested at the time that a number of children were being born to enable their mothers to claim exemption from the compulsory employment orders of the Ministry of Labour, though there is little statistical evidence to suggest that such births were of any numerical significance. But even if there were favourable factors, there were certainly offsetting features of an adverse kind; as for example, in the increasing degree of separation beteeen husbands and wives as either or both were absorbed in the Armed Forces and growing numbers of the males transferred to more distant theatres of war; or again in the diversion of women's domestic interests and activities to various forms of voluntary and compulsory war service, the increasing difficulties in obtaining hospital and nursing services and the steady deterioration in home and housing conditions. Differences in the comparable circumstances of the two wars were hardly sufficient to account for the very different behaviours of the birth rate over the two periods. A relevant and probably important aspect of the more recent upward turn in the trend is probably to be seen in the fact that it has not been confined to this country but has been paralleled by similar types of increase in many other countries in which the birth rate tendency had been a declining one between the two wars. The range covers neutrals as well as belligerents from which it is possibly to be inferred that the change of wider application is also of deeper origin reflecting a more fundamental alteration in the hitherto prevailing social attitude towards family life and the rearing of children.

Comparison with previous periods.—Comparison of the behaviour of the birth rates in the two war periods and their relation to that of adjacent peace-time trends is provided by Diagram F, which displays the course of the crude birth rate since the beginning of the century. The two war disturbances are distinguished by the thin line representation in which the annual fluctuations are portrayed, while the preceding and intermediate peace-time experiences are shewn in more continuous heavy lines, each point on the latter representing the average of three years centred about it instead of the single year rate in order to suppress the effect of minor fluctuations having no significance in this presentation. The annual rates used for the years 1915–19, viz., 21·4, 20·9, 17·6, 17·1 and 19·6 differ slightly from the hitherto published values in order that, in conformity with later practice, they may more nearly represent the actual birth occurrences of the years rather than the numbers registered; differences in this respect for other years of the series are not significant.

#### DIAGRAM F.—Birth Rate, 1900-1948 (see text). England and Wales.



Throughout the whole of the recorded peace-time experience of this country, the birth rate fluctuations from year to year have been quite small and little objection can be taken to their representation in the form of moving three year averages prior to 1914 and between 1922 and 1938 as shown. The thick continuous lines so drawn conform to our general understanding of the long continued decline to 1933 and its moderate reversal after that year; they may fairly be accepted as what is in mind when reference is made to the long-term trend.

For the two periods of war disturbance 1915-1921 and from 1940 onwards, if isolated and taken by themselves, no conclusion regarding general trend can be arrived at; and it is only when sufficient time has elapsed to shew that the violent oscillations have subsided, and the more stable records of periods before and after the disturbance can be taken into account that it is finally possible to view the effect of the disturbances in their proper perspective. At

the same time, without waiting for the "after" experience, provisional inferences can be drawn with the aid of the preceding trend alone, and the completer knowledge now available in respect of the first war period should go some way towards reinforcing any provisional conclusions now sought on that basis in respect of recent years.

The first war disturbance, 1915-1921.—It can be seen from the diagram that the major disturbance resulting from the first war was confined in the main to the seven years 1915-1921, that is, the period of the war itself and the three complete peace years immediately following. The disturbance was characterized by an abnormal and continuous fall in the birth rate throughout the whole period of hostilities followed by a complementary and equally abnormal boom in the immediately ensuing years. The temporary fall and temporary boom were obviously related to one another and were clearly explainable in the main by the postponement hypothesis, births of the earlier years being temporarily deferred by reason of the uncertainties and alternative demands of the struggle, to be made good later when circumstances became more favourable.

If one had had occasion, say at the end of 1921, to attempt to visualize the effect of the then disturbance upon the long term trend, it would have been justifiable as a provisional measure to have put the two parts together, to have calculated the average annual birth rate (20·7) for the seven years 1915-21 as a whole and drawn the expected trend line from the last established position at the beginning of the war (point A on the diagram) through the mean point at the middle of the period. Such line is shown as A B on the diagram, and as a strictly provisional indicator, later events show that the general trend would not have been seriously misrepresented thereby.

As events actually turned out, however, it would seem that the trend line was picked up at a point more nearly indicated by C on the diagram, a point which is somewhat higher than B, showing that the provisional assessment of the trend in the manner described tended to overstate the true fall in the birth rate during the period. Later reflection suggests that this overstatement tendency might have been anticipated, for the effect of drawing the provisional line AB through the mean point of the range was tantamount to assuming that the births lost or postponed in the first portion of the period were all made up in the second portion; an assumption that is demonstrably unreal, since postponements as such can never be fully caught up. So far as the potential mothers were concerned their fecundity must have been reduced with the passage of time; some would have died, others would have passed beyond the childbearing period and with the remainder, a delay of three or four years must have diminished, rather than otherwise, their ability to bear further children. While as regards the potential fathers, the heavy casualties during the war effectively eliminated any chance of making good deferments with which they may have been concerned. To a certain degree, the difference between the provisional trend AB and a line joining A to C may be looked to as furnishing an indication of the births lost as a direct effect of the war; a loss which in figures would be of the order of 200,000.

Current Period, 1940-1948.—The current period of disturbance is similar to that associated with the earlier war in that it comprises the period of hostilities and three complete peace years immediately following. The period of hostilities has been rather longer on the present occasion, but the fluctuations

in the birth rate have not been so violent, a comparatively moderate fall during the first two years of the war having been followed by a rise during the three following years from 1941 to 1944 after which a renewed fall in 1945 preceded the ultimate rise to the post-war maximum in 1947. If the earlier experience is repeated, the bulk of the disturbance should be accommodated within the nine years' range and more stable conditions should begin to emerge from 1949.

The events are of course too recent and incomplete for any final assessment of the trend to be deduced from them and as in the case of the first war period, the records of several more years will be required before the location and direction of future tendencies can be established. But it is at least possible to obtain a provisional guide as described above in respect of the first war period. The average annual birth rate of the nine years 1940-1948 is 16.8 per thousand, and since the last stable measurement (in 1939) was at about the point marked D in Diagram F, the line DE passing through 16.8 at the middle of the period should at least be a broad general g iide to the way events may be assumed to have moved. The temporary effects of the recent war superimposed upon the more enduring course of the birth rate, may have been different in detail from those of the last, but in substance they will have been of the same general nature, if on a smaller scale. That there was considerable postponement of births in the early years is hardly to be doubted and for the reasons already given, the irreplaceable loss of births caused thereby will have been material, though probably not so great as in the first war, in view of the far fewer war casualties on the present occasion, and a possibly shorter average period of

Whether the future trend will be picked up at E or at some other point only time will shew. But there can be little doubt that the position reached in 1948—as represented by the recorded rate fully abated for all possible remaining war abnormality—is substantially higher than it was before the war, implying a definite upward movement through the intervening years.

Standardized Comparisons.—From the point of view of fertility, the discussion of successive movements in terms of crude birth rates measured in relation to the total population is not altogether satisfactory, particularly for comparisons extending over a wide range of time, because the proportion of the total population which is responsible for the births has been diminishing for many years, with the result that the crude birth rate progression will have tended to overstate the fertility fall during its declining phase prior to 1934 and to understate the degree of its recovery during more recent years.

For a proper appreciation of the fertility changes, care must be exercised to see that the distortion arising solely from age changes in the population at risk is eliminated or reduced as far as practicable and several methods are available to secure this. A substantial element of the distortion can be avoided at the outset by the employment of rates relating the births not to the total population but to the numbers of women within the conventional reproductive age period of 15 to 45 or 15 to 50 as is regularly done in Table C of Part II of the Annual Review. Or it can be more completely eliminated from the crude rate comparisons by subjecting them to an age standardization process under which the recorded births of each year are compared with the calculated number which would have occurred if the females at successive ages between 15 and 50 had borne children at certain fixed rates employed as a standard. The latter method was adopted in the 1938-39 Text in a table (Table CVI. page 189) shewing changes in the course of the birth rate from 1841 to 1939, the standard age fertility rates employed being those of 1938. The standardized comparison, based on the same 1938 rates, is continued for the years since 1939 in the following table, those of selected earlier years being repeated from the table in the 1938-39 Text.

Table XXIX.—Ratio of the recorded live births (legitimate and illegitimate combined) to those which would have occurred had the population been subject to the age fertility rates of 1938.

Year (mean)	Ratio to 1938	Year	Ratio to 1938	Year	Ratio to 1938	repeated, flee	Ratio to 1938
1880-2	2.346	1934	0.956	1940	0.947	1946	1.345
1890–2	2.053	1935	0.953	1941	0.931	1947	1.463
1900–2	1.792	1936	0.962	1942	1.047	1948	VOTE 1-297000
1910–2	1.546	1937	0.974	1943	1.105	Mean of 6 yrs.	1934/39 0.974
1920-2	1.470	1938	1.000	1944	1.224	HO Line DE	1940/45 1.061
1930–2	1.022	1939	0.997	1945	1.114	9	1940/48 1.164

The extent to which the change in fertility is masked in the crude birth rate figures by alteration in the population distribution may be judged by comparing the experience of the high fertility year 1947 with the pre-war 1938 year; the crude rate of 15·1 per 1,000 population in 1938 increased to 20·5 in 1947, representing an increase of 36 per cent. whereas the corrected increase provided by the standardization of the above table is shewn to be 46 per cent.

The standardized average for the six pre-war years 1934-39 is 0.974 of the standard year 1938, while for the six war years 1940-45 it is 1.061, indicating a percentage increase of 8.9 per cent. (as compared with about 6 per cent. on the basis of the crude rates); for the nine years 1940-48 the average is 16.4 per cent, above the standard year 1938 and 19.5 per cent, above the average of the six pre-war years.

#### Reproduction Rates

An alternative method of assessing the fertility of each year, which fully meets the foregoing conditions and which is preferable from the point of view of both absolute and comparative measurements, is now available in the function lately introduced and adopted under the title of the Reproduction Rate. The rate is a direct measure of the birth experience in terms of fertility -in so far as any single figure can be used to reflect so complex a force as fertility—and is one which, while automatically making full allowance for sex-age characteristics in the population at risk, has the additional merit of being cast in the form of a sufficiency index showing the proportion which the births actually recorded in a year bear to the number theoretically required by the existing population, if its maintenance capacity, i.e., its total reproductive potential, had remained unchanged throughout the year.

The form of the index hitherto employed by this Department-known as the Effective Reproduction Rate (E.R.R.)—was fully described in the 1938-39 Text. The concept on which it is based, however, is not wholly free from ambiguity and it is considered further in a later section (page 204) in which the possibility of minor modification is discussed, with the double objective in mind of simplifying its construction without detracting from its value as a replacement index on the one hand and on the other of enabling it to be incorporated in a wider system of population measurement based upon the inherent reproductive capacity of the population rather than upon contents

in terms of persons.

E.R.Rs. in the form employed at present were set out for censal years 1841 to 1901 and individual years 1911 to 1939 on page 209 of the 1938-39 Text and they are continued for subsequent years to 1948 in Table XXX. The female age fertility rates employed in their construction are shewn in Table EE of Parts II of the Annual Reviews of the successive years.

Table XXX.—Effective Reproduction Rates. England and Wales.

1934	1940 1941 1942 1943	·772 ·761 ·853 ·900	1946 1·103 1947 1·205 1948 1·070
1938810	1944 1945	996	mean of 6 years 1934–39 .784 mean of 6 years 1940–45 .865
-041 1540 ±5078 961 + 089 + 076	1 60084 I	225	mean of 6 years 1940–45 .865 mean of 9 years 1940–48 .952

For the six war years 1940-1945 taken as a whole the average E.R.R. was 865 in which form it suggests a fertility increase of 10·3 per cent. over the corresponding average of ·784 for the six immediately preceding peace years 1934-1939. The said increase of 10·3 per cent. may be compared with the lower increase of 6 per cent. already shown in the crude birth rate over the same period, thus illustrating the way in which the full increase is masked in the crude rate comparison by the quite adventitious changes in the population structure referred to above.

For the whole nine years of disturbance 1940 to 1948, the average E.R.R. was .952, less than 5 per cent. short of full replacement standard and more than 27 per cent. in excess of the minimum of .747 recorded in 1933 where the trough of the earlier steady decline was approximately located; such change, having regard to the fact that the .952 is not a snap figure but an average covering as long a period as nine years can hardly be interpreted otherwise than as reflecting a degree of recovery of the highest significance.

So far as the changes over individual years are concerned, the E.R.R. is merely an alternative, if truer, measure of the recorded events and the fluctuating gradations from year to year naturally follow those of the crude birth rate which have already been described, commencing with a decline to '761 in 1941, a sharp rise thereafter to the maximum of 1.205 in 1947 interrupted by a temporary fall between 1944 and 1945 and a final decline from the 1947 maximum to the latest figure provisionally assessed at 1.070 for 1948.

Analysis of changes in the E.R.R.—Some insight into the factors responsible for the changes in the E.R.R. in recent years is obtainable by the type of analysis described on page 212 of the 1938–39 Text which provides an approximate apportionment of the movement of each year or period amongst its main contributory components.

Total fertility at any time may be regarded as influenced in the main by three factors, viz. (1) the rate at which married women bear legitimate children, (2) the rate at which unmarried women bear illegitimate children and (3) the way in which the legitimate and illegitimate contributions are combined as represented by the proportion of married to total females at the reproductive ages. And since the replacement index (the E.R.R.) has regard to the future reproductive efficiency of the new births, their chance of surviving to become mothers also enters into account, and thus introduces mortality as a fourth, if minor, factor influencing the periodic changes in the E.R.R. In the following table, the total increase or decrease of the E.R.R. in each period (first column)

is apportioned amongst the four contributing factors, thus indicating the relative extent to which they have severally been responsible for the total change.

Table XXXI.—Apportionment of periodic increases or decreases in the E.R.R., 1901-1946. England and Wales.

Period	Total increase or decrease (—)		the total inc		
Period 000 I along	in the E.R.R.	Legitimate Fertility	Illegitimate Fertility	Proportion of Women married	Survivorship Mortality
1901–11 (10 yrs.)	133	-·165	-·003	·041	+·076
1911–22 (11 yrs.)	115	-·225	-·005	+- ·039	+·076
1922–33 (11 yrs.)	265	-·302	-·010	+- ·009	+·038
1933–39 (6 yrs.)	+-061	-·044	+·003	+- ·090	+·012
1939–40	036	079	+ ·001	+ 040	+·002
1940–41	011	043	+ ·009	+ 021	+·002
1941–42	+-092	+-066	+ ·008	+ 016	+·002
1942–43	+-047	+-031	+ ·010	+ 005	+·001
1943–44	+-096	+-082	+ ·015	- 002	+·001
1944–45	087	100	+ ·012	- 001	+·002
1939-45 (6 yrs.)	+·101	-·043	+·055	+·079	+·010
*1945-46	+·194	+·193	-·011	+·010	+·002
*1946-47	+·102	+·094	-·007	+·013	+·002

<sup>\*</sup>Provisional.

The main factor determining the fertility of the population as a whole is the rate at which the average married woman bears children—rates which determine the ultimate size of her family—and the long continued fall in the E.R.R. to 1938 was primarily a reflection of the continuous and precipitate decline in its legitimate fertility component, which the analysis shows to have been far greater than any compensating advantage derived from the other factors. The reversal of the downward trend in the E.R.R. after 1933 was likewise due in the main to the abrupt halt in the legitimate fertility decline, but it is to be noticed here that the said decline did not entirely cease but that it was merely reduced to such small proportions that it could be, and was, offset by favourable changes in the other factors sufficient to impart a net increase to the E.R.R. as a whole over the six years from 1933 to 1939.

The imposition of war conditions after 1939 affected the several contributory factors in different ways and their combinations, sometimes in conjunction, and sometimes in opposition, have determined the course of the E.R.R. through the successive years. The marriage influence, through the early boom in new marriages, provided large positive contributions to the index which diminished in later years, though there has been some further addition from this source as a result of the post-war rise in marriages. Improvement in survivorship mortality has continued to exercise a small positive influence, but it has not been of any significance in recent periods. Illegitimate fertility, hitherto of no great consequence in peace-time, has intruded itself as a more material if temporary influence with cumulative positive contributions during the period of hostilities that are now in the process of being reversed with the approach once more of more stable peace-time conditions.

The largest and most erratic of the contributory war changes are those assigned to the main legitimate fertility component, a considerable deterioration in the shape of large negative contributions to the E.R.R. in 1940 and 1941 being followed first by equally large positive increments in the years 1942 to 1944, then by a renewed and substantial decline in 1945 followed by a complete reversal in the shape of heavy positive increments in the immediate post-war years. Over the six war years 1939 to 1945 taken together, the E.R.R. increased by ·101 (from ·808 to ·909), the increase embodying a decline in the legitimate fertility component of .043 masked by a much larger increase from the other factors amounting to 144. In a period of such outstanding transition and variability, the assessment of the position at any one point can have little intrinsic interest and it is unfortunate from many respects that the family census conducted by the Royal Commission on Population, which was designed primarily to throw light on legitimate fertility and which is bound to be treated as a bench mark in the meagre fertility records of this country, had to be taken at the end of 1945, when the said legitimate fertility had fallen to a completely artificial minimum which was immediately raised in subsequent years in which the increment for the first year alone was more than double the fall associated with the twelve preceding years.

Temporary effect of changing marriage rates upon the E.R.R.—In so far as a change in the normal flow of new marriages, either in an upward or a downward direction, alters the proportion of married women in the community, its effect on the E.R.R. is shewn in Table XXXI. But such change has a temporary influence on the E.R.R. which is not separately identified in that analysis. It arises from the fact that fertility varies with the marriage duration and is at a maximum immediately after marriage. The immediate effect of the change is to raise or lower the proportion of married women at the shorter marriage durations subject to the higher fertility and therefore to impart to the E.R.R. an increment or decrement of purely ephemeral character.

The scale of this influence may be illustrated by an example, taking for the purpose the experience of the year 1938, which followed a continuous rise in marriage rates from 1933. There were estimated to have been 3,079 thousand married women in the population of 1938 who were under age 50 and of less than ten years marriage duration,\* and their distribution by successive years of duration is shown in the first line of the following statement. The said women were responsible for approximately 239.8 thousand maternities in the second half of 1938 and the distribution of these according to duration is shown on the second line with the resulting maternity rates (per 1,000 women) shown on the third line.

or book bloom was	MOLIA d aid	Marriage duration (in years)									
licent years, For	0-	o bas	2-	3- 19 - 8 J	4	5-	6-	7- 1 ( b)	8-	9_	All Durations under 10
No. of Married Women (thousands)	347	350	335	326	314	284	287	283	282	271	3,079
Legitimate Maternities (thousands)	44.9	40.7	32.3	27.5	23.2	18.6	16-1	13.9	12:4	10.2	239-8
Rate per 1,000 Women	129.4	116.2	96.5	84.3	73.9	65.5	56.1	49-2	44.0	37.8	77-9

<sup>\*</sup> About 80 per cent. of the total legitimate births occur within the first 10 years of marriage; the experiences of later durations are of relative insignificance in this examination.

The rate line illustrates the rapidity with which the fertility incidence declines with increasing marriage duration.

If, instead of having been drawn from a rising scale of marriages in preceding years as was the case in fact, the 3,079 thousand married women had proceeded from a constant annual number of marriages, their distribution by marriage duration in 1938 would have been more nearly as follows:—

bodying a decline in	maile	Creas	ru or	1) (6	Iarriage	Durat	ion (in	years)	101	yd b	nerease
of such outstanding at any one point can	ariod tion	q <sub>1</sub> s	12_0	AA3L	19.40 19.410 11.220	es er	16-D	inds:	el <sub>8</sub> la	192 5	All Durations under 10
Standard Distribution of Married Women (thousands)	326	322	317	314	310	306	302	298	294	290	3,079
And the maternities to them at the above experienced rates would have been	42.2	37.4	30.6	26.5	22.9	20.0	16.9	14.7	12.9	11.0	235-1

Thus the maternities actually experienced (239·8) were 4·7 thousands in excess of those expected (235·1) from a standard duration distribution of the married women. The said excess represents 1·5 per cent. of the total maternities registered in the period and both the crude birth rate and the E.R.R. of the year may accordingly be regarded as being subject to a percentage abnormality of this degree due to the rising scale of marriages in preceding years. The 1938 E.R.R. as published was ·810 and if abated by 1·5 per cent. would be reduced to ·798 and the true rise from the minimum of ·747 recorded in 1933 would be ·051 instead of ·063.

Corresponding distortion percentages, calculated in a similar way for years since 1938 are shewn below:—

,	1938	1939	1940	1941	1942	1943	1944	1945	1946*	1947*	1948*
10	+1.5	+1.7	+2:8	+3.6	+2.5	+0.8	-1.0	-1.7	-0.5	-0.5	-0.7

<sup>\*</sup> Provisional.

The figures shew that the records of the successive years tended to be subject to progressively increasing degrees of inflation from this source up to 1941 after which the distortion declined and for the past five years has tended to be slightly deflationary in its effect. Apprehension is sometimes expressed in current commentary concerning the overstatement imparted to the customary fertility records by changes in the marriage rates; and the chief interest and value in the present examination is its revelation that even in 1941 the temporary distortion following the most phenomenal rise ever recorded for marriages in this country was not as much as 4 per cent., while for most of the years since 1938, it has been little more than 1 per cent. and for the latest years has been negative instead of positive in its operation.

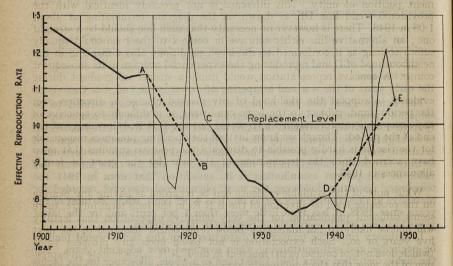
In ordinary times the temporary distortion from this factor would tend to be negligible and self-neutralizing when averaged over adjacent years. For the highly disturbed years 1940–1948 taken as a whole, allowance for the factor would reduce the average of the recorded E.R.Rs. from 952 to 948, itself an insignificant change; by reducing the recorded E.R.Rs. of the earlier years and raising those of the later years it would have the effect of steepening the slope of the improvement over the period.

It is to be borne in mind that the foregoing demonstration is designed to investigate only the temporary element of the movement imparted to the E.R.R. by changes in marriage frequencies. It has no permanent significance since an initial boost or reduction therefrom must be expected sooner or later to be countered by a neutralizing fall or rise as the case may be. It is to be

distinguished from the more enduring influence on the E.R.R. trend produced by change in marriage conditions; the latter arises from the fact that women once married remain married and that variations in their marriage frequencies or in the ages at which they marry operate to influence the consequential fertility product throughout the whole of their married reproductive life.

Trend of the reproduction rate.—The movement of the E.R.R. in a longer term setting may be seen in the next diagram (G) which shows the course of the changes that have taken place since the beginning of the century. The diagram has been constructed on similar lines to those adopted and described for the crude birth rate displayed in the preceding diagram. The irregular progressions through the two periods of war disturbance are shown by the thin lines linking the individual years experiences of these periods while the thick continuous lines represent the more general trend in the inter-war period 1922-1939 and in the pre-1914 period. The inter-war representation, as previously described for the birth rate, is by a three year moving average: for the pre-1914 period E.R.Rs. are not available for years between 1901 and 1911, but the line joining the 1901 and 1911 points broadly represents the fall in that decennium. As before, provisional trends through the two war disturbance periods are indicated by dotted lines drawn through the mean rate of each period from the last established pre-war position.

# DIAGRAM G.—Effective Reproduction Rates (see text). England and Wales.



The year to year course of the E.R.R. follows the similar course of the crude birth rate curve already described and need not be repeated here, the value of the alternative representation lying not so much in its detail as in the fact (a) that it shows the relationship of the experienced conditions at any time with that required by a 100 per cent. replacement test and (b) that it allows for the decline in the proportion of reproductive women in the population over the period represented and thus corrects the tendency inherent in the birth rate progression to overstate the fertility fall prior to 1933 and to understate its rise in subsequent years.

Further than this, it is not unreasonable to infer that at the present time (1948), normal fertility, if the experienced rate could be freed from its remaining war abnormalities such as may still exist from the earlier postponement of births, etc., would be found to have reached a position at or near replacement level with a possibly still rising tendency. The abnormality remaining in the experience of the third year (1921) after the first war would seem to have been about 10 per cent. of the recorded E.R.R. as judged by its fall to 1922 when the peace-time trend was more or less restored; by analogy the abnormality associated with the 1948 E.R.R. of 1.070—the third year after the recent war —would be expected to be lower in view of the smaller scale of birth postponement on the second occasion, in which event the normal component of the 1948 E.R.R. would hardly be very different from the standard replacement position of unity. This inference is not precisely identical with the provisional trend line DE as drawn on the diagram terminating at about 1.06 in 1948. There is however no necessity that such line should be a straight one: an alternative line either concave or convex to the base could equally suffice so long as it conformed to the basic conditions of commencing in the neighbourhood of D and reproducing the experienced average in its subsequent course. A concave representation would imply a steeper up gradient during the early years of the war and a tapering off towards the end, but there is no evidence to support the likelihood of any marked change in direction over the period; and, subject to the basic conditions, it is difficult to conceive of any acceptable interpretation which would put the E.R.R. below unity at the end of the period. Though we know little of the operating pressures responsible for the rise, it is hardly possible to disregard the positive stimulus that must have accrued since the termination of the war by the grant of family allowances in 1946.

While none of the available evidence can be regarded as having any bearing on the probable level or direction of the E.R.R. in the long term future, there seems sufficient justification for the very tentative expectation that fertility will not be likely to fall materially below replacement standard in the next five years or so. Such expectation is not based upon any prospect value (which does not, of course, exist) inherent in the E.R.R.; it is merely an expression of the view that the fundamental reproductive force, like any other natural force, is subject to the properties of momentum and inertia and that a sudden and violent departure from its current positional trend is to be regarded as unlikely.

The foregoing conclusions are put forward with the utmost caution and reserve. The precariousness of data derived from conditions so variable as those of the war and post-war years is in no wise to be denied and in no circumstances could inferences based on them be accepted with the confidence enjoyed by more stable movements of a corresponding peace period. Whether any

essentially different conclusions would be justified by an independent examination of the several factors which jointly contribute to total fertility and an attempted blend of the components to determine their joint effect and trend, it is difficult to say; the several factors have each been subject to their own types of irregularity and distortion and their proper appraisement and blending would certainly be hazardous at the present time, while much of the essential material of the critical years 1947 and 1948 remains unanalysed and unavailable. The important advantages possessed by the E.R.R. for the purpose lie mainly in the fact that it automatically blends together the effect of all the contributory factors, ponderable and imponderable, in a single collective index and secondly that the said index, or a sufficient approximation thereto, is available up to the end of the period.

There is little doubt that the general apprehension which existed prior to the war, viz., that the numbers of children then being born from year to year were tending towards levels that would result in a serious decline of population, owed its origin to the behaviour of the conventionally calculated reproduction index; the said births, as measured by that index, being seriously below the parity replacement standard represented by an index value of unity. The present examination is important in shewing that the position has now radically changed; that current births, after adjustment for war abnormalities, are probably at or about replacement level and that there is no apparent statistical pointer to suggest that any departure therefrom is more likely to be downward

than upward or vice versa.

In the contemplation of future requirements, care must be taken to distinguish between the actual numbers of births, and the rates they may represent, whether in the form of crude rates per 1,000 population or in the corrected and more informative terms of the E.R.R. The numbers of women at the reproductive ages 15-45 have been estimated at 9,729 thousands in the year 1947, but the numbers at younger ages now coming forward to take their place are insufficient to maintain this figure owing to the low birth rates of the nineteen thirties, and unless they are supplemented by a favourable migration balance. they are bound to fall during the next twelve years or so, i.e., by 1961, to about 90 per cent. of their present level. A parallel fall of this character in the numbers of annual births would thus be nothing more than a reflection of the reduction of the mothers available to bear them. The births required to satisfy a 100 per cent. replacement test would be about 710 thousands in 1949 and about 640 thousands in 1961 and an immediate fall to the former followed by a continuing decline to the latter in twelve years time could be tolerated without any misgiving, the maintenance of births from now on at a par replacement level being commensurate with the stabilization of the ultimate level of the population at about 45 millions, a figure somewhat higher than the estimate of 431 millions for 1948.

Restatement of the replacement rate and certain implications therefrom.—Since the publication of the Text for 1938–39, comments have appeared in contemporary demographic literature alleging the existence of popular misconception regarding the E.R.R. tending to discredit it as a valid measure of the fertility experienced at any time, particularly during periods of disturbance such as those through which we are now passing. It is alleged for example, that the nature of the E.R.R. is such as to make it unduly prone to encourage false impressions regarding the likely behaviour of fertility in the long term future; whether such impressions have really been created it is difficult to say, but it has always been explicitly stressed that the rate is a measure of current events carrying no future implications; in any case, its validity is hardly to be challenged because some may be found to misunderstand or mis-use it and it is safe to say that it could never have been so mis-used by

any responsible demographer. Again it is suggested that the E.R.R. is to be distrusted because it is influenced by marriage rates and conditions which do not necessarily affect the size of the completed family; here again the mismderstanding is difficult to follow because the number of children born does not depend upon the size of family alone, it depends also on the number of married women available to have families, to say nothing of the contribution from illegitimate sources, and an index such as the E.R.R. which sums up the effect of all the contributory factors must be more representative of the total conditions than one which has regard to one only of the factors, even if it be the most important one. That the whole is greater than the part is axiomatic, though this in no way denies the enrichment of the knowledge of the subject to be gained by the examination of the several parts in the light of all available data.

It was not the intention here to devote any considerable attention to alleged misunderstandings for which there is no obvious justification, but rather to refer to more real difficulties which have been experienced alike by both constructors and users of the E.R.R. in attempting to describe or understand precisely what the E.R.R. is or what it purports to do. It has been variously regarded as a measure of the replacement, as between successive generations, either of women, or of children or even of potential parents, vaguely implying the existence of some common generation relationship factor inherent in each of these alternative concepts, but without making it clear what this common factor is or why it is adequately measured by the arithmetical construction employed in its evaluation. A similar sort of vagueness attaches to the meaning of the "population" which the standard E.R.R. of unity is conceived to maintain; since the maintenance of numbers at ages above the upper limit of the childbearing range involves considerations that are not obviously taken account of in the construction of the E.R.R. index. In short, is the E.R.R. to be regarded as a vague hypothetical abstraction, or can it be accepted as a true and specific measure of a particular aspect of a birth experience, and if the latter, what precisely is the aspect whose measurement is thus being attempted?

The subject is examined in Appendix III on page 204 as a result of which it is suggested that the replacement index—as approximately measured by the E.R.R.—will be better understood as one feature in a system of measurements in which a population is measured not by a count of the individuals within it but by its inherent reproductive capacity as evaluated in terms of a suitably

designed capacity unit.

It is assumed as a general premise that the total reproductive capacity possessed by a community at any time is the fundamental factor governing its prospective potentiality for future development; the said total capacity may not and probably will not be used to the full, but the extent to which it can be used must depend in the first place upon how much there is to use. And that, since possession of reproductive capacity is confined to the younger elements who may be present in widely differing proportions in different communities, a truer appreciation of the comparative prospects of different populations or of changes from time to time within the same population will be obtained by expressing the populations and changes in terms of their reproductive capacities rather than in numbers of individuals.

In the course of a population through time, its total reservoir of reproductive capacity is being continuously depleted on the one hand as its members gradually pass through and beyond the reproductive ages, and at the same time it is being continuously replenished by the latent capacity possessed by the newly born children; the level of the total reservoir thus going up or down accordingly as the added capacity of the children is greater or less than that expended in

the course of their production.

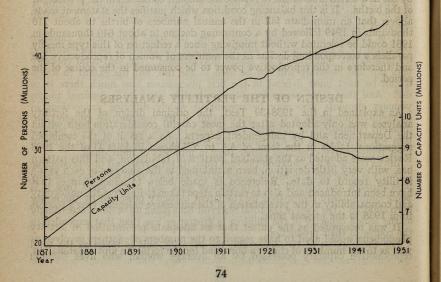
For the purpose of the Appendix, the capacity unit is taken as the total reproductive capacity possessed by an average woman who lives through

the whole of the reproductive age range, and on the basis of the assumption that such unit has not changed in value over the past 80 years, measures of the population of England and Wales in terms of its capacity units have been computed for various years from 1870 to the present time and are assembled in a table shewing for each year (a) the total number of capacity units possessed by the population, (b) the number of units consumed in the year and (c) the number of units added by the new births in the course of the year. Thus the total population of 42,259,000 persons in 1943 for example, is estimated to have contained a total of 8,666,000 reproduction capacity units, of which about 335,000 or 3.9 per cent. were expended during the year and were replaced by 304,200 associated with the 684,334 children born during the year. The rate of replacement of capacity units in 1943 is given by the fraction \( \frac{30.012.00}{335.000} \) i.e., \( .908, \) a figure which for all practical purposes can be regarded as equivalent to the published E.R.R. for the year, viz., \( .900. \)

A similar equivalence is shewn to exist between the computed capacity replacement fractions and the published E.R.Rs. for the whole range of years examined, and the immediate purpose of the investigation is regarded as having been achieved in demonstrating that the E.R.R., however it may have been described in the past, is not a hypothetical abstraction but an objective measure of a birth experience in that it purports to shew the extent to which the latent reproductive capacity of the progeny replaces the similar reproductive capacity consumed by the progenitor generation in giving them birth. If the credit and the debit items are of the same magnitude the total capacity of the population is unchanged and the standard reproduction rate of unity, instead of being defined in terms of a mystical and undefined future population, is seen simply as the rate necessary to maintain the reproductive capacity of the existing population at its existing level.

DIAGRAM H.—Course of the Population of England and Wales, 1871-1948, Measured in Terms of: (a) Number of Persons, (b) Units of Reproductive Capacity.

(Decennial intervals to 1911, single years thereafter)



An incidental advantage of this type of fertility measurement is that it associates significant changes with the period to which they relate rather than with more indefinite conditions of the future, and it is usefully illustrated by Diagram H opposite, in which changes in the numbers of persons in the population over the period 1870 to 1948 may be seen in relation to the simultaneous changes in the reproductive capacity of the population.

The top curve shews the familiar course of the population measured in the customary form of the numbers of persons at successive periods, and exhibits the steady and continuous increase which has been associated with the whole of

the period covered.

The lower curve which shews the reproductive capacity of the population is seen to have taken a radically different course. Up to 1901, the capacity increased at about the same rate as the numbers of individuals, but thereafter while the growth of the latter continued unchanged, the growth of their inherent reproductive power began to slacken and by 1911 had nearly ceased, achieving a capacity maximum in the neighbourhood of 91 million units which can be associated with the period of the first world war. From that time, notwithstanding the continuing increase in the numbers of individuals, the reproductive capacity began a decline which has persisted for more than two decades and which has lowered its level to a point some 9 per cent. below that of the maximum of the 1911-1921 period. There is no doubt that from the point of view of its prospective influence upon future numbers, the population of today is some 9 per cent. poorer off than it was after the first war. The significance of the subnormal E.R.Rs. recorded year by year after 1922 lay not so much in the inference that they foreshadowed a possible decline in the total numbers in a somewhat hypothetical future as in the fact that they registered a fall in the governing growth factor as and when that fall was taking place.

The fall appears to have ceased after about 1940 and for the past seven or eight years has varied little from an average of rather less than 8,700 thousand units, a level which under the conditions of the survivorship mortality anticipated in the future may be regarded as commensurate with a stable population of about 45 million persons as suggested above. Apart from the effect of migration, the capacity level will be maintained if the amount added each year by the new births is sufficient to replace the amount consumed in the production of the births. It is this balancing condition which justifies the statement made above, that an immediate fall in the annual numbers of births to about 710 thousands in 1949 followed by a continuing decline to about 640 thousands in 1961 could be tolerated without misgiving since a reduction of this type merely parallels a corresponding decline in the numbers of women of reproductive age and therefore in the reproductive power to be consumed in the course of the

period.

#### DESIGN OF THE FERTILITY ANALYSES

As explained in the 1938-39 Text, the original design of the fertility analyses was only adopted after the most careful consideration both within the Department and by independent experts. As a result of the combined suggestions, tables in the form of AA to YY shewn in Part II of the 1938 Review were adopted as the standard pattern of tabulation, and this pattern has, with very little deviation, been maintained in the analyses of each year's fertility record to date. Reference is made below to minor changes that have been introduced and also to certain steps taken to improve the uniformity and comparability in the presentation of the successive calendar year's records from 1938 to the present time.

It was recognized at the outset that an adequate presentation of iertility phenomena would need to have regard to the numbers of mothers involved as well as to the numbers of children born, and for the former, a unit of tabulation,

new to the records of this country, was introduced in the concept designated as a "maternity", defined in tables as follows:—

"The term 'Maternity' is used to denote a pregnancy which has terminated in the birth of one or more live- or still-born children, the criterion of stillbirth being that defined in the Births and Deaths Registration Act, 1926. The maternity record differs from the birth record in that multiple births from a single pregnancy are counted as one maternity while for the birth record each child born is reckoned as a separate unit."

At the same time, in view of the complexity of tabulations involving identification of legitimacy, mother's age, duration of marriage, number of previous children and their various combinations, it was not deemed feasible to provide completely parallel classifications of both births and maternities, and short of this, it was decided that whereas analyses by the two features of legitimacy and mother's age should be complete for both births and maternities (Tables AA to HH and YY) for the legitimate fertility tabulations involving duration of marriage or number of previous children (Tables II to SS) the analyses should in the main be restricted to maternities. Maternities are slightly greater in number than the corresponding number of live births involved (the still-birth element included in the former being in excess of the plural births excluded) but the difference is not great 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 ratio as shown in the following table:—

Table XXXII.—Ratio of Legitimate Live Births to Legitimate Maternities by Mother's age. 1938-1945. England and Wales.

Year	All Ages	Mother's Age								
	All Ages	Under 20	20-	25-	30-	35-	40 and			
1938	-974	·978	-981	.977	-976	•963	.938			
1939	-974	-979	-980	.979	.973	.964	-941			
1940	.976	.978	.982	.980	.976	.966	-942			
1941	-978	-980	-982	.982	-977-	-969	.946			
1942	-979	-979	.982	.982	-980	.972	-950			
1943	-982	.984	.986	-985	-982	.977	-956			
1944	-985	-985	-989	.989	.986	-980	-962			
1945	-985	-987	-988	-989	.986	.978	-958			

It is to be noted that maternities are in excess of live births throughout, but that the difference has steadily diminished over the eight years shown in the table.

Changes in presentation and steps taken to improve serial comparability.—Four changes in presentation, three of them minor and the fourth of rather more significance have been introduced since 1938. They may be enumerated as follows:—

- (i) In response to the need to curtail tabulation labour and paper consumption, Tables FF, LL, NN, TT, and UU have been omitted from 1939 inclusive. These tables were of secondary interest only in that they were confined to sub-analyses for regions of the country and their value in any event would have been problematical in view of the abnormality of the regional distribution of population under war conditions.
- (ii) Operating from 1943, the analysis of first maternities in Table QQ has been enlarged to display the first maternities of "existing" marriages as well as those of "all" marriages.

- (iii) In 1945 the detailed sub-division of the marriage duration records identifying monthly and quarterly intervals for durations under two years was transferred from the "first maternities" table QQ to the "all" maternities table OO.
- (iv) The most significant change arose from the decision in 1941 to base the analyses on the birth occurrences of the year instead of upon the numbers registered. The original design provided for the counting of the births by month of occurrence and the publication of the simple numbers in Table YY. When it became apparent that, owing to the progressive shortening of the registration time lag (referred to on page 104), the actual occurrences were being materially overstated by the numbers registered, the tabulation processes were rearranged to provide for the whole of the analyses to be based on the numbers of occurrences. The change necessarily introduces an element of non-comparability between the published analyses of the years 1938–1940 and those of subsequent years.

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 failure at numbers of birth registrations to obtain 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 years 1938 to 1945 is as follows:—

"Not stated" cases per 10,000 total legitimate maternities.

Type of information not stated	1938	1939	1940	1941	1942	1943	1944	1945
Age only	21	21	21	23	23	23	20	20
Age and duration Age and children	5	5	4	6	5	4	4	3
Age, duration and children	25	23	28	24	18	13	11	11
Duration only	89	69	67	62	45	46	42	40
Children only Duration and children	44 7	12 13	12 8	13	12 5	17 9	17 5	32 6
Total all types	191	143	140	134	108	112	99	112
All age types	*51	50	53	53	46	41	36	34
All duration types	125	111	107	98	73	72	62	60
All children types	76	48	48	43	36	39	33	50

It will be seen that in the first year of the operation of the Population (Statistics) Act, the new information required was deficient—in one form or another—in nearly 2 per cent. of the total records; that the percentage fell to less than 1½ per cent. in the two following years and that it has since been reduced to a little more than 1 per cent. The item of information most frequently omitted has been the date of marriage, from which the marriage duration is obtained; the omissions of the mother's age and previous children are consistently less but they cannot be disregarded in the circumstances of the detailed interest now evinced in all the aspects of the incidence of fertility. It is to be remembered that amongst the informants responsible for registering the births there will always be a number not familiar with the mother's marital history so that some degree of record omission will be seen to be inevitable and there is no evidence that the failures recorded are more than would be satisfied by this explanation.

Though it is in accord with sound statistical practice that the defective elements should be identified in the published records there is little doubt from the user's point of view that a preferable presentation would be one in which the said elements were distributed and included in the specific analyses and that, having regard to the fact that many of the "not stateds" in the present case will have been unintentional and unprejudiced, they would be adequately disposed of by their rateable distribution amongst the "stated" cases. It would not be practicable to dualize in this way the whole of the published analyses but a contribution to that end, which should be of direct service to those who hereafter have occasion to trace the course of fertility in the early phase of the new system of extended records, has been made by the provision in Table VI, Appendix I on page 176 of a supplementary presentation of Tables SS of Parts II of the successive Annual Reviews in which modifications have been incorporated so that the records of the eight successive years 1938 to 1945 shall as nearly as possible be directly comparable one with another. The modifications are as follows:-

- (1) The "not stated" cases have been distributed throughout in a consistent and orderly manner, those of each type having been dealt with separately so that cases in which "age only" was omitted have been rateably distributed according to all the records in which age was returned, cases in which age and duration was omitted according to all the records in which both these items were recorded, and so on.
- (2) The analyses of 1939 and 1940 published on the basis of the numbers registered have been further modified by common factors so as to represent the occurrences of the two years.
- (3) The published analysis for 1938 which was necessarily limited to the second half of the year has been further rateably modified so as approximately to represent the position for the full calendar year, with the aid of factors based upon the relationship of the births of the whole year to those of the second half.

Table SS for which this revised treatment is provided is the one which deals with all three fertility characteristics, viz., mother's age, duration of marriage and number of previous children, in combination and thus readily supplies controls to which any other tables can be assimilated as occasion requires. The rates or other indexes used in the present report have in the main been derived from the fertility data so treated, in conjunction with the improved estimates of population described in Appendix II, and figures quoted for 1938 or 1939 may accordingly differ to some extent from those used in the Text for those years.

#### Illegitimate Births and Pre-marital Conceptions

Illegitimate Births.—Of the total 3,936,463 live births which occurred in the six years 1940-1945, rather more than a quarter of a million, viz., 255,460 or 6.5 per cent., were illegitimate in that their parents were not married at the time of birth. The number is 102,385 or 67 per cent. in excess of those similarly recorded in the preceding six-year period when they were only 4.2 per cent. of the total births registered.

In terms of the related population at risk, viz., the numbers of single, widowed and divorced females between the ages of 15 and 45, the illegitimate birth rate of this country in normal peace years has shown a steady decline over the past 80 years from a level exceeding 18 per thousand related women prior to 1860 to about 9 at the turn of the century and to 5.5 in the six years preceding the recent war. The decline was not different in essence from that appertaining to the birth rate as a whole, of which it necessarily formed part.

The course of the numbers and rates through the several years of the war period 1940 to 1945 is as follows, a comparable record being added in respect of the first world war.

Table XXXIII.—Illegitimate Live Births. England and Wales.

ed to slot First V	Vorld War	dinamine in	Second	World War	
course of ferrility has been made by applementary pre- fewiewsomewines	No. of illegitimate births	Per 1,000 single and widowed women 15-45	perestics have of the new system ole VI. Appendix S. S. Mart I. S.	No. of illegitimate births	Per 1,000 single and widowed women 15-45
4 yrs. 1911–1914	150,399	8.0	6 yrs. 1934–1939	153,075	5.5
1915 1916 1917 1918	36,245 37,689 37,157 41,452	7·6 7·8 7·7 8·5	1940 1941 1942 1943 1944 1945	25,633 31,058 36,467 43,709 55,173 63,420	5.9 7.4 9.0 10.9 13.8 16.1
4 yrs. 1915–1918	152,543	7.9	6 yrs. 1940–1945	255,460	10.4

It will be seen that both numbers and rates of illegitimate live births have steadily and markedly risen throughout the recent war years and that by the end of the war, that is in 1945, the number was  $2\frac{1}{2}$  times and the rate nearly 3 times the pre-war level. The behaviour is in noticeable contrast with that of the previous war when there was very little change in the incidence of illegitimacy; the average for that war period taken as a whole was almost identical with the then pre-war position and in regard to the separate years it was only in the last year of that war that a fractional increase was recorded which was no more than enough to offset the lower level of the earlier war years.

An increase in the number of illegitimate children is one of the legacies bequeathed by the late war and there is no intention here of under-rating the seriousness of the social problems that they will have brought in their train. At the same time, it is important that the adverse implication of the figures should not be over-rated, and above all, it is necessary to utter an emphatic warning against treating the record of the above Table XXXIII as a measure of the loosening of the conventional restraints hitherto associated with the sexual behaviour of the people, and in particular of the young women of this country.

Illegitimate maternity rates by quinary groups of mothers age are shown in Table V of Appendix I on page 172.

Extra-Marital Conceptions.—A prominent feature of the new information derived from the Population (Statistics) Act of 1938, has been the revelation it provided of the large number of legitimate births that are conceived before marriage. The mothers in such cases are unmarried at the date of conception so that their conception conditions can in a sense be regarded as similar to those of unmarried mothers, and the two classes should accordingly be treated together in figures employed to indicate the incidence of sexual irregularity.

Maternities occurring within 8½ months of marriage are taken as the statistical representation of the pre-marital conceptions, and on the basis of these and the illegitimate maternities combined, the somewhat startling disclosures were made in the preceding Text that, in 1938 and 1939, one-seventh of all the

children born in England and Wales were products of extra-marital conceptions, and that nearly 30 per cent. of all mothers conceived their first borns out of wedlock. The births of 1938 and 1939 were all products of peace-time conceptions, and there was no reason to suppose that these proportions, astonishing as they may have seemed, were other than representative of the prevailing peace-time conditions.

The experience of the subsequent war years is set out in Table XXXIV the records being expressed in numbers of maternities, that is, in terms of the mothers involved instead of the numbers of births.

Table XXXIV.—Illegitimate Maternities and Pre-maritally conceived Legitimate Maternities. England and Wales.

grejani Berne	TO STANKE TO LO	Pre-maritally		ities conceived wedlock	Percentage of irregularly	
Year	Illegitimate maternities	conceived legitimate maternities	Numbers	Per cent. of all maternities	regularized by marriage of parents before birth	
1	2	3	4	5	6 110 12 10 10 10 10 10 10 10 10 10 10 10 10 10	
1938	28,160	66,221	94,381	14·6	70·2 data 69·4 data fac	
1939	26,569	60,346	86,915	13·8		
1940	26,574	56,644	83,218	13·7	68·1	
1941	32,179	43.362	75.541	12·7	57·4	
1942	37,597	40,705	78,302	11·8	52.0	
1943	44,881	37,271	82,152	11·8		
1944	56,477	37,746	94,223	12·3	37·1	
1945	64,743	38,176	102,919	14·9		
1940- 45	262,451	253,904	516,355	12.9	49.2 sit a	

The illegitimate maternities of the second column of the table parallel the illegitimate births of the preceding table, and like them, shew a progressive and substantial increase throughout the war years, rising from 26,569 in the last pre-war year 1939, to 64,743—a figure  $2\frac{1}{2}$  times as great—in 1945. At the same time it will be seen that the complementary numbers of pre-maritally conceived legitimate cases in the third column show an equally remarkable decline, falling from 60,346 in 1939 to 37,271 in 1943, and only slightly exceeding the latter figure at 38,176 in 1945.

From the point of view of sexual irregularity, it is not with these columns separately that interest is concerned but with their combined numbers in column 4 which shew the total number of maternities conceived out of wedlock. The annual changes here are far more moderate; in fact the numbers declined materially during the first two years of the war and though they rose towards the end, the average for the six war years 1940-1945 was lower at 86,059 than in either of the two pre-war years for which we have record. When measured as a percentage (column 5) of the total maternities of each year, the proportion of those conceived out of wedlock was substantially below the pre-war figure in five out of the six war years and only in 1945 did it rise fractionally above that for 1938. Instead of the irregularly conceived being one-seventh of all the children born as before the war, the proportion for the war years was little

more than one-eighth, not a startling change perhaps, but one of improvement rather than deterioration.

The significant feature of the war experience, however, is not so much the small decline in the proportion of the irregularly conceived cases as the change in the form in which it has found expression in the statistical record, namely in the transfer of increased numbers from the pre-nuptially conceived legitimate section to the illegitimate section or in other words in the decline in the proportion of parents who regularized their actions by marriage before birth took place. The said proportions are shewn in the sixth column of Table XXXIV, from which it will be seen that whereas under pre-war peace conditions about 70 per cent. of the parents concerned married and thus secured that the coming child should be included in the normal legitimate category, the percentage fell year by year throughout the war until in the last year, 1945, it was only 37 per cent., or little more than half its peace-time level.

The explanation is almost unquestionably to be found in the enforced degree of physical separation of the sexes imposed by the progressive recruitment of young males into the Armed Forces and their transfer to war stations at home and abroad, rendering immediate marriage with their home brides increasingly difficult and, in the case of many, quite impossible. Precisely how many children were thus inadvertently transferred from the legitimate to the illegitimate class by the imposition of war obstacles to the timely marriage of their parents cannot, of course, be ascertained directly. But that the number is likely to be a large one can be inferred from the scale of the figures set out in the above Table XXXIV. If, for example, the normal proportion of parents expected to marry before the birth of an extra-maritally conceived child be taken as 70 per cent.—the proportion recorded prior to the war-then about 361 thousands of the 516,355 maternities conceived out of wedlock in the years 1940-1945 should have been so regularized as compared with the 254 thousands which were in fact regularized, leaving the difference, viz., 107,000, as a general indication of the magnitude of the illegitimate births, which, but for the exigencies of the war, would otherwise have been included in the legitimate class. The numbers, as would be expected, grew progressively through the war years, their distribution on the above basis of reckoning being as follows (in thousands):-

						Total
1940	1941	1942	1943	1944	1945	1940-1945
1	10 .	14	20	28	34	107

The transfer of large numbers such as these from the legitimate to the illegitimate section will have had the effect of distorting the respective trends of fertility in both sections, producing an undue rise in the illegitimate and a no less fortuitous decline in the legitimate section.

To the extent to which this is the explanation, the lapse will often have been of a temporary character only, since it is to be presumed that in many, probably a large proportion, of the cases where the parents were reunited after the war they will have married and thereby legitimated many of the children registered as illegitimate and secured to them the normality of home life and upbringing of which they might otherwise have been deprived. In such circumstances it will usually be in the future interest of the child to complete the rectification process as far as possible by re-registering the birth under the arrangements authorized by the Legitimacy Act of 1926. The record of re-registrations to date shows that this has not so far been done to any great extent.

In the following table the irregularly conceived maternities—illegitimate and legitimate combined—are analysed according to the mother's age and are shewn in the form of rates per thousand of the unmarried female population in each group (to which the mothers of the legitimate section have been restored).

Table XXXV.—Irregularly conceived maternities per 1,000 unmarried females (see text). England and Wales.

Age of mother	1938	1939	1940	1941	1942	1943	1944	1945	1940–1945 average
15- 20- 25- 30- 35- 40-	12·0 37·1 27·6 16·0 10·6 4·2	12·1 36·5 26·6 15·8 10·0 4·0	11·4 36·2 28·1 16·1 9·7 4·0	10·1 32·3 28·6 18·0 10·7 4·7	10·4 34·0 30·5 20·5 11·9 5·1	10·7 34·9 33·4 23·5 13·2 5·7	11·4 38·4 43·0 29·9 15·6 5·9	12·4 43·3 46·5 33·2 17·2 5·9	11·1 36·5 35·0 23·5 13·0 5·2
15–45	19.8	19.0	18-9	17.9	19.0	20.2	23.3	25.8	20-9
Ratio to 1938 Crude Standardized	1·00 1·00	·96 ·98	·95 ·98	·90 ·92	·96 ·98	1·02 1·04	1·18 1·18	1·30 1·32	1·05 1·07

When expressed in relation to the unmarried female population at risk in the successive years the bottom two lines of the table shew that the general incidence of the irregularly conceived maternities declined up to 1941, and that though it rose thereafter, it was only in the last two years of the war that it was materially above the 1938 level, there being an excess of 18 per cent. in 1944 and 32 per cent. in 1945. For the six war years 1940-1945 as a whole, the average, standardized to allow for changes in age, was about 7 per cent. above the 1938 figure, a comparatively modest increase in view of the quite exceptional circumstances of the period.

The age analysis is of interest in showing that such increase in sexual irregularity as is evidenced by the figures is located amongst women of the older groups. For each age section identified, the tendency at first was for the incidence rates to decline, after which they steadily rose to the end of the war. In the two youngest groups, under 20 and 20-25, the later rise was barely sufficient to offset the earlier fall and for the six years as a whole the average was well below the 1938 level; for ages above 25 the record is less satisfactory, for the rise started earlier and reached proportionately higher points by the end of the war with the effect that the six years' war average exceeded the pre-war level by as much as 27, 47, 23 and 24 per cent. in the successive quinary age groups from 25 onwards, the maximum increase being that recorded for the comparatively advanced 30–35 age section in respect of which the 1945 rate was double the pre-war rate and the average excess for the six war years, 47 per cent. as indicated.

The increases at the more mature ages are striking; but it has to be remembered that the unmarried female population declines very rapidly over the marriage ages so that the ages of increased irregularity incidence are the ages of the reduced population and the effect of the increases in terms of the numbers of births involved is only slightly more than the reduction effected by the reduced irregularity incidence at ages under 25 where the unmarried population is at a maximum.

Taking the six war years as a whole the average increase of about 6 per cent. in the total number of irregularly conceived births will hardly be regarded as inordinate, having regard to the wholesale disturbance to customary habits and living conditions in conjunction with the temporary accession to the population of large numbers of young and virile men in the Armed Forces of our Dominions and Allies.

#### Legitimate Births and Fertility

Of the total births which occurred in the six war years 1940–1945, 3,681,003 were registered as legitimate, and in this respect compare with 3,494,855 similarly registered in the six preceding years 1934–1939, the present figure thus embodying an increase of 186,148 or 5·3 per cent. over the preceding record. During the same period, however, the numbers of married women responsible for the births increased at an even greater rate and in relation to the numbers of such women between the ages of 15 and 45—the population to which it has been customary to relate legitimate births in all past periods—legitimate births of 1940–1945 represent an average annual yield for the six years of 104·3 per 1,000 married women, in which form it is lower than any corresponding rate hitherto recorded; comparing with 110·3 in the immediately preceding six years, with 143·6 and 173·5 in the decades 1921–30 and 1911–20 respectively and with far higher rates in all earlier periods.

The relevant records of the individual years over the current and preceding

six-year periods are shewn in the following table.

Table XXXVI.—Legitimate Births and Rates per 1,000 married women aged 15-45. England and Wales.

	Pre-War Y	ears	War Years					
Year	Legitimate Births (thousands)	Rate per 1,000 married women	Year	Legitimate Births (thousands)	Rate per 1,000 married women			
1934	571.9	112-9	1940	564.5	98.8			
1935	573.7	111.5	1941	548.0	94.1			
1936	580.4	110.9	1942	615.0	103.8			
1937	585.2	110.2	1943	640.6	107.6			
1938	594.8	110.0	1944	696.3	117.4			
1939	588-9	107.0	1945	616.5	103.9			
6 years	3494.9	110.3	6 years	3681.0	104:3			

The identification of the experience by individual calendar years is of importance at the present juncture in spite of the fact that the records of the war years have been profoundly and irregularly influenced by war circumstances, for it provides an indication of a change in tendency which may be of the utmost significance in the contemplation of future trends. For the six war years taken together, the only inference is that the average rate at which married women produced children, viz., 104·3 per 1,000, was  $5\frac{1}{2}$  per cent. lower than the inadequate rate of the preceding period, thus apparently registering a further decline in the long fall that has operated almost continuously for more than 60 years. But when the years are examined individually, it is seen that whereas the character of the immediate pre-war period 1934–39 was much the same as that of its predecessors in that the legitimate birth rate proceeded in a downward direction throughout, the character itself was different in the war period, for the rate, after touching a minimum in 1941, thereafter changed its direction and rose substantially in the later part of the period.

This change of direction may, as stated, be of high significance, though the experience of a number of post-war years will be required before its scale and the question of its permanence or otherwise can be determined. There appears no ostensible reason to ascribe the change to the war conditions with which it coincides. These, as is shewn hereafter, tended to depress the rate rather than to raise it; moreover, in the first world war the general decline then proceeding was accelerated throughout the war period and even during the compensatory boom conditions which followed that war, only for one year at the peak of the boom, viz., in 1920, did the rate exceed its immediate pre-war counterpart; whereas in the current experience the rate not only began to rise early in the war itself but materially exceeded the pre-war position in 1944 and in the course of the comparable post-war boom conditions has for the three years since 1945 been at markedly higher points. It is noteworthy also that the change is not confined to this country but has been paralleled in other countries, neutrals and belligerents alike.

War conditions will, however, have left their impression on the birth facts of the years as recorded in the above table and though it will only be years hence, when the effect of the war repercussions have disappeared from the serial record, that it will be possible, by a survey of the whole, to attempt a full appraisement of the more fundamental tendencies of the period, it should nevertheless be possible by a general consideration of the known disturbing factors to obtain some approximate indication of their likely effect on the recorded figures. The more important of them are referred to hereunder.

The first war feature likely to influence the birth rate comparison was the sudden boost in the number of new marriages which occurred immediately after the outbreak of war in 1939, involving, particularly, women of the youngest ages.

The tendency for women to marry at increasingly younger ages, which began a few years before the war and was accelerated during the war has resulted in raising the proportion of married women at the younger ages where the incidence of fertility is at its highest. This change in age proportions alone must have had the effect of raising the births in the ensuing years above the numbers that would otherwise have been recorded and would thus have influenced the birth rate even had there been no change in the inherent fertility of the women. It constitutes an influence which is reflected in the birth experience of the war years which must be considered and if possible eliminated in any approach to the more fundamental fertility changes of the period.

A similar but independent type of disturbance has been introduced by the abnormal increase in the number of new marriages in 1939 and 1940 and its complementary offset in the abnormally low numbers of marriages of 1943 and 1944. Fertility varies with marriage duration more markedly even than with age and is at its maximum immediately after marriage. The immediate effect of any substantial change in the regular numbers of new marriages is to raise or lower the proportion of married women at the shortest marriage durations and thus, like the age change referred to in the previous paragraph, to impart an influence to the fertility product over and above that due to any change in fertility itself.

Changes in the age or duration characteristics of the body of reproductive women are, of course, always occurring; they have merely been aggravated by war conditions and the customary means of eliminating their influence by the familiar method of standardization is applied to the experience of the war years in the demonstration below. In the comparison there set out, rates for the successive war years are displayed in relation to the position of 1938 which is taken as a standard, the appropriateness of that year for the purpose ensuing

from the fact that it is the first year for which the enlarged statistics from the Population (Statistics) Act of 1938 are available and that it is at the same time reasonably representative of the immediate pre-war position with a general fertility level not very different from the average of the six years 1934–1939 as a whole; e.g., the crude birth rate of Table XXXVI above is 110.0 per 1,000 in 1938 as compared with 110.3, the average of the six years.

Year has	A. Crude rate per 1,000 married women 15-45 compared with 1938 taken as 1,000.	B. Standardized comparison from which the influence of age change has been eliminated.	C. Standardized com- parison from which the influence of both age and duration change has been eliminated.
1938	1,000	2000 1,000 Visalita	1,000
1939	dio an bei 973 per mead	and lad v 967 as each a	967 - PART
1940	898	871	860
1941	855	821	813
1942	944	899	899
1943	978	935	949
1944	1.067	1.031	1,061
1945	945	dw add to 918 the sign	948
6 years	wan amma an Louisin	SILE RESIDENCE TO A STREET	ternebung them edi i
1940-45	948	912	921

The first column (A) shews the progress through the period as represented by the unadjusted crude rates of Table XXXVI above, expressed in terms of the 1938 record taken as 1,000. So expressed, the legitimate birth rate is seen to have fallen progressively to a minimum 14.5 per cent. below that of 1938 in 1941 and thereafter to have changed direction and risen comparatively steeply in the three following years to a point 6.7 per cent. above 1938 in 1944 followed by a recession in 1945 which, in the absence of a satisfactory explanation, might be regarded as challenging the significance of the preceding rise. For the six war years as a whole, the average level by the crude rate test is 5.2 per cent. below that of the standard year.

The first of the series of correcting adjustments is provided by column B of the statement, in which the influence imparted by the changing age constitution of the women at risk is removed from the crude comparison of A. The value for each year in column B expresses the ratio of the actual births of the year to the births which would have been expected had the women of the year in their several age classes borne children at the age rates of 1938, the effect of the operation thus being to compare the products of the birth rates of the experience and standard year as applied to the single population of the experience year instead of to the differing populations of the experience and standard years, respectively.

The over-favouring influence of the age factor is seen by its removal; as a result of which the average level for the six years is now reduced to a point 8.8 per cent. below the standard instead of the 5.2 per cent. deficiency by the crude A test. All the several years of the period are depressed thereby, the decline to 1941 being accentuated, while the rise thereafter is maintained as before, though at lower levels.

Age standardized comparisons for years prior to 1938 were provided in Table CVI of the 1938-39 Text and the figures of column B above continue the series to 1945.

The next stage in the adjustment process is provided by column C, in which the bias due to changing incidence of marriage duration is eliminated as well as that due to age change; the actual births of each experience year being

compared with the numbers expected from the application of 1938 age-duration fertility rates to the appropriate age-duration sections of the women of the experience year. The effect is not uniform over the series of years in this case; in the early years of the war the occasion of abnormally large increments of newly married women added a positive incidence to the births, the removal of which is seen to have still further sharpened the decline to the minimum year of 1941; but in the later years when the new marriages fell off, the effect was reversed and its removal has resulted in a steepening of the rise after 1941 and in the latest years to have practically offset the depression caused by removal of the age bias. For the war period as a whole, the position, after the second-stage correction, at 7.9 per cent. below the 1938 standard, is slightly better than that shewn by column B but is still materially below the crude rate comparison of A.

While adjustments as above for the abnormal changes in the numbers of new marriages would have been appropriate if the marriages had occurred under normal peace conditions, they are probably less adequate, or at any rate must be subject to further qualification in the present case. The onset of war conditions affected the character of the marriages over and above the mere changes in the numbers and ages of the women involved.

In the first place the war undoubtedly accelerated the dates of many marriages and thereby added many years of married life to the population experience which could not have been counted upon in a peace regime. Exactly how many cannot be known, but from the run of the numbers of annual marriages there would appear to have been an abnormal excess of something like 150,000 marriages in the years 1939 and 1940 with a corresponding depression about four years later from which it may be inferred that probably more than half a million years of married life with an associated expectation of 50,000 or more births were added as the result of the earlier anticipation of marriage. Whatever the forces which stimulated those marriages, whether associated with emotional factors or with more tangible attractions bound up with separation allowances and pensions in the event of war widowhood, there was little immediate prospect of indulging in ordinary domestic life, and though the contingency of childbirth could not be disregarded it was more likely intended that reproduction should be avoided at the outset. From a fertility point of view many of the marriages must have been of a delayed action type and debiting them with a full peace-time fertility expectation in the standardized tests above will have unduly depressed the comparative yield of the war years.

Another significant difference between the character of the war and pre-war marriages was the exclusion from the war experience of the marriages of many pregnant women which, under peace conditions, would have taken place before the birth of the coming child but were inadvertently frustrated by the physical absence of the fathers on active service. In respect of these women the children were actually born but have necessarily been registered in the illegitimate class; thus depriving the legitimate section of a class which would have been included with them under normal conditions and were in fact so included in 1938, the year with which the war experience is being compared. The distortion thus imparted to the comparison cannot be measured exactly but its broad effect can be gauged in either of two ways. In the preceding section dealing with illegitimate births it is shewn that the births transferred in this manner from the legitimate to the illegitimate class steadily increased during the war and on the assumptions there made may have reached a total of 107,000 for the whole of the six war years; to improve comparability with 1938 these should be included with the actual legitimate births of the war years in which event the ratios of the actual to expected shewn in column C (p. 85) would be improved throughout to the figures at column D opposite. Alternatively, the effect of the distortion would be removed by omitting all pre-nuptially conceived births from the comparison, i.e., from both the records of 1938 and the later years, and limiting the actual/expected test to the births conceived after marriage. On this basis the column C comparisons would be revised to those shewn at column E.

Standardized comparisons of C adjusted as follows:-

Year	D. To allow for inclusion of births assumed to have been registered inadvertently as illegitimate.	E. To limit the comparison to births conceived after marriage.				
1938	1,000	1,000				
1939	967	980				
1940	of appending 1862 and south tole	893 Ha Shall W				
1941 1942	938 (156) 1 827 A 70 Y 10 8 10 9 10 9 10 9 10 9 10 9 10 9 10 9	935 978				
1943 1944	978 1,103	1,096 988				
1945	1,000	such and an asymptotic and				
6 years 1940-45	of to eath of the 948 his visite	that the elies 959 and a find all				

The adjustment, computed on either the D or E basis, raises the relative position of the war experience and suggests that about three-eighths of the apparent deficiency by the standardized C test may represent, not a decline in numbers of births, but merely a change in their assignation, viz., to the illegitimate instead of the legitimate class. The correction at this stage raises the average war level again to that indicated by the initial crude comparison of A, viz., one about 5 per cent. below that of 1938 but with a lower minimum

in 1941 and a steeper rise in the subsequent years.

Finally, and of more consequence than either of the distorting features so far mentioned, was the deliberate or unavoidable suppression of normal reproductive habits during the period of hostilities which is to be inferred from the sharp and quite abnormal rise in the birth rate which occurred immediately after the ending of the war. It parallels the experience of the first world war, though on a somewhat smaller scale, and is probably rightly explained by the postponement hypothesis usually accorded to it, that is, to the making good after the war of births which would otherwise have occurred during the war and which should accordingly be credited to the war years in any attempt to envisage the true fertility trend during those years. The births suppressed during the war were not, however, limited to those made good later; for, as has already been mentioned, many of the original postponements could never be made up owing partly to the ageing and debilitation of the prospective mothers during the postponement period and even more to the fatal war cas lalties amongst the prospective fathers: but the original suppressions implied the existence of a normal intention at the time and credit for them, if they could be identified, would be no less valid than it is for the cases where the original postponements have in fact been made good.

But while it is possible to recognize the existence of these factors it is quite another matter to measure them and it is not possible to do more than attempt to assess their weight in very general terms. Apart perhaps from some natural expectation that women of more cautious or prudent temperaments would tend to have restrained their normal reproductive impulses under conditions like those of the early years of the war, the main factual evidence of the existence of the postponement factor is that provided by the sharp temporary

boom in the birth rate which immediately followed the termination of both the first and the second world wars and it is mainly that evidence that must be looked to for any measure of the birth transference involved. Following the cessation of hostilities in 1945 the crude birth rate rose substantially to 19-2 per thousand population in 1946 and from there to the peak of 20.5 in 1947. after which it dropped to 17.8 in 1948 with a still declining tendency which may well carry it to 163 per 1,000 or thereabouts in 1949. The latter point would still be some 10 per cent. in excess of the pre-war level, so that it hardly seems likely that the normal component in the rates for the three preceding years 1946-48 would have been higher than 161, in which event the abnormal element in the 1946-48 experience could be assumed, in a very rough approach, to be that represented by the excess of their rates over 161. The average of the rates for the three years, as given above, amounts to 19.2, of which 2.7 or about one-seventh would thus be the measure of the abnormal element. In terms of numbers, the total births registered in the three years 1946-48 were 2.484 thousands, one-seventh of which-about 350 thousands-would accordingly be the measure of the post-war credit strictly assignable to the war period in the attempt to associate them with their years of origin. These have regard only to the suppressions actually made good after the war and they accordingly should be augmented by the suppressions which, for the reason already given, could not be made good and of which—though their numbers are not known—there must have been many thousands in all.

On this basis the measure of the births suppressed would be 10 per cent. or more of the total legitimate births (3,681 thousands) actually recorded in the six war years, and their credit to the war experience would have the effect of transforming the apparent deficiency of 5 per cent. in the war years (as indicated by standardized comparisons D or E) into an apparent excess of 5 per cent. Without accepting this as the only or even a best measurement, there would seem to be ample ground on the whole for regarding the finally adjusted legitimate fertility of the war years 1940–45 as being higher, rather than lower, than the corresponding fertility of 1938 or the immediately

comparable pre-war period.

In considering the possible assignment of the suppressions to the individual years of the period, differentiation would have to be made according to whether the postponements were voluntary and deliberate on the part of the parents concerned or whether they were forced upon the said parents by the exigencies of the war situation. As regards the voluntary postponements, there are no direct means of estimating the numbers of parents or births involved though it seems reasonable to assume that the tendency would be likely to have been strongest in the early years of the war when the uncertainty of the future was at its maximum in which case any credit in respect of them should go to the early years and would have the effect of raising the fertility level of the earlier in relation to that of the later war years. The alternative type of forcible postponement was that imposed on parents by their physical separation for long periods where the husband was in the Armed Forces, a feature which grew with the increase in the numbers of men posted overseas and which reached a climax after "D" day when all the forces that could be spared were transferred to the Continent and remained out of contact with their homes for the remainder of the war. The wives involved were virtually sterilized for the time being and their fertility performance in such circumstances is obviously not to be judged by an "expectation" based upon 1938 peace-time conditions. The material available for testing and measuring the temporary suspension of births so caused is incomplete and to some extent confidential so that any specific estimate of the loss is out of the question; but from two very broad guides, viz. (1) that a million men of an age constitution corresponding to that of the Armed Forces would have been responsible for something like 80,000 births in a pre-war year and (2) that probably more than five million

years of life were spent abroad by men of this country at the various theatres of war, it may be conjectured that the loss must have extended into hundreds of thousands of births even after liberal allowance for mitigating factors such as a possibly smaller proportion of married men in the Forces and for the fact that the separations of husbands and wives were not always continuous, but were occasionally interrupted by periods of leave. Such losses were at a maximum in the last phases of the war and go far to explain the recorded decline in the numbers of births in 1945. Allowance for them would raise the recorded fertility of the later years of the war in the same way that similar allowance for the voluntary type of postponements would increase those of the earlier years.

Such in the main are the outstanding features of the war experience, which have operated to mask the more enduring legitimate fertility tendencies concealed behind the recorded events. Some appear to be measurable, though only within a wide margin of approximation, and others are not capable of measurement at all. Such examination as has been possible, however, appears to be sufficient to establish two main conclusions, viz. (a) that when the war experience is adjusted so as to eliminate the distorting factors, the legitimate fertility tendency of the years 1940–1945 may be regarded as having on the whole been higher rather than lower than that of the immediately preceding peace period and (b) that within the period it was at a minimum at the

beginning, from which it rose to a substantially higher point at the end.

Of the two conclusions, a comparatively minor increase in the average level is not of great significance in itself since legitimate fertility of the comparable pre-war period was lower than any in the recorded history of this country and a larger rise than is taken credit for here would be necessary to raise it to a sufficiency level from the point of view of population replacement.

But as suggested earlier, the change of direction during the period is of the highest importance; in fact it is probably the most important feature of the whole experience of the war years since it appears to mark a turning point in a decline which has been practically continuous for a period of 60 years. It will be remembered that when, following the long decline, the general birth rate first began to shew signs of recovery in the early nineteen thirties it was seen that the then change was not due to any increase in the rate at which married women were adding to their families but to the fact that more women were marrying and marrying at earlier ages. It was a definite fertility improvement, but was a reflection of an increased willingness on the part of women to join the married class and to expose themselves to the contingency of fertility rather than of an increase in the married woman's average fertility which still went on declining though at a decelerated pace. The latter has now been reversed by this second phase of change under which legitimate fertility itself is seen to have turned from a downward to an upward direction.

Improvement in legitimate fertility, established after making full allowance for changes in the ages and marriage durations of the women concerned, suggests increase in the average size of family and its importance at the present time lies not so much in the amount of the improvement so far recorded as in the fact that the tendency is an upward one; for, unless the rise can be definitely and unequivocally explained in terms of its promoting causes and those causes can be shewn to be of limited or temporary effect, it is impossible to say when

or where the rise will come to an end.

The main effect at the moment of any change of this nature is to impart more than the ordinary degree of obscurity to the immediate future. The present change, for example, may herald an era of fertility conditions more favourable than those to which we have become accustomed in recent years; though confidence in such prospect would only be gradually established by a continuance of the favourable experience into peace years freed from the effect of war disturbances. On the other hand, the rise may be of a more transient nature, though here again it would equally seem the height of

unwisdom to assume that no change of importance was taking place and to base long term expectations or policies on the assumed continuance of legitimate birth rates—or their aggregates in terms of family sizes—achieved during what may prove to be the trough years of the depression.

Legitimate Fertility by Mothers' Age and Duration of Marriage.—
Legitimate maternities at successive marriage durations are classified by individual ages of the mothers in Table OO of Part II of the Annual Review of each year. As there published, the records are seen to be subject to a degree of incompleteness on account of the inclusion of varying numbers of cases in which the age of the mother or the duration of her marriage was not recorded. With the object of presenting the serial record in a consistent and complete form, the "not stated" cases have been distributed and other adjustments incorporated as described on page 76 and the maternities so adjusted are shewn for the years 1938–1945 by quinary groups of age in Table VI of Appendix I on page 176.

Annual rates corresponding to the adjusted maternities are shewn in Table V of Appendix I (page 172) and have been obtained by relating them to the estimated years of married life exposed to risk, the ascertainment of which is described in Appendix II. It should be noted that a maternity rate expressed per year of married life may be regarded as equivalent to the rate per married woman except where the duration is less than a full year in which case the married woman's rate is a fraction of the rate per year of married life corresponding to the fraction of a full year represented by the duration identified. Again the rates shewn are maternity rates and to obtain equivalent birth rates they should be multiplied by the appropriate ratios of births to maternities.

Analysis by age.—Dealing first with the distribution by mothers' age at maternity, the following table shews the numbers of legitimate maternities of each year and their distribution 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 XXXVII.—Distribution of Legitimate Maternities by Mothers' Age, 1938-45. England and Wales.

Mothers' Age	1938	1939	1940	1941	1942	1943	1944	1945	Average 1940–45
Total numb	er of ma	ternities	(in hun	dreds)	+				Harris Harrison
	6,107	6,047	5,789	5,606	6,282	6,524	7,066	6,262	6,255
Age distrib	tion per	1.000 to	otal					noobsto	
15—	36	39 1	39	35	30	28	25	27	alubiana in
20—	233	223	235	249	247	249	247	246	246
25—	324	328	327	316	312	290	271	269	297
30—	237	238	230	224	235	246	256	249	240
35	126	128	125	129	131	140	153	157	139
and over	. 44	44	44	47	46	47	48	52	47

Throughout the period the largest proportion of maternities occurred to mothers between the ages of 25 and 30, but with a declining tendency from 32·4 per cent. in 1938 to 26·9 per cent. in 1945, the average for the six war years being 29·7 per cent. A large proportion of the remainder are associated with mothers in the immediately older and younger groups both of which have slightly improved their relative positions. Altogether, the maternities between ages 20 and 35 have accounted for between three-quarters and four-fifths of the total in every year, the average proportion of 78·3 per cent. in the war years comparing with 79·4 per cent. in 1938. Outside the main middle range the small proportions to young mothers under 20 declined from 3·6 per cent. of the total in 1938 to 2·7 in 1945 (war average 3·1) and those at ages over 35 increased from 17·0 to 20·9 (war average 18·6).

In the top portion of Table XXXVIII the numbers of maternities are shown in the form of rates per 1,000 married women at each age in each year as extracted from Table V of Appendix I and in the lower half of the table the age rates of each year are compared with those of 1938. Fertility varies with duration of marriage independently of age and to eliminate the duration factor the comparisons are shewn in a standardized form, representing the percentage difference between the maternities actually recorded at each age and those which would have emerged had the married women been subject to the 1938 age-duration rates.

Table XXXVIII.—Legitimate Maternity Rates by Age, 1938-45.

Mothers' Age	1938	1939	1940	1941	1942	1943	1944	1945	Average 1940–45
Experience	d matern	ity Rat	es per 1,	000 Mar	ried Wo	men 8	21- 998	h ne I	
15-	550	473	341	304	292	303	319	294	309
20-	272	257	230	216	221	218	233	212	222
25-	175	171	157	145	162	165	176	154	160
30-	112	110	99	92	107	116	131	113	110
35-	61	61	56	55	62	68	79	71	65
40-	23	22	21	22	23	24	26	25	24
	DIELDIL				18			17 17 17 17	e remain
15-44	113	110	101	96	106	110	119	106	106
Percentage	Fall or	Rise (he	avv tvp	e) as con	mpared	with 193	38 (Dura	ation sta	ndardized
15-	Participation of the second	14	40	44	47	44	41	47	44
20-		6	18	22	19	19	11	20	18
25-	matem	2	10	18	6	3	6	1117	6
30-	100 mm 100	2	12	18	4	5	20	5	at lane 1
35-	JUNESCH S	1		11		10	28	16	6
40-	80000000000000000000000000000000000000	4	911	7	1	4	13	9	1
	303 439		PRINSE	Herry of Aton	THE PARTY OF THE P	Property of the	it cours in the	CREAT PAST	2002.00
*15-44	3/2000	3	14	19	10	11991619	5	6	8.3

\* Standardized for age and duration.

The general course of the age rates as shewn by the percentage changes in the lower half of the table is dominated by the effect of the special war factors previously referred to. Beyond the fact that the said factors could be seen to be substantial in character, their assessment in total was quite indeterminate; any attempt to envisage their influences at different portions of the age field would be highly conjectural and little more can be said than that the nature of the age changes recorded largely accords with what would have been expected of the special factors and that the latter must be looked to as providing the explanation for the bulk of the apparently adverse changes. Thus the reductions were outstandingly high and most uniformly sustained through the war period at the youngest age group as would be expected; the numbers of births at ages below 20 are relatively few, but they would have been subject to postponements no less than at higher ages and in addition they would have suffered the maximum degree of loss from the failure of parents of extra maritally conceived maternities to legitimate their offspring at birth: the loss from this cause gathered momentum through the war period and the fact that it is not reflected by a commensurate rise in the percentage loss suggests that it may have been offset by a rise in the basic fertility in the later years of the period. The proportion of the male population in the Armed Forces was at its maximum at the earliest adult ages so that the fertility war disturbance from both the postponement and the illegitimizing effects would be expected to decline with advancing age. The illegitimizing factor was still prominent in the 20- age class and would have been largely responsible for the maintenance of the fall in the later years of the period though at levels less than half those of the younger group. From age 25 onwards the distortion would have been increasingly due to the postponement factor though with diminishing weight and as this was probably spread more evenly over the

range of war years its effect may be expected to have lowered the fertility incidence without entirely masking the rise in the later years.

That the standardized fall in maternities shewn for the aggregate of married women on the 15-44 line is rather greater than that shewn for live births in comparison C on page 85 is due to the decline in stillbirths, the proportion of live births per maternity having steadily improved throughout the period.

Analysis by Marriage Duration.—The distribution of legitimate maternities according to marriage duration\* is shewn for the successive calendar years from 1938 in the following table.

Table XXXIX.—Distribution of Legitimate Maternities by Marriage Duration, 1938-45. England and Wale

Marriage Duration	1938	1939	1940	1941	1942	1943	1944	1945	Average 1940–45
Pre-marital	ly conce	ived per	1.000 to	tal legit	imate m	atorniti	on of an	1	
0-8½ m.	106	100	98	77	65	57	53	61	69
T	0 416					1150			Janes and Marketing Phil
Distribution	per 1,0	00 total	conceive	ed after	marriag	e in eacl	vear		
02-112 m.	60	58	73	67	51	47	45	56 1	57
1- yr.	154	151	159	193	153	139	119	119	147
2- yrs.	122	122	118	116	150	118	103	91	116
3- yrs.	104	105	102	90	102	125	100	92	
4- yrs.	88	90	87	79	82	87	111		102
5-6- yrs.	131	135	132	125	136	140		90	89
7-8-9- yrs.	138	138	129	123	131		146	170	141
10 & over	203	201	200	207	STATE OF THE PARTY	146	159	157	141
0.02	The state of the s	201	200	207	195	198	217	225	207

The biggest change shown by this arrangement of the data is that associated with the first duration identified, viz., 0-81 months, the duration adopted as statistically reflecting the incidence of pre-maritally conceived births. In 1938 such births accounted for 106 per 1,000 of the total legitimate births recorded, but for the reasons already advanced this proportion fell rapidly during the course of the war to 53, half the pre-war figure, in 1944 and for the six war years taken together averaged only 69, less than two-thirds of the peace-time proportion.

To avoid the influence of this very exceptional section upon the later durations, the proportions for the latter are shewn per 1,000 conceived after marriage. From the 1938 column it will be seen that conceptions were highest immediately after marriage and thereafter steadily and substantially declined at each succeeding year of marriage duration; 21.4 per cent. of the maternities occurred before the end of the second year and were thus products of conceptions within 15 months of marriage, while 52.8 per cent. occurred before the end of the fifth year (conceptions within four-and-a-quarter years of marriage); about one-fifth of the total occurred after 10 years of marriage.

For the average of the war years taken together the general pattern of the distribution was not dissimilar though there was a slight lowering of the proportions at the early durations and a complementary increase at durations over four years. Within the war period, however, more variation was evident, the decline in the proportions with advancing duration showing a steepening at first which was later reversed and ultimately resulted in considerable levelling so that in 1945 the proportions were very similar at durations 2, 3 and 4, and were only slightly different from those at 1 and 5 and 6. The variations can be largely ascribed to the fluctuations in the annual numbers of marriages; the larger numbers of births which would flow from the abnormally large numbers of marriages of 1939 and 1940 would tend to be reflected by high proportions located at the shortest durations in the early years of the war and at correspondingly later durations towards the end of the war; conversely the abnormally few marriages of 1943 and 1944 would tend to produce unduly low proportions of births for the early marriage durations of 1944 and 1945.

\*Durations shown in years, e.g., 1-, 2-, etc., should be read as strictly meaning 11½m. -1 yr. 11½m., 2yr. 11½m., etc.

The unevenness imparted by the annual marriage variations is eliminated in the following table which expresses the numbers of births at each marriage duration as a rate per 1,000 married women aged 15-45 passing through the duration identified. The course of legitimate fertility between 1938 and 1945 at the various durations of marriage identified will perhaps best be seen from the two lower sections of the table where the ratios of the successive years are shewn in terms of their excesses or deficiencies in relation to 1938, the first year of the series and a reasonably stable representative year of the pre-war

Table XL.—Legitimate Maternity Rates by Duration of Marriage, 1938-1945. England and Wales.

Marriage Duration	1938	1939	1940	1941	1942	1943	1944	1945	Average 1940–45
Experienced	Rates 1	per 1,00	0 Marr	ied Wo	omen 1	5-44 a	t each	duratio	on
0-8½ months	187	164	117	109	110	124	134	113	118
8½-11½ months	98	92	82	79	79	87	106	113	91
1 year	244	243	232	211	224	233	263	253	236
2 years	203	195	186	171	189	182	191	180 152	183
3- ,,	177	175	159	142	171	167	172		160
4- "	156	155	141	123	149	156	163	139	145 132
5- ,,	138	134	121	111 96	132	142 127	157	131	118
6- ,,	119	119	103	84	101	115	129	112	106
7- ,, 11	94	92	81	78	86	99	117	99	93
8- ,, (100)	81	81	- 74	69	80	85	103	92	84
9- ,,	46	45	42	43	45	48	56	51	48
10 years and over				AND THE RE					MINISTED REP
All durations	113	110 .	101	96	106	110	119	106	106
All durations from	106	104	97	93	104	107	117	103	104
8½ months	A STANSAUGUS		TOTAL STEEL STEEL						104
	r Rise	(heavy	type) in	rate a	s comp	ared w	1th 193	8 74	69
0-8½ months		23	70	78	77 19	63	8	15	7
81-111 months	A STEEL	1	12	33	20	11	19	9	8
1 year		8	17	32	1 14	21	12	23	20
2 years		2	18	35	6	1 10	5	25	17
3- "		1	15	33	7	1 10	1 7	17	11
4- ,, 5		4	17	27	6	4	19	1 7	6
5- ,, 6- ,,	1000		16	23	1000	8	22	6	1
7- ,, 0 10 20 100000		2	12	21	4	10	24	7	î
8-di stoled berggood	11100	2	13	16	8	5	23	5	IN SUPLICE
9-1, partition to enday	100000	M. 5-5	7	12	W =10	4	22	11	3
10 years and over	6_6		4	3	111	2	10	11	-010 200
All durations		3	12	17	7	3	6	7	edi 701
All durations from	35 KE 40	3	12	1	Tisting.	cases t	mr man	una ità	rdintedus
81 months		2	9	13	2	1	11	3	200
Percentage Fall or	Rise (	heavy t	ype) as	comp	ared w	ith 193	88 (age	standa	rdized)
0-81 months	19	16	42	46	48	43	38	47	0 44
8½-11½ months	-	6	16	19	20	12	9	16	7
1 year	-	-	5	15	10	8	4	1	6
2 years	-	4	8	16	8	13	10	15	12
3- ,,	-	1	9	19	4	8	7	18	11
410, Exportant as used	915		9	20	4		2	14	8
5- ,, controller is well to	11 43	3	11	19	4	3	13	7	4
6-1, de la contrata			13	18	1	8	19	4	State Transfer
7- 3 50 3 80 3 855	To the same of	961	10	19	2	12	25	8	2
8-4,	P B	2	14	17	8	7	26	7.7	100 -000
9- ,,	Now II	ped1br	8	15	1	6	29	16	ed 4
10 years and over	15 TE 15 15	2	8	7	1	4	22	10	3.00
*All durations *All durations from	-	3	14	19	10	6	5	6	8.3
8½ months	Thomas of	2	9	15	6	2	9	1	4.0

The general course of fertility thus portrayed repeats in its broad aspects the more general changes associated with the period as already described, viz., the marked fall in the years 1940 and 1941 and a recovery thereafter which took the rates above the pre-war level in 1944 followed by a temporary recession in 1945. At the same time, it adds point to some of the influencing factors.

The largest and most persistent reductions are seen to be those associated with the first eight-and-a-half months of marriage reflecting the maternities proceeding from the pre-marital conceptions; from the two total lines which show the "all durations" and the "all durations after eight-and-a-half months" experience it will be seen that this factor was responsible for more than half the fall during the war years as a whole and considerably more than half in the later years of the war. Moreover, as already explained, the decline at this duration cannot be accounted a real loss since the children must be deemed to have been largely born in, but accidentally excluded from, the legitimate class through circumstances which conspired to prevent the marriage of their parents before birth.

Apart from its identification of the pre-maritally conceived element, the arrangement has the advantage that the experience of successive cohorts of marriages can be traced on falling diagonals through the table. Thus the rates immediately above the diagonal step line in Table XL are those experienced by the cohort of women married in 1939-40 and the diagonal itself broadly divides the table between the records of war marriages (above the line) and the records of pre-war marriages (below the line). The distinction is of interest in that it shows that the bulk of the improvement located in the later war years was confined to women married prior to the war; to some extent the later increases no doubt represent the making good of postponements from the early war years, but this is hardly likely to be the sole explanation since many women occupied on war duties would have tended to defer resumption of their family building to the less inauspicious prospects of a postwar period and, in many cases, would have been forced to this eventuality by the physical absence of their husbands on war service; in which event it would seem that part of the rise might be regarded as reflecting a real rise in fertility, a suggestion which derives some support from the second section of the table which shows that for the 1935-36 marriage cohort the excesses in the later years were greater in amount than the deficiencies of the early years

In the case of the war marriages (above the line) a rise is shown for the latest cohorts (marriages of 1943-4 and 1944-5) and since in their case the question of earlier postponement did not arise, the increase is hardly to be explained other than as an increase in basic fertility. But with the earlier war marriages, that explanation does not hold, for in their case the apparent decline continued with minor exception throughout the war period, there being little evidence in the later years either of real fertility improvement or even of the making good of earlier postponements; the reason for their different behaviour is not as yet forthcoming, but it lends colour to the suggestion, made earlier in this comment, that the excess marriages of the early war years differed from their more normal counterparts in having been stimulated in the first place by war factors, partly psychological and partly economic, rather than by the prospects or intentions of an immediate domestic family life. To what extent ordinary fertility reactions may have thus been suppressed or delayed must be a matter of conjecture upon which the future experience of these marriage cohorts may or may not throw light.

By re-arranging the tabulations of successive calendar years, it is possible to trace the performance of successive marriage cohorts and so to ascertain their total achievements in the matter of fertility at the end of one, two, three, etc., years from their date of marriage. This has been done in the adjoining table so far as is possible from the duration records of years from and after 1938, the first year for which the analysed fertility information is available.

# Table XLI.—Comparative Fertility Achievements of successive Cohorts of marriages of women marrying at all ages under 45.

Note.—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 calendar years.

THE RESERVE OF THE PARTY OF		discussion of	<b>学院公司</b>	3.154.2110					
Original	stendiza	me er Lish	Mara M	Marr	iage Durat	ion	0.04100	al figh	PROBL
Cohort of new marriages	0-8½ months	8½-11½ months	1-2 years	2-3 years	3-4 years	4–5 years	5-6 years	6-7 years	7-8 years
a) Number of	motorpities	at encessive	duration	s per 1.000	) married	women sur	vivors of o	original co	hort of
a) Number of	materinties	at successive	women ma	rrying und	er age 45.				
1937–38	1 187	98 (121)	242	184	141	147	139	137 122	109
38-39	164	92 (110)	231	169	169	153	154 128	122	
39-40	117	82 ( 93)	210	188	165 170	160 136	128		
40-41	109	79 ( 89)	223	181 189	150	130			
41-42	110	79 ( 89)	232 262	178	130				
42-43	124 134	106 (122)	252	170					
43-44	113	113 (127)			- 124.343.3.3.3				
		original o	cohort of v	vomen mar	rying unde	er 1,000 m r age 45.			
1937-38 38-39 39-40 40-41 41-42 42-43 43-44 44-45	187 164 117 109 110 124 134 113	285 256 199 188 189 211 240 226	527 487 409 411 421 473 492	711 656 597 592 610 651	852 825 762 762 760	999 978 978 922 898	1,138 1,132 1,050	1,275 1,254	
38-39 39-40 40-41 41-42 42-43 43-44 44-45	164 117 109 110 124 134 113	285 256 199 188 189 211 240 226	527 487 409 411 421 473 492	711 656 597 592 610 651	852 825 762 762 760	999 978 922 898	1,138 1,132 1,050	1,275 1,254	1,384
38-39 39-40 40-41 41-42 42-43 43-44 44-45 (c) Similar	164 117 109 110 124 134 113	285 256 199 188 189 211 240 226	527 487 409 411 421 473 492	711 656 597 592 610 651	852 825 762 762 760 conception of each cohe	999 978 922 898 from the nort.	1,138 1,132 1,050 naternities	1,275 1,254 of the first	1,384
38-39 39-40 40-41 41-42 42-43 43-44 44-45 (c) Similar	164 117 109 110 124 134 113	285 256 199 188 189 211 240 226 celuding the of	527 487 409 411 421 473 492 effect of p. marriage i	711 656 597 592 610 651	852 852 825 762 762 760 conception of each cohe	999 978 922 898 from the n	1,138 1,132 1,050 naternities	1,275 1,254	1,384
38-39 39-40 40-41 41-42 42-43 43-44 44-45 (c) Similar	164 117 109 110 124 134 113	285 256 199 188 189 211 240 226 ccluding the of	527 487 409 411 421 473 492 effect of p. marriage i 363 341 303	711 656 597 592 610 651 re-nuptial 6 in respect 6	852 852 825 762 762 760 conception of each cohe	999 978 922 898 from the n	1,138 1,132 1,050 naternities	1,275 1,254 of the first	1,384
38-39 39-40 40-41 41-42 42-43 43-44 44-45 (c) Similar 1937-38 38-39 39-40 40-41	164 117 109 110 124 134 113	285   256   199   188   189   211   240   226   coluding the of   121   110   93   89	527 487 409 411 421 473 492 effect of p marriage i 363 341 303 312	711 656 597 592 610 651 re-nuptial 6 in respect 6	852 825 762 762 760 conception of each cohe 688 679 656 663	999 978 922 898 from the n	1,138 1,132 1,050 naternities	1,275 1,254 of the first	1,384
38-39 39-40 40-41 41-42 42-43 43-44 44-45 (c) Similar 1937-38 38-39 39-40 40-41 41-42	164 117 109 110 124 134 113	285 256 199 188 189 211 240 226 celuding the of the little	527 487 409 411 473 492 effect of p marriage 363 341 303 312 321	711 656 597 592 610 651 re-nuptial (in respect of 1914) 491 493 510	852 852 825 762 762 760 conception of each cohe	999 978 922 898 from the n	1,138 1,132 1,050 naternities	1,275 1,254 of the first	1,384
38-39 39-40 40-41 41-42 42-43 43-44 44-45 (c) Similar 1937-38 38-39 39-40 40-41 41-42 42-43	164 117 109 110 124 134 113	285 256 199 188 189 211 240 226 cluding the of 121 110 93 89 99 99	527 487 409 411 421 473 492 effect of p marriage i 363 341 303 312 321 361	711 656 597 592 610 651 re-nuptial 6 in respect 6	852 825 762 762 760 conception of each cohe 688 679 656 663	999 978 922 898 from the n	1,138 1,132 1,050 naternities	1,275 1,254 of the first	1,384
38-39 39-40 40-41 41-42 42-43 43-44 44-45 (c) Similar 1937-38 38-39 39-40 40-41 41-42	164 117 109 110 124 134 113	285 256 199 188 189 211 240 226 celuding the of the little	527 487 409 411 473 492 effect of p marriage 363 341 303 312 321	711 656 597 592 610 651 re-nuptial (in respect of 1914) 491 493 510	852 825 762 762 760 conception of each cohe 688 679 656 663	999 978 922 898 from the n	1,138 1,132 1,050 naternities	1,275 1,254 of the first	1,384

Part (a) of the table sets out the maternities recorded (per 1,000 married women survivors) in successive years of marriage duration, and in part (b) these are summed continuously across each horizontal line so as to show the total family achieved at the end of eight-and-a-half months, 11½ months, two years, three years, etc., by each cohort.

Thus 1,000 survivors from the women married at ages under 45 in 1937–38 produced 285 maternities in the first 11½ months of marriage, 527 by the end of the second year and so on, the total mounting to 1,384 by the end of 1945, i.e., at the end of eight years of married life. For the next succeeding cohort of 1938–39 marriages, only seven years' experience up to the end of 1945 are available, and the record shews that at all comparable marriage durations their families were smaller than those of the preceding cohort though the

difference tended to be higher in the earliest years of marriage and tended to diminish as the marriage period lengthened. In comparing their respective achievements it will be borne in mind that the experience of the earlier cohort includes the product of two peace years while the second includes only one. The experiences of all cohorts from 1939-40 onwards fell wholly in the war years and the available record in respect of them necessarily diminishes to that of the first year of marriage only, which is all that is available for women married in 1944-45.

The general picture presented by Part (b) of the table suggests that the rate of family-building progressively declined with successive marriage cohorts to that of 1940-41, the level of which was roughly repeated by the 1941-42 cohort, after which the earlier declining tendency appears to have been reversed, giving place to progressive improvement, at any rate at the early marriage durations where the earlier decline was generally at its maximum.

Little more can be done at the present time beyond noting the results as they are recorded. The experiences of the successive marriage cohorts cover different phases of the war period with their varying impact in respect of birth postponements and other abnormal war influences referred to earlier in this review. In respect of the effect of one of these special factors, however, the table itself provides some evidence in shewing that the comparable achievements of successive cohorts were markedly influenced by the fall in the maternities of the first eight-and-a-half months of marriage, which are those statistically regarded as proceeding from pre-nuptial conception.

As already described, the fall in pre-nuptial conceptions does not necessarily proceed from a decline in fertility and the picture of comparative family achievements will probably be improved by limiting the experience of the first year of marriage to that of the women who were not pregnant at the date of marriage. To this end alternative maternities at 81-111 months marriage duration are shewn in brackets in the second column of part (a) of the table, representing the maternities at that duration per 1,000 women not pregnant at marriage; and part (c) of the statement has been added to shew the corresponding family achievements after this adjustment for the exclusion of the pre-nuptial cases. The modification suggests that the fall in family building in the earlier marriage cohorts represented was not so great as that depicted by part (b) and that even before the end of the war the later rise may have restored the position to one more rather than less favourable than that of immediately preceding peace years. Such inferences must, however, remain largely speculative until the experiences of sufficient post-war years are available in similar detail and the full effect of complementary or compensatory factors such as the making good of temporary war birth deferments can be incorporated in the total picture.

Analysis by Age and Duration Combined.—The foregoing analyses shew that fertility consistently declines both with the increasing age of the mother and also with the increasing duration of marriage, but to what extent either or both these factors are responsible for the decline is not so 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 involve and reflect the influence of the other. For an appreciation of their separate and independent weights in the ultimate determination of the births of the period, attention must be directed to the square table analyses of Appendix I, in which the legitimate fertility of each year is analysed both by the mother's age and her duration of marriage in combination. The significant aspect of their relationship is indicated in the following summary table.

Table XLII.—Legitimate Maternity rates per Married Woman distinguishing both Age and Duration of Marriage.

England and Wales.

986	Ario -	Sylvei	Bridge		BILLDE	Duratio	on (year	rs from	1—)	court	079		
Age	All Dura- tions	0-8½ m.	8½-11½ m.	i	2—	3—	4	5—	6—	7—	8-5	9—	10 & over
	To Marie	interior		Ave	erage A	nnual R	ates 19	10-45					SOFT
15- 20- 25- 30- 35- 40-	·309 ·222 ·160 ·110 ·065 ·024	·227 ·119 ·086 ·084 ·069 ·035	·094 ·097 ·093 ·089 ·063 ·022	·276 ·264 ·226 ·208 ·158 ·062	·247 ·213 ·180 ·162 ·123 ·051	·237 ·198 ·163 ·144 ·112 ·046	·193 ·153 ·132 ·104 ·040	-188 •146 •124 •097 •038	-189 ·138 ·113 ·090 ·036	·214 ·133 ·103 ·081 ·033	·244 ·131 ·094 ·073 ·030	-131 :090 :066 :028	-149 -089 -055 -022
15-44	·106	-118	-091	-236	1 .183	-160	·145	·132	1 .118	•106	-093	084	1 -048
9384	AND DESCRIPTION OF THE PERSON	CONTRACTOR OF	1940-		rage cor		with 19	38 take	n as 100				
15- 20- 25- 30- 35- 40-	56 82 91 98 107 104	43 57 77 83 81 88	90 93 97 87 89 79	89 94 97 97 99 99	75 86 91 92 92 102	76 84 92 95 100 98	88 93 96 99 93	89 94 101 103 103	86 98 104 108 103	86 98 105 109 103	69 96 100 111 100	103 103 108 108	96 100 108 105
15-44	94	63	93	97	90	90	93	96	99	101	99	104	104

This summary brings out the important feature which is consistently shewn by every one of the separate years' experiences shewn in the Appendix, viz., the marked dependency of fertility on both the age and the marriage duration of the mother.

Looking at the horizontal lines of the table, it will be seen for every separate age group that, with negligible exceptions, fertility is at a maximum immediately after marriage and declines thereafter, rapidly at first, so that in the fifth year it is but two-thirds or thereabouts of what it was in the second year, and less rapidly though no less continuously thereafter. The first year of marriage has a feature of its own due to the inclusion therein of births proceeding from pre-marital conception; these are separately identified, and if they are disregarded and attention confined to the births of the final quarter reflecting conceptions in the first three months of marriage—it will be seen that the incidence here, allowing for the fact that it is that of a quarter only, is at an outstanding maximum in the whole duration experience. Even so, the high incidence of fertility at the outset of marriage and its fall with extended duration tend to be under-represented by the way the figures are constructed, for the maternities in each group are related to the total population of married women in the group, a relationship which assumes that the said married women are exposed to risk throughout the whole duration, whereas such is not in fact the case in respect of that portion of them which bore children during the nine months preceding the duration identified; and an alternative presentation shewing conceptions in relation to the numbers of non-pregnant and therefore available to conceive would exhibit a higher initial maximum and a steeper decline from the maximum. The difference between the standard maternity rates and corresponding conception rates at the earliest marriage duration years is referred to below.

Reading the columns of Table XLII downwards, that is, following the course of fertility with advancing age of mother, it will likewise be seen that for any given duration, the rate declines at a steep gradient with the increase of age, a feature which persists throughout the whole range of durations identified. It is slightly less marked at the duration  $8\frac{1}{2}-11\frac{1}{2}$  months as might possibly be expected since maternities here are the products of conceptions within the first three months of marriage. For the reason given in the preceding paragraph, however, the declines shewn by the maternity rates tend to understate the decline in the truer conception rates, an understatement which would be at its maximum at the  $8\frac{1}{2}-11\frac{1}{2}$  months duration.

The importance of the recognition of the mother's age as an essential feature in the measurement of fertility is of special significance at the present time because of the pronounced downward shift in recent years of the ages of women at marriage. That younger married women bear children more rapidly than their older sisters and that women married early achieve materially larger families than those married late are features which are stamped upon the fertility history of this country over the past hundred years; they are associated with all the separate social classes and have been maintained notwithstanding the degree of birth control which has reduced the average family from five or six in the last century to little more than two at the present time; they are reflected in every fresh year's fertility analysis as it emerges and point inevitably to the conclusion that the lowering of the ages of the women married in recent years is itself a factor which, in the absence of any change in the basic fertility rates must lead to larger average families and a consequent favourable effect upon the reproduction rate.

Compared with 1938 (lower half of table) the decline in fertility at the younger ages and shorter durations combined with rises elsewhere have tended to reduce the slope of the falling incidence both with advancing age and advancing durations, but the change is not of great magnitude, and in view of the temporary disturbance to the war record by birth postponement, etc...

it cannot so far be regarded as of permanent significance.

Maternity and Conception rates immediately after marriage.—In the Supplement to Table IV of Appendix I, legitimate maternities occurring within two years of marriage are analysed by quarter years of duration and a summary extract expressing their incidence in terms of the married women involved is provided in Table XLIII below. The section is of interest because reproductive behaviour is subject to least restraint in the immediate vicinity of marriage in consequence of which the children born within two years of marriage normally represent a large proportion of all legitimate births, the proportion in the last complete peace year 1938 being approximately 30 per cent., of which rather more than one-third were represented by births conceived prior to but born after marriage. The proportion increased slightly during the first two years of the war largely through the heavy increase of newly married women, but thereafter fell away to little more than 20 per cent. towards the end of the war.

Table XLIII.—Legitimate Maternities within the first two years of Marriage. England and Wales.

Defficient to A	Ma	ternity F	Rates for	Married W Du	Vomen (×1 rations (mo	,000) at the	following	Marriage	Rate amo	espondes* in toollowingstody pronning of	he five g mar wome egnan	quar riage n n t at	ot the
	0-21/2	21-51	51-81	81-111	111-141	141-171	171-201	201-231	1st Qr.	2nd Qr.	3rd Qr.	4th Qr.	5th Qr.
Year	W. W.	Matern	ity Rate	s in succes	sive Calend	lar years—	all ages 15-	44			1000		013
1938	20	81	86	98	97	63	43	42	121	132	88	58	53
1939	15	72	82	92	86	62	50	45	111	114	84	66	56
1940	12	45	58	82	80	59	48	40	93	98	76	62	49
1941	12	42	54	80	72	55	48	36	90	87	69	61	44
1942	12	41	56	79	74	59	49	44	89	90	75	62	54
1943	14	46	62	87	79	61	50	44	99	98	79	65	54
1944	14	49	72	106	96	71	54	47	123	124	98	74	60
1945	11	39	68	113	85	63 -	55	50	128	109	86	74	63
Age		Ave	erage An	nual Age	Rates durin	g the years	1940-1945	el mod	KE SA	19337			349
15-	24	96	120	93	89	67	55 1	43	122	129	96	73	54
20-	11	42	65	97	89	69	57	48	110	112	92	77	61
25-	9	29	46	93	79	58	49	44	102	95	74	64	54
30-	10	29	44	89	73	54	45	40	97	87	68	57	48
35-	11 8	25	32 14	63	56 20	40	34	29	68	64	47	40	33
70-	0	140	14	44	20	16	14	13	23	21	17	15	14
15-44	12	44	62	91	81	61	51	43	103	101	80	66	53

\* The rates refer to conceptions which result in childbirth.

Amongst the maternity rates shewn in the left half of the table, those arising from pre-marital conception occupy the first three columns comprising

marriage durations less than eight-and-a-half months. It will be seen that though the highest quarterly maternity rates are consistently those shewn for duration  $8\frac{1}{2}-11\frac{1}{2}$  months, representing conceptions occurring within the first three months after marriage, they are not very different from the rates for the immediately following quarter,  $11\frac{1}{2}-14\frac{1}{2}$  months, and that prior to the war they were approached by the rates for the pre-maritally conceived classes of the two earlier quarters of  $2\frac{1}{2}-8\frac{1}{2}$  months' duration, the rates for the four quarters between  $2\frac{1}{2}$  and  $14\frac{1}{2}$  months' duration being markedly higher than those of all later periods. The position changed during the war by reason of the falling off amongst those recorded as pre-maritally conceived, but as has already been indicated the fall was not so much amongst the conceptions as in the marriages of the parents, the children being born but going to swell the illegitimate class.

An alternative and preferable picture of the relative incidence of fertility immediately after marriage is provided by the right half of the table which shews the approximate conception rates in the first five quarters (corresponding to the births in the fourth to eighth quarters) obtained by relating the conceptions not to the total married women but only to those not already pregnant at the beginning of each quarter. In 1938, for example, the maternity rates of the first three columns shew that 187 per 1,000 of the women were already pregnant at the date of marriage leaving 813 not pregnant so that the 98 maternities of the fourth quarter (per 1,000 married) were conceived amongst the 813 women not pregnant at the date of marriage, yielding a conception rate in the first quarter of the marriage shewn as 121 per 1,000 not pregnant. All the conception rates have been similarly obtained by dividing the corresponding maternity rate by 1 minus the sum of the maternity rates of the three preceding quarters. The rates of course refer to conceptions which result in childbirth and exclude abortions.

The arrangement by conception incidence serves to bring out the fact that fertility is at its highest at the youngest marriage ages and that its rapid decline as age advances applies no less to the period immediately after marriage than it does to all the later durations referred to in an earlier paragraph. It likewise tends to decline sharply with advancing marriage duration though from the bottom half of the table it would appear that for the two age groups under 25 the conception rates for the second quarter of marriage are slightly higher than those of the first quarter while for all older women they are maximal immediately after

marriage.

Maternities by Number of Previous Children

The legitimate maternities of each calendar year are classified in the published statistics in Parts II of the successive Statistical Reviews so as to shew, for various ages of mother, the sizes of the existing families to which the new children are born. The size of existing family, in terms of the numbers of previous children borne by the mother, is identified for the purpose according to three separate definitions or types, as follows:—

in Table II as the number of previous children (surviving, dead or still-born), born to the mother by the present and any previous husband.

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

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

The Table MM criterion is further employed in the three dimensional analysis of Table SS in which the duration of marriage is also identified in addition to the age of the mother and the number of her previous children.

In broad outline the analyses by each of the three criteria of existing family are much the same and the nature of the general distribution and the changes in distribution over the period 1938 to 1945 will be sufficiently seen from the

following summary of the numbers of families classified according to the Table MM criterion of size.

Table XLIV.—Legitimate Maternities classified according to number of mothers' previous children by present husband.

No. of previous	realist	Basu-	on to w	Calend	lar Year	ague si	nin digit	ct of so	Total
children	1938	1939	1940	1941	1942	1943	1944	1945	1940-4
sad State I	Strict sa	I. N	umber d	of Mater	nities (	hundred	s) Pests	vheetle	es io
0	2,575	2,579	2.585	2,502	2.873	2.946	2.875	2,535	16.316
Ma de la color	1,548	1,577	1,484	1,320	1.583	1,759	2.097	1,842	10,085
2	789	784	768	728	779	798	989	886	4.948
3	423	417	415	398	405	399	464	415	2,496
4	253	250	243	229	232	226	247	219	1,396
5–6	275	264	254	239	232	222	230	205	1,382
7–9	154	149	137	128	122	116	111	101	715
10-14	42	41	39	37	33	31	29	270	196
15 and over		of teplo	renes also	gard vis	CHELL !	ment by	sel lide	vinda	dow 6
Not stated	47	29	081 29	24	23	26	24	31	157
Total stated	6,060	6,062	5,926	5,582	6,260	6,498	7,043	6,231	37,540
pening to a	on same	. Dist	ribution	per 1.0	000 state	ed each	(19530)	aven en	ne but
0	425	425	436	448	459	453	408	407	435
1	256	260	250	237	253	271	298	296	269
2 7	130	129	130	130	124	123	140	142	132
wollog as a	70	69	70	0 2 71	65	61	66	67	66
4	42	41	41	41	37	35	35	35	37
5–6	45	44	43	43	37	34	33	33	37
7–9	25	25	23	23	20	18	16	16	19
10 and over	7	7	7	7	5	5	4	4	5
Total	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1.000	1,000

Note:—1938-40, registrations; 1941-45, occurrences. Figures for the second half of 1938 have been rateably increased to represent approximately the whole year's maternities.

From the last column in the lower half of the table it will be seen that 43.5 per cent. of the maternities in the six war years were first births, there having been no previous child to the parents; that in 26.9 per cent. there was already a single previous child; that 13.2 and 6.6 per cent. were to existing families of two and three children respectively. Altogether 90 per cent. of all legitimate births of the war years were thus born to families with not more than three existing children. Amongst larger families to which children were born, the distribution is a more extended one reaching families of the largest sizes though at much diminished frequency incidence. The continued existence of comparatively large families is a feature which should not be forgotten when thinking of the normal family in terms of the average of two children or thereabouts, and it is not altogether without significance that as many as 10 per cent. of all the legitimate children born during the war went to families which already had four or more children apiece and that some 20,000 of the children so born were credited to families each with 10 or more preceding children.

In broad respects, the distribution so described for the war years as a whole applies to the individual years both of the war and preceding period, though the proportions as shewn can be seen to have been subject to changes and changing tendency throughout the period. As with other serial records in this report, however, the changes will have been influenced, if not dominated, by

the circumstances of the war, and the experiences of subsequent years must be brought in to the picture before it will be possible to judge to what extent the tendencies are of a long-term character rather than ephemeral reflections of an unduly disturbed period.

Compared with 1938, the 1940-1945 average proportions are higher for the smallest families of 0 and 1 and are progressively lower for families of three or more, a shift of weight towards the smaller families which will have had the effect of continuing the similar tendency of pre-war decades when it could be more confidently associated with the established fertility decline over those decades. The same association is not to be inferred from the war experiences, for, as already described, the latter part of the period may well have been one of rising fertility, masked in some degree by temporary war features. In the present connection, for example, the exceptional marriage boom at the outbreak of war will have greatly enlarged the numbers of married women at the shortest marriage durations and will have been responsible for an abnormal increase in births to families of the smallest sizes, quite apart from any change in basic fertility tendencies. A similar result may have followed from the temporary suppression or postponement of births in the war years, the incidence of which may well have been relatively higher amongst larger families.

But apart from the special war features, any adequate statistical examination of the incidence of new births amongst families of different sizes is largely ruled out by the fact that the available record is confined to those families to whom the births have occurred and that there is no corresponding record at present of the families at risk, that is, of the total numbers of families of different sizes in the population at large.

The average size of family to which children were born in the successive years, which summarizes the distributions of the preceding table is as follows, the figures being accompanied, for comparison, by similar averages based on the alternative types of family measurement in which the statistics have been recorded.

Type of family measurement.	Ave 1938	rage siz	e of far 1940	nily to 1941	which o	hildren 1943	were b	orn. 1945
All children of present husband (MM type)	1.413	1.393	1.370	1.359	1.255	1.217	1.262	1.272
	1.441	1.417	1-394	1.381	1.275	1-237	1.281	1.293
Surviving children of all husbands (KK type)	1.242	1.228	1.218	1.213	1.123	1.092	1.144	1-157
	0.028	0.024	0.024	0.022	0.020	0.020	0.019	0.021
Stillborn or dead children, viz. II-KK	0.199	0.189	0.176	0.168	0.152	0.145	0.137	0.136

In this form the progressions shew that the decline in the size of average families to which children were born was not continuous throughout the war but that after proceeding to a minimum in 1943, the direction changed and was followed by small but progressive increases in the two final years.

The difference line II-MM shews the portion of the total average family (to which new children were born) accruing from marriages already terminated in respect of those mothers who had been married more than once. Beyond the fact that they constitute consistently small proportions throughout, averaging less than 2 per cent. of the total averages, the figures lack greater significance owing to the general absence of information concerning the numbers

and marital characteristics of reproductive women in the community who have been married more than once.

The difference line II-KK, shewing the portion of the mothers total reproductive effort represented by stillborn children or live born children who have failed to survive, is of more interest and significance in providing relative evidence of the casualties attending family development. Thus the surviving families to which children were born in 1938 averaged 1.242 children which was 0.199 lower than the corresponding total average births of 1.441, reflecting a casualty rate among them of 13.8 per cent. The differences steadily diminish from 1938 until by 1945 the family casualty loss is 0.136 out of a total average of 1.293 or 10.5 per cent., a notable reduction in a serial record of eight years. The 1945 mothers to whom new children were born had a somewhat shorter average marriage duration than those of 1938 and their shorter period of exposure to risk would have contributed to the reduced casualty rate, but the bulk of the losses would have been due either to stillbirths or to mortality soon after birth, neither of which would have been influenced by marriage duration, and the reduction can be regarded as due in the main to the notable improvement that has occurred during recent years in both stillbirths and infant mortality.

## First Maternities (Legitimate)

Of the 3,754 thousand total legitimate maternities of the war years 1940–1945, the modified versions of Table SS in Appendix I, page 176, shew that the mothers in respect of 1,632 thousands or 43.5 per cent, had not had a previous live or stillborn child by their existing husbands. The percentage compares with 42.9 and 42.6 in the two pre-war years 1938 and 1939.

The incidence of first born children is naturally at a maximum for the youngest mothers whose marriages are comparatively recent. The rapid decline with advance in mothers' age and the variations that have occurred over the war years are shewn in the following table.

Table XLV.—First Maternities to existing marriages per 1,000 total legitimate maternities at each age.

1938	1939	1940	1941	1942	1943	1944	1945
429	426	436	448	459	453	408	407
889	882	885	897	910	911	907	905
644	638	668	701	713	714	678	686
469	466	466	475	489	479	421	424
296	296	294	292	314	317	275	263
166	165	164	173	185	198	180	179
95	92	94	100	107	121	118	121
	429 889 644 469 296 166	429         426           889         882           644         638           469         466           296         296           166         165	429         426         436           889         882         885           644         638         668           469         466         466           296         296         294           166         165         164	429         426         436         448           889         882         885         897           644         638         668         701           469         466         466         475           296         296         294         292           166         165         164         173	429         426         436         448         459           889         882         885         897         910           644         638         668         701         713           469         466         466         475         489           296         296         294         292         314           166         165         164         173         185	429         426         436         448         459         453           889         882         885         897         910         911           644         638         668         701         713         714           469         466         466         475         489         479           296         296         294         292         314         317           166         165         164         173         185         198	429         426         436         448         459         453         408           889         882         885         897         910         911         907           644         638         668         701         713         714         678           469         466         466         475         489         479         421           296         296         294         292         314         317         275           166         165         164         173         185         198         180

Generally speaking, the proportions of first births tended to increase during the first half of the war, a circumstance due largely, no doubt, to the abnormal increase in the new marriages of the immediately preceding years. The increases were not maintained, however, and the proportions at all ages dropped to lower levels during the last two years, though the final proportions at both the youngest and oldest ages remained well above the pre-war level.

Birth production as a whole tends to be highly concentrated in the few years immediately after marriage and the concentration will necessarily be accentuated when consideration is confined to first births or maternities. Within this generalization the war years were no exception as will be seen in Table XLVI in which the first maternities of successive calendar years are classified by the year of marriage duration in which they occurred.

Table XLVI.—Number of First Maternities by existing husbands to Married Women of all ages.

trole is dwarfor a bad group and (Hundreds.)

Calendar	0-8½ months	8½-11½ months	1- year	2- years	3- years	4- years	5- years	6- years	7- years	8- years	9- years	10+ years	Duration
voadan	5141810	0.00	706	354	217	135	80	53	36	27	18	41	2,619
1938 1939	632 595	320 313	706 683	361	223	138	87	53	37	25	18	41	2,575
1939	559	377	699	327	204	125	78	50	32	22	15	38	2,524
1941	429	342	884	334	176	115	76	48	32	21	15	42	2,512
1942	403	294	816	586	274	167	114	75	48	31	22	51	2,882
1943	368	287	777	485	396	204	132	98	66	45	30	68	2,957
1944	372	294	718	438	314	270	140	94	71	53	37 33	82 78	2,88
1945	377	328	622	319	245	192	168	87	58	44	33	10	2,550
		STREET, S	enel	Dist	tributio	on per 1	,000 to	tal :			HOLL		
1938	241	122	269	135	83	52	31	20	14 19	10 13	7 9	16 22	1,000
1940-45	154	118	277	153	98	66	43	28	19	13	9	22	1,00

From the distribution lines at the foot of the table it will be seen that prior to the war, in 1938, 24·1 per cent. of the first maternities occurred within eight-and-a-half months of marriage, representing conceptions which took place before marriage; that 63 per cent. occurred before the end of the second year of marriage (conceptions prior to or within 15 months after marriage), 90 per cent. within the first five years of marriage and only 1·6 per cent. at marriage durations exceeding 10 years. For the war years 1940-1945 taken as a whole, the frequency of first births was considerably lower at the earliest durations, the biggest element of the difference being the drop in the proportion conceived before marriage; the initial decline in the proportions was to a large extent caught up at later durations as will be seen by the progression of the proportions, which were 15·4 per cent. within eight-and-a-half months of marriage, 55 per cent. within two years and 87 per cent. within five years; 2·2 per cent. occurred after 10 years of marriage as compared with 1·6 per cent. in 1938.

Changes in the actual numbers of first maternities as indicated by the foregoing table are due partly to the changes in the number of women marrying in successive years. The experience of successive marriage cohorts may be obtained by following the records after the first year of duration diagonally downwards as was done for all maternities on page 93 and relating the experienced maternities to the survivors from time to time of the original marriage cohorts. This is shewn in Table XLVII for successive marriage cohorts since 1937–38, each cohort identified being the number of women who married in the period at ages under 45. In this presentation, women who were pregnant at the date of marriage have been excluded throughout; they constitute a removable element, the inclusion of which, as already described, would have tended to distort the picture without any commensurate advantage.

Table XLVII.—First Maternities per 1,000 Married Women of successive Marriage Cohorts (of women marrying at ages under 45, not pregnant at date of marriage).

Marriage	OW ADDOC	of Day	I	Duration o	f Marriag	е		
Cohort	8½-11½ mos.	1- yr.	2- yrs.	3- yrs.	4- yrs.	5- yrs.	6- yrs.	7- yrs.
	(a)	Occurrin	g within th	e marriage	duration	specified.	ioniscon baltech	TE POS
1937-38	1 118	247	120	65	63	49	36	22
1938-39	108	232	112	93	69	48	31	
1939-40	92	210	140	96	66	42	NEW TRANSPORT	
1940-41	89	226	136	90	55	DISTRIBUTION TO		
1941-42	88	237	135	76	55 55-79836			
1942-43	98	269	121					
1943-44	121	259						
1944-45	126						adv vi	
	(b) Accum	ulated to	tal to the en	id of the m	arriage di	cration spe	ecified.	
1937-38	1 118	365	485	550	613	662	698	720
1938-39	108	340	452	545	614	662	693	
1939-40	92	302	442	538	604	646		
1940-41	89	315	451	541	596			
1941-42	88	325	460	536				
1942-43	98	367	488	E White				
1943-44	121	380						
1944-45	126							

The table reflects the general feature observed in other analyses of the fertility data, viz., a declining tendency associated with cohorts of the years immediately before and after the outbreak of war which appears to have been reversed during the later phases of the war by an improvement which, so far as the information goes, was greater than the initial decline. This generalization is not necessarily impugned by the fact that the frequencies at some durations in part (a) of the table increased even amongst the earlier cohorts since in general the increases here were only partially sufficient to make good declines registered by the same cohorts at earlier marriage durations. The making good effect is better brought out in part (b) of the table which shews for each cohort the accumulated total of first maternities from the beginning of marriage to the end of the duration specified, and which discloses a definite change in tendency as between the earlier and later marriages of the period. It suggests that women married in 1937-38 and the immediately subsequent years progressively avoided maternity immediately after marriage though they tended to make good the initial defect as their marriages progressed. For women married towards the end of the war, the record is necessarily less extensive, but it is sufficient to shew that there was definitely less restraint in the immediate consummation of their marriages than there was amongst the earlier cohorts represented, even of those of years prior to the outbreak of war; of the women married in 1944-45 and 1943-44, for example, the proportion who had had a child within one and two years of marriage respectively was materially higher than the corresponding proportions in respect of women married in 1937-38, and this notwithstanding that all the conceptions of the later marriages took place in the circumstances of war conditions whereas those of the 1937-38 cohort occurred during the pre-war peace period.

Birth Occurrences and Registration Time Lag

The statutory period allowed for registration of either a live birth or a still-birth is 42 days, and as a consequence there has always been an appreciable time lag between the occurrence of a birth and its subsequent incorporation in the registered birth records of the country.

Prior to the war the average time lag was about a month and the registration records were thus out of phase with the actual occurrences to that extent.

Where the numbers of births at the beginning and the end of a period were similar, the constant phase difference would not materially affect the numbers involved and for most calendar years prior to the war, taken as a whole, the numbers registered, which was the form in which the records were then kept, could be regarded as being not materially different from the corresponding number of occurrences.

The introduction of food rationing shortly after the outbreak of war in 1939 at once acted as an incentive for a prompter registration of births leading to a reduction in the time lag which steadily increased with the gradual tightening of food restrictions and their extension to other commodities. A broad idea of the extent of the changes may be obtained from the following statement shewing the average time lag in days between birth and registration at the beginning of successive calendar years or quarters; the record in each case has been derived from a comparatively small sample of live births, but sufficiently distributed amongst a variety of urban and rural areas to ensure a fair reflection of the national conditions. Comparable records in respect of the first war period are also shewn so far as they are available.

		Fir.	st War	Period	1		
1914	1915	1916	1917	1918	1919	1920	1921
36.0	33.3	30.8	31.1	30.5	21.2	24.3	31.6
	The Char	Seco	nd Wa	r Period	d		
	1939	1940	1941	1942	1943	1944	1945
1st Or	32.6	27.8	22.4	14.4	11.9	13.3	13.2
2nd Or	31.7	27.5	19.3	13.1	11.2	10.7	12.1
3rd Or	31.3	22.1	16.8	13.2	10.3	12.0	11-1
4th Õr	27.6	20.3	13.9	11.6	11.3	12.1	10.7

The comparison is of interest in the contrast it provides between the behaviour of the lag in the two war periods, reflecting as it does the much greater stringency of living conditions during the later and more recent occasion. Though registration was speeded up after 1914, the then pre-war lag of 36·0 days did not fall below 30 days up to the end of 1917 and only in 1919 was it reduced to 21 days from which it rapidly reverted to 31 days within two years of the ending of that war. During the recent war the initial response was just as immediate but its cumulating effect over the subsequent years was more prolonged and more extensive, reducing the pre-war lag of 32·6 days to 14·4 at the end of 1941, to about 12 at the termination of hostilities and to even lower levels since. In so far as the grant of family allowances now acts as a stimulant to prompt registration, the prospect of reversion to the more casual habits of the pre-war period seems an unlikely one.

The difference between the numbers of registrations and occurrences in the period is due to the combined operation of changing time lag and the changes in the numbers of births at the beginning and end of a period. For periods prior to July, 1938, the tabulated record is confined to registrations and estimates of the corresponding occurrences, e.g., as during the first war period, were only such as could be indirectly obtained by inference from the time lag variations. From July, 1938, the birth records have been specifically identified and tabulated by month of occurrence coincidentally with the generally enlarged fertility analyses available from that date, and the monthly occurrence totals are now published in Table YY of Part II of the Annual Review. The varying effect of the lag is thus now measurable by the ratio of occurrences to registrations and it is illustrated in respect of its effect on live births for the years 1939 to 1945 as follows:—

1939 1940 1941 1942 1943 1944 1945

Ratio of Occurrences to Regis-

trations (live births) ... .992 .972 .986 .996 1.002 1.009 .992 the continued acceleration of registration thus having tended to result in more births being registered than the numbers which actually occurred, with marked effect in the early years of the war, 1940 and 1941.

Since 1941, inclusive, the whole of the detailed fertility analyses have been based upon occurrences and are thus unaffected by the vagaries of registration. But for the earlier years the published analyses are those of the numbers registered, and where this is the case they require modification in the light of the occurrence-registration ratios if they are to be comparable with the truer occurrence series of later years. The appropriate ratios for the years 1938 and 1939 for use as multipliers applicable to the registration records were given in the Text for those years; those for the remaining uncorrected year 1940 are as follows:—

Maternities Live Births Stillbirths
Legit. Illegit. Legit. Illegit. Legit. Illegit.

Ratio of Occurrences
to Registrations 1940 ·972 ·989 ·971 ·991 1·003 ·983

#### Seasonal Distribution of Births

The quarterly record of live births since 1936 is set out in Table XXVIII on page 59, and the incidence both in relation to quarter of occurrence and to quarter of conception is shewn in continuous pictorial form in Diagram E

n page 60.

The characteristic pre-war pattern is shewn by the regular cycle of conceptions between a minimum in the first quarter of the year and a maximum in the third (summer) quarter, a rhythm which was consistently maintained up to and including the second quarter of 1939. From then on the seasonal effect becomes obscured to some extent by the varying phases of the more fundamental changes in the birth rate, the significance of any quarter's record requiring to be assessed in relation to the prevailing upward or downward tendencies in operation at the time rather than to other quarters of the same calendar year. Generally, the tendency for conceptions to be lower in the winter months and higher in the summer period was maintained, though with varied emphasis and subject to marked exceptions associated with critical periods of the war. Thus there was clearly a sudden diminution of conceptions in the third quarter of 1939 in which the war actually commenced, the rate for that quarter being lower than that of the second quarter instead of its customary position at a point well in excess. A similarly noticeable interruption of conceptions appears also in the third quarter of the following year, 1940, which marked the height of the Battle of Britain, the profounder implications of the more general war situation seemingly having had a more direct and immediate influence upon the habits of reproduction than the concentration of the aerial attack on the civilian population in the two following quarters. The incidence in 1944 was quite exceptional by reason of the removal of the large invasion forces to France on and after "D" day at the beginning of June; not only were the conceptions in the final three quarters greatly reduced but those of the first quarter were contrastingly high, almost abnormally so, as if in anticipation of the foreboding conditions of the later months of the year.

A detailed study of pure seasonal variation from monthly records was included at pages 184 and 185 in the Text of 1938–39. Owing to the presence of the above-mentioned powerful factors and many others, acting over comparatively short periods and not in total evenly spread over the different months, a further such study should await the accumulation of data after the major war disturbances have subsided. Some conclusions, additional to those drawn in the 1938–39 Text may, however, be advanced, subject to confirmation in the future. By consolidating the data of Table YY (Births and Maternities by month of occurrence) for the years 1939–1945, sufficient material is obtained to permit distinction of maternal age. This has been done for maternities and the variation due to length of month removed by calculating daily averages.

For each maternal age these have been rated to a daily average, throughout the year, of 1,000 for that age, and these rated values are recorded at Table XLVIII. Considering the individual ages, excluding Under 20 and Age Not Stated, it will be seen that there is a marked tendency for the shape of the variation to be the same for each age, but for the magnitude of the variation to increase steadily with maternal age. This phenomenon is illustrated at Diagram J, in which January and February are included at each end of the scale to provide continuity throughout the seasonal cycle. In addition to this cycle the marked rise at September births (December conceptions) will be noted and, as was pointed out in the 1938-39 Text, can hardly be dissociated from Christmas. However, in this diagram it will be seen how clearly this rise is marked for the younger mothers and how it is barely visible for the older mothers.

Table XLVIII.—Seasonal Variation of Maternities by Mother's Age, 1939-1945.

(Legitimate and Illegitimate)

Month	ai qu	of Isigo	soid se	Age	of Motl	herda al	nollige	of conc	narter
of Birth	All Ages	Under 20	20-	25-	30-	35-	40-	45 and over	Not Stated
January	981	1.019	982	988	968	970	993	982	1,068
February	1.011	1,018	993	1,015	1,016	1,013	1,033	1,050	1,062
March	1,035	1.037	1.004	1,040	1,048	1,047	1,052	1,037	1,075
April	1.043	1.018	1.013	1,044	1,064	1,064	1,054	1,114	1,057
May	1.057	1.029	1.048	1,065	1,056	1,066	1,062	1,097	1,036
June Volg	1.027	1,035	1.023	1,021	1,030	1,036	1,032	1,014	1,005
July of da	1.005	973	1.006	1,002	1,008	1,014	1,020	995	966
August	977	959	980	976	982	972	968	1,024	900
September	1,009	1.021	1.036	1.012	995	988	973	923	949
October	955	947	978	955	950	937	924	848	919
November	934	947	958	927	924	926	913	931	974
December	967	998	980	955	960	967	978	989	995
Annual	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000

The seasonal distribution of the Under 20 class is seen from Table XLVIII to be of a different shape from that of the older mothers, rising much more rapidly after the trough at February conceptions to a more or less level maximum, spread over conceptions from April to September. In fact it will be seen that the distribution corresponds more closely to that of illegitimate births (given on page 185 of the 1938–39 Text), although such births form only a fraction of the whole, 44,920 out of a total of 190,089; but, of the legitimate

first maternities, some 76,000 were pre-maritally conceived.

At the other end of the scale, the group aged 45 and Over demonstrates generally an extension of increasing amplitude of the cycle with maternal age, discussed above by comparison of the data for ages 20–24 and 40–44; it must of course be remembered that the numbers in this group are not great, and chance influences give rise to a certain amount of irregularity. It may, however, be significant that for this age group the maximum for spring births occurs in April, a month earlier than for the bulk of the other age groups; the customary maximum at September occurs also a month earlier; and the minimum occurs in October, also a month earlier than for the other groups. This may possibly be attributed to a decrease with maternal age in the average period of gestation, since premature births are more frequent at advanced maternal ages.

The Not Stated group will also be seen to follow its own distribution, indicating the presence of a certain amount of bias. This is, however, of little, if any, practical importance since the number in this group is so small (some

per cent.).

DIAGRAM J.—Seasonal Variation of Maternities by Mother's Age. 1075 1050 MONTHLY MATERNITIES RATED TO AN AVERAGE OF 1,000 1025 1000 Mean Mean 108 Age 20-24 30-34 40-44 950 925 Month of Conception
SEPT OCT MAY JULY NOV DEC JAN FEB MARCH MAY APRIL JAN FEB MARCH APRIL MAY JUNE JULY AUG SEPT OCT NOV DEC JAN FEB MONTH OF BIRTH

## Birth Rates in Different Parts of the Country

The birth rates of individual administrative areas are given in Table E. They are summarized, with certain modifications, in Table XLIX, which shews, for each region and density aggregate, live birth rates (separately for all births and for illegitimate births) and the ratio of the local crude rate to the national rate, in each of the eight years 1938–45, and averages for 1936–39 and 1940–45.

# Table XLIX.—Birth Rates by Geographical Regions and Density Aggregates. 1938-1945.

(Rates from 1939 onwards corrected approximately to give live birth occurrences per 1,000 total population including Armed Forces and Merchant Seamen at home and abroad.)

## All Live Births

Area	1938*	1939	1940	1941	1942	1943	1944	1945	Average 1936–39*	Average 1940–45
and because of em.	Birth I	Rate I	per 1,	000 T	otal ]	Popul	ation	•	100 1000	100
England and Wales	15.1	14.8	14.1	13.9	15.6	16.2	17.7	15.9	14.9	15.6
Regional Summary— South East Greater London Remainder of S.E.	14.3	14·0 13·8 14·3	13·5 13·9 13·1	13·1 13·2 13·1	15·4 15·6 15·2	16·0 16·3 15·6	17·1 16·7 17·5	15·6 15·5 15·8	14·2 14·1 14·4	15·1 15·2 15·0
North	16·8 16·6 15·3	15·1 16·3 16·1 14·6 14·8	14·5 15·8 15·2 13·9 14·3	14·3 15·1 15·0 13·7 14·2	15·3 15·8 15·8 15·0 15·3	16·1 16·5 16·0 15·7 16·1	17·8 18·7 18·1 18·0 17·4	15·9 16·6 16·3 15·6 15·6	15·4 16·7 16·5 15·0 15·0	15·7 16·4 16·1 15·3 15·5
Midland	16.4	15·9 16·3 15·1	14·9 15·3 14·0	14·6 15·0 13·9	16·4 16·8 15·7	17·4 17·7 17·0	18·9 19·0 18·9	16·8 16·8 16·7	15·9 16·2 15·2	16·5 16·8 16·0
East	14.7	14.5	13.6	14.2	15.9	15.9	18.3	17.0	14.7	15.8
South West	13:6	13.6	12.3	12.3	14.2	14.6	16.8	15.4	13.5	14-3
Wales Wales I Wales II	15.4	15·0 15·2 14·6	14·4 14·8 13·5	14·2 14·6 13·4	15·6 16·2 14·3	15·8 16·2 14·8	17·0 17·6 15·6	15·3 15·7 14·4	15·1 15·3 14·6	15·4 15·8 14·3
Density Summary of al areas outside Greate London—						5 1 1 1	0		THE RESERVED	
County Boroughs Urban Districts Rural Districts	15.0	15·2 14·9 14·8	14·7 13·7 13·9	14·5 13·9 13·5	15·9 15·4 15·1	16·8 16·0 15·5	18·6 17·8 17·2	16·7 15·7 15·6	15·5 14·9 14·9	16·2 15·4 15·1

## Ratio to England and Wales taken as 1,000 (Crude Rates) †

	11	1				1		[I]		and the same of th
England and Wales	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Regional Summary— South East Greater London Remainder of S.E	952	950	961	947	991	986	963	978	953	972
	947	936	989	951	1,003	1,004	944	969	, 947	976
	960	971	927	942	977	965	987	989	961	966
North	1,034	1,025	1,031	1,032	987	993	1,007	995	1,033	1,006
	1,112	1,102	1,122	1,092	1,018	1,019	1,058	1,042	1,121	1,056
	1,103	1,094	1,076	1,078	1,014	991	1,022	1,024	1,103	1,032
	1,013	992	988	988	966	969	1,016	980	1,002	985
	1,003	1,001	1,014	1,025	983	997	981	980	1,004	996
Midland	1,067	1,077	1,056	1,055	1,056	1,077	1,070	1,052	1,062	1,062
Midland I	1,091	1,106	1,088	1,085	1,080	1,091	1,071	1,055	1,086	1,078
Midland II	1,019	1,020	993	999	1,011	1,049	1,068	1,047	1,015	1,030
East	972	985	963	1,026	1,022	985	1,032	1,064	981	1,016
South West	902	918	875	888	916	904	947	969	904	918
Wales I Wales II	1,012	1,016	1,024	1,025	1,002	974	959	962	1,013	989
	1,023	1,027	1,050	1,052	1,039	999	992	985	1,027	1,018
	985	986	960	963	917	913	879	903	977	920
Density Summary of all areas outside Greater London—		001 02/08		1913-191 Fraid 19	is Dir Love 1	is The	A SALA	They are	ali desta Producti	national .
County Boroughs Urban Districts Rural Districts	1,040	1,033	1,044	1,044	1,025	1,038	1,049	1,047	1,040	1,041
	997	1,009	973	1,001	992	989	1,003	987	996	991
	998	1,002	984	974	974	958	969	977	998	972

<sup>\*</sup> Rates based on births registered in the year and total population excluding Armed Forces and Merchant Seamen abroad. Rates on the same basis as those for later years would be about 1 per cent. lower.

† Figures for 1938 and 1939 have been revised. All the ratios were calculated before rounding off the rates.

### Illegitimate Live Births

Area	1938*	1939	1940	1941	1942	1943	1944	1945	Average 1936-39*	Average 1940-45
	Birth I	Rate 1	per 1,	000 T	otal I	Popul	ation	sin er	These se	1935 a
England and Wales	0.64	0.61	0.61	0.74	0.87	1.03	1.30	1.49	0.62	1.01
Regional Summary— South East Greater London Remainder of S.E.	0·67 0·68 0·67	0·64 0·63 0·66	0·64 0·66 0·62	0·80 0·77 0·83	0.94 0.90 1.00	1·12 1·01 1·26	1·36 1·17 1·58	1·51 1·35 1·69	0.65 0.64 0.66	1.06 0.97 1.16
North	0.61 0.85 0.64	0.62 0.61 0.82 0.60 0.59	0.62 0.62 0.83 0.60 0.59	0·73 0·71 0·93 0·68 0·73	0.83 0.78 1.05 0.79 0.82	0.97 0.91 1.26 0.94 0.95	1·17 1·06 1·50 1·17 1·15	1·35 1·19 1·65 1·29 1·38	0.63 0.61 0.86 0.61 0.59	0.95 0.88 1.20 0.91 0.94
Midland Midland I Midland II	0·59 0·58 0·60	0·57 0·56 0·59	0·56 0·54 0·59	0·67 0·65 0·70	0·81 0·81 0·83	0.98 0.94 1.06	1·27 1·20 1·41	1·49 1·43 1·62	0·57 0·55 0·59	0.96 0.93 1.03
East	0.72	0.70	0.67	0.89	1.06	1.03	1.79	2.18	0.72	1.32
South West	0.59	0.58	0.57	0.77	0.89	1.09	1.62	1.90	0.58	1.14
Wales Wales I	0·59 0·52 0·78	0·56 0·49 0·75	0·56 0·48 0·78	0·64 0·55 0·84	0·74 0·64 0·97	0·86 0·75 1·12	1·09 0·97 1·40	1·20 1·10 1·48	0·58 0·50 0·79	0·85 0·75 1·10
Density Summary of all areas outside Greater London— County Boroughs Urban Districts Rural Districts		0.66 0.56 0.61	0·67 0·54 0·61	0·80 0·70 0·73	0·95 0·80 0·84	1·12 0·98 1·03	1·43 1·25 1·30	1.66 1.40 1.50	0·67 0·56 0·62	1·10 0·94 1·00

#### Ratio to England and Wales taken as 1,000 (Crude Rates)†

England and Wales	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Regional Summary— South East Greater London Remainder of S.E	1,054	1,040	1,049	1,071	1,084	1,082	1,046	1,012	1,041	1,053
	1,064	1,018	1,074	1,031	1,031	972	900	907	1,033	967
	1,039	1,072	1,019	1,114	1,146	1,216	1,219	1,139	1,053	1,155
North	993	1,005	1,013	988	951	936	903	909	1,006	939
	954	989	1,014	957	901	884	815	797	974	872
	1,329	1,337	1,361	1,244	1,207	1,214	1,154	1,110	1,380	1,193
	1,006	976	976	918	911	904	897	868	985	904
	928	956	959	984	938	915	886	930	951	929
Midland	921	924	911	895	936	945	978	1,003	907	955
Midland I	911	904	887	870	925	907	925	960	890	920
Midland II	939	961	957	943	956	1,022	1,082	1,088	941	1,025
East	1,120	1,140	1,097	1,193	1,218	1,265	1,376	1,463	1,160	1,305
South West	926	941	935	1,040	1,023	1,057	1,243	1,280	935	1,132
Wales I Wales II	926	909	921	856	845	829	842	810	934	842
	814	792	782	737	731	721	747	737	805	740
	1,220	1,214	1,266	1,135	1,109	1,083	1,075	993	1,272	1,088
Density Summary of all areas outside Greater London— County Boroughs Urban Districts Rural Districts	1,079	1,080	1,096	1,073	1,087	1,078	1,102	1,115	1,076	1,095
	880	912	875	935	924	948	958	938	900	935
	991	989	988	975	970	992	999	1,007	997	992

\* † For footnotes see page 109.

Apart from the usual difficulty of comparing crude rates which take no account of the varying sex and age composition of the population, the rates during the years under review were subject to abnormal distortion in several ways.

In the first place there was national service, which meant that a varying proportion of the population was excluded from the local civilian populations on which the rates in Table E are necessarily based. This source of error has

been largely eliminated in Table XLIX by the use of correcting factors, based on the ratio of the civilian to the total population of the country as a whole. The opportunity has also been taken to put all the rates from 1939 onwards on a comparable basis of births occurring during the year per 1,000 total population including Armed Forces and Merchant Seamen abroad. Those for 1938 and the average of 1936–39 represent, as in the past, births registered in the year per 1,000 total population excluding Armed Forces and Merchant Seamen abroad; rates comparable with those for later years would be about 1 per cent. lower. The parts of the table showing ratios of local to national rates also eliminate the effect of the call-up, to the same extent as the corrections just explained, though neither method allows for local variations in its incidence or in that of the time lag in birth registration.

The other main source of distortion is the movement of the civilian population due to such factors as evacuation, and dealt with more fully on pages 16–23.

This affects the figures in two main ways. First, the birth rates are computed by relating the births of a calendar year to the civilian population of that year, while the population responsible for the births is a group of people some nine months earlier.\* This makes little difference in normal times, but had an appreciable effect as a result of the large and temporary movements during the war. Secondly, for purposes of Table E births are assigned, not to the area of occurrence, but to that containing the home address or permanent residence. During the war this frequently meant an address, e.g., in an evacuation area, from which people might be absent for anything up to several years, the births being therefore counted in the evacuation area and the population in the reception area.

It is not possible to correct the figures systematically for these latter distortions, though it is possible to identify some of the most marked instances. Thus the apparent rise in both the Greater London ratios from 1939 to 1940, and most of that in the aggregate of County Boroughs, as well as most or all of the corresponding fall in the Remainder of the South East and the Urban and Rural District aggregates are to be explained in this way. But the general picture given by Table XLIX is substantially correct.

It will be seen that birth rates in all areas followed a course similar to that of the England and Wales rates. Thus in the case of total births, there was a marked decline until 1941, followed by an even greater rise except for a setback in 1945; in the case of illegitimate births, rates fell a little between 1938 and 1939-40 and then rose steeply until 1945. The average overall birth rate for the six years 1940-45, at 15.6, was about 5 per cent. higher than the average rate of 14.9 for the four years 1936-39; the average illegitimate birth rate, at 1.01, was 63 per cent. above the pre-war average of 0.62.

The ratios of the local to the national rates show the variations within this general pattern. In the South East, both within and outside Greater London, the overall birth rate has tended to rise relatively to the national one, though a large part of the rise in the Greater London ratio from an average of 947 in 1936–39 to 976 in 1940–45 is due to the distortions mentioned earlier. This ratio fluctuated violently throughout the war. The Greater London illegitimate birth rate has declined from fourth place among the regions in 1938 to ninth in 1945, and from second to fourth place among the density aggregates. The illegitimate ratio for the Remainder of the South East rose from 1,039 in 1938 to 1,219 in 1944, but then began to fall again; the average for 1940–45 was 1,155, compared with 1,053 for 1936–39.

<sup>\*</sup> It is true that migration during the nine months affects the place of residence of parents and children at the time of the birth, but the migrants are not representative of the population as a whole, and in any case the effect of the movement of unborn children on the figures is largely nullified by the factor next to be mentioned.

The general pattern in the North is one of relative decline earlier in the war. followed by a recovery which was still in progress at the end of the period as far as overall birth rates are concerned\*; for illegitimate births it was only just beginning. The overall birth rate in North I was still fourth among the regions in 1945 compared with first before the war, and North II was fifth compared with second. The average ratios declined from 1,121 to 1,056 (North I) and from 1,103 to 1,032 (North II). For illegitimate births, North II fell from first place before the war to fourth in 1945, and North I from seventh to eleventh place.

The Midlands (especially Midland I for total and Midland II for illegitimate births) continued their pre-war upward trend, reaching a peak during the later war years. The decline from it was already visible by 1945 for overall birth rates, but was only just beginning for illegitimate ones. There was little change in the average ratios for all births compared with before the war, though the figures probably conceal a moderate real rise; the averages for illegitimate births all rose, and would have risen still more in the absence of distortion.

The East and South West both showed marked rises in all ratios, the East advancing to first place by 1945 both for total and illegitimate births. Even then the increase in the average ratios for East from 981 to 1,016 (total births) and from 1,160 to 1,305 (illegitimate births) understates the true rise.

All the Welsh ratios, both total and illegitimate, show a declining trend. in spite of initial peaks (partly concealed by the effects of evacuation movements) early in the war. By 1945 Wales II had taken the place of the South West as the region with the lowest total birth rate; Wales I still had the lowest

Among density aggregates, the apparent tendency in the ratios for total births has been upward for Greater London and the County Boroughs and downward for Urban and Rural Districts, thereby reversing the pre-war trend. But up to 1945 most of the net change from 1938 is accounted for by distorting influences. For illegitimate births the County Borough ratio has tended to rise moderately, after some setback (understated by the figures) in 1941. That for Urban Districts rose in the early years of the period (this rise is also understated), and began to fall again after 1944; the average ratio rose from 900 before the war to 935 for 1940-45. The Rural Districts ratio remained fairly steady; the fall for Greater London has already been mentioned. Except for the variations in Greater London, the relative positions of the density aggregates have not changed much. For total births, the County Boroughs have retained the first place; Greater London was fourth before the war and again in 1945, but third for the average of 1940-45. The Urban Districts, holding the second place, have overtaken the Rural ones, but the two rates are still close together, and the apparent relative fall in the Rural Districts is largely due to distortion. For illegitimate births, the order for the average of 1940-45 is County Boroughs, Rural Districts, Greater London, Urban Districts; by 1945 Greater London (second before the war) had fallen to fourth place.

#### International Comparison of the Course of Birth Rates

If the British birth experience during the war and the years immediately preceding and succeeding it is put in its international setting it is seen to be typical of a pattern found widely throughout the world. Birth rates for a number of countries over a series of years are given in Table Q of Part II of the Annual Review; a selected number are reproduced in Table L. Some of these figures are affected by breaks in continuity (e.g., because of territorial changes) and possible under-registration in war conditions, but the general picture is clear.

Table L.—Birth Rates in Selected Countries, 1930-1948.

Ye	ar	England	THE RESERVE TO A PROPERTY OF THE PERSON NAMED IN COLUMN TWO IN COLUMN TO A PERSON NAMED IN COLUMN TO A PERSON NAME	HINE N	Germany						The !!
10		and Wales	France(1)	1937 Territory	Bavaria(2)	Berlin	Norway	Switzer- land	Roumania	U.S.A.	Japan
1930	10	16.3	18.0	17.6	98000		17.0	17-2	35.0	18-9	32-4
1931 1932 1933 1934 1935		15·8 15·3 14·4 14·8 14·7	17·3 16·2 16·2	16·0 15·1 14·7 18·0 18·9			16·3 16·0 14·8 14·6 14·4	16.7 16.7 16.4 16.3 16.0	33·4 35·9 32·1 32·4 30·7	18·0 17·4 16·6 17·2 16·9	32·2 32·9 31·5 30·0 31·6
1936 1937 1938 1939 1940		14·8 14·9 15·1 14·8 14·1	14·7 14·6 14·6	19·0 18·8 19·6 20·4 20·0	21·6 22·3 21·9	14·9 15·7 16·8	14·6 15·1 15·6 15·9 16·3	15·6 14·9 15·2 15·2 15·2	31·5 30·8 29·6 28·3 26·5(4)	16·7 17·1 17·6 17·3 17·9	29·9 30·6 26·7 26·1 28·9
1941 1942 1943 1944 1945	b.d	13·9 15·6 16·2 17·7 15·9	13·1 14·5 15·7 16·1 16·2	18·6 14·9 16·0	19·9 15·5 15·8 17·2 15·1	17·2 15·3 14·7 8·6 10·5	15·5 17·9 19·1 20·5 20·2	16·9 18·4 19·2 19·6 20·1	23·0 21·4 23·4 21·7 19·6	18·9 20·9 21·5 20·2 19·6	30·7 29·7 29·6 29·4 23·2(6)
1946 1947 1948		19•2 20·6 17·9	20·6 21·0 20·8	16·2(8) 15·7 15·9	18·2 18·8	7·3 9·6 9·7	22.6 21.6 20.6	20·0 19·3 19·0	23·8 22·4	23·3 25·8 24·4( <sup>5</sup> )	25·3 34·8 34·0

Excludes infants born alive but dying before registration of birth.

Excludes infants for any even cyling before registration of the control of the cylindric stillbirths.
 From 1946 British Zone (which before the war had a level very slightly above that for Germany as a whole).
 From 1940 comparability affected by successive territorial changes.
 1948 rate based on population excluding armed forces overseas.
 From 1945 Japanese nationals in Japan proper, excluding the Ryukyu Islands.

Note .- Some of the figures have been revised since the publication of Parts II of the Annual Reviews for the years

For the purpose of this comparison the experience of this country may be briefly summarized thus. A downward trend of long standing prevailed until the early nineteen-thirties. Thereafter the fall appears to have been arrested, but insufficient time had elapsed to show whether or not a period of recovery was in prospect before the war intervened in 1939 with its obscuring influences. Superimposed on the long-term changes were fluctuations associated with economic and war conditions. Thus there was an apparent acceleration of the fall in the birth rate over the years 1930-33, probably associated with the severe economic depression of those years, followed by a moderate rise until 1938. A slight decline in 1939, which may have been associated with the increase in unemployment in the preceding year and possibly with the apprehension of the coming war, was followed by further falls in the rate during the first two years of war to a minimum point in 1941. After this there was a steady and substantial rise, temporarily interrupted in 1945 as a result of the transference of the invading forces to the Continent in the previous year and then resumed, leading to a sharp post-war peak in 1947 as births postponed during the war were made up. Following the 1947 peak there has been some recession, though the latest records are markedly above those prevailing before the war.

Most of these features were closely reproduced in countries with social conditions similar to those in Great Britain, i.e., the countries of North Western and West Central Europe, the United States and the English-speaking Dominions. This is true even of countries which were neutral during the war (though of course affected by its repercussions); the only difference is the absence of the temporary decline of 1945, and, with most of them, a somewhat earlier date of the post-war peak. In fact the line of demarkation seems to run more between the above-named geographical regions and the rest of the world than between belligerent or occupied countries and neutrals.

Of the countries listed in Table Q (Annual Review, Part II) those with an experience similar to that of England and Wales may be considered first.

<sup>\*</sup> The slight setback in 1945 has proved to be temporary.

Belligerent and occupied European countries in this group are Austria. Belgium, Czechoslovakia, Denmark, Finland, France, Germany, the Netherlands and Norway. Of these Austria at first sight appears different, because, after its incorporation in Germany and the resulting changes in the employment situation and population policy, the birth rate rose suddenly to the German level. But after that its course was very similar to that of the German rate. In Czechoslovakia, too, there was a marked rise between 1938 and 1940, followed by a moderate decline to 1942; for the rest of the period the movement was similar to that in England and Wales. In Finland the two campaigns of 1939-40 and 1941-42 each brought a steep fall in the rate, separated by an equally steep rise in 1941. The year 1945 produced no interruption of the subsequent rise. In Germany the period of the Nazi régime and the accompanying high level of employment had seen the rise of the birth rate, from the low figures of 1931-33, to the level of the middle nineteen-twenties. The war produced a decline which was gradual at first but then accelerated rapidly. A minimum (comparable in magnitude to that of 1933) seems to have been reached in 1942. Such data as are available for later years suggest that the subsequent course has been much as in this country, though without raising the general level to that of 1939. This would also mean that in Germany, in contrast to this country, the war has caused a considerable loss of births.

Among neutral countries, the Irish Republic, Portugal, Sweden and Switzerland fall into this group. Of these Sweden and Switzerland had birth rate movements most like the British, though in neither case was there a marked fall at the beginning of the war, and both, together with Portugal, reached the peak in 1944 or 1945. In Portugal the general pattern of fluctuation is dominated by the continuance of the pre-war downward trend which may be associated with a general high level of birth rates, i.e., a somewhat earlier stage of demographic development. In the Irish Republic the war-time rise in rates was largely concentrated on the year 1942; the post-war peak was

in 1947, as in England and Wales.\*

Overseas countries with a similar birth experience include the United States, Canada, Australia (where the short-term fluctuations are much less marked compared with the general upward trend between 1934 and 1947), New Zealand (where the decline due to mobilization and the like did not show itself until

1942 and 1943, while there was no fall in 1945), and South Africa.

The countries with a different course of birth rates are mostly characterized by the higher general level, and in many cases the declining tendency, already noted in the case of Portugal. In Europe they are found in the East and South, and include, among belligerents, Hungary and Roumania and also Italy (where the continuous decline in 1940–45 is the chief difference compared with the West). In Spain, a neutral country, the steep and continuous decline during the civil war was followed by an equally rapid recovery in 1940. The second world war brought a further fall in 1941, and some recovery by 1943. In 1946 there was another decline.

Outside Europe, Japan, like Spain and Finland, shows fluctuations due to two wars instead of one. The war with China, which broke out in 1937, caused a marked decline in birth rates, but by 1941 the 1937 level had been restored. In contrast, it seems from the available data that the world war did not bring about a serious decline until 1945; also that the recovery of 1947 has carried the rates, temporarily at least, to the level prevailing twenty years earlier.

Sex Proportions at Birth

For the quinquennium 1841–1845, the first for which data are available, the proportion of live male births per thousand female was 1,052; for the next five quinquennia it lay between 1,041 and 1,046; and for the next nine between 1,035 and 1,039. In the next quinquennium, 1916–1920, an outstanding

recovery to 1,051 was recorded, chiefly due to the then record figure of 1,060 for 1919, the first full year after the first world war. Thereafter a decline set in, and 1,047 and 1,043 were recorded in the succeeding quinquennia. A recovery to 1,051 was registered in 1931–1935. If sex ratio is associated with economic factors, it may be noted that this was a transition period, in which the aftermath of the 1929 boom and the beginnings of recovery from the 1933 depression may have exercised a greater influence than the depression itself: the actual figures for the individual years were 1,049, 1,050, 1,046, 1,055 and 1,056. In 1936–40, a period of continuing economic recovery followed by the onset of war conditions, a further rise to 1,054 was recorded, at that time a record for a quinquennial average; and in 1941–1945 a still further rise to 1,062, including the successive record annual proportions of 1,063, 1,064 and 1,065 in 1942, 1943 and 1944. In 1945 the proportion fell to 1,061.

Since the operation of the Population (Statistics) Act, 1938, data have become available on age of mother, with which sex proportion may now, therefore, be associated. Table LI gives sex proportions of live born children by maternal age, for the first seven-and-a-half years' operation of the Act, that is, from

1st July, 1938, to the end of 1945.

# Table LI.—Male Live Born Children per 1,000 Female by Maternal Age. 1938-1945.

(Legitimate and Illegitimate Combined.)

a marked	redt es	or concern	estates.	1	Maternal A	ge		MAI DE	DMEL
reached the	Under 20	20-	25	30-	35-	40-	45 and over	Not Stated	All Ages
Male Births per 1,000 Female.	1.068 ± 5	1.066+2	1.060+2	1.058+2	1 051 +2	1.042+4	1.030+16	1.053+14	1.059 ± 1

The continued, but not regular, decrease in the male proportion with maternal age will be noted. However, as far as biological factors are concerned, this relationship represents the combined effect of several influences. The still-birth rate (and possibly therefore the abortion rate as well) is higher for males than for females, and thus the proportion of males at conception will be higher than that shown in Table LI. Furthermore, since paternal age and parity, for instance, are strongly correlated with maternal age, it is the combined influence of these and similar factors which contribute to the apparent effect of maternal age. Some clarification is possible by the inclusion of stillbirths and the distinction of legitimacy in Table LII.

Table LII.—Sex Proportion by Maternal Age and Legitimacy for Live- and Still-Born Children together. 1938–1945.

(Male children per thousand female.)

Maternal Age	Legitimate	Illegitimate
Under 20	1.064+ 5	1,076 (+ 9)*
20-	$1,066 \pm 2$	1,079 (+ 6)*
25-	$1,063\pm\ 2$	1.062 (+ 8)*
30-	1,063 ± 2	1,046 (+ 9)*
DEDITIES 35- 100 1016 3	1.055 + 2	1,087 (+12)*
40-	1.051 + 4	1,043 (+20)*
45 and over	1.042 + 16	1,016 (±72)*
Not Stated	$1,058\pm14$	1,151 (±31)*
All Ages	1.062 + 1	1,070 (± 4)*

\*These standard errors have been calculated in the usual way, i.e., using formulae based on the assumption that the numbers of births of each sex follow the binomial law. From an examination of annual data it appears that the standard errors quoted above are, in general, too small and that at least twice these values may be more appropriate.

It will be noted in the legitimate section of this table that the difference between the sex ratio of the Under 20 age group and that of the 45 and Over group is substantially less than the similar difference in Table LI, which is

<sup>\*</sup> A more detailed comparison of vital statistics in the countries of the British Isles is given on page 137.

thus seen to have been due, partially, to the differential stillbirth rates between these age groups. The large standard errors of the illegitimate rates lead to the conclusion that there is insufficient illegitimate data to detect any difference

between the levels of legitimate and illegitimate rates.

The regional sex ratios for live births are given annually in Table HH. A test of whether or not there is a tendency for any regions to register consistently high or low sex ratios may be made by means of the Coefficient of Concordance. This coefficient takes the value of unity for perfect concordance and zero for perfect discordance. For the years 1935–1945 the value was .07, which is quite insignificant, showing that there was no sign of consistency in the data. The rankings for each individual year (on which the coefficient of concordance is based) are given at Table LIII. The considerable variations in the rankings of each region will be noted and demonstrate visually the insignificance of the concordance.

Table LIII.—Rankings of Regional Sex Ratios for Live Births, 1935-1945.

(Rank 1 indicates a high proportion of male births.)

Reg	gion		1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945
Greater Lon Remainder	don	South	7	6	4	5	6	7	10	5	11	3	10
East North I			9	4 5	8 7	3	5	6	4	9	4	7	4
North II	W	77 100.7	3	7	12	4	12	11 8	2 12	11 10	12 2	5 2	6 7
North III North IV			5	10	6	2 7	10 7	5 4	5	3	3 7	4 6	8
Midlands II Midlands II		A	11 6	3	5 9	6	2	2	8	1	9	9	1
East		Walley I	8	12	1	9 12	9 8	3 10	9	6 8	5	10	11 2
South West Wales I	•••		2 4	8 2	11 3	11 8	11 3	1 9	3 7	4 2	8	8	9
Wales II	•••		î	9	2	10	4	12	11	12	10	12 11	3 12

Multiple Births

General.—Comment on Multiple Births has previously been included in the Annual Review; in Part II, 1938, pages 117–124 and 134 and in the Text, 1938–39, page 186. The importance of studying this phenomenon is not in the main derived from the additional children which are added to the population, since these only amount to some 1 per cent. of all children; but to the insight which such a study can throw on the mechanism of reproduction. The influence of biological factors on crude birth rates, for instance, is hidden by the predominant effects of social and economic factors; but man has no appreciable power to cause or prevent multiplicity in a maternity, and thus the proportions of multiple maternities reflect purely the influence of biological factors. A difficulty arises from the relative scarcity of at all adequate data, and it has therefore appeared desirable to include in this present analysis the data for all the seven-and-a-half years that have elapsed since the operation of the Population (Statistics) Act, 1938, rather than to confine attention precisely to the six years, 1940–1945, covered by this Text.

From the aggregation of Tables AA, CC and DD, it is found that during the period 1st July, 1938 to 31st December, 1945, there were 5,038,662 births from 4,978,343 maternities\*, the excess of 60,319 arising from 59,300 twin, 496 triplet and 9 quadruplet maternities. Of the 120,124 births from multiple

maternities, 112,124 were live born and 8,000 stillborn.

but is relatively of negligible magnitude.

The figures for 1938, 1939 and 1940 relate to registrations, those for other years to occurrences. This applies to all data in the Multiple Section.

The frequency of occurrence of multiple births is summarized in Table LIV, where no account is taken of maternal age. It will be seen that the proportion of the off-spring of multiple births amongst stillborn children is twice that amongst live born children.

Table LIV.—Frequency of Occurrence of Multiplicity in Births and Maternities, 1938-1945.

	Twins per 1,000	Proportion	Triplets per 1,000	Proportion	All Multiples per 1,000	Proportion
Maternities All children Live born children Stillborn children	11.91 23.54 22.72 47.74	1 in 84·0 1 in 42·5 1 in 44·0 1 in 20·9	0·100 0·295 0·273 0·945	1 in 10,037 1 in 3,386 1 in 3,657 1 in 1,059	23.84	1 in 83·3 1 in 41·9 1 in 43·5 1 in 20·5

Effect of Maternal Age.—The frequency of occurrence of multiple maternities is substantially influenced by maternal age, and Table LV compares this frequency for legitimate and illegitimate maternities and for different age groups. So sensitive is this frequency to maternal age that it is not sufficient to associate each age group with its central age, and it is necessary to calculate the actual average age of mothers in the group. These average ages, calculated from Table AA, are recorded in the table.

From a visual examination of the table all that is seen is that the frequency of occurrence of multiple maternities rises to a maximum in the age group 35–40, and thereafter falls with increasing age. The actual relationship between the frequency and maternal age is only seen to be of a rather remarkable

Table LV.—Frequency of Occurrence of Multiple Maternities by Maternal Age and Legitimacy, 1938-1945.

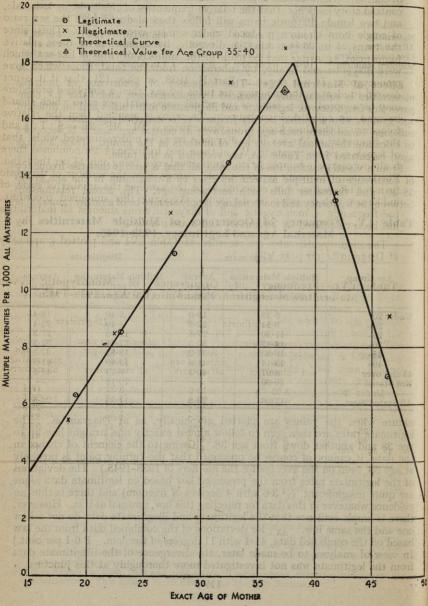
	Legitimate	. 1	Illegitimate			
Age Group	Multiple Maternities per 1,000 Maternities	Average age of Mothers	Multiple Maternities per 1,000 Maternities	Average age of Mothers		
Under 20	6.38	19.0	5.40	18.4		
20-	8.54	22.8	8.49	22.4		
25-	11.30	27.5	12.70	27.3		
30-	14-47	32.3	17.31	32.3		
35-	16.83	37.2	18-52	37.3		
40-	13-14	41.8	13.40	41.9		
45 and over	6.97	46.3	9.13	46.5		
Not Stated	10.90		10-19	-		
All Stated Ages	12.06	29.3	11.35	26.5		

nature when the values are plotted graphically, as at Diagram K. The legitimate rates are then seen to follow almost exactly one straight line up to age 38 and another down from age 38. (Owing to the element of chance in the data, it cannot of course be presumed that the turning point is precisely at age 38, even on the average for the mothers of 1938–1945.) The deviations of the legitimate rates from the presumed law based on legitimate data alone are quite insignificant ( $\chi^2$  3.6 with 4 degrees of freedom) and there is thus no evidence whatever in this data for rejecting this law, unusual as it is. However, there is ample evidence that the legitimate and illegitimate data do not follow one and the same law. ( $\chi^2$ , for deviations of the combined data from the law based on the combined data, 41.4 with 11 degrees of freedom. P 0.1 per cent.) In view of analyses to be made later, the divergence of the illegitimate data from the legitimate was not investigated more thoroughly at this juncture.

<sup>\* (</sup>a) An error was made in the 1939 tabulations of illegitimate births and maternities, which may be recognized by disagreement between the excess of births over maternities calculated from Tables AA, BB, or YY and from Tables CC or DD for ages Under 20, 25-29, 30-34, 35-39 and All Ages. The error cannot now be rectified but is relatively of negligible magnitude.

It will be noted in Diagram K that the legitimate points for age groups other than 35-40 lie close to the theoretical curve. For age group 35-40, however, the actual point lies well below the curve, and a theoretical value has been marked near the actual. This is because of the discontinuity at age 38.

DIAGRAM K.—Frequency of Occurrence of Multiple Maternities against Maternal Age by Legitimacy, 1938-1945.



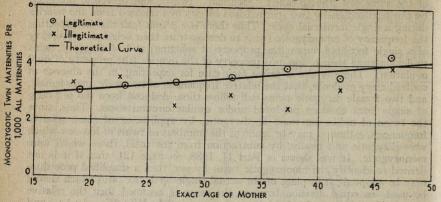
Twins.—Two kinds of twins are recognized, monozygotic twins produced by the splitting of a single ovum after fertilization, and thus always both of the same sex (the so-called "identical" twins), and dizygotic produced by the fertilization by two spermatozoa of two ova released from the ovaries during a single menstrual cycle. Thus there is a prima facie case for expecting the frequency of monozygotic twins to demonstrate their origin as a property of a single fertilized ovum (the property of splitting) and of dizygotic twins to demonstrate their origin as a property of the ovaries (the property of dual ovulation). There is also a prima facie case for expecting, in the absence of contradictory evidence, that the relative frequencies of two male, male-female, and two female dizygotic twins will follow those deduced from the sex ratio of single born children produced under similar circumstances. Thus, since the twins of unlike-sex must be dizygotic, by application of these relative frequencies, estimates may be made of the numbers of twins of like-sex which were dizygotic and finally, by subtraction from the total, those which were monozygotic. It was shewn in Part II, 1938, on page 121, that if it is not desired to identify the monozygotic twins by sex, then a simplified procedure may be adopted; if in place of the actual single-birth sex ratio which should be used, an equal division between the sexes is assumed then the relative frequency of the three kinds of dizygotic twins is  $2M: MF: 2F = \frac{1}{2}: 1: \frac{1}{2}$  and the frequency of like-sex male dizygotic twins is underestimated whilst that of female is overestimated. When these two frequencies are combined there is almost complete compensation, the residual error being only 12 per thousand. Furthermore the result is very simple, namely that the number of dizygotic twins of like-sex may be expected to be the same as the number of twins of unlike-sex (which must be dizygotic). Applying this simplified procedure, the frequency of monozygotic and of dizygotic twins amongst all maternities has been calculated by legitimacy and maternal age.

The monozygotic rates are recorded at Table LVI and plotted graphically at Diagram L (see page 120).

Table LVI.—Frequency of Occurrence of Monozygotic Twin Maternities by Legitimacy and Maternal Age, 1938-1945.

	Legitim	ate	Illegitimate				
orker tour	Monozygotic twin	Occurren	Monozygotic twin	AIVAI phis			
Age group	maternities per 1.000	Average maternal age	maternities per 1,000	Average maternal age			
AMOUNT	all aternities	all mothers	all maternities	all mothers			
Under 20	3.05	19.0	3.32	18.4			
20-	3.23	22.8	3.48	22.5			
25-	3.31	27.5	2.53	27.3			
30-	3.51	32.3	2.89	32.3			
35-	3.86	37.2	2.44	37.3			
40-	3.55	41.8	3.17	41.9			
15 and over	4.29	46.3	3.91	46.5			

DIAGRAM L.—Frequency of Occurrence of Monozygotic Twin Maternities against Maternal Age by Legitimacy, 1938-1945.



There is no evidence of any difference between the legitimate and illegitimate rates, which are hardly (but significantly P 0·1 per cent.) influenced by maternal age.\*

The deviations of the actual values from the theoretical curve (actually calculated from the legitimate data alone) give insignificant values of  $\chi^2$  (3·1 with 5 degrees of freedom for the legitimate and 8·9 with 7 degrees of freedom for the illegitimate data), and thus there is no evidence that the true relationship is other than that shewn. The slightness of the influence of maternal age and the complete absence of any legitimacy effect are consistent with the origin of monozygotic twins, namely by the splitting of the ovum and not from abnormal behaviour of the maternal organism, and suggest but do not definitely show that, at least as far as splitting is concerned, fertilized ova are the same no matter what are the ages of the parents producing them.

The dizygotic rates are given at Table LVII and are plotted on Diagram M. It will be seen that the bulk of the behaviour of multiple maternities previously

Table LVII.—Frequency of Occurrence of Dizygotic Twin Maternities by Legitimacy and Maternal Age, 1938-1945.

	Legitin	nate	Illegitimate			
Age group	Dizygotic twin maternities per 1,000 all maternities	Average maternal age	Dizygotic twin maternities per 1,000 all maternities	Average maternal age		
Under 20	3+30	19·0	2·04	18.4		
20-	5-26	22·8	4·91			
25-	7·91	27·5	10·10	27·3		
30-	10·82	32·3	14·29	32·3		
35-	12·79	37·2	15·97	37·3		
40-	9·47	41·8	10·02	41.9		
45 and over	2·61	46·3	5·22			

<sup>\*</sup> This does not imply that there is a direct influence of mother's age. It might well be that father's age is the direct cause of this variation, appearing here because of the correlation between parents' ages.

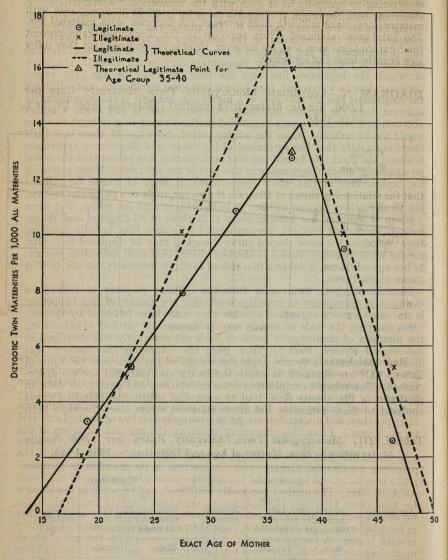
discussed in connection with Diagram K, namely the sudden rise and equally sudden fall, is caused by the dizygotic twins. This sensitivity to maternal age, contrasting so markedly as it does with the monozygotic characteristics, is consistent with the origin of dizygotic twins by multiple ovulation. The best fitting lines are drawn on Diagram M. The steeper rise in the illegitimate rate. compared with the legitimate, in the age range up to 38 will be noted and this is significant (P just less than 5 per cent. but only 2 degrees of freedom and there is not a great deal of illegitimate data in the range). The point at which the legitimate line cuts the base, that is, the age (131 years) corresponding to a zero rate, may have a biological significance, and, although the illegitimate line actually cuts at a higher age, not only is this insignificantly different from the age for legitimate experience, but in any event a higher abortion rate amongst young unmarried mothers about to give birth to twins would not be unlikely. Over the waning period above age 38, there is so little illegitimate data that the agreement of legitimate and illegitimate experience is almost too good. No formal test was made since it was patent that there was no significant effect of legitimacy in this part of the age range. When searching for explanations of this whole phenomenon, it must of course be realized that the relationship shewn at Diagram M does not apply to a particular mother, but to all mothers (having children in 1938-1945) in each age group. But when a group of mothers, less heterogeneous than those of all England and Wales, such as unmarried mothers, are considered it is seen that broadly speaking they reproduce the same shaped curve though it may be displaced from that for the whole country. And it is therefore likely that each individual mother, as her age advances, is subject to a risk of multiple maternity, similar to that shewn in the curve.

Since monozygotic twins arise from the splitting property of a fertilized ovum, it is appropriate to investigate whether the chance of this happening is the same for ova regardless whether they have been fertilized by spermatozoa carrying the male or female sex chromosone. A method of calculating the numbers of monozygotic twins of each sex separately was described in the Annual Review, Part II, 1938, page 121. Applying this method, and dividing the numbers by the single maternities of the same sex, the rates of Table LVIII are obtained, in which legitimacy and maternal age are distinguished. The relative complexity of the calculations and paucity of data, in particular of illegitimate data, lead to somewhat substantial standard errors applying to these estimates and these standard errors have therefore been

Table LVIII.—Monozygotic Twin Maternity Rates per 1,000 Single Maternities by Sex, Maternal Age and Legitimacy, 1938-1945.

	CONTRACTOR OF STREET	Legitimate		Illegitimate					
Age group		otic twin y rate per maternities	Average maternal age	Monozyg maternity 1,000 single	Average maternal age				
	Male	Female	10 to A 15	Male	Female				
Under 20	2.87+0.27	3.28+0.28	19.0	2.84 ± 0.43	3·86±0·49	18.4			
20-	3.15 + 0.11	3.36 + 0.12	22.8	$3.74 \pm 0.38$	$3.25 \pm 0.37$	22.5			
25-	3.20 + 0.12	3.48+0.12	27.5	$2.24 \pm 0.55$	$2.87 \pm 0.56$	27.3			
30-	3.40 + 0.15	3.72+0.15	32.3	$2.76 \pm 0.79$	$3.11 \pm 0.80$	32.3			
35-	3.72+0.21	4.12+0.21	37.2	1.53±1.03	3·47±1·08	37.3			
40-	3.46+0.33	3.74+0.33	41.8	2.31 ± 1.44	4·16±1·56	41.9			
5 and over	4.43+0.89	4.21+0.88	46.3	2·60±4·13	5·32±4·97	46.5			

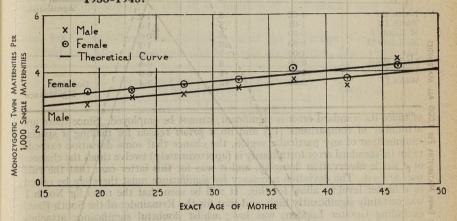
DIAGRAM M.—Frequency of Occurrence of Dizygotic Twin Maternities against Maternal Age by Legitimacy, 1938-1945.



recorded in the tables. At Diagram N the legitimate rates are plotted with their theoretical relationships. There is no evidence that the slopes of the regressions on age are different for the two sexes, but the vertical shift between the two lines is significant (P 1 per cent.), the rate for the female being slightly higher than that for the male. It should be noted that this higher rate for the female may not be caused by a higher splitting rate for female-fertilized ova, or may not entirely be due to this. Since a strong correlation would be expected

between stillbirth and abortion rates, the abortion rate for male monozygotic twins may well be high, and may explain all or part of the male deficiency in monozygotic twins. There is no similar alternative explanation of the persisting and significant (though slight) rise in the monozygotic rate with maternal age, since stillbirth rates increase, not decrease, with maternal age. The substantial standard errors applying to the illegitimate rates prevent their nature being seen and, for instance, there is no evidence that they differ significantly from the legitimate.

DIAGRAM N.—Legitimate Monozygotic Twin Maternity Rate per 1,000 Single Maternities against Maternal Age by Sex, 1938-1945.



Regional Variation.—At Table BB the numbers of births and maternities are given for each region of England and Wales. Aggregating this data for the period 1938-1945, a rate may be obtained for the excess of births over maternities per thousand maternities, an alternative criterion of multiple births to that employed in the preceding paragraphs. (Live- and still-born rates per thousand maternities are given separately and by regions in Table HH for each year.) From this convenient criterion, the regional variation in the frequency of occurrence of multiple births may be studied. Owing to the substantial influence of maternal age, to which attention has been drawn in the preceding paragraphs, and to regional variations in the distribution of maternities over maternal age, a valid comparison cannot be made from the crude All Ages rates. The method previously employed, and recorded in the Review for 1938 (Part II) pages 123-124, was to apply the England and Wales rates for each age of mother to the numbers of maternities with that age of mother in each region and, by summation, to calculate the expected excess of children in each region. A comparison of this expected excess with the actual shows up the regions in which there was a greater number, and those in which there was a lesser number, of multiple maternities than would be expected. At Table LIX the results of this analysis are recorded in the form of the ratio of the actual to the expected excess, so that ratios at or near 1 indicate normality whilst ratios larger than 1 show a greater frequency of multiple maternities and ratios less than 1 a lesser frequency than normal. Owing to the considerable variations in the sizes of the regions, the minimum divergence of the ratio from 1 for significance is substantially different for the various regions. In Table LIX a column is included showing the divergence from 1 as a multiple of its standard error. In examining this data the usual criterion, that a deviation

Table LIX.—Regional Variations in the excess of Births over Maternities, 1938-1945.

Region	Ratio of actual to expected excess	Ranking of ratio	Divergence of ratio from 1 as a multiple of its standard error	Significance
Greater London Remainder of	1.00	6	0.1	_
South East	0.95	11	5.1	Cim-iC
North I	1.10	na equation	5.8	Significant
North II	1.07	2	3.1 1.01.86	Significant Doubtful
North III	1.02	9	1.2	Significano
North IV	1.01	5	1.3	
Midlands I	0.99	3 5 8	0.6	
Midlands II	0.98	10	1.3	-1-1
East	1.00	7	0.2	
South West	0.99	9		
Wales I	1.02	4	0.5	
Wales II	0.90	12	0·9 3·4	Doubtful Significant

of twice its standard error is significant, cannot be employed. Since there are a number of comparisons (12) and no a priori reason for making a special examination of any particular region, the chance that some deviation exceeds twice its standard error fortuitously is (approximately) twelve times the chances of a single observation doing so, and it was for this latter case that the rule was devised. The deviation necessary for significance must therefore be raised to a higher level to allow for this. It will be seen that the ratio for North I was certainly significantly high, and that for the Remainder of the South East, excluding Greater London, was low; whilst doubtful significance attaches to the high ratio of North II and to the low ratio of Wales II, actually the lowest ratio of all regions. In general, these outstanding regions held approximately the same position at each individual age as they held overall.

Average Number of Previous Children of Mothers having Multiple Maternities.—At Table II of Part II of the successive Annual Reviews the numbers of previous children of mothers are given, distinguishing those experiencing single, twin or other multiple maternities. At Table LX is recorded the

TABLE LX.—Numbers of Previous Children of Mothers of 1938-1945 distinguishing those currently experiencing a Single, Twin or Other Multiple Maternity.

eniena a	Single	(Live and	Still)	fame a	Twin		Other Multiple			
Mother's Age Group	Numbers of Maternities	Numbers of Previous Children	Average Number of Previous Children per Maternity	Numbers of Maternities	Numbers of Previous Children	Average Number of Previous Children per Maternity	Numbers of Maternities	Numbers of Previous Children	Average Number of Previous Children per Maternity	
Under 20 20- 25- 30- 35- 40- 45- 50 and over	146,477 1,113,867 1,387,520 1,098,695 627,413 197,129 15,734 179 12,080	16,051 467,929 1,291,270 1,744,771 1,635,794 823,210 93,867 1,045 20,910	0·11 0·42 0·93 1·59 2·61 4·18 5·97 5·84 1·73	939 9,540 15,757 15,976 10,629 2,601 109 0	126 4,621 16,583 29,038 31,116 11,798 668 0 314	0·13 0·48 1·05 1·82 2·93 4·54 6·13 —	5 60 118 147 118 23 1 0	2 20 165 276 384 124 7 7	0·40 0·33 1·40 1·88 3·25 5·39 7·00	
All Ages	4,599,094	6,094,847	1.33	55,686	94,264	1.69	475	1,006	9.33	

aggregation of this data for the first 7½ years of the Population (Statistics) Act, 1938. It will be seen that, almost without exception, the average number of previous children of mothers having twin maternities exceeded that of mothers in the same age group having single maternities and that similarly the twin average was exceeded by that of other multiple maternities. The crude averages for mothers of all ages are not directly comparable, owing to the effect of age on the chance of a maternity being multiple. This difficulty may be overcome by a comparable method to that employed to compare the regions in the preceding section. The results of such a comparison are recorded at Table LXI. It will be seen that the excess of Twin compared with Single, and of Other Multiple compared with Twin are both highly significant. Such a phenomenon would occur if a mother who already had experienced a multiple maternity (and thus relatively had a large family for her age) was more likely to experience another multiple maternity, that is, for instance, if some women were prone

Table LXI.—Age-Corrected Comparison of the Average Numbers of Previous Children in Single and Multiple Maternities, 1938-1945.

Туре	Number of Previou "Not Stated	s Children excluding Mother's Age "	Difference	
	Actual	Expected	The control of the co	
Applying Single Ma	ternity Rates			
Twin Other Multiple	93,950 978	83,431	10,519±289 199±28	
and the day of	of board at the format of	I wante entry the	grow Girts to 8	
Applying Twin Man	ternity Rates	il 2 02 crosunts bear	6-86 , med 1991	
	978	877	101+ 30	

to multiple ovulation; and the analysis of dizygotic twinning rates, recorded in a previous section, would support this. Alternatively, as has sometimes been suggested, the tendency to experience multiple maternities may increase with parity for women of the same age.

#### 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. Annual numbers of stillbirths are shown in the Statistical Reviews, Part II, Table B (for England and Wales as a whole) and in Table E1 (for the main regions, density aggregates, metropolitan and county boroughs, and administrative counties).

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 Analysis of the Annual Reviews, Part II.

No provision has yet been made for obtaining a record of the causes of stillbirth in England and Wales but information on this subject has been published for Scotland in the Annual Reports, since 1939, of the Registrar General for Scotland.

Table LXII,—Stillbirths, Deaths of Infants Under 1 Week and Under 4 Weeks per 1,000 Total (Live and Still) Births. England and Wales, 1938-1945.

	l vam va	able, ov a difficul	Nun of de	nber eaths	Rates	per 1,00	00 total births	(live and still)		
Year Number of live births Number of still-births	Under 1 week	Under 4 weeks	Still- births	Deaths under 1 week	Still- births and deaths under 1 week	Deaths under 4 weeks	Still- births and deaths under 4 weeks			
1938	621,204	24,729	13,106	17,572	38.3	20.3	58.6	27.2	65.5	
1939	614,479	24,320	13,070	17,401	38.1	20.5	58-5	27.2	65.3	
1940	590,120	22,779	12,611	17,503	37.2	20.6	57.7	28.6	65.7	
1941	579,091	20,876	11,953	16,746	34.8	19.9	54.7	27.9	62.7	
1942	651,503	22,383	12,698	17,676	33.2	18.8	52.1	26.2	59.4	
1943	684,334	21,262	12,523	17,251	30.1	17.7	47.9	24.4	54.6	
1944	751,478	21,306	13,098	18,218	27.6	16.9	44.5	23.6	51.1	
1945	679,937	19,333	12,306	16,910	27.6	17.6	45.2	24.2	51.8	

In 1928 the stillbirth rate in England and Wales was 40·1 per thousand total births (live and still), and during the next twelve years showed little tendency to decline. By 1940 the rate was 37.2. Thereafter it fell rapidly reaching a level of 27.6 in 1944 and 1945. Table LXII compares stillbirth rates from 1938 to 1945 with death rates among live born children who died within the first week and the first four weeks after birth. In 1938, out of every thousand children born, 38.3 were stillborn, 20.3 live born infants died within the first week, and a further 6.9 failed to survive the next three weeks. Altogether 65.5 per thousand were dead at birth or died in the next four weeks. In 1945 there were 27.6 stillbirths, 17.6 infants died in the first week and a further 6.6 during the next three weeks, a total of 51.8 per thousand births. Thus between 1938 and 1945 the risk of a child being stillborn had dropped by 28 per cent., while if born alive its risk of dying in the first week had fallen by 13 per cent. and of dying within the next three weeks by 4 per cent. The total risk either of being stillborn or of dying within four weeks after birth had fallen by 21 per cent. Compared with 1938, children born in 1945 had a much improved prospect of being born alive, but the prospect of remaining alive for the next four weeks, though better than it was, had not improved nearly to the same extent.

Table LXIII classifies annual stillbirth rates for England and Wales by sex and legitimacy, compares them with the corresponding neonatal and infant mortality rates, and, combining 1940-45, presents rates in the main regions and density areas.

Table LXIII.—Stillbirth, Neonatal, and Infant Mortality Rates, 1938-45.

England and Wales.

ad con page 11 droNed (1 12 Weeth 47	St	illbirths total	per 1,00 births	00 1 212		eaths und			Deaths under 1 year (including deaths under 4 weeks) per 1,000 related live births			
Pow - Great	Legi	Legitimate Illegitin			Legi	timate	Illegitimate		Legi	timate	Illegi	timate
South East	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
1 27.5 62	1-20	1 4-6		J-6-57	6,746	100	DIE BES	2/4/6	de, q	ach a Bi	Per	gan
England and Wales	150	0.8			Bro. I	1981	420	-680,3	120	6.126	SER	
Year: 1938	40	36	51	49	31	24	49	34	58	45	96	67
1939 1940	39	36 35	50 46	45 49	30	24 25	52 49	49 38	63	43	97 93	83 71
1941	36	32 32	48	43	32 29	25 23	46 46	36 35	66	51 43	93 83	71 66
1942 1943	34	28	39	36	27	22	38	35	53	42	78	64
1944 1945	28 28	26 26	35 34	33 29	26 27	21 21	37 37	34 31	49 49	38	74 71	62 58
to this enough	G(T)	The Manager	Tiest.	WA BUIL	Deliver of the second	70 TV 81	propunsion of the		A STATE OF THE STA	103 80	79	- CONCERNICATION
Years 1940-1945	SBYADI	12 215	Y SV	SW t t	ene	ft gar	ub t	ns (i)	ne bi	וועט ה	elli	lid (
England and Wales Regional	32	30	39	37	29	23	41	34	55	43	80	64
Summary: Greater London	28	25	38	33	25	19	40	36	47	36	76	64
Remainder of South East	28	26	34	31	26	20	36	29	45	35	69	53
North I	34	33	42	46	33	27	42	33	70	56	85	64
North II	33	32 32	37 42	43	32	24 24	45	35 35	64 59	49	81 79	64
North IV	36	34	44	43	32	25	47	38	67	52	103	79
Midland I Midland II	32 32	29 29	38 38	32 35	29 29	23 22	41 42	35 34	55 54	44 43	78 72	64 59
East	31	28	38	31	26	21	35	32	47	37	68	58
South West	31	29	36	31	27	22	34	34	49	37	71	63
Wales I	41 39	36 35	51 53	46 45	33 32	27 26	50 50	42 34	64 62	51 49	93 92	74 71
Density summary of all areas out- side Greater	ori <sub>ng</sub>	i sale	thick thank	anda.		e nod	eb)   Leave	7.87 C	i, be	ofia ofia	The	1000114
London:— County Boroughs	34	31	40	39	31	24	41 41	34 34	65 55	51 43	87 78	70
Urban Districts Rural Districts	34	31 29	39	37 35	29	23 22	41	35	49	38	73	61

The legitimate rates were lower than illegitimate, and female rates were lower than male. Percentage reductions between 1938-39 and 1944-45 were:

the literate than it regularies has a	Legitimate		Illegitimate	
	Male	Female	Male	Female
Stillbirth rate	29 14 13	28 14 12	32 27 25	34 21 19

enoug, deputy aggregates, megraphic wash county borough camp a savagence

lower than have the population (Statistics) Act, 1938, additional information has been collected at the registration of butbs, including stillburiles, and established abulances of sulburines by sectionary, mother's agents of the algebra

In each region during 1940–45 the illegitimate stillbirth rate was higher than the legitimate and the male higher than the female, similar differences being observed with neonatal and infant mortality rates. The highest still-birth rates were recorded in Wales followed by the North of England, especially North IV (Cheshire and Lancashire). The lowest rates were recorded in Greater London and the Remainder of the South East. Regional differences in neonatal and infant mortality were broadly similar. The county boroughs had slightly higher stillbirth and neonatal mortality rates than the other urban districts, whose rates in turn were higher than those of the rural districts. Infant mortality rates followed the same order but the differences were greater.

Table LXIV gives annual stillbirth rates in the main regions and compares the rates in 1945 with 1938. Improvement was least (19 per cent.) in North II (Durham and Northumberland) and was greatest (35 per cent.) in North IV (Cheshire and Lancashire). Although the war-time decline in stillbirths was shared by all parts of the country, the gap between Wales and South East England has been slightly narrowed.

Table LXIV.—Annual Stillbirths per Thousand Total Births, 1938-1945.

25 by 25 25	1938	1939	1940	1941	1942	1943	1944	1945	1945 as per cent. of 1938
England and Wales	38	38	37	35	33	30	28	28	74
Greater London	31	31	29	30	29	26	24	24	77
Remainder of S.E	34	33	31	29	28	27	25	25	74
North I	39	40	40	36	37	32	30	31	79
North II	37	39	36	39	35	30	29	30	81
North III	41	42	39	38	36	32	30	30	73
North IV	46	44	41	40	38	34	31	30	65
Midland I	37	38	36	34	33	30	26	27	73
Midland.II	39	38	36	33	33	31	26	28	72
East	37	36	34	34	32 .	29	26	28	76
South West	39	37	36	32	32	30	27	26	67
Wales I	51	49	47	44	39	36	34	35	69
Wales II	48	47	47	39	41	35	33	32	67,
Density summary of all areas outside Greater London:—	oda eterope	miliya W		tomorrow u		o rambio des Lorses		,	NI SENERGIA
County Boroughs	40	40	38	36	35	31	29	29	73
Other Urban Districts	41	40	38	36	34	32	28	29	71
Rural Districts	38	37	37	34	32	30	27	28	74

Table LXV compares stillbirth rates in single and in multiple maternities, classified by age of mother and by legitimacy. Multiple maternities, especially illegitimate multiple maternities, are few in number compared with single maternities, and the rates, although representing the consolidated experience of seven-and-a-half years, are subject to random variability and cannot be accepted without reserve.

Table LXV.—Stillbirths per thousand Births (Live and Still) distinguishing Sex, Single and Multiple Maternities, Legitimacy, and Mother's Age. England and Wales, 1938-45.

(Rates based on less than 250 births are in italics).

		Sir	igle			Mult	iple		
	Legit	imate	Illegit	imate	Legi	timate	Illegitimate		
	M.	F.	М.	F.	M.	F.	M.	F.	
Under 20	23.4	24.4	30.5	31.2	88.4	62.6	92.8	83.7	
20-	23.3	22·3 25·3	30·1 34·0	29.1	73.4	59·5 58·4	74·4 70·1	59·3 71·3	
30-	34.1	30.7	39.1	37.6	68.0	56.5	85.7	62.3	
35-	44.5	40.1	50.3	43.3	75.6	62.5	76.2	67.2	
40– 45 & over	62·1 87·2	54·7 78·8	60·0 96·4	58·7 74·5	82·6 136·8	65.2	69.8	88.9	
All ages	32.6	29.9	39.6	36-9	72.4	59.6	79-2	69.7	

\* 1 stillbirth in 6 births.

\*\* No stillbirths in 8 births.

The multiple stillbirth rate was in every case higher than the corresponding rate for single births. But whereas at younger maternal ages the multiple rates were two to four times the single rates, the excess in multiple maternities declined with age, so that in mothers aged over 40 the stillbirth risk in multiple maternities was only about 25 per cent. greater than in single maternities. Multiple rates, expressed as a percentage of the corresponding single rates were:—

				Mother	r's Age		
	Under 20	20-	25-	30-	35-	40- ar	45 ad over
Legitimate M.	378	315	250	199	170	133	157
<b>F.</b>	257	267	231	184	156	119	129
Illegitimate M.	304	247	206	219	151	116	/ILI
F	268	204	243	166	155	151	

As in single maternities the stillbirth rate in multiple maternities was higher in illegitimate than in legitimate and in male than in female births.

In single maternities the risk of stillbirth was least in mothers aged 20-24. The risk was slightly higher in mothers under 20, and increased progressively after the age of 25. In multiple maternities the relationship with age was different (Diagram O); the risk of stillbirth was least at age 30-34 rising at younger and at older ages, though in illegitimate maternities the rates tended to be erratic.

# DIAGRAM O.—Stillbirth Rates in Single and Multiple Legitimate Maternities, 1938-1945. England and Wales.

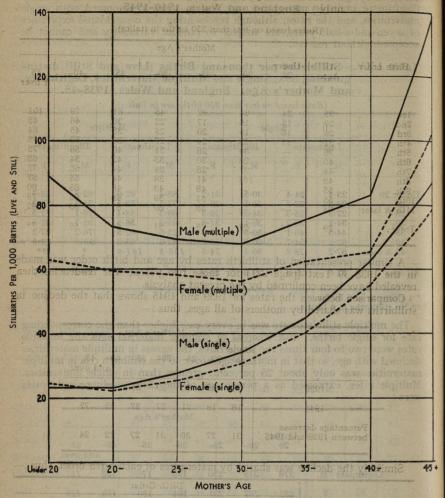


Table LXVI presents an analysis of stillbirth rates in single legitimate maternities by mother's age and by birth order. The table consolidates the experience of 1940–45 and is based on almost four million births.

The lowest rate (15 per thousand) was recorded by women aged under 25 at the birth of the second child. The highest rates occurred in primiparae aged over 45 (101 per thousand) and in women aged 20–24 at the eighth birth (105 per thousand based on only 19 maternities). At each age except 40–44 the risk of stillbirth was least at the second birth, rising with subsequent births. This rise with increasing parity was relatively greater among young than among older mothers. Thus among mothers aged under 20 the risk of stillbirth at the first maternity was greater than at the next two, but among mothers over 35 the risk at the first was higher than at any subsequent maternity.

Table LXVI.—Stillbirths, per 1,000 Total Births, according to Birth Order and Mother's Age. (Single Legitimate Maternities only.) England and Wales, 1940-1945.

(Rates based on less than 250 births in italics).

(enitrite	(18) m	tastinjo	Tada ba	ar balas	Mother'	s Age	i boi is	m need t	mii va
Birth o	order	All Ages	Under 20	20-	25-	30-	35-	40-	45 & over
1st 2nd 3rd 4th 5th 6th 7th 8th 9th 10th 11th & 1	iiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii	33 20 26 31 36 40 44 48 55 55 64	24 15 18 63	24 15 19 23 30 28 37 105	32 17 20 24 26 30 28 41 48 53 30	45 22 25 27 31 33 34 38 43 39 60	61 30 33 36 40 42 44 44 48 45 57	79 46 45 52 56 54 58 55 65 65	101 48 84 78 75 68 72 87 90 79 82
Total	e issur	29	23	22	25	31	40	56	78

A similar presentation of stillbirth rates by age and birth order was made in the 1938-39 Text (page 221) for those two years; the tendencies then revealed have been confirmed by the present analysis.

Comparison between the rates for 1939 and 1945 shows that the decline in stillbirths was shared by mothers of all ages, thus:—

188 188	-	1 7	numeron on	M	other	's Age	-	SEQ.	
146 141 146 141 148 157	169	Under 20		25-	30-	35-	40- ar	45 id over	
1939	101	26	26	30	39	51	67	95	
1945		18	19	21	27	37	52	72	
Percentage decibetween 1939 a	rease and 1945	31	27	30	31	27	22	24	

Similarly the decline was shared by maternities of each birth order, thus:-

	an eleganory and 200	- entra 13	S. A. Long	ene/A	Bir	th Or	der		Continues about	of editional colored in	aparago e constitui
obtant d. Somermus tes in single décitimate	er with	2	3	4 Bley	5	6	7	8	9	10 and	11 1 over
1939adfrid and	40	24	31	38	42	45	50	54	63	76	70
1945	29	18	24	30	34	37	43	47	54	51	55
Percentage decrease between 1939 and 1945	27	25	23	21	19	18,	14	13	14	33	21

The declining rate of improvement from the first to the eighth birth suggests that primiparae and mothers with small families were more willing or more able to use and profit by the various war-time antenatal and maternity services. It is not clear, however, why the improvement should have been so great

among mothers of exceptionally large families and it may be that the relatively small numbers on which these rates were based have produced a misleading picture.

### Fertility and Infertility recorded at Death Registration

Since July, 1938, at the registration of deaths of women who were or had at any time been married, information is obtained under the Population (Statistics) Act, 1938, as to whether the deceased had had children by any husband. Enquiry is not made about the number of such children nor whether they were live- or still-born.

Designating as Fertile those women who had had children and as Infertile those who had not had children, the proportions of married women and of widows and divorced women dying infertile between 1938 and 1945 are shewn in Table LXVII. These figures would normally have been included in Tables TT and UU for each year, but publication of the two tables has been suspended since 1940.

Table LXVII.—Infertility of Deceased Married Women and of Deceased Widows and Divorced Women. Proportions infertile per 1,000 stated, 1938 to 1945. England and Wales.

[Proportions based on less than 50 cases (fertile plus infertile) have been omitted, and proportions based on between 50 and 250 cases are shewn in italics.]

Age at Death	1938 (2nd half)	1939	1940	1941	1942	1943	1944	1945
rent Fisher	eficial agr	A.	Deceased	Married	Women.	igh bedi	一种高潮的	2 ans
All Ages	169	171	173	177	181	177	176	174
Under 25	405	393	441	475	487	484	489	455
25-34	295	278	286	293	301	305	299	296
35-44	201	199	202	200	215	205	202	214
45-54	173	177	166	175	186	178	188	188
55-64	153	153	159	157	163	168	159	160
65-74	135	146	146	152	148	144	141	142
75 and over	153	159	158	157	159	148	157	150
	В.	Deceas	sed Widov	ws and Di	vorced W	omen.		
All Ages	126	128	130	131	131	128	129	129
Under 25	45 47	38	4 人主	92 - 81	A second	RIGH	*	
25-34	216	197	226	264	263	273	245	295
35-44	248	216	190	216	206	190	218	204
45-54	165	160	166	161	162	189	174	173
55-64	141	152	142	143	152	147	144	150
65-74	129	129	130	136	133	130	131	132
75 and over	118	122	125	124	123	120	123	122

In a proportion of cases no statement of fertility was obtained. Sometimes the informant was unable to provide the information, or perhaps occasionally refused to do so, while in respect of deaths certified by coroners the question was not asked. The annual percentage of registered deaths without statement of fertility were:—

E de la silva	1938 (2nd half)	1939	1940	1941	1942	1943	1944	1945
Deceased Married Women Deceased Widows and	7.4	7-7	10-0	10.2	8-3	7.9	8-1	7.0
Divorced Women	6.9	7.4	8.5	9.5	8.8	8.0	7.2	6-6

With the exception of 1942 and 1943 the percentage without statement of fertility has been rather higher among married than among widows and divorced women. Among both classes of deceased women the percentage without statement rose during 1940 and 1941. This rise was no doubt in part due to an increased number of deaths from violence about which the statement of an informant was not obtained; during 1940 and 1941 female deaths from violence were doubled as the result of enemy action.

In the following discussion, cases without statement of fertility are excluded. The effect of any bias so introduced has not been specifically tested, but it is probably insufficient to invalidate the conclusions to be drawn.

Infertility rates (all ages) per thousand women with statement of fertility

at temperatura itom mega-	1938 (2nd half)	1939	1940	1941	1942	1943	1944	1945
Deceased Married Women		171	173	177	181	177	176	174
Deceased Widows and Divorced Women	126	128	130	131	131	128	129	129

In both classes the rates remained fairly steady, though both shewed a tendency to rise during the middle of the war period. The rise, as can be seen from Table LXVII, occurred especially within the younger age groups. Among older women the rates were practically undisturbed; their fertility condition had been determined before the war and could not be affected by the upsets to family life that interfered with child-bearing among younger women. This is illustrated in the following table which compares infertility rates at ages during 1940–45 with 1939:—

Age at Death	Dece	ased Married	Women	Deceased Widows and Divorced Women					
	1939	1940-45	Difference	1939	1940-45	Difference			
Under 25	393	472	+79	de assets	396	?			
25-	278	296	+18	197	261	+64			
35-	199	206	+ 7	216	203	-13			
45-	177	180	+ 3	160	170	+10			
55-	153	161	+ 8	152	146	- 6			
65-	146	145	-1	129	132	+ 3			
75 and over	159	155	- 4	122	. 123	+ 1			
All ages	171	176	+ 5	128	130	+ 2			

The experience of the six years 1940–45 provides for a more accurate comparison of infertility rates between different ages than is possible with only one year's experience. Nevertheless it is evident that the differences between ages revealed in the 1939 rates are similar to those of 1940–45. Both among married women and among widows and divorced women infertility is, as would be expected, highest at ages under 25, and thereafter declines progressively, at first rapidly and then more slowly, as age advances. At ages up to 45 infertility declines as the average duration of married life increases. But at ages beyond the child-bearing period, when duration of marriage no longer influences fertility, the declining infertility rates reflect the declining birth rates prevailing at earlier periods when these women were of child-bearing age. However, among married women over the age of 75 infertility is invariably higher than in the preceding age group (see Annual Review, 1938, Part II, page 159).

The infertility rates of married women are higher than those of widows and divorced women dying at the same age, an unexpected finding that was discussed in some detail in Part II for 1938. It can now be seen that this excess of infertility in married women has been recorded each year since 1938. In 1940–45 the excess was greatest in the two youngest age groups, there was little difference at ages 35–44, but at higher ages there was again a small excess increasing at ages over 75.

Table VV of Part II for each year presents infertility rates among married women dying from certain selected diseases and thus provides material for the investigation of possible relationships between fertility and disease. The accumulated experience of 1940–45 permits a more detailed examination of such relationships at different ages than was possible with the limited material available in 1938 and 1939. The results of this examination are presented in Table LXVIII, where the infertility rates of married women dying at different ages from the selected causes are compared with the corresponding infertility rates among all deceased married women. The difference between these rates considered in relation to the standard error of the difference determines those causes of death that are significantly associated at any age with infertility or with fertility. The criterion of significance adopted is the usual one of twice the standard error.

Crude infertility rates at "all ages" are not shewn, since such rates would be quite misleading. Total fertility increases with age; it is highest therefore among women dying from causes that operate chiefly at advanced ages, such as myocardial degeneration or arteriosclerosis; conversely diseases that are relatively more important in causing death at younger ages, for example tuberculosis, are associated with low fertility when all ages are combined. The effect of these age differences between diseases could be removed by standardization; but standardized rates would conceal possible variations at different ages in the nature of association between fertility and disease. More can be learned by the study of individual age groups.

In the group of diseases showing significant association with infertility, the infertility rates of women dying from cancer of the ovaries and Fallopian tubes are above average at each age, though under 25 the difference is not significant. Among women who died from syphilis infertility is significantly high at ages from 35 to 74; and among those dying from chronic endocarditis infertility is significantly high at all ages except 45–54 and 75 and over. For the three other causes of death, cancer of "other genital organs," exophthalmic goitre and diseases of the adrenals, infertility is at most ages above average though only in one age group in each disease is the difference significant.

The next group of diseases are those definitely associated at some age with fertility. Among women dying from puerperal causes, although because of the inclusion of abortion and diseases of pregnancy a proportion have died without having borne a child, the majority, naturally, are recorded as fertile. Thus the proportion of fertile women is high at each age at which deaths from this cause occurred. In association with death from cancer of the uterus (including cervix) the proportion fertile is high at ages from 25 to 54, consistent with the established belief that the trauma of child-bearing predisposes to uterine cancer. The proportion fertile is high at each age amongst women dying from myocardial disease, gall-stones and gall-bladder disease. Where death was due to non-puerperal diseases of the genital organs the proportion fertile tends to be low for younger women among whom the disease would

Table LXVIII.—Infertility Rates per thousand stated, distinguishing certain causes of death. Deceased Married Women, 1940-45.

	Age of Woman at Death	U	Inder 25	地流	25-34	国の	35-44	10	45–54	3	55-64	190	65-74	7.	5 and over
	A Property of the Control of the Con	Infer- tility rate	Difference from "all causes"	Infer- tility rate	Difference from "all causes"	Infer- tility rate	Difference from "all causes"	Infer- tility rate	Difference from "all causes"	Infer- tility rate	Difference from "all causes"	Infer- tility rate	Difference from "all causes"	Infer- tility rate	Difference from "all causes"
	All causes	472	7243	296	10 10 10 10	206	全里。	180		161	超级 三型	145	工作者 5	155	
	Me to the state of	が変	1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Disease	s showing sign	ificant	association wit	h Infer	tility at one or	more a	ges.	93	建造沙哥	100	
	Cancer of ovaries and Fallopian tubes	684 667	+212±114 +195±144	402 286	+106±30* - 10±52	313 328	+107±14* +122±24*	289 308	+109± 9* +128±16*	247 244	+ 86± 8* + 83± 15*	224 191	+ 79±11* + 46±18*	211 154	+ 56± 27* - 1± 41
	Chronic endocarditis, valvular disease of heart Cancer of other genital organs Exophthalmic goitre Diseases of adrenals	540 1,000 476 500	+ 68± 24* +528±499 + 4±109 + 28±353	342 412 340 385	+ 46± 9* +116±11 + 44±38 + 89±63	239 207 237 237	+ 33± 6* + 1±45 + 31±23 + 31±37	176 207 172 207	- 4± 5 + 27±29 - 8±15 + 27±36	172 223 183 267	$ \begin{vmatrix} -11 \pm 5^* \\ +62 \pm 20^* \\ +22 \pm 13 \\ +106 \pm 42^* \end{vmatrix} $	180 178	+ 19± 5* + 35±19 + 33±16·5* - 38±67	167 130 130 143	+ 12± 8 - 25± 31 - 25± 49 - 12±137
	自安安安皇帝士士皇康			Diseas	ses showing sig	gnificant	association w	ith Fer	tility at one or	more a	ges.		OF THE	N-4	是是是
196	Puerperal causes	279 474 409	$\begin{array}{c c} -193 \pm & 14* \\ + & 2 \pm 114 \\ - & 63 \pm & 75 \end{array}$	194 210 266	$-102 \pm 7*$ $-86 \pm 23*$ $-30 \pm 22$	112 166 191	- 94± 8* - 40± 9* - 15±11	68 155 170	$ \begin{vmatrix} -112 \pm 38* \\ -25 \pm 5* \\ -10 \pm 6 \end{vmatrix} $	100 168 150	$\begin{vmatrix} - & 61 \pm 116 \\ + & 7 \pm & 5 \\ - & 11 \pm & 3* \end{vmatrix}$	134	$\begin{vmatrix} -145 \pm 203 \\ -11 \pm 7 \\ -3 \pm 2 \end{vmatrix}$	172 155	+ 17± 15 ± 2
	Gallstones and diseases of gall bladder and ducts	375	- 97±176	143	-153±52*	177	- 29±25	121	- 59±16*	110	- 51± 11*	107	- 38± 11*	120	-· 35±17·5
	Diseases of genital organs (non- puerperal)	548 540	+ 76± 77 + 68± 44	332 267	+ 36±30 - 29±12*	228 205	+ 22±21 - 1± 6	124 180	- 56±20* ± 3	70 161	- 91± 24* ± 3	110 145	- 35± 34 ± 2	40 146	-115± 72 - 9± 4
	Intra-cranial lesions of vascular origin	531 447	+ 59± 88 - 25± 23	316 298	+ 20±26 + 2±32	205	$-1\pm10$ $-21\pm21$	164 143	$-16\pm 4*$ $-37\pm 17*$	153 164	$-8\pm 3^{*}$ + $3\pm 15$		$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	153 124	$\begin{vmatrix} - & 2 \pm & 3 \\ - & 31 \pm & 24 \end{vmatrix}$
	nepuntis)		Southful Sylverial Control			A1 300	Page Market	学 6	nd with Fertilit	v at di		1 de 1	1911		2000
	Cancer of Breast	615 631 506	-472±223* +143± 56* +159± 35* + 34± 6*	222 406 391	- 74±21* +110±26* + 95±14*	199 235 202 205	- 7± 7  + 29±20  - 4± 9  - 1± 5	214 148 164 168	+ 34 ± 5* + 32 ± 13* - 16 ± 7* - 12 ± 6*	203 101 145 156	+ 42± 4*   - 60± 8*   - 16± 5*	96	- 49± 7*	191 126 162 182	+ 36± 11*   - 29± 13*   + 7± 9   + 27± 29
	258 第一年至嘉朝	ag ag		Disease	es showing no	significa	int association	with I	nfertility or wi	th Ferti		3,87.3	正声量	00 00	
	Anæmias	409 182	$\begin{array}{c c} - 63 \pm 75 \\ - 290 \pm 150 \end{array}$	241 231	$\begin{array}{c c} - 55 \pm 32 \\ - 65 \pm 52 \end{array}$	203 227	$\begin{vmatrix} - & 3 \pm 21 \\ + & 21 \pm 33 \end{vmatrix}$	187 195		158 163	$\begin{vmatrix} - & 3 \pm & 11 \\ + & 2 \pm & 24 \end{vmatrix}$	194	+ 1± 9 + 49± 37	136	$\begin{vmatrix} -8 \pm 16 \\ -9 \pm 77 \end{vmatrix}$
	angina pectoris Hernia, intestinal obstruction	528	$\begin{vmatrix} -472 \pm 353 \\ +56 \pm 83 \end{vmatrix}$	286 347	- 10±65 + 51±38	247 223	+ 41±22 + 17±21	197 165	$ \begin{vmatrix} + & 17 \pm 10 \\ - & 15 \pm 14 \end{vmatrix} $	157 145	$\begin{vmatrix} - & 4 \pm & 5 \\ - & 16 \pm & 10 \end{vmatrix}$	148 146	+ 3± 4 + 1± 9	146 137	$\begin{vmatrix} - & 9 \pm & 7 \\ - & 18 \pm & 15 \end{vmatrix}$

Note.—Columns headed "difference from all causes" show the difference between the infertility rate of women dying from the specified cause and from all causes, together with the standard error of the difference. Significant differences are indicated by an asterisk.

prevent child-bearing and high at later ages, significantly so at ages 45–64, when the effects of earlier child-bearing may have caused disease. The relationship between fertility and this cause of death, therefore, is one that changes with age. In this respect it resembles the diseases in the next group, but since the only significant differences are those positively associated with fertility, it has been placed in the second group.

Four diseases have been allocated to the third group and show, at different ages, significantly high and significantly low infertility rates. Women dying from cancer of the breast at ages up to 44 contain a high proportion who had borne a child, but at later ages this proportion is low. It would seem that the risk of death from cancer of the breast is increased by child-bearing in young women or else those liable to breast cancer are more likely to have a child; but amongst older women death from breast cancer is more frequent amongst the infertile.

A similar relation appears from a comparison of death rates from cancer of the breast among single and married women in 1921-30 (rates per million):—

	25-	30-	35-	45-	55-	65-	75 and over
Single Married	9	41 44	· 219 191	691 510	1,099 776	1,448 1,020	2,386 1,583
Single as percentage of married	91	93	115	135	142	142	151

At the two younger ages married women are more prone to cancer of the breast, but at later ages single women progressively show a relative excess.

These differences at ages between fertile and infertile and between single and married women support in some measure the evidence arising from recent work in the hormonal treatment of breast cancer that the sex hormones may be intimately related to the development of the disease.

With diabetes and nephritis, on the other hand, an opposite relationship obtains. Women who die young from these causes tend to be infertile since the diseases reduce their prospects of having children, while those dying at later ages are more often fertile than the average. Similarly with tuberculosis the proportion who have borne a child is low in women dying under the age of 35 but is high at later ages, significantly high at ages 45 to 54 when the added burden of previous child bearing exerts its toll on tuberculous women.

Within the last group of diseases in Table LXVIII, those shewing no significant association at any age either with fertility or with infertility, a surprising feature is the high proportion fertile (almost significantly high) amongst women under the age of 25 who died from insanity. Even in the next age group, 25 to 34, the fertile proportion amongst these women is above average for that age.

# GREAT BRITAIN AND IRELAND

The vital statistics of England and Wales, Scotland, Northern Ireland and the Irish Republic for the years 1939 to 1945 are compared in Table LXIX.

Table LXIX.—Great Britain and Ireland. Vital Statistics 1931-38 and 1939-45.

		1			
	Great Britain and Ireland	England and Wales	Scotland <sup>1</sup>	Northern Ireland <sup>1</sup>	Irish Republic
Estimated Total Popul	ation <sup>2</sup> in the mi	ddle of the y	rears 1939 to	1945 (in the	ousands).
(Males	24,465	19,920	2,412	630	1,503
1939 Females	26,231	21,540	2,595	665	1,431
Persons	50,696	41,460	5,007	1,295	2,934
(Males	24,819	20,216	2,454	634	1,515
1940 Females	26,365	21,646	2,611	665	1,443
Persons	51,184	41,862	5,065	1,299	2,958
(Males	24,799	20,141	2,492	633	1,533
1941 \ Females	26,410	21,607	2,668	675	1,460
[Persons	51,209	41,748	5,160	1,308	2,993
(Males	24,835	20,180	2,508	648	1,499
942 Females	26,528	21,717	2,666	681	1,464
Persons	51,363	41,897	5,174	1,329	2,963
(Males	25,064	20,397	2,521	656	1,490
943 Females	26,671	21,862	2,668	685	1,456
(Persons	51,735	42,259	5,189	1,341	2,946
(Males	25,159	20,473	2,534	665	1,487
1944 { Females	26,801	21,976	2,676	692	1,457
Persons	51,960	42,449	5,210	1,357	2,944
(Males	25,213	20,549	2,508	666	1,490
1945 Females	26,921	22,087	2,679	693	1,462
Persons	52,134	42,636	5,187	1,359	2,952
THE REPORT OF THE PARTY OF THE	м	arriages	SALURIAN SER		4.4
1939	510,319	439,694	46,236	9,185	15,204
940	549,078	470,549	53,522	9,795	15,212
941	463,528	388,921	47,620	11,966	15,021
942	446,289	369,744	47,402	11,673	17,470
943	362,092	296,432	38,177	10,155	17,328
1945	366,011	302,714 397,626	37,017 48,642	9,508 10,452	16,772 17,301
Persons married per	THE PARTY OF THE P				10 00
1,000 living :—	58E 98E	12 1 1000.	PA A SA		34
1931–38	15.9	16.7.	14.7	12.9	9.6
939	20.1	21.2	18.5	14.2	10.4
1940	21.5	22.5	21.1	15.1	10.3
941	18.1	18.6	18.5	18.3	10.0
942	17.4	17.7	18.3	17.6	11.8
044	14.0	14.0	14.7	15·1 14·0	11.8
IOAE	100	18.7	18.8	15.4	11.4
1 Population figures for	Market and the second s	Northorn In	10.0	10.4	11.7

<sup>&</sup>lt;sup>1</sup> Population figures for Scotland and Northern Ireland have been revised since the publication of Part II of the Statistical Review for 1945, to make them comparable with those for England and Wales.

<sup>a</sup> Including Armed Forces and Merchant Seamen at home and overseas, except for 1939 and in later years for the Irish Republic, for which only those at home are included.

Table LXIX.—Great Britain and Ireland. Vital Statistics

THE RESERVE NAME OF THE PARTY O	1	1777	3 0 0 00		MAIN SALE
traited trait months and	Case of the	PEDIE IN DIE	ए ।।हावााच व	TOI DECINE	COUNTRY 93
at the changes throughout	Great	England	are combi	e countries	Herrariou
tootoon veticationin side	Britain	and	Scotland	Northern	Irish
this similarity, greatest,	and	and V	Scottand	Ireland	Republic
cotland on the other was	Ireland	Wales	d Wales o	ne hardwer	between E
283 - 47 42 7 41	liciand	Base Securit	A part is in	eres errens Gra	T TELEVISION
	101 11138 SSC	Births <sup>8</sup>	71 11101111	NY YOU SEED!	sumewhat
	Ţ	31rtns*	(1)		
war, marriage raies in all	of break off.	t of the d	Mean Real	to Rates in	M. news ad
1090	782,688	614,479	86,899	25 240	56,070
				25,240 25,363	56,594
1940 m maximixadi h	758,480	590,120	86,403	23,303	
1941	752,501	579,091	89,743	26,887	56,780
1942 E. JEHL JOHA. APP.	837,962	651,503	90,697	29,645	66,117
.the other three countries.	1 0-10-10	684,334	94,682	31,521	64,375
1011	040 744			30,900	65,425
1944 and niega sees bos-	943,744	751,478	95,941		
1945	862,737	679,937	86,932	29,007	66,861
		100	DEC AN DITTE IN	L DNO OND A	p (6461 III
Per 1,000 living :-	UCR.	3 3 3 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	70	34	06103
1931–38	15.7.51	15.0	18:0 91	20.0	19.4
					PROPERTY OF THE PARTY OF THE PA
1939 01161005 011 1141 11	15.4	14-8	17.4	Jac19-5d 1	.019:101
d. steady in 193940 0401	enis 14.8 5n	sle 14:1190	10 17·10 s	19:5	19:10
1941 a	14.7	13.9	17.4	20:6	19.0
1942	16.3	15.6	17.5	22.3	22.3
		16.2	18.2	23.5	21.9
1943	16.9				
1944	18.2	17.7	97184 591	22.8	29122:20
1945	16.5	15.9	16.8	21.3	22.6
ad at years on your daily	2001	month to a	I no but man	a a mark a	- 21 12
CONTRACTOR STATE OF STATE STAT	"Keter will	Deaths4	al sarmino	o agint as	DULLIUS OF
1 98	NO TIVE	0 6377	st-war pos	by the pd	hahaadana
1939	623,574	499,902	64,413	17,542	41,717
		581,537	72,775	18,941	41,885
England and Wales 1991	671,569	535,180	72,558	20,034	43,797
1942	604,310	480,137	64,963	17,570	41,640
1943	629,359	501,412	66,733	17,720	43,494
Tor a small use ill 1441	618,887	492,176	64,603	69 16,980 J	45,128
1945 45H D&T . 519 HL . 9201 . 4	609,957	488,108	62,655	916,43239	42,762
the ceneral dip in 1942.	r shared in	nöugh the	tha bas a	eak of wa	the dutbr
Per 1,000 living :	Colleges water	MAOR THAR	Broat hon	Whate what I	E 10 10 1 1 1 1
1931–38	12.4	12.0	13.3	WQII44AII	09114.200
1939 H. segnisas rentrubil	12.3	00012.10	12.9	190 13:5 90	1014.201
	14.4		14.9	14.6	
1940 min ont he mileven	TOTAL PROPERTY OF THE PARTY OF	THE RESERVE OF THE PARTY OF THE	HOUSE SELECTION OF THE PARTY OF		
1941 jeune danse tea	13.8	13.5	ad 14.7 mg	15.2	14.6
1942	12.5	12.3	13.3	13.3	14.1
1943	13.2	13.0	14.0	13.4	14.8
1944	13.0	12.7	13.6	12.8	15.3
	12.8	12.6	13.2	12.3	14.5
1945	and the second second	I a si al serva hi	I sel many to the second of	12.3	14.0
	Deaths of In	fants under	l year <sup>5</sup>	CHARLES,	VE VE ELITABLE
cest within pass alsuba	ALIA TONIAL	M LEISION. EL	TONY TOWN SEL	OPCITION	POTEST BEE ST
1939 dana rentrui a ereli	42,615	31.190	5.955	301,779	3.691
				2,179	3,759
1940 P.E. PLEYAWOD LEISO		33,892	6,766		
1941 Mager. Metalinixon	48,210	34,550	7,426	2,059	4,175
1942 2014 1970 1470	45 005	32,258	6,283	2,265	4,591
The state of the s	47,388	33,431	6,174	2,464	5,319
	47,000		6,237	2,000	5,198
1944		33,455		2,083	
1945	43,562	31,959	4,889	1,975	4,739
	8 T				99 700
Per 1,000 live births:—	TO THE LAND AND A STATE OF THE PARTY OF THE	11		CON WORLD	
1001 00	63	60	80	78	69
1000	E4	51	69	70	66
1939					
1940		57	78	86	66
1941	64	60	83	77	74
1942	54	51	69	76	69
1042	A Consequence Consequence	49	65	78	83
1944		45	65	67	79
	50 50	45	56	68	71

<sup>3</sup> England and Wales—occurrences; Remainder—registrations.

<sup>5</sup> England and Wales—deaths per 1,000 related live births; Remainder—deaths per 1,000 live births registered in the year.

13

The figures for Great Britain and Ireland combined follow much the same course as those for England and Wales, the largest constituent part. When the various countries are compared, it will be found that the changes throughout the period considered were very similar, but that this similarity, greatest between England and Wales on the one hand and Scotland on the other, was somewhat less for Northern Ireland and less still for the Irish Republic.

Marriage Rates.—As a result of the outbreak of war, marriage rates in all four countries rose to a peak which was very marked in all except the Irish Republic. England and Wales and Scotland reached the maximum in 1940, Northern Ireland in 1941 and the Irish Republic in 1942. After that rates in the Irish Republic continued more or less steady; in the other three countries they declined continuously to a low point in 1943—44 and rose again to a peak in 1945, at the end of the war.

Birth Rates.—There had been a slight fall in all four countries from 1938 to 1939. This continued in England and Wales until 1941, in Scotland until 1940, while the rate for Northern Ireland remained steady in 1939–40 and that for the Irish Republic in 1939–41. Then followed a rise which in the Irish Republic was marked in 1942 but then practically ceased; in the other three countries it continued more gradually to a peak which Northern Ireland reached in 1943, England and Wales and Scotland in 1944. This was followed in all these three countries by a decline in 1945, which was in turn to be succeeded by the post-war boom.

Death Rates.—After 1939 there was a sharp rise in rates in all the United Kingdom countries, reaching its peak in 1940 in England and Wales and Scotland and in 1941 in Northern Ireland. After that the rates declined throughout the years covered by the table, except for a small rise in 1943. Death rates in the Irish Republic, on the other hand, rose more gradually on the outbreak of war, and although they shared in the general dip in 1942, continued their upward trend until 1944, after which they declined. The net result of the war period, taking into account the small further changes in 1946, was to restore the rates approximately to the 1938 level in all the countries except Northern Ireland, where they were about 10 per cent. lower.

Infant Mortality Rates.—The downward trend in infant mortality rates which had prevailed in the years immediately before the war was not reversed until 1940 (1941 in the Irish Republic), when the rates rose, reaching their peak in 1941 (1940 in Northern Ireland). After that there was a more or less continuous decline, except in the Irish Republic, where a further and bigger rise was recorded in 1943 before giving way to the general downward tendency. With the exception of the Irish Republic (which approximately regained the 1938 level) all the countries finished the war period with lower rates than had prevailed before it.

<sup>4</sup> Deaths include those of non-civilians registered in the country. Death rates, except for the Irish Republic, are based on civilian deaths and populations as follows: for England and Wales, from 3rd September, 1939; for Scotland, from 1940; for Northern Ireland, from 1941.

### THE REGISTRATION SERVICE

# Registration of Births, Deaths and Marriages in England and Wales.

Progress of Registration.—Between 1940 and 1945, the number of names added each year to the alphabetical indexes of births, deaths and marriages recorded in the registers of England and Wales were as follows:—

1940			2,129,664	1943		1,777,488
1941		Tallet Nation	1,900,250	1944		1,842,447
1942	44	EN MARK	1.873.664	1945	a second	1 968 633

The total at the end of 1945 embracing a period of 108½ years was 185,619,688.

Searches and Certificates.—A revised list of the registers and records in the custody of the Registrar General may be obtained on application to the General Register Office, Somerset House, London, W.C.2. Searches may be made and certificates obtained on payment of the prescribed fees.

Table LXX shews the extent to which the copies of the records kept in the General Register Office have been utilized since 1866.

Table LXX.—Searches made in the Registers, Certificates issued and Fees received at the General Register Office, 1866-1945.

380/740	Total	Searches for	Searches paid for by	Certificates	Amount	
Years*	Searches	Govt. Depts.	the public	issued	Received	
nti seren	# 501-in	Enemy Actio	Records by	Montanaige	f s. (	d.
1866	12,135	clamage by ene	12,135	10,017	1.860 15	6
1875	26,356	The Day of the Fall	26,356	20,282	3.879 15	6
1885	36,450	was the court of	36,450	27,682	5,317 13	6
1895	53,289		53,289	35,727		6
1905	65,142		65,142	50,310		0
1915	202,939	118,788	84,151	69,746		0
1925†	488,781	339,790	148,991	115,378		6
1935	591,056	443,783	147,273	119,351		6
1936†	630,842	473,616	157,226	128,572		3
1937	662,195	494,045	168,150	138,401		0
1938	846,242	668,246	177,996	145,221		3
1939	969,713	802,566	167.147	144,226		9
1940	1,133,620	977,165	156,455	142,502		9
1941	791,876	670,471	121,405	110,185		3
1942†	639,273	497,739	141.534	128,967		6
1943	621,056	474,409	146,647	135,474		0
1944	590,611	444,479	146,132	138,326		6
1945	569,266	380,730	188,536	187,077		3

<sup>\*</sup> These periods relate to 52 weeks except those marked † which relate to 53 weeks.

Searches on behalf of other Government Departments were undertaken between 1940 and 1945 for purposes which included the following:—

- (a) Verification of the ages of persons over 70 claiming non-contributory old age pensions, and of certain blind persons eligible for pensions below that age.
- (b) Verification of births, deaths and marriages in connection with claims for contributory pensions under the Widows', Orphans' and Old Age Contributory Pensions Acts, 1936 and 1941, and other benefits then administered by the Ministry of Health.

- (c) Verification of births, deaths and marriages in support of claims for war pensions administered by the Ministry of Pensions.
- (d) Verification of the ages of certain classes of men in connection with service in the Navy, Army and Air Force.
- (e) Verification to assist dependents of men in the Armed Forces to produce evidence of marriage and of the births of children in support of claims to service pensions, separation allowances, etc.

The numbers of searches undertaken for these purposes are shewn in the following table:—

1,968,638	1940	1941	1942	1943	1944	1945
Old Age and Blind Persons' (Non-Contributory) Pensions	40,703	35,835	33,104	29,740	28,815	28,251
Ministry of Health	666,172	332,958	276,629	282,701	285,418	272,400
Ministry of Pensions	13,015	42,224	29,016	35,713	54,359	48,675
Army	236,282	214,427	126,953	105,026	67,147	27,279
Royal Navy	13,691	24,222	7,812	7,187	1,790	1,114
Royal Air Force	7,302	20,805	24,225	14,042	6,950	3,011
Total	977,165	670,471	497,739	474,409	444,479	380,730

Loss of Registration Records by Enemy Action.—The registration records suffered, fortunately, little loss or damage by enemy action during the period 1940–1945. The following are the details:—

Incendiary bombs fell on Cornwall House, S.E.1, on the 29th December, 1940, and caused an extensive fire which destroyed about three-quarters of the birth records of the year 1881. The destroyed entries—nearly 500,000 in all—were replaced by fresh certified copies of the original registers in the local register offices.

The following register offices were destroyed or damaged by enemy action :-

1940	Bristol Liverpool Manchester Southampton	Office and some registers destroyed. Office damaged. Office and some registers destroyed. Office damaged.
1941	London City Plymouth	Office and some registers destroyed. Office destroyed.
1942	Bathavon Devon Central Exeter Grimsby	Office destroyed. Office destroyed. Office and some registers destroyed. Office damaged.
1943	Hull gon and o	Office destroyed.

At Bristol, in addition to the task of repairing damaged registers, it was found necessary to compile new indexes of the surviving registers of births from 1870 and of deaths and marriages from 1900. The material for the new indexes was prepared in the Bristol Register Office and sorted in the General Register Office.

Deaths due to War Operations.—A special procedure was instituted for dealing with casualties and for the registration of deaths which were caused by war operations in England and Wales among civilians and members of the British, Dominion and Allied Armed Forces. A card index was compiled in the General Register Office of all deaths registered in this manner and extracts of the entries relating to civilians were sent to the Imperial War Graves Commission. The index contains 82,460 entries.

Offences against the Registration Acts.—The numbers of persons prosecuted each year at the instance of the Registrar General and convicted for failing to register a birth were as follows:—

Year	No. of Cases	Convictions		
1940	8	8		
1941	1	1		
1942	4	4		
1943	A SAND SELECTION OF THE PARTY.	I With the		
1944	2	2		
1945	1 1 1 1	1		

Proceedings were taken under the Perjury Act, 1911, by the Director of Public Prosecutions or by the police in a number of cases where false information had been given by an informant when registering vital events:—

20109	us isvol	Births	Marriages		
Year	Cases	Persons Convicted	Cases	Persons Convicted	
1940 1941	6 5	7500	Pulsuanuq Project d	ni sbant en	
1942 1943	10 22	10	17 10	20121307	
1944 1945	55 37	56	d to biggs	beilder	

In 1945 an informant who gave false information when registering a death was prosecuted and convicted. In 1944 two prosecutions were undertaken for similar offences in the registration of stillbirths, and both resulted in convictions.

Proceedings were also taken under the Perjury Act in some cases where false information was given for the purpose of procuring marriage:—

Year	No. of Cases	No. of Persons Convicted
1940	19	24
1941	27	36
1942	D 10 2933 119, 10 2	144 Teo
1943	19 78 9 24 brid SB	32 bil
1944	15	18
1945	19	21

The falsification of particulars on certificates resulted in the following convictions for forgery: in 1940, two; in 1942, one; in 1943, two.

### Registration of Births, Deaths and Marriages Abroad.

Registers of births and deaths of British subjects abroad are maintained by British Consular Officers and certain other British authorities under the Registration of Births and Deaths (Consular Officers) Regulations, made by the Secretary of State for Foreign Affairs. These Regulations provide for the deposit of certified copies of these consular records in the General Register Office

Under the Foreign Marriage Act, 1892, marriages to which one party at least is a British subject may be solemnized by a British Consular Officer or celebrated according to local law in his presence. The Act requires these Officers to maintain registers of such marriages and to deposit in the General Register Office a certified copy of each entry in their registers.

The number of certified copies of birth, death and marriage entries received in each of the years 1938 to 1945 is shewn in the table below:—

Year	Births	Deaths	Marriages
1938	2,180	1,026	560
1939	2,329	1,026	556
1940	2,007	740	522
1941	1,672	719	534
1942	1,470	582	512
1943	1,947	809	532
1944	2,987	1,177	559
1945	2,415	1,103	733

The Registration of Births, Deaths and Marriages (Army) Act, 1879, provided for the registration of births, marriages and deaths which occur out of the United Kingdom among officers and soldiers of H.M. land forces and their families. These facilities were extended to the Royal Air Force by the Air Force (Application of Enactments) (No. 2) Order, 1918, made under the Air Force (Constitution) Act, 1917.

By regulations made in pursuance of these enactments, certified copies of entries in the Army and Air Force Books 112, 113 and 114, which constitute respectively the registers of births, marriages and deaths, are sent to the Registrar General on the 1st January and 1st July each year.

The number of certified copies of birth and marriage entries received in each of the years 1938 to 1945 is shewn in the table below:—

Year Year	ration when re	Births	Marriages	
2000 51V 01938 b9	and both result	1,659	788	
1940 1941	ty Act in some	1,653 1,461	1,158 1,158	
1942 1943	No. of Persons	1,370 2,170	2,129 4,021	
1944 1945	Convicted,	2,359 1,609	4,255 7,001	

The numbers of certified copies of entries of death received under these regulations in 1938 and 1939 were 482 and 498 respectively. (For War Deaths see page 144.)

Marine Register Book.—In accordance with the Merchant Shipping Act, 1894, masters of every British ship, and of foreign ships plying to and from British ports, are required to transmit returns of all births and deaths which occur on board their ships, to the Registrar General of Shipping and Seamen, who furnishes certified copies to the appropriate Registrar General of Births and Deaths for England and Wales, Scotland, Northern Ireland and/or the Irish Republic. Captains of H.M. ships, in accordance with Section 37 (6) of the Births and Deaths Registration Act, 1874, and Articles 869 and 1709 of King's

Regulations and Admiralty Instructions, send reports of births and deaths on board their ships to the Registrar General. The returns received from these two sources constitute the "Marine Register Book." Between 1940 and 1945 the following entries were made in it :-

Year of Registration				on	N P	Births	Deaths
1940		, a	CO just	to Acute	rolls	Thornes add A and	5,689
1941	05.I	a same de		Dank		40	6,077
1942 1943	011.611		143.5115	32 100 5	D-4.2	46	9,890 7,044
1944	041	0.000	CL MILE	for sel	01:300	1301 10 15	2,974
1945						23	2,099
	7	otals	rtaily 5	atamiro	mn.sd	186	33,773

Registers of Naval, Army and Royal Air Force War Deaths .- A comprehensive record of all deaths which occurred on board H.M. ships during the recent war is being compiled by the Admiralty for deposit at the General Register Office and will form the Register of Naval War Deaths.

During the war, deaths in the Army and Royal Air Force abroad were recorded by the War Office and Air Ministry respectively. Returns of deaths will be rendered to the Registrar General and will form the Registers of Army and Royal Air Force War Deaths.

### Re-registration of Births under the Legitimacy Act, 1926

Under the Legitimacy Act, 1926, an illegitimate child is, subject to certain conditions, legitimated by the subsequent marriage of the parents; and the Act contains provision to enable the birth of such a child to be re-registered. The numbers of authorities for such re-registration issued during each

quarter from 1927 to 1945 were as follows:-

Year	March	June	September	December	Totals
1927	1,265	1,256	1,381	1,593	5,495
1928	1,401	1,170	1,242	1,070	4,883
1929	1,075	1,105	933	933	4,046
1930	996	1,001	1,006	986	3,989
1931	981	908	797	825	3,511
1932	854	762	709	-819	3,144
1933	752	724	718	774	2,968
1934	722	777	798	798	3,095
1935	774	790	701	691	2,956
1936	742	843	685	716	2,986
1937	695	699	628	756	2,778
1938	634	716	748	746	2,844
1939	717	883	791	1,138	3,529
1940	1,184	1,302	1,146	722	4,354
1941	659	715	742	783	2,899
1942	713	820	740	723	2,996
1943	710	749	739	615	2,813
1944	698	790	711	671	2,870
1945	741	908	931	1,161	3,741

The sudden increase in the quarterly totals of re-registrations which coincided with the outbreak of war in 1939 continued into the first three quarters of 1940. These high figures are probably connected with a greater desire in war-time to make provision for the illegitimate child and its mother, by enabling them to qualify, for example, for service allowances to wives and dependent

children. In the December quarter of 1940 the figures reverted to levels comparable with those of the years between 1932 and the outbreak of war, and remained so until the end of hostilities in Europe.

In the last three quarters of 1945 the quarterly figures again rose steeply, as release from war-time duties at home and abroad brought the opportunity, delayed while hostilities lasted, to take advantage of the provisions of the Act.

### The Adoption of Children Act, 1926

The Adoption of Children Act, 1926, provided for the legal adoption of children by Order of Court, and established a system of registration of such adoptions in an Adopted Children Register to be maintained by the Registrar General.

Table LXXI furnishes an analysis of the Adoption Orders made by reference to the several classes of Courts and the quarterly distribution of the total figure. Except for 1941, when conditions were unusually unsettled after the heavy bombing, the yearly totals have shown a continuous increase every year from 1927 to 1945.

Between 1927 and 1945 the number of adoption orders made in Courts of Summary Jurisdiction fell from 90 per cent. of the total number made in all courts to just under 84 per cent.; the proportion made in County Courts rose from 6 per cent. to 16 per cent.

The number of adopted children exceeds the number of adoption orders because the High Court does not issue a separate adoption order for each child where an adopter adopts more than one child at the same time.

Table LXXI.—Adoption of Children under the Adoption of Children Act, 1926. England and Wales.

Year -	Number	r of Adoptic	on Orders de	ealt with	Correspo	in the Ado	pted Childr	en, i.e., Entr en Register	ies made
Year	Total	High Court	County Court	Court of Summary Juris- diction	Year's Total	March Quarter	June Quarter	September Quarter	December Quarter
1927	2,943	133	184	2,626	2,967	329	990	774	874
1928	3,278	124	236	2,918	3,303	851	844	705	903
1929	3,294	72	224	2,998	3,307	722	787	857	941
1930	4,511	74	317	4,120	4,517	1,084	1,196	983	1,254
1931	4,119	68	274	3,777	4,127	873	1,049	1,046	1,159
1932	4,465	38	264	4,163	4,467	1,073	1,178	1,000	1,216
1933	4,524	61	262	4,201	4,528	1,029	1,258	1,004	1,237
1934	4,756	45	290	4,421	4,758	1,063	1,265	1,075	1,355
1935	4,844	64	342	4,438	4,852	1,174	1,261	1,073	1,344
1936	5,180	62	372	4,746	5,185	1,215	1,230	1,320	1,420
1937	5,547	78	413	5,056	5,553	1,183	1,535	1,283	1,552
1938	6,193	85	446	5,662	6,198	1,444	1,593	1,442	1,719
1939	6,826	65	635	6,126	6,832	1,630	1,705	1,667	1,830
1940	7,775	59	645	7,071	7,776	1,641	2,341	2,225	1,569
1941	7,429	44	709	6,676	7,434	1,370	1,794	1,980	2,290
1942	10,409	55	1,153	9,201	10,417	2,180	2,440	2,894	2,903
1943	11,548	57	1,504	9,987	11,565	2,632	2,883	3,190	2,860
1944	13,027	58	1,928	11,041	13,046	2,713	3,249	3,474	3,610
1945	16,319	52	2,622	13,645	16,357	3,514	3,715	4,453	4,675

### NATIONAL REGISTRATION

The National Register was established under the provisions of the National Registration Act, 1939, and the Registrar General was charged with the duty of making the necessary arrangements for the initiation and maintenance of the register.

Compilation of the Register.—The initial compilation of the register was made by obtaining returns for the purpose, from householders and others, giving the name, sex, date of birth, occupation and marital status of each civilian person on the premises on the night of the 29th September, 1939. On the collection of these returns the collector wrote and issued on the spot an identity card for every person included in the return. Each identity card bore the holder's name and a combination of letters and numbers known as the National Registration number, which effectively linked the person to the original return and related him to the household, etc., of which he formed part, the address at which he was registered and the local district, and through that district to the borough, urban or rural district in which the address was situated.

The card contained a space for the holder's address and signature but holders were not asked to fill in these particulars at the time. This was not done until May, 1940, when by announcements through the B.B.C. and the Press the public were instructed to complete the inside of their identity cards by inserting their usual residence and signature and the date of signing, and always to have the card ready to show to any authorised person.

The returns for each district were copied into "transcript books" in the order of the National Registration numbers, and the original returns, thus freed for other purposes, were handed over to the local Food Rationing Authorities to serve as the basis for the issue of Ration Books and thereafter to constitute the initial local Food Register.

The transcript books were centralised, those for England and Wales being assembled together at the Central National Registration Office at Southport, and those for Scotland at the similar office for Scotland. These offices are under the direct control of the respective Registrars General. The transcript books for Northern Ireland were centralised at the Central National Registration Office in Belfast, under the control of an officer responsible to the Registrar General for England and Wales.

The whole series of transcript books constitute a Central Index to the registered population of each country and the books are so arranged as to allow space for a note to be made against each individual entry of all the events concerning that individual which are notified through the standard procedure of the system, e.g., removal from one local area to another, acquisition or loss of alien status, entry into the Armed Forces or Mercantile Marine, embarkation for abroad for a period of more than two months, and death, etc.

The registration was supervised on behalf of the Registrar General by a National Registration Officer for each borough, urban or rural district. In each such unit the Clerk or other principal officer of the Council was appointed as National Registration Officer.

Registration of children born since the initial registration and of persons who, since that date, have entered the country or returned to civil life on release from the Forces is carried out by the local National Registration Officer. Particulars similar to those obtained on the original returns are obtained at each fresh registration and forwarded to the Central Index for inclusion in the National Register. Up to the end of 1945 over seven million fresh registrations had been recorded, over four million by birth, and nearly three million by entry to the country or release from the Services, together with those few who for one reason or another failed to be registered on National Registration Day.

Each local National Registration Office has also built up and operates a local index consisting of a register card for each person resident in the area giving the current address and other particulars.

How the Register is maintained.—The local National Registration Officer notifies the Central Index of any arrival from another area. The Central Index notes the record for that person and notifies the removal to the National Registration Officer of the previous area. (The number of such notifications recorded up to the end of 1945 was nearly 36 million.)

When a person dies, leaves the United Kingdom for more than two months, or joins the Armed Forces or Mercantile Marine, the entry in the Central Index is closed and the relative register card is removed from the local index. (The total number of such occurrences recorded up to the end of 1945 was approximately 71 million.)

The Central Index thus serves both as a control register to keep the local registers accurate, and also as a key register enabling information to be readily found for the various purposes for which the register is used.

Services rendered by the Register.—From the outset the National Register was able to make a substantial contribution to the war effort. It was, for example, instrumental in securing the registration of over 100,000 men who had not complied with their obligations under the National Service Acts and the registration of over 500,000 women who had failed to comply with the Registration for Employment Orders.

The administration of the Defence Regulations made it desirable that in certain cases a special form of identity card affording stricter evidence of the identity of the holder should be substituted for the ordinary card. Accordingly in November, 1939, arrangements were introduced for the issue to British subjects of special green identity cards bearing, in addition to the particulars on the ordinary card, the holder's photograph and signature and a statement of his date and place of birth and any visible distinguishing marks. This card proved a valuable means of securing that permits to enter protected places and areas could not be used by persons to whom they did not relate.

Other special forms of identity card relating the holder to some specific form of employment were later introduced and issued to employees of Public Utility Undertakings, to the Police, and (until their exclusion in 1943 from National Registration) to the Mercantile Marine.

Arrangements were also made with the Home Office for distinguishing in the National Register aliens and others subject to restrictions during their stay in the United Kingdom.

Links with food rationing.—The close relations early established between the National Register and the food and clothing rationing systems were maintained and strengthened, and in 1943 arrangements were made throughout the country which enabled the operations of National Registration and Food Rationing to be combined in the same local office. The same individual was appointed both National Registration Officer and Food Executive Officer, with responsibilities in the former capacity to the Registrar General and in the latter capacity to the Ministry of Food. The identity card and ration book became complementary documents backed by the National Registration and Food records housed in each National Registration/Food Office. The National Registration records have been of great assistance to the local Food Office and at the annual re-issue of ration books duplication has been prevented by the requirement that each person's identity card must be produced before a new ration book can be issued.

During 1943, the identity cards (of buff colour) held by persons over 16 years of age, other than the special types of cards referred to in the previous section,

were withdrawn and replaced by an improved eard (of blue colour). The exchange was carried out in conjunction with the Ministry of Food during the annual re-issue of ration books and its effect was to put out of action a considerable number of old cards which should have been previously surrendered (under arrangements with the Service Departments, etc., which did not work with the same efficacy at the beginning of the war as they did later on), but which had so far remained in existence as a potential source of material for forgers or impersonators.

At the same time as this general exchange, two new types of identity card having a limited period of validity were introduced, one for issue thereafter to children and valid only until the child's sixteenth birthday, and the other for issue to persons whose usual place of residence was outside the United Kingdom. Ration books issued to the latter class were limited to the period of

validity of the identity card.

Assistance to electoral registration.—In the same year (1943) a close link was forged between the National Register and electoral registration. The Parliamentary Electors (War-time Registration) Acts, 1943 and 1944, provided that qualification for inclusion in the electoral register was to be registration in the National Register in respect of an address in the constituency concerned on a specified qualifying date. The first electoral register compiled from information derived from National Registration sources was published in May, 1945, with reference to the qualifying date 31st January, 1945. The material which formed the basis of this register was in the main provided by the identity cards of persons over 21 handed over in exchange for the (Blue) cards issued in 1943, corrected and brought up to date by means of special operations carried out by the local and central National Registration Offices. The Representation of the People Act, 1945, as amended by the Elections and Jurors Act, 1945, provided that a register based upon National Registration machinery and to be published annually on the 15th October with reference to a qualifying date on 30th June should serve for all parliamentary and local government elections. A register compiled under these Acts was published in October of 1945, and of each year thereafter until 1949, when different arrangements came into force.

The corrected National Registration material originally handed over to the Electoral Registration Officer to serve as the basis of the Electoral Register was kept up to date and improved by means of notification from the local National Registration Office to the Electoral Registration Officer of changes of address, new registrations and withdrawals from the National Register of all persons entitled to vote. In addition the Central Index sent on to Electoral Registration Officers particulars of British subjects who attained the age of 21 and who were otherwise qualified for inclusion in the Electoral Register and of other persons in respect of whom information establishing electoral

qualification or disqualification had been received centrally.

A Central Index of Service Voters was established at the English Central National Registration Office which acted as a clearing house for passing information to Electoral Registration Officers regarding deaths, discharges from the Forces and other events notified by the various Services Record Offices in respect of members of the Forces who had registered as Service voters. Such a service was necessary because the Record Offices could not undertake the work of direct communication with Electoral Registration Officers. Nearly 3,800,000 Service declarations had been received in the Central Index by the end of 1945, and by this time nearly 900,000 notifications of release or discharge from the Forces, or of death, had been received. There were 2,749,531 Service voters on the register of Parliamentary Electors published on 15th October, 1945 (see Table U, Statistical Review, Part II, 1945), which represented about 60 per cent. of those eligible to be included in the Service register on the qualifying date of 30th June, 1945.

At the same time a "Central Index of War Workers" was built up at each Central National Registration Office to carry out similar functions in respect of civilians certified on behalf of a Government Department to be engaged outside the United Kingdom in war work of national importance, and therefore entitled to be placed on the electoral register. By the end of 1945, 11,600 declarations had been filed in the War Workers Index.

Later developments.—In 1943, Defence Regulation 60CC was enacted which gave power to Officers of the Post Office to require the production of the identity card of any person transacting Savings Bank or other business with the Post Office for which evidence of identity was material. This has been of substantial assistance in preventing fraud and has enabled the public to withdraw small amounts on demand without going through the more elaborate formalities which would otherwise have been necessary.

In 1944 the Board of Trade, by Orders under Defence Regulations 55 and 55AA, prohibited the completion of any sale by auction of furniture costing more than £1 until the buyer had produced his identity card and the auctioneer had recorded his National Registration number. Similar requirements were imposed in the case of the sale of any furniture by a trader or of any second-

hand furniture to a trader.

These measures (which were discontinued in 1947) were necessary for the effective enforcement of the maximum prices of furniture, which depended to a considerable extent upon the proper keeping of records; among other things, the recording of the National Registration numbers prevented evasion of the

price control system by the use of fictitious names.

The release to civil life of large numbers of Service personnel from June, 1945 onwards, added considerably to the work of the local and Central National Registration Offices. Arrangements were made for the inclusion, with the release documents issued to each member of the Forces on demobilization or discharge, of a simple form of application for registration containing all relevant particulars. On presentation of this form at the local National Registration Office, an identity card and the appropriate food and clothing books were

issued with a minimum of delay.

At the end of hostilities in 1945 it became possible to modify National Registration procedure in some respects to meet the new conditions, and to introduce changes designed to afford greater convenience to the public. For example, shortly after VE-Day the power of members of the Armed Forces to demand production of the identity card was confined to cases of suspected desertion, absence without leave or escape from detention as a prisoner of war, while the procedure governing the replacement of identity cards in consequence of change of name or the loss or destruction of the original card was simplified so as to enable the new card to be issued either at the time of application or

within a few days thereafter.

The information contained in the National Register has throughout been treated as confidential and there is a provision in the National Registration Act prohibiting the communication of information from the Register except for the purpose of criminal proceedings or in accordance with an authorization by the Minister of Health or the Registrar General. Such authorizations have necessarily been restricted within narrow limits and in general are confined to cases where disclosure would be of benefit to the individual. In pursuance of this general principle help has been given in reuniting families separated under war conditions, and in tracing persons to whom payments are due from public funds. In this way, numbers of persons who had left their previous address have been enabled to receive civil defence gratuities, war damage payments and increased pensions.

In the field of national administration the Register renders valuable services in many ways, e.g. in verifying birth dates and providing other information which simplifies the procedure for the payment of Family Allowances and the repayment of post-war credits. It also assists the conduct of statistical surveys, e.g. by providing the random samples required for the sickness surveys conducted by the Social Survey on behalf of the Registrar General.

Another service rendered by the National Register is in the sphere of population estimates. Not only are records kept of the movement of population in and out of each area but the National Registration records are also of material assistance in gauging the total movement of population into and out of the United Kingdom. The National Register thus makes an important contribution to the Registrar General's periodical estimates of population which, among many other uses, form the basis of the calculation of the Exchequer Grant to local authorities.

Enforcement.—It would not have been possible to rely on the National Register for the many services described above unless a high standard of compliance with the Act and Regulations had been insisted on. For the most part this was readily given, but in a residue of cases it was necessary to resort to prosecution. The following table sets out the number of persons convicted of national registration offences from 1st July, 1940, onwards. (Earlier figures are not available.)

The high total of prosecutions in 1944 was due to the special security measures taken in connection with the invasion of the Continent.

Table LXXII.—Persons convicted of offences under the National Registration Act, 1939.

des was 102 per cent. Of the distribution was variable ake District and the norther in a real excepting suit	1940 (second half of year only)	1941	1942	1943	1944	1945	Total
Major Offences  Making false statements for National Registration pur-	tiered a	ier sca id We	isine in	yell as	Total of	petron petron	Was r
Using an identity card for purposes of impersonation	25 17	88 252	119 440	121 344	189	120 462	1,998
Allowing another person to use one's identity card Forgery of an identity card	33	35 115	45 214	48 172	82 126	63 103	274 763
Minor Offences Defacement or destruction of identity card	at is bet	28	lieve 9	79	166	93	416
Failure to produce identity card to Police Failure to notify change of	35	202	286	369	1,573	706	3,171
address Other offences against the National Registration	13 13 13 14 14 14	113 101 m	300	211	527	474	1,638
Regulations  Total	132	873	1,502	190 1,534	1,527 4,673	532 2,553	2,345 11,267

Note.—Major Offences—Maximum penalties—(a) on Summary Conviction—Imprison-

on Summary Conviction—Imprisonment for 3 months, or £50 fine, or both.

(b) on Indictment—Imprisonment for 2 years, or £100 fine, or both.

Minor Offences-Maximum Penalties-

on Summary Conviction—Imprisonment for 1 month, or £5 fine, or both.

## WEATHER OF THE YEARS 1940 TO 1945 ENGLAND AND WALES

(Supplied by the Director, Meteorological Office)

Note.—Meteorological data are published in tabular form in the Registrar General's Weekly and Quarterly Returns and Statistical Reviews, Part I, Medical.

#### 1940

The most notable features of the weather of 1940 were the intense frost and heavy snowfall of January, the notable lack of sunshine in February, the long dry, sunny and warm period in late spring and early summer, the exceptionally dry August with its scarcity of thunderstorms and the excessive rainfall of

July and November.

Mean temperature was somewhat below the average, the deviation from the average for the country as a whole being  $-0.4^{\circ}$  F. The deviation from the average for the various districts ranged from  $0.0^{\circ}$  F. in England, S.W. to  $-0.8^{\circ}$  F. in England, E. Although the mean temperature for the year differed from the average by only  $-0.4^{\circ}$  F. there were large variations from the average during certain periods and the absolute annual range of temperature was great; the difference between the highest and lowest temperatures recorded in England and Wales was over  $100^{\circ}$  F. January was exceptionally cold and the periods February 1st-3rd and 9th-19th were very cold, while May was unusually warm and June exceptionally warm. Over the country as a whole January, 1940 was probably the coldest January since 1881; in the long record at Oxford it was the coldest month since February, 1895 and the coldest January since 1838. On the other hand, at numerous widely separated stations June, 1940 was the warmest June on record. The warmth of May was due to

persistent warmth rather than a very warm spell. The general precipitation of England and Wales was 102 per cent. of the standard average for the period 1881-1915. The distribution was variable; less than 90 per cent. occurred over much of the Lake District and the northern Pennines, while more than 110 per cent, occurred in an area extending southeast from the mouth of the Dee and covering most of Warwickshire and Worcestershire, as well as in smaller scattered areas elsewhere (125 per cent. was reported at Newport, Salop and Weymouth and 124 per cent. at Birmingham and Sealand). With regard to rainfall in individual months, over the country as a whole July and November were excessively wet and June and August markedly dry. The percentage of the average in July was 154 and in November 215; apart from November, 1929, it was the wettest November since before 1868. The general rainfall in June was only 31 per cent. of the average and in August 19 per cent. August was the driest month of that name since comparable records are available, that is before 1868; at numerous places in the south of England there was no measurable rainfall. With regard to the remaining months rainfall exceeded the average on the whole in the months January to April and in October, while a deficiency was recorded in May,

September and December.

Sunshine appreciably exceeded the average generally, the percentage of the average for the districts ranging from 104 in England, E. to 109 in England, S.E. For the country as a whole, compared with the average June was by far the sunniest month, though January was unusually sunny and May and September were appreciably sunnier than usual; on the other hand, February was much the dullest month compared with the average, but April and October were also decidedly dull. The excessive sunshine in June was exceptional; at widely separated stations with long records it was the sunniest June on record. A mean daily duration of more than 10 hours was registered at numerous places, while a daily mean of rather more than 11 hours was recorded at

Blackpool and Morecambe. Although January was markedly sunny on the whole, at individual towns the month was notably dull, probably due to the prevalence of fog. The deficiency of sunshine in February was notable; the percentage of the average over England and Wales was only 41 and in the long records at York, Oxford and Kew Observatory the sunshine totals were the lowest on record for February.

### 1941

Perhaps the most remarkable feature of the weather of the year 1941 was the prolonged cold spell from January to mid-June. During this long period there was an unusual prevalence of winds from between north and east. Other notable features of the weather were the heavy snowfalls which occurred at times in January and February, the hot spells of 21st-22nd June and 7th-12th July, the severe thunderstorms of 22nd June and at times in July and the dry and warm September. The year was also characterized by a deficiency of sunshine.

Mean temperature was below the average, the deviation for the country generally being  $-0.5^{\circ}$  F. The period January to mid-June was unusually cold. January was notably cold and the spring months April and May were unseasonably cold; at Ross-on-Wye it was the coldest May since 1877 and at Teignmouth since at least 1871; severe ground frosts were a notable feature of the first half of May. A marked change occurred about the middle of June and with the exception of August, which was cool, mean temperature exceeded the average in each of the months June to December; as already stated the periods 21st-22nd June and 7th-12th July were exceptionally warm and September was unusually warm. The following table gives the monthly deviation from the average temperature in °F. for the country as a whole:

Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. Year -6.3 - 1.7 - 0.9 - 2.0 - 3.6 + 1.7 + 2.6 - 1.4 + 2.3 + 0.9 + 0.8 + 1.7 - 0.5

The general precipitation of England and Wales was 97 per cent. of the average for the period 1881-1915; rainfall was more than the average over large areas in the eastern districts and the midlands but was below the average in the west. More than 110 per cent, occurred in the neighbourhood of Newcastle upon Tyne, over a large area from Worcester to the Wash, at Clifton Hampden (Oxfordshire) and in an appreciable area around London. Totals exceeding 120 per cent. were received in the neighbourhood of Birmingham, Leicester, Spalding, in parts of London and at Wisley (Surrey). Less than 80 per cent. occurred in the north-west from Southport to Alston over much of a coastal strip of Wales, in west Somerset and north Devon and at Tavistock. There was only about 70 per cent. over part of Westmorland and at Colwyn Bay. With regard to individual months February, August and March were unusually wet and September, December and June very dry. Locally in north-east England more than four times the average was registered in February and at Durham Observatory it was the wettest February since before 1850. In August more than twice the average occurred over much of the Thames Valley. Absolute droughts were recorded at times during the period April to September; for example, during the latter part of April and first part of May, the latter part of June and the first part of July and during the middle of September. Heavy snowstorms occurred during the third week of January and strong easterly winds caused deep drifts; level snow was 15 ins. deep at Birmingham and 12 ins. at Hoylake and Prestwood (Worcestershire) on the 20th and 15 ins. at Bala and Lake Vyrnwy on the 21st; at Hoylake drifts were 7 to 8 ft. and 10 ft. in places. Considerable snow fell also from 1st-5th February and 18th-20th. At Lake Vyrnwy

the depth was 14 ins. on the morning of the 6th. The snowfall of 18th-20th February was abnormal, particularly in north-east England; at Consett (800 ft. altitude), County Durham, the prevailing depth was reported to be 4 ft.: at Durham Observatory it was 42 ins.

The deficiency of bright sunshine was a marked feature of the weather of the year. The period covering the latter half of June and the first ten days of July was, however, notably sunny. The following table gives the monthly percentage of the average over the country generally. It shows that the dullest months on the whole in relation to the various averages were January, April, September and November.

Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. Year 78 99 92 73 82 101 112 99 75 106 72 101 92

### 1942

Among the most notable features of the weather of 1942 were the extreme cold and considerable snowfall at times during the first two and a half months, the scarcity of sunshine in the first three months, the long spring drought during the latter half of April and the first part of May, the very dry weather generally in June, in the western districts in November and in the south-west in February, and the mildness of December, with frequent and sometimes severe gales on our west coasts. Other remarkable features were the warm spells of early June and towards the end of August, the excessive sunshine of April and the period of exceptionally dry air during the latter part of April and early May. Rainfall was below the average and for the third year in succession mean temperature was below the average.

Mean temperature was 0.5° F. below the average over the country as a whole. In January temperature was markedly below the average, particularly in eastern districts and the Midlands; the period 11th-22nd was exceedingly cold; at Dunstable temperature remained at 32° F. or below from the 14th-23rd. February was the coldest month of that name since the record cold of February of 1895; the extremely low mean temperature was due to prolonged cold rather than to any short period of intense frost. The first twelve days of March were very cold, some notably low screen minima being registered between the 6th and 12th. On the other hand April was mild, December very mild and the periods 3rd-6th June and 27th-29th August unusually warm. July was mainly cool and although mean temperature in August exceeded the average there were many cool days during the first three and a half weeks. Temperature reached 90° F., however, at numerous places on 28th August and at a few in East Anglia on the 27th. September and October were rather mild on the whole, but November was mainly cold. 6th-22nd December was notably mild, both day and night temperatures being high. The following table gives the monthly deviation from the average temperature in degrees Fahrenheit over England and Wales.

Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. -5.3 - 7.1 - 1.0 + 2.3 - 0.5 + 0.8 - 0.7 + 1.5 + 0.8 + 1.4 - 1.3 + 3.5

The revised value of the general precipitation of England and Wales expressed as a percentage of the average for the period 1881–1915 was 94. More than the average was mostly confined to a large area covering East Anglia and north Kent, an area in the south extending along the coast from Devonshire to the Isle of Wight and northward over Dorset and Wiltshire to Oxford and in small, isolated areas around Swansea Bay, in Somerset, north Warwick, north-west Wales, Lancashire and the Lake District. More than 110 per cent. was received over much of East Anglia. Somewhat less than

and Newquay. With regard to individual months January and May were very wet and February, April, June and November dry, particularly June. No measurable rain was recorded in June at Abergavenny, Monmouthshire, and at Edgbaston, Birmingham, the total was the lowest for June since before 1893, but for England and Wales generally the month was not as dry as June, 1925. February was notably dry in south-west England and south Wales and November in western districts and the extreme north-east. May was

exceptionally wet in south Devon and south Cornwall; at Falmouth it was the wettest May in a record back to 1871. The revised monthly values of the general rainfall expressed as a percentage of the average are given in the following table:—

 Jan. Feb. Mar. Apr. May
 June
 July
 Aug. Sept. Oct. Nov. Dec.

 147
 50
 101
 77
 177
 30
 100
 104
 107
 100
 55
 107

Periods of absolute drought in 1942 were more frequent than usual. At Worthing there were four such periods and at numerous other stations there were three. Four absolute droughts in a year at a single station are rare in England and Wales and three are infrequent.

Among heavy falls of rain were 2·16 ins. in 33 minutes at Malden, Surrey, on 30th June, 3·94 ins. at Blaenau Ffestiniog, Merioneth, on 22nd July, 3·55 ins. at Burnham-on-Sea, Somerset on 29th August, of which 2·27 ins. fell in 50 minutes, 5·08 ins. at Borrowdale on 4th September, and 3·85 ins. at Ystalyfera

and 3.54 ins. at Princetown on 10th December.

The snowstorms of 19th–21st January were widespread and severe; level snow lay 6–8 ins. deep over much of north-east England and the Midlands; locally, particularly in the west Midlands it was 8–12 ins. deep. On 3rd February level snow was 14 ins. at Harrogate, 10–12 ins. at Bingley and 10 ins. at Mayfield and level snow was 10 ins. deep at Bellingham from 2nd–6th February. Owing to the persistently low temperature in February, snow lay on high ground for a long time; at some places it remained throughout the month. Widespread snow occurred from 4th–7th March; level snow was

12 ins. deep at Huddersfield on the 5th.

Sunshine was deficient at a large majority of stations; the percentage of the average for the districts ranged from 95 in England, E. to 101 in England, N.E. The mean daily duration in hours ranged from less than 3.5 over a large central area extending southward from the Scottish border to south Derbyshire to 4.5 on most of the south coast from Ilfracombe round to Felixstowe; at no station was it as much as 5 hours. In relation to the average the dullest months were August and the three months January to March. Over a large part of the country the total sunshine of the first three months was the lowest recorded over a similar period for many years. January was exceptionally dull in the north-east; at Scarborough the incredibly low total of 8 hours was 9 hours less than the previous low record since observations were first taken in 1898. On the other hand, April was notably sunny and June sunny, especially in the south. At Nottingham the April total was the highest for that month since 1909, at Cheltenham since 1912 and at Durham since 1914, while at Norwich it equalled the previous record in 1912. In June the mean daily sunshine exceeded 10 hours at a number of places on the south coast from Swanage to Hastings.

The table below gives the monthly percentage of the average sunshine for

England and Wales:-

Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. 80 71 69 140 109 117 93 76 98 86 92 91

80 per cent was reported around Be 1943 am (Northumberland), in an area

Mean temperature appreciably exceeded the average, the deviations for the average for the districts ranging from +1.2° F. in England, S.E. and England, N.W., and N. Wales to +1.5° F. in the Midland counties. The long run of months with a mean temperature above the average was remarkable; over the country generally, apart from September, when there was a slight deficiency, temperature exceeded the average in each month from January to November inclusive. There were few really hot spells, however, the most notable being the last week in July, particularly the last day when temperature rose to 90° F. at many places in England. The 11th and 20th June were warm in the southeast and 28th-29th in the west, and 14th May was also warm. February was very mild and April warm, the latter being the warmest April on record over the country as a whole, while October was the warmest October since 1921, although 1930 was nearly as warm. Cold spells included 1st-10th January, 7th-11th May, 17th-27th November, and 11th-17th December. The night of 26th-27th September was very cold for the season.

The extremes for the year were 93° F. at Worcester and Croydon on

31st July and 13° F. at Buxton on 8th January.

The following table gives the monthly deviation from the average temperature over England and Wales in degrees F.:—

Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. +1·3 +3·1 +2·3 +5·3 +1·4 +0·9 +0·5 +0·7 -0·1 +1·6 +0·3 -1·2

The general precipitation of England and Wales expressed as a percentage of the average for the period 1881–1915 was 94. Less than the average occurred over the eastern half of England, the Midlands, Cornwall, most of the country bordering the Bristol Channel and at a few places in mid-Wales. Less than 80 per cent. of the average was received in a broad belt from Reading and Cheltenham to Norfolk and Suffolk as well as around Nottingham and Harrogate. On the other hand, more than 120 per cent. was registered in a number of rather small areas in north Wales and north-west England.

The table gives the monthly rainfall over England and Wales expressed as a

percentage of the average :-

Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. 209 70 38 68 142 94 79 97 133 86 80 54

In England and Wales only three months had more than the average rainfall, namely January, May and September, and of these January was notably wet; it was in fact the third wettest January on record, that is, since before 1868. Many places in the eastern half of the country experienced a long period of absolute drought in the spring; for example, there was an absolute drought at Hull from 11th February-23rd March, at Bury St. Edmund's from 16th February-24th March, and at Worthing from 15th February-22nd March. The first half of April was also very dry and with the dry period noted above

constituted a prolonged partial drought in some districts; at Kew Observatory only 11 mm. were registered from 16th February-18th April, giving a partial drought of 62 days. Another period of absolute drought was widely reported in the Midland counties during the latter half of June and the first week in July; the drought lasted from 15 days at some stations to 20 at others. December also was very dry.

Among heavy falls in 24 hours were 3.63 ins. near Blaenau Ffestiniog on 5th February and 4.24 ins. at Machynlleth (Montgomery) and 3.92 ins. near

Blaenau Ffestiniog on 18th June.

During a thunderstorm at Lowestoft on 15th June, hailstones 1.5 ins. in

diameter, that is, nearly as large as golf balls, were collected.

The duration of sunshine over England and Wales expressed as a percentage of the average was 107, the percentages for the districts ranging from 100 in England, S.W., and S. Wales, to 113 in England, N.E. With regard to individual months, over the country as a whole, compared with the average, the sunniest months were February and May and the dullest January and August. February was notably sunny, particularly in north-east England and the Midlands; at Durham it was the sunniest February since 1907, and at Cranwell and Ilkley since records were first taken in 1921 and 1923 respectively.

The table gives the monthly percentage of the average sunshine for England

and Wales :-

 Jan.
 Feb.
 Mar.
 Apr.
 May
 June
 July
 Aug.
 Sept.
 Oct.
 Nov.
 Dec.

 92
 129
 115
 111
 125
 102
 109
 91
 99
 98
 111
 111

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The year 1944 was mainly dull; temperature slightly exceeded the average and rainfall was average over the country as a whole. Outstanding features of the weather were the mildness of January, the warmth of April, the severe frosts followed by an exceptionally hot spell in May, the notably dull July, the very dry March, the excessive rainfall in the three autumn months September to November and the very cold, foggy spell from 25th–29th December. There was considerable snowfall on 26th–27th February and in the north on 10th–11th December.

Mean temperature was  $0.4^{\circ}$  F. above the average, the deviation for the districts ranging from  $0.0^{\circ}$  F. in England, S.E., to  $+0.6^{\circ}$  F. in the Midland Counties. January was unusually mild, April notably warm for the season and August warm. February was cold, June cool, September was probably the coldest September since 1931 and October and December were rather cold, the period 25th–29th December being notably cold. In May there were exceedingly large fluctuations of temperature: severe frost for the season occurred at times during cold spells from the 4th–9th and 14th–23rd, and an exceptionally hot spell was experienced from the 28th–30th.

The table gives the monthly deviation from the average temperature over

England and Wales in degrees F.:-

Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec.  $+3\cdot1$   $-1\cdot1$   $-0\cdot5$   $+3\cdot9$   $0\cdot0$   $-0\cdot6$   $+0\cdot6$   $+2\cdot6$   $-1\cdot3$   $-1\cdot0$   $+0\cdot2$   $-1\cdot5$ 

The extreme temperatures for the year were 91° F. in London (Camden Square and Regent's Park), at Tunbridge Wells and Horsham on 29th May and 9° F. at Belper, Mayfield, Walsall and Newport (Salop) on 29th February and at Santon Downham on 27th December.

The general precipitation expressed as a percentage of the average for the period 1881–1915 was 100. Less than the average occurred over much of the country south of a line extending roughly from mid-Wales to Norwich as well

as at few isolated places in Cumberland and the north of Northumberland. Less than 90 per cent. was received over much of an area covering Sussex and extending north to Cambridge and Oxford, at a number of places on the south coast and in an area covering Herefordshire and some inland stations in south Wales. More than the average occurred, however, in the Bristol Channel region, locally in Wiltshire and on the border of Glamorgan and Brecon. More than 110 per cent. of the average was registered at many places north of the line mid-Wales to Norwich and more than 120 per cent. locally in Lancashire, and at Houghall, Tynemouth and one or two other scattered places.

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. 110 67 19 105 65 103 98 95 167 114 175 71

Compared with the average, March was notably dry and February, May and December dry, while September and November were excessively wet. In September more than three times the average was registered around Newcastle, and at Leaze's Park, Newcastle, it was the wettest September in a record back to 1896. In November more than twice the average occurred in areas scattered over the country and rainfall was not only heavy but frequent.

An absolute drought, that is a period of at least 15 consecutive days to none of which is credited 01 in. of rain or more, occurred in some areas during the end of February and March. At Sidmouth an absolute drought lasted for 45 days from 16th February to 31st March and at Newton Abbot for 44 days from 16th February to 30th March. In the east and south-east an absolute drought occurred at a number of stations during the first 18 or 19 days of August.

Among the heaviest falls in 24 hours were 4.70 ins. near Blaenau Ffestiniog (Merioneth) and 4.64 ins. at Machynlleth (Montgomery) on 22nd January, 3.97 ins. at Rhondda Water Works on September 3rd and 4.70 ins. near Blaenau Ffestiniog on 1st December. On the two consecutive days, 16th and 17th November, 3.60 ins. and 3.05 ins. respectively were registered at Holne, S. Devon. Unusually heavy rain was recorded in a narrow belt extending from Mayfield (Staffs) to Meltham in the West Riding of Yorkshire during a thunderstorm on 29th May; at Rhodes Wood Reservoir 3.05 ins. was registered in two hours and at Kinder Filters Reservoir 2.55 ins. in 75 minutes.

Sunshine was below the average, the percentage of the average being 93; the percentages for the districts ranged from 89 in England, N.E., and England, N.W., and N. Wales to 99 in England, S.E. For the country generally compared with the average the dullest months were January, June, July and November. July, with only 60 per cent. of the average, was exceptionally dul; at widely scattered stations with records back to 1881 it was the dullest July on record. At Gorleston, June was the dullest month of that name since records started in 1908. November was markedly dull in the south-west and locally in the Midlands; the percentage of the average at Bude was only 36 and the total, 27 hours, was the lowest there for November since 1917. At Ross-on-Wye, apart from 1934, it was the dullest November in a 31-year record. With reference to the average the sunniest months were March, May, August and December. December, in particular, was much sunnier than usual; at Falmouth it was the sunniest December in a record starting in 1881.

The table gives the monthly sunshine expressed as a percentage of the average:—

Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. 80 89 110 97 110 82 60 107 97 95 81 125

The year 1945 was mild after a notably cold January, with rainfall and sunshine both somewhat below the average over the country as a whole. Among outstanding features of the weather of the year were the intense cold of January, the unusual mildness of the late winter, early spring and autumn and the cold, frosty spell at the end of April and the beginning of May. Other memorable features were the unusually dull September, the exceptionally calm, dry and dull November, the severe gale of 18th–19th January, the severe thunderstorms in mid-July and the exceptional fall of hail in the Midlands on 11th May.

Mean temperature exceeded the average by 1.7° F.; January was exceptionally cold, but mean temperature was above the average on the whole in each of the following 11 months. An unusually prolonged spell of markedly mild weather occurred from the beginning of February until the 27th of April. The autumn months were also notably mild. A markedly cold spell occurred at the end of April and beginning of May and caused considerable damage to vegetable and fruit crops.

The table gives the monthly deviation from the average temperature over England and Wales in degrees F.:—

Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. -6.3 + 4.9 + 4.3 + 4.2 + 1.6 + 1.2 + 1.3 + 0.4 + 1.9 + 3.4 + 2.4 + 1.1

The extreme temperatures for the year were  $90^{\circ}$  F. at Norwich on 15th July and  $-1^{\circ}$  F. at Shobdon on 26th January.

The general precipitation expressed as a percentage of the average for the period 1881–1915 was 94. Less than the average occurred over the greater part of the country but more than the average was registered in rather small scattered areas; for example, in Cornwall, Devon, Norfolk, South Wales, north-west Midlands, an inland area in north Wales, around Manchester and Huddersfield and in coastal strips from Berwick upon Tweed to Alnwick and from Tynemouth to Hartlepool. More than 110 per cent. of the average was received in a small strip near Berwick upon Tweed and 121 per cent. at Berwick upon Tweed itself. On the other hand less than 80 per cent. was measured in a coastal area in north Wales, in an area extending south-west from Hull to Mansfield, locally in the Fen district, around Bournemouth and in east Kent and extreme east Sussex. Roughly 70 per cent. occurred in east Kent near Dungeness, Lympne and Margate.

Over the country as a whole November was exceptionally dry and March, April and August dry, while January, February, May and June were wet. November was the driest month of that name over the country as a whole in a record back to 1869.

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. 116 121 49 83 141 134 94 84 99 105 23 105

An absolute drought, that is a period of at least 15 consecutive days to none of which is credited ·01 in. of rain or more, occurred locally during March, or the latter part of February and the first part of March. Absolute droughts of from 15 to 20 days were experienced at many places in southern districts during the period 7th-27th April and no measurable rain was registered at numerous places in the southern half of the country from 1st-19th October inclusive. In November, too, an absolute drought was registered by many observers.

Among the heavier falls in 24 hours were 3·12 ins. at Blaenau Ffestiniog and 3·11 ins. at Cantref on 1st April, 4·20 ins. at Petworth (Sussex) and 3·49 ins. at Bognor Regis on 14th July, 3·53 ins. at Aberporth on 15th July, 3·26 ins. at Usk on 28th August, 3·35 ins. at Boston (Lincs.) on 29th August and 4·85 ins. at Borrowdale and 4·20 ins. at Watendlath Farm (Cumberland) on 24th October.

Thunderstorms occurred very frequently in some areas, notably the northeast and Midlands. Severe storms occurred in southern England on 8th May and locally in the Midlands on 11th May. Severe thunderstorms, during the period 13th-15th July, caused flooding and damage to crops and there were severe storms locally on 28th and 29th August.

There was considerable snowfall in January, but apart from this there was little snow during the year.

Sunshine was somewhat below the average, the percentage over the country being 96. Compared with the average April was by far the sunniest month while September and November were markedly dull. At many places in the southern half of the country September was the dullest September on record, notably at Kew Observatory and Oxford where the records go back to 1880 and 1881 respectively. November, also was the dullest month of that name at a number of places; for example, at Shoeburyness, Gorleston, Ross-on-Wye and Sealand.

The table gives the monthly percentages of the average sunshine.

Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. 108 99 113 128 91 95 94 93 67 100 68 98

The gale on 18th-19th January was exceptionally severe, the speed in gusts rising to more than 113 m.p.h. at St. Ann's Head (a record gust for the British Isles), 89 m.p.h. at Scilly and 88 m.p.h. at South Shields all on the 18th.

1938 MALES (a) All Marital Conditions

(b) Married

Mets. - Female Records for years prior to 1938 were jublished on pages 232 of seq. of the Statistical Review, Text, 1938-39,

in other years:) Table I. Population in thousands at ages 15-50, 1841-1945. (Census records in census years ; celimates

APPENDIX I.

# APPENDIX I.

Table I.—Population in thousands at ages 15-50, 1841-1945. (Census records in census years; estimates in other years.)

Note.—Female Records for years prior to 1938 were published on pages 232 et seq. of the Statistical Review, Text, 1938-39, England and Wales.

(a) All Marital Conditions

(b) Married

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1,465·2 1,607·5 1,654·9 1,727·8 1,709·5	1,247·3 1,472·6 1,502·7 1,448·4 1,699·1	1,111·1 1,328·3 1,455·8 1,340·0 1,629·0	977·9 1,157·7 1,375·9 1,281·3 1,433·3	865.5 1,034.5 1,261.4 1,273.3 1,283.0	745·5 897·5 1,075·1 1,223·1 1,229·3	642·2 760·0 926·1 1,162·2 1,186·6	7,054·7 8,258·1 9,251·9 9,456·1 10,169·8	4,201·8 4,993·1 5,595·8 5,343·0 6,044·4	1891 1901 1911 1921 1931	5·6 4·4 3·2 6·9 4·8	240·4 254·2 213·1 255·9 234·6	617·9 710·5 731·9 733·9 855·0	730·6 858·6 985·0 968·4 1,105·7	701·5 833·6 1,001·6 1,041·8 1,086·8	617·8 734·0 881·2 1,023·5 1,060·4	530·6 621·7 763·3 972·2 1,014·9	3,444·4 4,017·0 4,579·3 5,002·6 5,362·2	2,290·4 2,656·9 2,931·6 3,000·0 3,282·1
1,709·5 1,653·2 1,571·9 1,487·3 1,550·1	1,699·1 1,706·9 1,699·4 1,694·2 1,690·1	1,629·0 1,663·4 1,680·3 1,693·8 1,704·5	1,433·3 1,512·2 1,570·8 1,615·2 1,641·1	1,283·0 1,289·2 1,301·3 1,324·5 1,368·8	1,229·3 1,239·1 1,240·6 1,240·7 1,243·1	1,186·6 1,174·5 1,178·3 1,184·6 1,193·8	10,169·8 10,238·5 10,242·6 10,240·3 10,391·5	6,044·4 6,171·7 6,251·8 6,327·7 6,404·5	1931 1932 1933 1934 1935	4·8 5·7 6·6 7·4 8·4	234·6 240·0 238·2 241·5 247·0	855·0 864·4 862·2 870·8 886·3	1,105·7 1,154·8 1,186·4 1,213·6 1,232·2	1,086.8 1,090.7 1,098.8 1,115.5 1,150.5	1,060·4 1,070·3 1,071·5 1,073·2 1,074·5	1,014·9 1,007·9 1,013·5 1,021·4 1,032·6	5,362·2 5,433·8 5,477·2 5,543·4 5,631·5	3,282·1 3,349·9 3,385·6 3,441·4 3,516·0
1,615·0 1,677·2 1,741·8 1,835·0 1,737·0	1,660·6 1,630·5 1,560·7 1,546·0 1,608·0	1,706·8 1,709·3 1,703·2 1,735·0 1,735·0	1,652·1 1,669·0 1,683·3 1,719·0 1,737·0	1,423·2 1,482·6 1,535·5 1,596·0 1,636·0	1,249·7 1,259·6 1,272·5 1,310·0 1,365·0	1,204·9 1,213·1 1,217·6 1,231·0 1,240·0	10,512·3 10,641·3 10,714·6 10,972·0 11,058·0	6,442·7 6,491·4 6,482·7 6,596·0 6,716·0	1936 1937 1938 1939 1940	8.9 9.5 10.6 13.0 14.0	252·4 258·7 262·5 263·0 310·0	896·4 908·6 916·2 929·0 1,016·0	1,246·2 1,266·7 1,289·3 1,325·0 1,361·0	1,192·3 1,238·3 1,280·2 1,330·0 1,381·0	1,081·8 1,090·0 1,102·0 1,131·0 1,180·0	1,044·6 1,054·4 1,060·1 1,075·0 1,085·0	5,722·6 5,826·2 5,920·9 6,066·0 6,347·0	3,587·3 3,672·3 3,748·2 3,847·0 4,068·0
1,652·0 1,592·0 1,554·0 1,521·0 1,496·0	1,636·0 1,652·0 1,674·0 1,743·0 1,633·0	1,691·0 1,635·0 1,553·0 1,494·0 1,536·0	1,732·0 1,717·0 1,704·0 1,717·0 1,703·0	1,647·0 1,664·0 1,685·0 1,710·0 1,714·0	1,415·0 1,475·0 1,538·0 1,590·0 1,619·0	1,239·0 1,249·0 1,265·0 1,287·0 1,333·0	11,012·0 10,984·0 10,973·0 11,062·0 11,034·0	6,706·0 6,668·0 6,616·0 6,664·0 6,586·0	1941 1942 1943 1944 1945	15·0 15·0 15·0 15·0 15·0	330·0 358·0 375·0 388·0 344·0	1,037·0 1,015·0 948·0 875·0 875·0	1,376·0 1,380·0 1,372·0 1,370·0 1,348·0	1,401·0 1,431·0 1,457·0 1,479·0 1,487·0	1,228·0 1,286·0 1,347·0 1,398·0 1,428·0	1,086·0 1,097·0 1,113·0 1,135·0 1,176·0	6,473·0 6,582·0 6,627·0 6,660·0 6,673·0	
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1,636·0 1,580·0 1,541·0 1,507·0 1,482·0	1,617·0 1,672·0 1,737·0 1,791·0 1,699·0	1,718·0 1,672·0 1,591·0 1,500·0 1,549·0	1,767·0 1,765·0 1,758·0 1,754·0 1,746·0	1,696·0 1,717·0 1,736·0 1,747·0 1,751·0	1,570·0 1,590·0 1,610·0 1,632·0 1,655·0	1,463·0 1,477·0 1,492·0 1,508·0 1,523·0	11,467·0 11,473·0 11,465·0 11,439·0 11,405·0	6,798·0 6,826·0 6,822·0 6,792·0 6,745·0	1941 1942 1943 1944 1945	64·4 64·0 60·0 55·5 57·9	645·6 703·0 745·0 750·2 727·7	1,224·0 1,207·0 1,148·0 1,089·3 1,094·4	1,359·0 1,377·0 1,384·0 1,388·0 1,380·0	1,309·0 1,330·0 1,354·0 1,369·0 1,383·0	1,223·0 1,242·0 1,261·0 1,279·0 1,289·0	1,092·0 1,109·0 1,130·0 1,144·0 1,165·0	6,917·0 7,032·0 7,082·0 7,075·0 7,097·0	4,537·6 4,617·0 4,631·0 4,596·5 4,585·1

15-20	20-25	25–30	30–35	35–40	40-45	45-50	Aggr 15-50	egates 20-40	Year	15-20	20-25	25-30	30–35	35–40	40-45	45–50	Aggre 15–50	egates 20-40
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952.8	636.1	316·6 303·2	174·2 162·4	114.5	91.9	74.7	2,277.4 2,368.1	1,241.4	1851	.0044	•2004	•5473	-7181	.7851	-8062	-8099	-4807	•5307
1,078.7	732-7	340.5	186.8	116.4	98.0	80.0	2,633.1	1,376.4	1861	·0053 ·0055	·2227 ·2303	•5871	·6790 ·7497	·8165 ·8184	·8258 ·8339	·8306 ·8422	•4972	•5459
1,262.4	866-9	418.7	185.2	120.0	127.1	83.7	3,064.0	1,590.8	1881	•0047	-2207	.5733	•7796	-8389	·8111	.8471	•5091 •5032	·5675 ·5676
1,459.6	1,006.9	493.2	247.3	164.0	127.7	111.6	3,610.3	1,911.4	1891	-0038	.1927	.5561	•7471	-8105	-8287	-8262	-4882	
1,603·1 1,651·7	1,218.4	617.8	299·1 390·9	200·9 259·8	163·5 193·9	138·3 162·8	4,241.1	2,336.2	1901	-0027	.1726	•5349	•7416	8058	.8178	·8180	.4864	·5451 ·5321
1,720-9	1,192.5	606.1	312.9	231.5	199.6	190.0	4,672.6	2,664.2	1911 1921	·0019 ·0040	·1418 ·1767	·5027 ·5477	·7159 ·7558	•7940	·8196	-8242	•4950	-5239
1,704.7	1,464.5	774.0	327.6	196.2	168.9	171.7	4,807.6	2,762.3	1931	.0028	·1381	.5249	.7714	·8182 ·8471	·8368 ·8626	·8365 ·8553	·5290 ·5273	·5615 ·5430
1,704.7	1,464.5	774-0	327-6	196.2	168-9	171-7	4,807.6	2,762.3	1931	.0028	·1381	-5249	.7714	-8471	-8626	-8553	10(2	112 6
1,647·5 1,565·3	1,466·9 1,461·2	799·0 818·1	357·4 384·4	198·5 202·5	168.8	166.6	4,804.7	2,821.8	1932	-0034	.1406	•5197	•7637	·8460	-8638	-8582	·5273 ·5307	·5430 ·5428
1,479.9	1,452.7	823.0	401.6	209.0	169·1 167·5	164·8 163·2	4,765.4	2,866.2	1933 1934	·0042 ·0050	·1402 ·1425	-5131	•7553	-8444	-8637	-8601	-5347	-5415
1,541.7	1,443.1	818-2	408.9	218.3	168.6	161.2	4,760.0	2,888.5	1935	.0054	·1461	·5141 ·5200	·7514 ·7508	·8422 ·8405	·8650 ·8644	-8622 -8650	·5413 ·5419	•5439 •5490
1,606.1	1,408.2	810-4	405.9	230-9	167-9	160-3	4,789.7	2,855.4	1936	-0055	•1520	-5252	.7543	-8378	-8656	-8670	•5444	
1,667·7 1,731·2	1,371.8	800-7 787-0	402·3 394·0	244.3	169.6	158.7	4,815.1	2,819.1	1937	-0057	.1587	-5316	•7590	-8352	-8654	·8692	-5475	·5568 ·5657
1,822.0	1,283.0	806.0	394.0	255.3	170·5 179·0	157·5 156·0	4,793·7 4,906·0	2,734.5	1938 1939	·0061 ·0071	·1682 ·1701	·5379 ·5354	•7659	.8337	-8660	-8706	-5526	-5782
1,723.0	1,298.0	719.0	376.0	255.0	185.0	155.0	4,711.0	2,648.0	1940	.0081	1928	•5856	·7708 ·7835	·8333 ·8441	·8634 ·8645	·8733 ·8750	·5529 ·5740	·5832 ·6057
1,637.0	1,306.0	654.0	356.0	246.0	187.0	153.0	4,539.0	2,562.0	1941	-0091	-2017	-6132	.7945	·8506	-8678	41.8	60/2	
1,577·0 1,539·0	1,294·0 1,299·0	620·0 605·0	337.0	233.0	189.0	152.0	4,402.0	2,484.0	1942	00094	-2167	6208	-8037	·8600	8719	·8765 ·8783	·5878 ·5992	·6180 ·6275
1,506.0	1,355.0	619.0	332·0 347·0	228·0 231·0	191·0 192·0	152·0 152·0	4,346.0	2,464.0	1943 1944	·0097 ·0099	•2240	6104	*8052	8647	8758	8798	•6039	-6276
1,481.0	1,289.0	661.0	355.0	227.0	191.0	157.0	4,361.0	2,532.0	1945	.0100	·2226 ·2107	·5857 ·5697	·7979 ·7915	·8649 ·8676	·8792 ·8820	·8819 ·8822	·6021 ·6048	·6170 ·6155
			, , , , , , , , , , , , , , , , , , ,	FEMALE	S			Asym I		2.5 (0)			I.	EMALES			0010	0133
1,691.1	1.067-2	631.1	467-2	274.1	40-42	42-20	(2-2)	80-40-1	GSL	72-50	50-52	52-90	30-32-	ENIALES	40-42	42=20	1900mm	50=94
1,746.8	980.9	604.6	452.8	374·1 378·0	353·4 354·3	376·6 374·5	4,960.7	2,539·6 2,416·3	1938 1939	·0230 ·0280	·3281 ·3484	·6426	•7334	•7712	.7675	.7363	•5656	-6233
1,646.4	974.5	553.9	429.9	385.8	349.5	373.4	4,713.4	2,344.1	1940	.0383	•3777	·6571 ·6856	·7432 ·7575	·7717 ·7709	·7697 ·7757	·7401 ·7434	·5733 ·5905	·6387 6545
1,571.6	971.4	494.0	408-0	387.0	347.0	371-0	4,550.0	2,260-4	1941	-0394	•3993	7105	HOW-	PRINT T TES	O SE AS	TOTAL SERVICE	O ARRES	pr Val
1,516.0	969.0	465.0	388.0	387-0	348.0	368.0	4,441.0	2,209.0	1942	.0405	·3993 ·4205	·7125 ·7219	·7691 ·7802	·7718 ·7746	·7790 ·7811	·7464 ·7508	·6032 ·6129	·6675 ·6764
1,481·0 1,451·5	992·0 1,040·8	443·0 410·7	374·0 366·0	382·0 378·0	349·0 353·0	362·0 364·0	4,383.0	2,191.0	1943	.0389	.4289	.7216	·7873	·7800	.7832	.7574	·6177	·6788
1,424.1	971.3	454.6	366.0	368-0	366.0	358.0	4,364·0 4,308·0	2,195.5	1944 1945	·0368 ·0391	·4189 ·4283	·7262 ·7065	·7913 •7904	·7836 ·7898	·7837 ·7789	·7586	•6185	·6768
424 4 2			A TOKAL D	4 21 178	on the sea of the	33.0 (3)	一是阿利	STEPP S	TRUE :	Vales	1203	1005	1301	7090	1109	.7649	-6223	.6798

# Table II.—Annual Marriages at ages under 50 (3 year averages in decennial section after 1851). England and Wales.

Notes.—(i) See note at head of Table I, page 161.
(ii) Not Stated ages rateably distributed.

2,000 A	(a) Nu	ımber	of M	<b>farriag</b>	es (in	hundi	eds). (t	) M:	arriag	es pe	r 1,00	0 non	-marri	ed at e	ach a	ge (Ha÷Ic).
15-20	20-25	25-30	30-35	35-40	40-45	45-50	Aggregates 15–50 20–40	Year	15-20	20-25	25–30	30–35	35–40	40-45	45-50	Aggregates 15-50 20-40
40.4	718·4 781·9	406·5 423·0	166·2 167·8	MALES 81·1 85·6	53·1 0 58·5	30·7 35·6	1,496·4 1,372·2 1,599·3 1,458·3		4·6/30 4·9/3	112·9 116·9	128·4 139·5	95·4 103·3	70.8 79.0	57·8 60·9	41.1	65·7 110·5 67·5 117·4

	15-20	20-25	25-30	30-35	35-40	40-45	45-50	15-50	20-40	Year	15-20	20-25	25-30	30-35	35-40	40-45	45-50	15-50 20-40
1099					MALES	rive		Anama a	atomor !	5.3	- Logoo	570	ngae	NATA TA	MALES	100.00	2027	The state
	40·4 46·9 65·2 58·3	718:4 781:9 910:4 938:0	406·5 423·0 485·7 528·3	166·2 167·8 187·6 188·2	81·1 85·6 91·6 94·3 115·5	53·1 58·5 58·9 60·9 67·3	30·7 35·6 39·6 38·0 46·6	1,496·4 1,599·3 1,839·0 1,906·0 2,172·3	1,372·2 1,458·3 1,675·3 1,748·8 2,013·4	1851 1861 1871 1881 1891	4·6 4·9 6·0 4·6 3·1	112·9 116·9 124·3 108·2 95·5	128·4 139·5 142·6 126·2 139·6	95·4 103·3 100·4 101·6 100·3	70·8 79·0 78·7 78·6 70·4	57.8 60.9 60.1 47.9 52.7	41·1 46·4 49·5 45·4 41·8	65·7 110·5 67·5 117·4 69·8 121·7 62·2 109·9 60·2 105·3
	45·0 40·3 35·7 59·2 54·9	961·1 1,050·0 966·2 1,164·2 1,057·4	688·7 849·1 979·1 1,112·5 1,190·8	248·1 306·0 378·8 453·9 380·1	136·1 162·2 211·8 143·7	75.7 81.8 116.7 82.2	50·5 54·3 77·9 59·8	2,507·7 2,658·1 3,196·2 2,968·9	2,341·2 2,486·3 2,942·4 2,772·0	1901 1911 1921 1931	2·5 2·2 3·4 3·2	86·2 74·9 97·6 72·2	137·4 135·3 183·6 153·9	102·3 96·9 145·1 116·0	67·7 62·4 91·5 73·2	46·3 42·2 58·5 48·7	36·5 33·4 41·0 34·8	59·1 100·2 56·9 93·3 71·8 125·6 61·8 100·4
1000年	55·2	1,065·0	1,189·3	379·6	142.6	80.6	59·6	2,971·9	2,776·5	1931	3·2	72·7	153·7	115·9	72·7	47·7	34·7	61·8 100·5
	56·0	1,026·0	1,182·1	392·0	139.6	81.0	56·1	2,932·8	2,739·7	1932	3·4	69·9	147·9	109·7	70·3	48·0	33·7	61·0 97·1
	53·1	1,029·2	1,246·4	426·2	144.4	79.3	58·9	3,037·5	2,846·2	1933	3·4	70·4	152·4	110·9	71·3	46·9	35·7	63·7 99·3
	53·8	1,091·3	1,348·9	482·4	154.2	84.4	60·8	3,275·8	3,076·8	1934	3·6	75·1	163·9	120·1	73·8	50·4	37·3	69·7 106·6
	49·8	1,110·2	1,376·6	499·1	167.7	83.5	60·9	3,347·8	3,153·6	1935	3·2	76·9	168·2	122·1	76·8	49·5	37·8	70·3 109·2
1028	44·1	1,133·4	1,390·0	504·8	180·9	84·6	59:0	3,396·8	3,209:1	1936	2·7	80·5	171.5	124·4	78·3	50·4	36·8	70·9 112·4
	46·0	1,144·4	1,390·7	512·2	192·0	87·4	61:0	3,433·7	3,239:3	1937	2·8	83·4	173.7	127·3	78·6	51·5	38·4	71·3 114·9
	56·2	1,131·3	1,392·7	518·4	199·6	91·4	65:0	3,454·6	3,242:0	1938	3·2	87·1	177.0	131·6	78·2	53·6	41·3	72·1 118·6,
	82·0	1,486·5	1,668·7	586·2	229·9	104·5	68:4	4,226·2	3,971:3	1939	4·8	115·9	207.0	148·8	86·4	58·4	43·8	86·1 144·5
	99·6	1,674·8	1,712·5	610·5	241·1	112·8	76:0	4,527·3	4,238:9	1940	5·8	129·0	238.2	162·4	94·5	61·0	49·0	96·1 160·1
	118·7	1,483·5	1,199·7	490·3	224·9	115·1	74·4	3,706·6	3,398·4	1941	7·3	113.6	183·4	137·7	91·4	61·6	48·6	81·7 132·6
	129·1	1,553·3	1,002·0	429·1	213·7	116·1	73·7	3,517·0	3,198·1	1942	8·2	120.0	161·6	127·3	91·7	61·4	48·5	79·9 128·7
	120·1	1,262·1	707·0	340·1	184·1	108·5	68·3	2,790·2	2,493·3	1943	7·8	93.1	116·9	102·4	80·7	56·8	44·9	64·2 101·2
	109·3	1,326·2	714·5	344·5	176·8	110·0	68·8	2,850·1	2,562·0	1944	7·3	97.9	115·4	99·3	76·5	57·3	45·3	64·7 100·4
	116·4	1,613·4	1,148·5	466·3	226·3	130·1	81·5	3,782·5	3,454·5	1945	7·9	125.2	173·8	131·4	99·7	68·1	51·9	86·7 136·4
	_ on spin only		alapha an	30-	FEMAL	ES	3.00	12-20	\$0-40	761	1293	2 20 30 - 3		30-3	FEMALE	S	45-50	15-50 20-44
	382·0	1,580·0	975·0	326·0	141·8	75·8	52·1	3,533·0	3,023·0	1938	22·6	148·1	154·5	69·8	37·9	21·4	13·8	71·2 119·0
	560·0	1,939·0	1,140·0	368·0	159·5	85·4	57·3	4,309·0	3,607·0	1939	32·1	197·7	188·6	81·3	42·2	24·1	15·3	88·1 149·3
	633·0	2,171·0	1,103·0	378·0	171·0	94·7	61·2	4,612·0	3,823·0	1940	38·4	222·8	199·1	87·9	44·3	27·1	16·4	97·8 163·1
	572·0	1,834·0	771·0	303·0	154·7	95·1	64·1	3,794·0	3,063·0	1941	36·4	188·8	156·1	74·3	40·0	27·4	17·3	83·4 135·5
	590·0	1,817·0	627·0	264·0	149·0	93·0	63·5	3,604·0	2,857·0	1942	38·9	187·5	134·8	68·0	38·5	26·7	17·3	81·0 129·3
	507·0	1,404·0	462·0	224·0	128·9	84·5	61·0	2,871·0	2,219·0	1943	34·2	141·5	104·3	59·9	33·7	24·2	16·9	65·5 101·3
	480·0	1,497·0	463·0	220·0	128·8	82·5	59·2	2,931·0	2,309·0	1944	33·1	143·8	112·7	60·1	34·1	23·4	16·3	67·2 105·2
	570·0	1,954·0	726·0	292·0	157·6	100·8	68·5	3,869·0	3,130·0	1945	40·0	201·2	159·7	79·8	42·8	27·5	19·1	89·8 144·9

# Table III.—Estimated years of life spent within given age groups in the calendar years 1938-1945. England and Wales.

- (a) Non-married women
- (b) Married women at successive marriage durations.

Note.—Durations shown in years, e.g., 1-, 2-, etc., should be read as strictly meaning 11½ m.-1 y. 11½ m., 1 y. 11½ m., 2 y. 11½ m., etc. (figures in tens)

	45-10-7	H NAME	1.140 24	A Tropic	130.00	No. of Land	appropriate y and	THE A STATE	E SI				The second second	30 306	358 25 P
	40-44	27700	10000	1 800	70 1151	1 1000	I with	MAR	RIED, the	marriage du	ration being	1 4823	2,116	1 1081	100,403
	AGE OF WOMAN	NON- MARRIED	All Durations	0-8½ months	8½-11½ months	1- year	2- years	3- years	4- years	5- years	6- years	7- years	8- years	9- years	10 years
164	1938 15-19 20-24 25-29 30-34 35-39 40-44 45-49	169,109 106,717 63,110 46,720 37,410 35,340 37,660	3,981 5 52,123 113,490 128,530 126,100 116,670 105,140	2,095 10,827 7,428 2,487 1,042 547 369	462 3,551 2,800 942 377 195 27	1,076 13,297 13,039 4,557 1,672 848 530	293 10,116 14,267 5,553 1,847 885 540	53 6,898 15,139 6,882 2,131 973 572	2 4,114 14,857 8,264 2,473 1,067 605	2,088 12,742 9,094 2,765 1,116 618	918 11,390 10,838 3,526 1,309 703	266 9,030 12,233 4,417 1,524 791	46 6,253 13,497 5,660 1,811 900	3,630 13,415 6,919 2,139 997	2,915 40,768 93,271 104,256 98,388
4	15-44 15-49	458,406 496,066	540,894 646,034	24,426 24,795	8,327 8,454	34,489 35,019	32,961 33,501	32,076 32,648	30,777 31,382	27,805 28,423	27,981 28,684	27,470 28,261	27,267 28,167	26,105 27,102	241,210 339,598
	1939 15-19 20-24 25-29 30-34 35-39 40-44 45-49 15-44 15-49	174,680 98,090 60,460 45,280 37,800 35,430 37,450 451,740 489,190	5,040 52,450 115,840 131,040 127,740 118,420 106,670 550,530 657,200	2,685 11,492 7,668 2,574 1,097 588 395 26,104 26,499	598 3,591 2,846 972 400 206 138 8,613 8,751	1,320 12,847 12,638 4,431 1,698 852 548 33,786 34,334	373 10,231 14,850 5,730 1,965 932 570 34,081 34,651	62 6,827 15,520 6,986 2,212 985 580 32,592 33,172	2 4,095 15,357 8,555 2,612 1,096 614 31,717 32,331	2,167 13,888 10,052 3,096 1,209 660 30,412 31,072	877 11,065 10,736 3,510 1,266 683 27,454 28,137	273 9,031 12,296 4,501 1,503 778 27,604 28,382	48 6,271 13,336 5,633 1,776 882 27,064 27,946	2 3,769 13,750 7,133 2,166 1,007 26,820 27,827	2,937 41,622 93,883 105,841 99,815 244,283 344,098
	1940 15-19 20-24 25-29 30-34 35-39 40-44 45-49 15-44 15-49	164,640 97,450 55,390 42,990 38,580 34,950 37,340 434,000 471,340	6,560 59,150 120,810 134,310 129,820 120,850 108,160 571,500 679,660	3,767 16,095 9,520 3,043 1,282 685 437 34,392 34,829	808 5,202 3,689 1,186 480 252 160 00 11,617 11,777	1,509 13,986 12,990 4,588 1,782 932 585 35,787 36,372	405 9,922 14,387 5,536 1,972 959 583 33,181 33,764	70 6,783 16,141 7,184 2,333 1,059 612 33,570 34,182	3,917 15,752 8,665 2,698 1,132 625 32,165 32,790	2,077 14,362 10,359 3,271 1,265 673 31,334 32,007	869 12,031 11,814 3,937 1,400 731 30,051 30,782	249 8,770 12,122 4,495 1,484 755 27,120 27,875	48 6,308 13,370 5,743 1,782 869 27,251 28,120		3,042 42,825 94,729 107,755 101,142 248,351 349,493

1941 15–19	157,090	6,440	3,277	778	1,874	438	6,852	4,000	2,010	831	<u>-</u>	- - 43	-1	energia co <u>nsti</u> bulida
20-24 25-29 30-34	97,140 49,400 40,800	64,560 122,400 135,900	13,656 6,743 2,520	5,204 3,069 1,070	20,345 16,457 5,393	11,373 14,715 5,647	15,541 6,839	16,245 8,801	14,628 10,373 3,348	12,382 12,021 4,123	9,468 13,177 4,993	6,126 12,994 5,689	3,869 13,502 7,165	3,157 43,563 94,658
35-39 40-44 45-49	38,700 34,700 37,100	130,900 122,300 109,200	1,213 703 463	466 259 163	2,076 1,087 659	2,049 1,037 618	2,309 1,081 621	2,811 1,208 657	1,299	1,452	1,633	1,752	2,142 972	108,647 101,999
15-44 15-49	417,830 454,930	582,500 691,700	28,112 28,575	10,846 11,009	47,232 47,891	35,259 35,877	32,694 33,315	33,066 33,723	31,658 32,337	30,809 31,549	29,516 30,313	26,604 27,436	26,679 27,651	250,025 352,024
1942 15-19	151,630	6,400	3,368	765	1,678	512	76	7 0 J A	2 027	820	249	76	-	
20-24 25-29 30-34	96,900 46,500 38,800	70,300 120,700 137,700	13,601 5,278 2,162	4,880 2,214 876	18,942 11,930 4,458	16,960 18,936 6,727	8,315 15,906 7,018	4,299 15,588 8,451	2,169 14,993 10,664	843 12,539 12,179	9,705 13,524	45 6,574 14,204	3,768 13,165	3,269 44,272 95,405
35-39 40-44	38,700 34,800 36,800	133,000 124,200 110,900	1,138 694 460	433 260 170	1,964 1,102 692	2,411 1,207 710	2,412 1,161 660	2,782 1,229 663	3,487 1,383 717	4,231 1,493 751	5,244 1,699 818	6,351 1,935 889	7,142 2,117 935	109,920 103,435
45-49 15-44	407,330	592,300	26,241 26,701	669 9,428 9,598	40,074 40,766	46,753 47,463	34,888 35,548	32,350 33,013	32,696 33,413	31,285 32,036	30,417 31,235	29,109 29,998	26,193 27,128	252,866 356,301
15-49	444,130	703,200	3 985 T	736	1,687	452	86	4 005 4 005	8 167	1 83.5 7	353	48		El Paris
15-19 20-24 25-29	148,110 99,200 44,300	6,000 74,500 114,800	3,038 11,089 3,801	4,591 1,672	19,514 8,976	16,868 13,509	12,993 20,555 8,435	5,578 15,989 8,674	2,546 14,270 10,239	1,000 12,647 12,565	272 9,648 13,751	6,598 14,591	3,943 14,317	3,192 44,267 96,374
30–34 35–39 40–44	37,400 38,200 34,900	138,400 135,400 126,100	1,750 982 632	716 390 242	3,704 1,810 1,086	5,391 2,254 1,215	2,856 1,358	2,909 1,311 712	3,438 1,409 724	4,399 1,597 794	5,362 1,765 828	6,646 2,035 913	7,980 2,360 1,003	96,374 111,090 105,220
1 45-49	36,200 402,110	113,000 595,200	21,292	639	694 36,777	737 39,689	759 46,283	34,462	31,902	32,208	30,798 31,626	29,918 30,831	28,601 29,604	254,923 360,143
15-49	438,310	708,200	21,744	8,511	37,471	40,426	47,042	35,174	32,626	33,002	7 265	20,031	3 4 3	
15-19 20-24	145,200 104,080 41,070	5,550 75,020 108,930	2,770 10,440 3,534	673 3,787 1,333	1,578 16,491 6,695	17,485 10,583	76 13,099 15,291	8,758 21,218	3,321 14,957	1,233 12,097	347 9,662	58 6,465	3,889	3,206
25-29 30-34 35-39	36,600 37,800	138,800 136,900	1,644 940 602	629 351 227	2,974 1,563 980	4,424 2,012 1,190	6,623 2,579 1,355	10,602 3,422 1,539	10,569 3,550 1,493	12,165 4,259 1,620	14,291 5,507 1,875	14,935 6,711 2,116	14,781 8,220 2,497	45,163 97,786 11 <b>2</b> ,406
40-44 45-49	35,300 36,400	127,900 114,400	434	9 160	30,281	735	784	817 45,540	776 33,890	796	872 31,682	921 30,285	1,028	106,403 258,561
15-44 15-49	400,050 436,450	593,100 <b>707,500</b>	19,930 20,364	7,000 7,160	30,281	36,881	39,807	46,357	34,666	32,170	32,554	31,206	30,416	364,964
1945 15-19 20-24	142,400 97,130	5,790 72,770	3,111 12,381	669 3,885	1,500 14,442	432 14,366	77 13,014	8,171	4,627	1,432	9,415	66 6,438	3,720	3,081
25-29 30-34 35-39	45,460 36,600 36,800	109,440 138,000 138,300	4,763 1,912 1,049	1,556 630 353	6,530 2,704 1,466	8,625 3,451 1,737	13,502 5,259 2,275	17,515 8,053 3,001	21,035 13,060 4,186	13,260 12,429 4,383	13,767 5,288	15,441 6,863	15,070 8,274 2,564	46, <b>2</b> 24 99,425 113,187
40-44 45-49	36,600 35,800	128,900 116,500	673 469	158	924 652	1,034 725	1,282 796	1,497 852	1,740 909	1,692 871	1,872 895	2,213 990	1,059	108,124
15-44 15-49	394,990 430,790	593,200 709,700	23,889 24,358	7,315 7,473	27,566 28,218	29,645 30,370	35,409 36,205	38,238 39,090	44,648 45,557	33,196 34,067	30,727 31,622	31,021 32,011	29,629 30,688	370,041

Table III.—Supplement.

Subdivision of Estimates shown in main table distinguishing separate Quarters of Marriage Durations under 2 years.

(figures in tens)

	1.975	žey i	1,573	1392	(figures in tens)	1,333	1,303	1,244	3,060
Total I	253	Duration	(months)	235 230 763	- Age = 4	351 227 160	Duration	(months)	269 172 172
	0-21	21-51	51-81	81-111	15-44	111-141	141-171	171-201	201-231
Service of the servic	749 3,273 2,077 696 300 158 109	744 3,830 2,616 874 367 194 130	602 3,724 2,735 917 375 195 130	462 3,551 2,800 942 377 195 127	1938 15-19 20-24 25-29 30-34 35-39 40-44 45-49	391 3,550 3,009 1,019 397 204 131	297 3,3 <b>7</b> 9 3,175 1,098 410 209 132	226 3,234 3,328 1,172 422 213 132	162 3,134 3,527 1,268 443 222 135
	7,253	8,625	8,548	8,327	15-44	8,570	8,568	8,595	8,756
	7,362	8,755	8,678	8,454	15-49	8,701	8,700	8,727	8,891
THE PERSON NAMED IN COLUMN	1 044 3,843 2,338 764 330 178 120	918 3,972 2,652 892 382 205 137	723 3,677 2,678 918 385 205 138	598 3,591 2,846 972 400 206 138	1939 15-19 20-24 25-29 30-34 35-39 40-44 45-49	496 3,480 2,983 1,022 411 207 139	363 3,310 3,123 1,086 422 214 137	271 3,143 3,238 1,144 431 216 137	190 2,914 3,294 1,179 434 215 135
	8,497 8,617	9,021 9,158	8,586 8,724	8,613 8,751	15–44 15–49	8,599 8,738	8,518 8,655	8,443 8,580	8,226 8,361
	1,276 4,561 2,422 807 357 195 126	1,376 5,819 3,410 1,080 454 242 154	1,115 5,715 3,688 1,156 471 248 157	808 5,202 3,689 1,186 480 252 160	1940 15–19 20–24 25–29 30–34 35–39 40–44 45–49	580 4,312 3,394 1,129 452 238 151	408 3,514 3,137 1,106 436 230 145	306 3,160 3,135 1,141 439 230 145	215 3,000 3,324 1,212 455 234 144
	9,618 9,744	12,381 12,535	12,393 12,550	11,617 11,777	15-44 15-49	10,105 10,256	8,831 8,976	8,411 8,556	8,440 8,584
	1,139 3,853 1,702 659 330 199 134	1,157 4,765 2,330 877 427 246 163	981 5,038 2,711 984 456 258 166	778 5,204 3,069 1,070 466 259 163	1941 15-19 20-24 25-29 30-34 35-39 40-44 45-49	657 5,320 3,471 1,165 483 260 161	538 5,406 4,151 1,328 515 269 164	410 5,113 4,453 1,430 535 277 166	269 4,506 4,382 1,470 543 281 168
	7,882 8,016	9,802 9,965	10,428 10,594	10,846 11,009	15–44 15–49	11,356 11,517	12,207 12,371	12,218 12,384	11,451 11,619
	1,186 3,878 1,387 580 319 199 133	1,198 4,810 1,850 758 400 243 162	984 4,913 2,041 824 419 252 165	765 4,880 2,214 876 433 260 170	1942 15–19 20–24 25–29 30–34 35–39 40–44 45–49	608 4,730 2,377 922 441 262 169	460 4,687 2,747 1,047 479 271 173	360 4,778 3,189 1,187 515 284 176	250 4,747 3,617 1,302 529 285 174
	7,549 7,682	9,259 9,421	9,433 9,598	9,428 9,598	·15–44 15–49	9,340 9,509	9,691 9,864	10,313 10,489	10,730 10,904
	1,025 3,001 1,000 476 272 178 130	1,090 3,881 1,324 614 344 223 159	923 4,207 1,477 660 366 231 163	736 4,591 1,672 716 390 242 164	1943 15-19 20-24 25-29 30-34 35-39 40-44 45-49	611 4,937 1,906 795 423 257 170	470 4,951 2,151 890 443 266 171	358 4,899 2,367 975 464 277 174	248 4,727 2,552 1,044 480 286 179
	5,952 6,082	7,476 7,635	7,864 8,027	8,347 8,511	15-44 15-49	8,929 9,099	9,171 9,342	9,340 9,514	9,337 9,516
		Commence of the Commence of th			The company of the same of the		Section of the last of the las	The state of the state of	10 10 10 to 10 10 10 10 10 10 10 10 10 10 10 10 10

Table III—Supplement (contd.)

956 3,066 987 462 269 172 124 5,912 6,036	980 3,655 1,244 576 330 210 153 6,995 7,148	834 3,719 1,303 606 341 220 157 7,023 7,180	673 3,787 1,333 629 351 227 160 7,000 7,160	1944 15-19 20-24 25-29 30-34 35-39 40-44 45-49 15-44 15-49	555 3,823 1,392 651 356 230 163 7,007 7,170	441 4,005 1,573 708 379 239 167 7,345 7,512	343 4,209 1,755 769 402 248 171 7,726 7,897	239 4,454 1,975 846 426 263 173 8,203 8,376
1,129 3,955 1,483 598 324 208 143 7,697 7,840	1,115 4,400 1,694 679 372 240 167 8,500 8,667	867 4,026 1,586 635 353 2225 159 7,692 7,851	669 3,885 1,556 630 353 222 158 7,315 7,473	1945 15–19 20–24 25–29 30–34 35–39 40–44 45–49	538 3,715 1,532 630 351 221 156 6,987 7,143	415 3,599 1,592 659 360 226 160 6,851 7,011	323 3,577 1,676 693 372 235 166 6,876 7,042	224 3,551 1,730 722 383 242 170 6,852 7,022
2,914 3,294 2,434 2,434 2,434 133 133 8,226	8,238 8,238 1,14,1 431, 431, 137 181	0.32.6 2.123 1.086 2.24 422 7.77	08-1 -882,2 -289,1 -414 -702 -781 -781	20-24 25-29 30-34 35-39 46-46 46-46	979 979 906 906 901	3,672 918 918 203 203	3,972 2,652 892 382 205 205	384 386 330 330 176 120
8,361	8,580	4558	827.8	13-49	200 B	8,724	9,021	784 783
215 3,000 3,924 1,312 2,314 2,314 144	305 3,150 3,151 431 230 230 141	408 1,514 8,137 436 436 230 230	1,312 1,329 1,129 452 452 238 452 1,129	15-19 20-24 25-29 30-34 35-39 40-44 45-49	808 3,202 3,689 3,689 480 252 480	13.588 13.588 13.586 13.6 13.6 13.7	365, 10 3619 3619 1,089 454 262 262	276 551 857 857 126 126
044.8 +82.8	112.8 032.8/	8,976	10,255	12-49	11,017	12,550	12,381	618 745
269 4,308 4,309 4,470 281 281 16,411	410 4 655 4 655 1 450 1 235 1 255 1 255 1 2 364	528 50952 518 518 618 618 605 605 605 605 605 605 605 605	637 3,320 3,471 1,365 483 483 483 1,360 101 101 11,537	1881 20-02 20-02 25-29 20-30 30-30 40-44 20-30	175 5.204 5.056 5.070, 5.070, 2.59 466 103 103 11,009	984 984 984 984 984 106 106 10 428	2.805 2.805 4.27 4.27 4.27 4.27 2.605 2.805 2.805	1000 M
250 4,747 3,617 1,302	3.68 2.77.8 3.18 3.18 18.78	480 4,587 2,747 2,747	\$08 \$330 \$337 \$327	25-28 25-28 25-28 25-29 86-34	765 4,880 2,214 876	28¢ 2,041 2,041 3,041	1,198 4,810 4,810 1,198	-2081 81.8 108.8
285	- 284 - 284 - 176	271	202 202 169	35-39 40-44 45-49	260	50E 3	400 243 162	613 60 613
10,730	10,489	195,9	9,340	15-49	4.428	ELE,0 802,0=	9,259 138.9	288 288
248 4,727 2,552 4,727 11,044 480 285 480 179	358 4,899 2,367 2,367 464 277 464 277	470 4,951 2,451 200 444 2,56 4,51 1,71	4,237 1,005 1,005 1,005 4,23 4,23 4,23 4,23 4,23 4,23 4,23 4,23	\$943 11-49 20-46 20-36 30-39 35-39 40-46	736 4.591 1,672 4.590 7,100 2.62 2.62 2.62	tse 7081+ 778,18, 7005 7006 7165 7165 7165		1000 WAR 100
9,337	9,340	9,171,0	T PESCE ST	1 245	H34T H5H	7,654 8,027	7,476	15.2

# Table IV.—Maternities by Legitimacy, 1938-1945, showing numbers of

(a) Illegitimate Maternities by Mother's Age.

# **England** and Wales

- (b) Legitimate Maternities by Mother's Age and Marriage duration combined.
- Note.— (i) The maternities of 1939 to 1940 have been rateably adjusted to represent as far as possible the occurrences in the complete calendar years, thus making them comparable with the records of subsequent years.
  - (ii) "Not Stated" cases have been distributed as in Table VI of this Appendix. There are slight and unimportant differences between the resulting figures for Legimate Maternities—All Durations, and those shown in Table EE of the successive Parts II of the Statistical Review.
  - (iii) The few maternities to women over 45 years of age have been included in the 40-44 age group.
  - (iv) Durations shewn in years—e.g., 1-, 2-, etc., should be read as strictly meaning  $11\frac{1}{2}$  m.-1 y.  $11\frac{1}{2}$  m., 1 y.  $11\frac{1}{2}$  m.-2 y.  $11\frac{1}{2}$  m., etc. (figures in tens)

	Name of	Tilogitimati	16 100	19/054	5/3/0 5/3/0 5/3/0	13.731 43.693 4 940	20,030 F	egitimate M	aternities, t	he Marriage	Duration be	ing	9,912	9.703 3.703	2336
	Age of Woman	Illegitimate Maternities	All Durations	0-8½ Months	8½-11½ Months	1- Year	2- Years	3- Years	4- Years	5- Years	6- Years	7- Years	8- Years	9- Years	10 Years and over
168	1938 15-19 20-24 25-29 30-34 35-39 40-44	4,934 8,615 6,034 3,947 2,739 1,171	21,878 141,994 198,124 144,508 77,192 26,994	15,513 32,181 11,703 3,568 1,251 314	1,912 14,749 10,749 3,866 1,076 218	3,324 37,469 30,445 9,785 2,679 541	960 25,037 28,123 9,751 2,471 445	165 16,265 26,968 10,461 2,395 457	9,005 24,384 11,441 2,585 457	4,415 19,736 11,173 2,606 417	2,030 16,035 11,776 2,932 457	660 12,293 12,032 3,281 482	163 8,505 12,646 3,753 539	20 4,627 11,727 4,225 555	4,556 36,282 47,938 22,112
	15–44	27,440	610,690	64,530	32,570	84,243	66,787	56,711	47,876	38,347	33,230	28,748	25,606	21,154	110,888
	1939 15-19 20-24 25-29 30-34 35-39 40-44	5,336 7,863 5,753 3,865 2,654 1,098	23,864 134,840 198,457 143,875 77,466 26,211	15,929 28,969 10,637 3,337 1,156 318	2,321 14,256 10,400 3,568 1,062 210	4,241 35,609 29,385 9,790 2,669 520	1,176 23,983 28,560 9,788 2,481 452	197 15,392 27,920 10,589 2,436 462	9,092 25,143 11,742 2,664 435	4,702 20,568 12,139 2,781 437	1,964 15,603 11,810 2,920 425	677 12,012 11,938 3,337 464	196 8,354 12,002 3,816 501	5,232 11,606 4,339 613	4,643 35,566 47,805 21,374
	* 15-44	26,569	604,713	60,346	31,817	82,214	66,440	56,996	49,076	40,627	32,722	28,428	24,869	21,790	109,388
	1940 15-19 20-24 25-29 30-34 35-39 40-44	4,774 8,167 5,944 3,949 2,607 1,133	22,350 136,105 189,514 133,100 72,513 25,345	14,138 28,148 9,894 3,039 1,148 277	2,755 18,363 11,786 3,898 1,109 228	4,155 37,306 29,068 9,303 2,613 524	1,108 23,085 25,974 8,710 2,256 481	190 14,630 26,197 9,666 2,394 441	8,108 23,783 10,638 2,465 408	4,073 19,822 10,961 2,715 447	1,719 15,068 10,996 2,845 405	540 10,981 10,457 2,908 400	120 7,757 10,494 3,335 440	13 4,972 10,452 3,830 520	4,212 34,486 44,895 20,774
	15-44	26,574	578,927	56,644	38,139	82,969	61,614	53,518	45,406	38,018	31,033	25,286	22,146	19,787	104,367

	12-44	26,578	578,927	56,548	- 38'13a_1	93,000	01.614	58,518	45,406	28 018	-31,633	24,286	22,136	1 490 187	a rovines
	1941 15-19 20-24 25-29 30-34 35-39 40-44	5,496 10,602 7,013 4,701 3,052 1,315	19,564 139,702 176,914 125,614 72,394 26,446	10,493 21,440 7,302 2,693 1,102 333	2,812 17,325 9,508 3,445 1,166 235	4,998 49,593 31,597 9,771 3,019 616	1,087 23,980 24,190 8,038 2,377 467	168 13,517 22,095 8,115 2,236 449	7,794 21,064 9,194 2,312 458	3,847 18,347 9,939 2,606 469	1,576 14,802 10,109 2,763 421	507 10,890 10,069 2,905 426	100 7,421 9,571 3,120 453	23 4,617 9,660 3,511 492	5,081 35,010 45,277 21,627
,	15-44	32,179	560,634	43,363	34,491	99,594	60,139	46,580	40,828	35,208	29,671	24,797	20,665	18,303	106,995
	1942 15-19 20-24 25-29 30-34 35-39 40-44	5,927 12,790 8,275 5,600 3,540 1,465	18,660 155,426 195,938 147,401 82,200 28,616	9,973 20,842 6,070 2,437 1,076 307	2,485 16,445 6,884 2,707 981 205	4,788 47,881 24,860 8,727 2,978 663	1,225 37,645 34,797 11,191 2,952 609	185 17,177 28,303 10,667 2,810 562	8,729 24,739 11,489 2,824 471	4,357 22,010 13,008 3,200 510	1,674 17,742 13,480 3,715 518	573 12,666 13,002 3,959 540	96 8,179 12,183 4,111 523	7 4,984 11,064 4,248 558	4,704 37,446 49,346 23,150
	15-44	37,597	628,241	40,705	29,707	89,897	88,419	59,704	48,256	43,085	37,129	30,740	25,092	20,861	114,646
169	1943 15-19 20-24 25-29 30-34 35-39 40-44	6,576 16,190 9,856 6,628 4,015 1,616	18,156 162,581 189,041 160,380 91,695 30,533	9,439 19,093 5,128 2,205 1,025 381	2,736 16,732 5,886 2,449 995 224	4,639 49,582 20,0 <b>5</b> 1 7,707 2,858 679	1,139 34,090 24,729 8,835 2,887 652	198 25,314 34,474 13,086 3,339 677	5 10,525 26,364 12,915 3,415 568	4,659 22,293 14,069 3,703 572	1,829 18,176 15,828 4,382 582	610 13,373 16,034 4,901 646	129 8,861 14,700 5,332 666	18 5,019 13,119 5,518 630	4,687 39,433 • 53,340 24,256
	15-44	44,881	652,386	37,271	29,022	85,516	72,332	77,088	53,792	45,296	40,797	35,564	29,688	24,304	121,716
	1944 15-19 20-24 25-29 30-34 35-39 40-44	7,453 21,072 12,710 8,677 4,870 1,695	17,727 174,745 191,496 181,147 107,925 33,575	9,156 19,654 5,173 2,351 1,037 375	2,770 17,240 6,139 2,555 930 184	4,520 47,693 17,237 6,903 2,735 631	1,103 36,802 20,030 7,818 2,534 629	165 26,194 26,538 10,414 3,169 647	13 17,268 35,767 16,130 4,274 678	6,560 25,510 16,298 4,287 588	2,383 19,278 17,117 4,681 702	773 14,873 18,744 5,694 716	157 9,952 18,191 6,462 749	21 5,763 16,676 7,065 830	5,236 47,950 65,057 26,846
	15-44	56,477	706,615	37,746	29,818	79,719	68,916	67,127	74,130	53,243	44,161	40,800	35,511	30,355	145,089
	1945 15-19 20-24 25-29 30-34 35-39 40-44 15-44	8,850 23,140 15,654 9,948 5,315 1,836	16,994 153,992 168,674 155,895 98,154 32,482	8,966 19,817 5,752 2,293 1,026 322 38,176	2,894 18,871 7,431 2,712 1,027 226	3,973 39,817 16,671 6,172 2,460 654	975 28,450 15,422 5,656 2,250 538 53,291	174 22,649 20,473 7,551 2,540 579 53,966	12 13,591 24,993 10,536 3,201 638 52,971	7,491 29,489 16,566 4,289 704 58,539	2,444 18,449 15,379 4,408 745	683 12,496 15,710 4,856 697 34,442	149 8,301 15,912 5,647 739 30,748	30 4,782 14,933 6,745 880 27,370	4,415 42,475 59,705 25,760
						The state of the s							d sen		

Table 1V .- Materalties by Legitimary, 1938-1945, showing numbers of

Table IV.—Supplement.

Subdivision of Legitimate Maternities shewn in main table distinguishing separate Quarters of Marriage Durations under 2 years.

	Duration	n (months)		la Reaco		Duration	(months)	
0-21/2	$2\frac{1}{2}-5\frac{1}{2}$	51-81	81-111	Age of Woman	111-141	141-171	171-201	201-231
2,272 2,933 1,149 416 216 62	7,478 13,821 4,690 1,419 478 124	5,763 15,427 5,864 1,733 557 128	1,912 14,749 10,749 3,866 1,076 218	1938 15-19 20-24 25-29 30-34 35-39 40-44	1,665 15,492 11,282 3,581 958 206	1,003 9,607 7,650 2,440 690 137	470 6,810 5,280 1,639 473 104	186 5,560 6,233 2,125 558 94
7,048	28,010	29,472	32,570	15–44	33,184	21,527	14,776	14,756
2,145 2,576 967 389 167 84	7,645 12,302 4,110 1,256 483 141	6,139 14,091 5,560 1,692 506 93	2,321 14,256 10,400 3,568 1,062 210	1939 15-19 20-24 25-29 30-34 35-39 40-44	2,194 13,525 9,474 3,191 868 145	1,162 9,490 7,414 2,386 711 150	591 6,985 6,378 2,173 576 107	294 5,609 6,119 2,040 514 118
6,328	25,937	28,081	31,817	15-44	29,397	21,313	16,810	14,694
1,767 2,318 846 346 176 71	6,447 10,838 3,440 1,109 460 125	5,924 14,992 5,608 1,584 512 81	2,755 18,363 11,786 3,898 1,109 228	1940 15–19 20–24 25–29 30–34 35–39 40–44	2,286 15,589 10,098 3,242 926 166	1,009 9,505 7,160 2,325 648 172	564 6,857 6,232 1,986 528 102	296 5,355 5,578 1,750 511 84
5,524	22,419	28,701	38,139	15–44	32,307	20,819	16,269	13,574
1,428 1,863 605 290 183 78	4,621 7,939 2,504 921 402 101	4,444 11,638 4,193 1,482 517 154	2,812 17,325 9,508 3,445 1,166 235	1941 15-19 20-24 25-29 30-34 35-39 40-44	2,323 16,979 9,238 3,050 1,054 183	1,373 13,731 8,365 2,519 783 152	944 11,618 7,889 2,267 692 141	358 7,265 6,105 1,935 490 140
4,447	16,488	22,428	34,491	15-44	*32,827	26,923	23,551	16,293
1,206 1,898 624 257 171 64	4,466 7,427 2,052 860 391 112	4,301 11,517 3,394 1,320 514 131	2,485 16,445 6,884 2,707 981 205	1942 15-19 20-24 25-29 30-34 35-39 40-44	2,157 15,338 6,600 2,474 917 205	1,393 12,584 5,828 2,106 731 159	782 10,557 6,018 2,081 689 139	456 9,402 6,414 2,066 641 160
4,220	15,308	21,177	29,707	15-44	27,691	22,801	20,266	19,139
1,218 1,800 505 265 172 94	3,982 6,669 1,726 748 376 150	4,239 10,624 2,897 1,192 477 137	2,736 16,732 5,886 2,449 995 224	1943 15-19 20-24 25-29 30-34 35-39 40-44	2,186 16,753 5,870 2,352 941 200	1,258 13,244 5,042 1,919 703 184	757 10,650 4,545 1,779 640 148	438 8,935 4,594 1,657 574 147
4,054	13,651	19,566	29,022	15–44	28,302	22,350	18,519	16,345
1,167 1,816 543 253 145 72	3,761 6,852 1,726 797 355 155	4,228 10,986 2,904 1,301 537 148	2,770 17,240 6,139 2,555 930 184	1944 15-19 20-24 • 25-29 30-34 35-39 40-44	2,068 16,091 5,375 2,168 901 199	1,303 12,696 4,289 1,803 691 143	745 9,953 3,763 1,481 587 148	404 8,953 -3,810 1,451 -556 141
3,996	13,646	20,104	29,818	15-44	26,802	20,925	16,677	15,315
1,129 1,961 625 291 149 55	3,567 6,577 1,805 704 356 145	4,270 11,279 3,322 1,298 521 122	2,894 18,871 7,431 2,712 1,027 226	1945 15-19 20-24 25-29 30-34 35-39 40-44	1,632 13,526 5,520 1,985 792 196	999 10,055 4,032 1,480 628 154	816 8,629 3,603 1,350 545 172	526 7,607 3,516 1,357 495 132
4,210	13,154	20,812	33,161	15–44	23,651	17,348	15,115	13,633

Table IV.—Supplementers

Subdivision of Legitimate Maternities shewn in main table distinguishing separate Quarters of Marriage Dorations under 2 years.

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1.86 3,560 6,233	470 5,810 5,280	1,003	1,665 15,492 15,492	15-19 20-24 25-29	1,912	5.765- 25.127 35.127	7 478	2,222, 2,933, 2,139
2,125	1,530	2,440	3,581 945 206	30-34 · · · · · · · · · · · · · · · · · · ·	3,855 1,076 2,18 2,18	128	184	3150
14,756	14,776	21,527	33,184	15-44	32,570	24+162	23,016	5505
2,040 6,119 2,040 314 116	108 6.82 6.378 7.173 6.173 6.173 6.173	7,162 7,416 7,416 7,416 7,11 1,50	9,104 13,315 9,476 7,101 808 145	20-24 20-24 25-29 30-34 30-34 40-64	15, 52 16, 206 16, 400 1, 060 1, 060 210	190.41. 4 190.41. 4 190.4 190.4 190.4 190.4	243,0 22,30 21,4 20,1 20,1 194 141- 60	EARS ATER TOP TAP
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295 5.355 5.355 5.1750 5.115 6.115	564 5,857 5,242 5,242 5,26 5,26 102	1,009 9,505 17,160 2,320 648	2,286 15,589 16,086 3,242 16,086	1940   20-24   20-24   25-39   15-39   40-44	2,755 18,363 18,364 2,004 2,009 2,009	-90 8 1 -90 8	# 6.447 # 20.658 # 2.640 # 1.109 # 165	PACTA A SEA A SEA
13,574	16,269	20,819	32,307	Pt-21	38,739	28,751	122,419	8,824
358 7,265 6,105 1,935 490 1,40	11,618 7,859 7,859 2,267 2,267 191	1,373 13,731 8,305 2,519 783 783	2,323 16,979 9,238 3,050 2,054 1,054	1941 20-24 20-24 35-29 30-34 35-39 40-44	2,83,0 4,43,0 4,44,4 3,46,0 235,0 235,0	1,088 4,103 1,482 3,57 1,04 1,04	4,621 7,939 7,2304 7,2304 7,2304 4,231 4,2	7,428 1,663
16,293	23,555	26,923	_32,827_	N+-61	34,491	-524,22	1,16,488	744
\$455 \$402 \$414 2,056 551 160	782 0,0387 2,081 2,081 689	1,395 (2,384 0,828 731 731 (199	15/358 15/358 15/358 205,000 205,000	\$491 91-62 45-00 20-22 16-01 51-63	185 705 705 705 705 705 705 705 705 705 70	-100.4 E	171 A 455 74 A 456 74	9001
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Table V.—Maternity Rates (per year of exposure -see Table III), 1938-1945 showing

(a) Illegitimate rates by Mother's age.

(b) Legitimate rates by Mother's age and Marriage Duration combined.

England and Wales

Note.— (i) See notes to Tables III and IV.

(ii) The tables 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.

335	Age of	Illegitimate Maternity	-026	110	-018	125	Legitimate	Maternity	Rates, the M	arriage Dura	ation being	-038	980	086 5	-067
-07	Woman	Rate	All Durations	$0-8\frac{1}{2}$ months	8½-11½ months	1- year	2- years	3- years	4- years	5- years	6- years	7- years	8- years	9- years	10Years and over
179	1938 15-19 20-24 25-29 30-34 35-39 40-44 15-44	·0029 ·0081 ·0096 ·0084 ·0073 ·0033	·550 ·272 ·175 ·112 ·061 ·023	·740 ·297 ·158 ·143 ·120 ·057	·414 ·415 ·384 ·410 ·285 ·112	·309 ·282 ·233 ·215 ·160 ·064	-328 -247 -197 -176 -134 -050	·311 ·236 ·178 ·152 ·112 ·047	·248 ·219 ·164 ·138 ·105 ·043	-211 -155 -123 -094 -037	·221 ·141 ·109 ·083 ·035	- 136 ·098 03074 0302	-354 -354 -136 -094 -066 -030	     	
2 05	<b>1939</b> 15–19	·0031	-473	-593	-388	-321	-315	318	-180	183	183	-334	\$20	75.081	11:046
15-	20-24 25-29 30-34 35-39 40-44	·0080 ·0095 ·0085 ·0070 ·0031	·257 ·171 ·110 ·061 ·022	·252 ·139 ·130 ·105 ·054	·397 ·365 ·367 ·266 ·102	·277 ·233 ·221 ·157 ·061	·234 ·192 ·171 ·126 ·048	·225 180 ·152 ·110	·222 •164 ·137 •102 •040	·217 ·148 ·121 ·090 ·036	·224 •141 ·110 •083 •034	·248 ·133 ·097 ·074 ·031	·408 •133 •090 ••068 ••028	-080139 -084 -03-061 -0-028	-04-158 -085 -05-051 -07-020
30-	15,44	0133	16.110	•231	30d 37:369	\$(•243	-100 -18-195 -535	-12-175 -504	13.155 -503	151	18119 1800	13.103	-080 -13-092	1 081	082
	<b>1940</b> 15–19	-0029	-341	-375	-341	-275	-274	-271	e marine mount line				71100		
135	20-24 25-29 30-34 35-39 40-44	·0084 ·0107 ·0092 ·0068 ·0032	·230 ·157 ·099 ·056 ·021	·175 ·104 ·100 ·090 ·040	·353 ·319 ·329 ·329 ·321 ·3090	·267 ·224 ·203 ·147 ·056	·233 ·181 ·157 ·114 ·1050	·216 1+162 ·135 0+103 0-042	·207 ·151 ·123 ·091 ·036	·196 ·138 ·106 ·083 ·0.035	·198 ·00·125 ·093 ·072 ·0-029	·217 ·084125 ·086 ·08065 ·08027	·250 03·123 ·078 03·058 03·025		
-30-	15-44	01000	7.101 304	70.165	328	10.232 544	-186	110	13-141 132	-000 -15-121 -101	-084 -73103 -780	-207 -11- <b>03</b> 3	-034 -13-081 -333	-0.NT -1.1-074	-080 -10-042

	1941 15-19 20-24 25-29 30-34 35-39 40-44 15-44	·0035 ·0109 ·0142 ·0115 ·0079 ·0038	•304 •216 •145 •092 •055 •022	-320 -157 -108 -107 -091 -047	-361 -333 -310 88 -322 -250 60 -091	·267 ·244 ·192 ·181 ·145 ·057	·248 ·211 ·164 ·142 ·116 ·045	·233 ·197 ·142 ·119 ·097 ·042	•195 •130 •104 •082 •038	•191 •125 % • •096 •078 % • •036 % • •111 % • •111	·190 ·120 ·084 ·067 ·029 ·096	·207 ·115 ·076 ·058 ·026 ·084	-233 -121 <sup>192</sup> -074 -055 52 -026 28 -078	-119 •072 •049 •023 •069	-161\%3 -080 -048\10 -020\%4 -081 -043\38
	1942 15-19 20-24 25-29 30-34 35-39 40-44 15-44	·0039 ·0132 ·0178 ·0144 ·0091 ·0042 ·0092	·292 ·221 ·162 ·107 ·062 ·023 ·106	•296 •153 •115 •113 •095 •044	·325 ·337 ·311 ·309 ·227 ·079	·285 ·253 ·208 ·196 ·152 ·060	·239 ·222 ·184 ·166 ·122 ·050	·243 ·207 ·178 ·152 ·117 ·048	-203 •159 •136 •102 •038	·201 ·147 ·122 ·092 ·037 ·132	 -199 -141 -111 -088 -035	 ·234 ·131 ·096 ·075 ·032 ·101	-213 -124 -086 -065 -027 -086	-132 -084 -059 -026 -080	
173	1943 15-19 20-24 25-29 30-34 35-39 40-44 15-44	·0044 ·0163 ·0222 ·0177 ·0105 ·0046	·303 ·218 ·165 ·116 ·068 ·024 ·110	·311 ·172 ·135 ·126 ·104 ·060	-372 -364 -352 -342 -255 -093	·275 ·254 ·223 ·208 ·158 ·063 ·233	·252 ·202 ·183 ·164 ·128 ·054 ·182	·230 ·195 ·168 ·155 ·117 ·050	·189 ·165 ·149 ·117 ·043	-183 -156 -137 -108 -041 -142	-183 -144 -126 -100 -036 -127	·224 ·139 ·117 ·091 ·037 ·115	·269 ·134 ·101 ·080 ·033 ·099	 -127 -092 -069 -027 -085	 -147 -089 -055 SI -022 21 -048
	1944 15-19 20-24 25-29 30-34 35-39 40-44	·0051 ·0202 ·0309 ·0237 ·0129 ·0048	•319 •233 •176 •131 •079 •026	·330 ·188 ·146 ·143 ·110 ·062	·412 ·455 ·461 ·406 ·265 ·081	·286 ·289 ·257 ·232 ·175 ·064 ·263	·244 ·210 ·189 ·177 ·126 ·053	·217 ·200 ·174 ·157 ·123 ·048			-193 -159 -141 -110 -043	·223 ·154 ·131 ·103 ·038 ·129	·271 ·154 ·122 ·096 ·035	·149 ·113 ·086 ·033 ·	163 (SE) 106 -106 -067 -024
	1945 15-19 20-24 25-29 30-34 35-39 40-44	·0062 ·0238 ·0344 ·0272 ·0144 ·0050	·294 ·212 ·154 ·113 ·071 ·025	·288 ·160 ·121 ·120 ·098 ·048 ·160	.433 .486 .478 .430 .291 .102	·265 ·276 ·255 ·228 ·168 ·071	·226 ·198 ·178 ·164 ·130 ·052	·226 ·174 ·152 ·144 ·112 ·045			-171 -139 -124 -101 -044 -125		-226 ·129 ·103 ·082 ·033 ·099		 -143 -092 -060 -023 -051

Table V.—Supplement.

Maternity Rates (per year of exposure) for separate Quarters of Marriage Durations under 2 years.

	Duration	(Months)		Age of Woman		Duration	(Months)	
0-21	21-51	51-81	81-111	Age of Woman	111-141	141-171	171-201	201-231
•303 •090 •055 •060 •072 •039	1·005 ·361 ·179 ·162 ·130 ·064	·957 ·414 ·214 ·189 ·149 ·066	·414 ·415 ·384 ·410 ·285 ·112	1938 15-19 20-24 25-29 30-34 35-39 40-44	·426 ·436 ·375 ·351 ·241 ·101	·338 ·284 ·241 ·222 ·168 ·066	•208 •211 •159 •140 •112 •049	·115 ·177 ·177 ·168 ·126 ·042
-097	•325	-345	-391	15-44	•387	-251	-172	.169
•205 •067 •041 •051 •051 •047	·833 ·310 ·155 ·141 ·126 ·069	·849 ·383 ·208 ·184 ·131 ·045	·388 ·397 ·365 ·367 ·266 ·102	1939 15-19 20-24 25-29 30-34 35-39 40-44	·442 ·389 ·318 ·312 ·211 ·070	·320 ·287 ·237 ·220 ·168 ·070	·218 ·222 ·197 ·190 ·134 ·050	·155 ·192 ·186 ·173 ·118 ·055
•074	•288	•327	•369	15-44	·342	•250	· <b>19</b> 9	-179
·138 ·051 ·035 ·043 ·049 ·036	•469 •186 •101 •103 •101 •052	·531 ·262 ·152 ·137 ·109 ·033	•341 •353 •319 •329 •231 •090	1940 15-19 20-24 25-29 30-34 35-39 40-44	·394 ·362 ·298 ·287 ·205 ·070	·247 ·270 ·228 ·210 ·149 ·075	·184 ·217 ·199 ·174 ·120 ·044	·138 ·178 ·168 ·144 ·112 ·036
-057	·181	•232	•328	15-44	•320	•236	·193	·161
•125 •048 •036 •044 •055 •039	·399 ·167 ·107 ·105 ·094 ·041	•453 •231 •155 •151 •113 •060	•361 •333 •310 •322 •250 •091	1941 15-19 20-24 25-29 30-34 35-39 40-44	•354 •319 •266 •262 •218 •070	·255 ·254 ·202 ·190 ·152 ·057	·230 ·227 ·177 ·159 ·129 ·051	·133 ·161 ·139 ·132 ·090 ·050
•056	•168	•215	-318	15-44	-289	-221	·193	-142
•102 •049 •045 •044 •054 •032	•373 •154 •111 •113 •098 •046	•437 •234 •166 •160 •123 •052	·325 ·337 ·311 ·309 ·227 ·079	1942 15-19 20-24 25-29 30-34 35-39 40-44	•355 •324 •278 •268 •208 •078	·303 ·268 ·212 ·201 ·153 ·059	·217 ·221 ·189 ·175 ·134 ·049	·182 ·198 ·177 ·159 ·121 ·056
-056	•165	-224	-315	15-44	•296	·235	·197	-178
·119 ·060 ·050 ·056 ·063 ·053	·365 ·172 ·130 ·122 ·109 ·067	·459 ·253 ·196 ·181 ·130 ·059	•372 •364 •352 •342 •255 •093	1943 15-19 20-24 25-29 30-34 35-39 40-44	·358 ·339 ·308 ·296 ·222 ·078	·268 ·268 ·234 ·216 ·159 ·069	·211 ·217 ·192 ·182 ·138 ·053	·177 ·189 ·180 ·159 ·120 ·051
∙068	∙183	•249	·348	15–44	•317	·244	·198	•175
·122 ·059 ·055 ·055 ·054 ·042	·384 ·187 ·139 ·138 ·108 ·074	·507 ·295 ·223 ·215 ·157 ·067	·412 ·455 ·461 ·406 ·265 ·081	1944 15–19 20–24 25–29 30–34 35–39 40–44	·373 ·421 ·386 ·333 ·253 ·087	•295 •317 •273 •255 •182 •060	·217 ·236 ·214 ·193 ·146 ·060	·169 ·201 ·193 ·172 ·131 ·054
-068	·195	•286	•426	15-44	•383	285	·216	-187
·100 ·050 ·042 ·049 ·046 ·026	·320 ·149 ·107 ·104 ·096 ·060	·493 ·280 ·209 ·204 ·148 ·054	-433 -486 -478 -430 -291 -102	1945 15-19 20-24 25-29 30-34 35-39 40-44	·303 ·364 ·360 ·315 ·226 ·089	·241 ·279 ·253 ·225 ·174 ·068	·253 ·241 ·215 ·195 ·147 ·073	·235 ·214 ·203 ·188 ·129 ·055
-055	·155	·271	•453	15–44	•339	·253	•220	.199

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# Table VI.—Legitimate Maternities of Years 1938-1945 classified by Mother's Age, Duration of Marriage and Number of Previous Children. England and Wales.

Note.—(i) Tables already published as SS in Parts II of the Statistical Reviews of the several years but here adjusted (a) by an ordered distribution of all Not Stated records, and (b) to render the records of 1938, 1939 and 1940 comparable as far as possible with the "occurrences" of later years—see page 77. The adjusted figures by age, for all durations and numbers of previous children combined, differ to a slight and unimportant extent from those shewn in Table EE of the successive Parts II.

(ii) 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.

DESCRIPTION PROPERTY.	entroveles, escess					1938	POLITICAL CHARGES CHARGE	- Million and Joseph Strong	Martine Comme	in expenses actes	CONTROLLARITY OF	Holpharason	SS demonstra
Marriage duration	S. desa	LEGITI	MATE M	ATERN	ITIES: tillborn)	the number of the	ber of prent husba	evious cl and being	nildren 3	(survivi	ng, dea	d or	Marr
duration	Total	0	1	2	3	4	5	6	7	8	9	10–14	15 & over
Mothers o	f All A	ges									-08.5	QB 875	d302/
All	610,690	261,872	155,132	78,959	42,353	25,228	16,472	10,962	7,314	4,833	3,255	4,176	134
0- 8 mos. 9-11 ', 0- yrs. 1- ', 2- ', 3- ', 4- ', 5- ', 6- ', 7- ', 8- ', 9- ',	64,530 32,570 97,100 84,243 66,787 56,711 47,876 38,347 33,230 28,748 25,606 21,154 69,046	95,165 70,638 35,441 21,658 13,524 7,951 5,279 3,559 2,736 1,810	1,565 12,947 28,183 26,062 21,765 16,125 12,454 9,721 7,671 5,488	205 552 2,887 7,854 9,897 9,724 8,964 7,911 6,876 5,454 14,731	91 48 216 1,003 2,325 3,566 4,530 4,605 4,381 3,856 12,590	46 32 28 86 307 826 1,574 2,074 2,460 2,509 9,907	6 10 20 22 38 119 346 684 1,051 1,334 7,543	8 10 10 12 18 63 146 294 471 4,934	2 4 8 10 8 14 6 30 105 168 2,534	-4 -2 2 -2 10 12 18 44 1,225	4    2 4 4 8 495	4 2 2 4 - 2 2 2 2 10 12 264	H11111112
10- ,, 15- ,, 20- ,, 25- ,, 30 & over	33,235 7,692 905 10	502 59 2	11,273 1,701 173 4	3,517 367 20	4,527 597 18	4,747 595 37	4,421 839 39	4,042 872 80 2	3,480 855 90	2,593 829 92	1,784 848 104 2	1,895 1,593 378	26 65 41
Mothers a					1.7						_		
All durations	21,878	ľ	2,231	174	8	2				68	38 58	30 319	dielvi
0- 8 mos.	15,513	19,403	195,8 45	1 18	80	15 31	0,0   58	3,51, 00	ier I	277,51	2,192	ions	All
9-11 ,, 0- yrs. 1- ,, 2- ,, 3- ,, 4- ,,	1,912 17,425 3,324 960 165	17,225 2,058 167 13	196 1,235 722 74 4	2 29 69 74	-2 -2 4 -*	-2 -3 -3	- H			11441	TELL		HITT
Mothers a	ged 20-	24	34-81		23	1 00	33	1 30			2,585	1	
All durations	141,994	91,462	36,119	10,977	2,813	509	98	16	-	era_	2,922	_	
0- 8 mos. 9-11 ,, 0- yrs. 1- ,, 2- ,, 3- ,, 4- ,, 6- ,, 7- ,, 8- ,, 9- ,,	32,181 14,749 46,930 37,469 25,037 16,265 9,005 4,415 2,030 660 163 20	46,269 30,050 10,392 3,443	610 7,156 13,157 8,807 4,112 1,566 529 145 31	40 253 1,413 3,582 3,004 1,702 687 237 55 4	11 10 71 415 837 725 545 162 33 4	 4 18 82 161 155 67 22	8 16 37 29 6 2	8 6 2 2		200 200 200 200 200 200 200 200 200 200	14 b		100 A
Mothers a	ged 25-	29									314	100	18 -0 41-0
durations	198,124	92,835	57,285	27,056	12,357	5,492	2,113	679	234	65	6	2	
0- 8 mos. 9-11 ,, 0- yrs. 1- ,, 2- ,, 3- ,, 4- ,, 5- ,, 6- ,, 7- ,, 8- ,, 9- ,, 10-14,,	11,703 10,749 22,452 30,445 28,123 26,968 24,384 19,736 16,035 12,293 8,505 4,627 4,556	21,893 27,011 17,182 12,021 7,290 3,836 1,919 876 472 143	440 3,234 9,861 11,624 11,228 8,296 5,686 3,646 1,834 817 619	69 174 996 2,914 4,684 5,143 4,754 3,677 2,530 1,180 935	29 10 74 376 1,039 1,971 2,548 2,485 1,889 1,054 882	17 10 10 29 129 419 923 1,172 1,119 794 870		4 .2 — 2 2 2 21 49 125 155 319		6 10 49	111111111111111111111111111111111111111		THITTITITIES.

# classified by Mother's Age. Duration of Marriage and [Vamber of Previous Children, England and Wales. 4—4) Tables already published as So in Parts II of the Statistical Reviews of the lyears but Mers adjusted (2) by an lordered distribution of all Motherated Fecords by to render the records of 1832, 1933 and 1940 comparable as far as possible with occurrences, of later years—set page 77. The adjusted figures by age, lot all form these shewn in Table IV. of the successive Parts II. Table VI.—1938. (contd.)

Toole VI. Legitimage Aletteranges, of Years 1938-1945

	*				9	202							
Marriage duration	bash a	LEGITI	MATE M	ATERN st	ITIES:	the numb	per of protect husban	evious cl	hildren	(survivi	ng, dea	d or	
duration 15 &	Total	0	1	2	3	4	5	6	7	8	9	10–14	15 & over
Mothers a	iged 30-	34	71 TH							\$0	ON HA	30 878	CHON
All durations	144,508	42,756	41,249	24,717	14,345	9,086	5,907	3,438	1,645	812	347	206	sint Bart
0- 8 mos. 9-11 ", 0- yrs. 1- ", 2- ", 3- ", 4- ", 5- ", 6- ", 7- ", 8- ", 9- ", 10- ", 15-19",	3,568 3,866 7,434 9,785 9,751 10,461 11,441 11,173 11,776 12,032 12,646 11,727 33,640 2,642	7,069 8,730 6,077 4,982 4,296 3,100 2,590 1,971 1,570 1,015 1,329 27	235 956 3,352 4,313 5,073 5,070 4,942 4,578 4,394 3,222 4,967 147	71 65 251 984 1,650 2,186 2,715 3,110 3,286 3,068 7,047 284	36 12 49 143 335 620 1,082 1,466 1,812 2,116 6,327 347	21 14 10 25 69 167 341 626 994 1,291 5,134 394	2 8 8 12 16 88 200 423 676 4,037 437	-6 -2 4 6 14 57 118 239 2,614 378	2 4 4 2 6 -14 39 80 1,239 255				THITTITIE
Mothers a	ged 35-	39	•							81	-SITE	De ere	r roll
All durations	77,192	12,779	15,409	12,862	9,816	7,508	5,781	4,474	3,391	2,251	1,448	1,457	16
0- 8 mos. 9-11 ", 0- yrs. 1- ", 2- ", 3- ", 6- ", 7- ", 8- ", 10- ", 115- ", 20-24 ",	1,251 1,076 2,327 2,679 2,471 2,395 2,585 2,606 2,932 3,281 3,753 4,225 26,503 20,287 1,148	2,204 2,338 1,358 1,023 829 674 613 604 598 568 1,699 265 6	67 292 950 1,032 1,164 1,034 1,150 1,215 1,236 1,316 4,963 970 20	21 27 129 257 455 583 677 783 893 1,082 5,764 2,134 57	13 14 16 51 100 214 308 404 553 590 4,631 2,815 107	6 2 4 10 23 67 131 178 288 361 3,386 2,968 84	2 2 10 10 6 18 29 65 106 194 2,540 2,662 137	4 4 4 8 16 20 47 57 1,723 2,430 161	2 2 2 4 4 6 2 4 24 24 37 972 2,218 114	4 -2 2 2 - 4 4 4 4 459 1,638 120	2   2 4 4 2 2 231 1,082 123	2 2 2 -2 -2 -2 4 133 1,095 215	
Mothers a	ged 40 a	and over		1 0000	161	90 B	100 M	1 100 041		3 62	214,4 950,8 950,8	an ax	adhib.
All	26,994	2,577	2,839	3,173	3,014	2,631	2,573	2,355	2,044	1,705	1,454	2,511	118
0- 8 mos. 9-11 ,, 0- yrs. 1- ,, 2- ,, 3- ,, 4- ,, 5- ,, 6- ,, 7- ,, 8- ,, 9- ,, 10- ,, 15- ,, 20- ,, 25- ,, 30 & over	314 218 532 541 445 457 457 417 457 417 457 482 539 555 4,347 10,306 6,544 905	505 451 265 176 147 96 88 94 82 80 328 210 53 2	17 74 141 212 184 159 147 137 176 127 724 584 153	2 4 29 43 104 110 131 104 112 120 985 1,099 310 20		2 4 4 12 24 31 37 63 517 1,385 511 37	2 4 2 — 2 10 12 20 33 425 1,322 702 39	-2 -4 2 2 2 4 14 14 2 20 278 1,234 711 80 2		- - - - - - - - - - - - - - - - - - -	2      2 33 586 725 104 2	2 -2 2 2 - - - 6 4 31 702 1,378 378 6	16 61 41

Table VI.—1939.

Marriage	ag, desc	LEGITI	MATE M	ATERNI s	ITIES:	the numl	per of prent husba	evious ch and being	nildren	(survivi	ng, dead	d or	
duration	Total	0	1	2	3	g. 4	5	6	7	8	9	10–14	15 & over
Mothers o	f All A	ges		Calso	i let	PA IN	17 01	CHI.		äš	OF 58	de sa	Mitoli
All durations	604,713	257,505	157,231	78,140	41,522	24,947	15,825	10,490	7,077	4,705	3,040	4,095	136
0- 8 mos. 9-11 " 0-yrs. 1- " 2- " 3- " 4- " 5- " 6- " 7- " 8- " 10- " 15- " 20- " 30 & over	60,346 31,817 92,163 82,214 66,440 56,996 49,076 40,627 32,722 28,428 24,869 21,790 68,445 32,091 7,867 973 12	90,820 68,333 36,142 22,302 13,771 8,670 5,327 3,680 2,525 1,790 3,659 444 40 2	1,058 13,287 27,266 26,317 22,421 17,502 12,744 9,764 7,429 5,606 11,816 1,855 156 10	144 494 2,751 7,448 10,137 9,903 8,604 7,605 6,686 5,687 14,646 3,629 390 16	70 51 207 797 2,356 3,540 4,255 4,431 4,248 3,936 12,588 4,406 611 26	35 24 38 75 314 834 1,365 2,058 2,544 2,586 9,809 4,461 751 51 2	17 9 19 29 47 139 338 684 962 1,357 7,163 4,150 843 68	14 7 6 12 16 23 61 144 347 583 4,503 3,773 932 67 2	4 3 4 8 5 9 14 42 88 174 2,422 3,309 898 97	1 3 5 4 4 4 6 8 28 4,092 2,580 834 88	1 1 2 2 4 6 3 9 468 1,640 792 112	2 1 2 5 1 4 6 9 14 273 1,823 1,551 399 5	6 21 69 37 3
Mothers	aged 16	-19		+ + 68	ial	1 - 1 - h	in lat	1 1 25	in T	1275	7686	eroi	LA HOLE
All durations	23,864	21,040	2,621	184	140	2	30			-	3E4.1	] _30n	9-0
0- 8 mos. 9-11 ,, 0- yrs. 1- ,, 2- ,, 3- ,, 4- ,,	15,929 2,321 18,250 4,241 1,176 197	18,127 2,669 226 18	121 1,549 844 107	2 23 102 57	- 4 10 -	- Co	÷ 1 3	46568684 11111				2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	FLUIDAL.
Mothers	aged 20	-24	18 1 2 18	# 1 E B	108 25.0 139	E 1 200	E+ 0 (0.8)	R. 1 7 7 8	No.	12 * 13,73	4,339 6,533		10-01
All	134,840	86,190	34,802	10,460	2,668	583	97,	22	9	3	2	4	20-24
0- 8 mos. 9-11 ,, 0- yrs. 1- ,, 2- ,, 3- ,, 4- ,, 6- ,, 6- ,, 8- ,, 9- ,,	28,969 14,256 43,225 35,609 23,983 15,392 9,092 4,702 1,964 677 196	42,728 28,345 10,076 3,520 1,074 320 87 25 15	465 7,050 12,490 8,360 4,107 1,641 532 127 30	29 201 1,344 3,183 3,036 1,734 673 204 56	3 10 73 312 786 788 473 185 38	3 	2 5 16 34 35 5	146	2 4 3	10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Deg Deg La Control La		133 133110We
Mothers	aged 25	-29	Q 14 10	- 50	20 42 64	183	99 110 124	251 551		ara ha	425 446-49 500	\$ 30 K	9.H383
All durations	198,457	92,525	58,701	26,611	12,048	5,356	2,132	772	217	73	2-11	11	1-U
0- 8 mos. 9-11 ,, 0- yrs. 1- ,, 2- ,, 3- ,, 4- ,, 5- ,, 6- ,, 7- ,, 8- ,, 9- ,, 10-14,,	10,637 10,400 21,037 29,385 28,560 27,920 25,143 20,568 15,603 12,012 8,354 5,232 4,643	20,669 25,948 17,996 12,632 7,433 4,076 1,978 956 427 164 246	286 3,251 9,644 12,065 11,689 8,972 5,776 3,570 1,975 859 614	48 157 851 2,885 4,808 5,217 4,513 3,522 2,348 1,338 924	18 25 55 307 1,066 1,829 2,360 2,348 1,812 1,228 1,000	9 20 10 26 133 410 776 1,158 1,131 862 839	5 1 4 5 14 60 172 373 490 476 532	28 71 140 224 303	13 25 54 125	6 18 49	1 - 37	1 - 6 4	

# Table VI.—1939. (contd.)

Marriage	Barb (g)	LEGITI	MATE N	IATERN	IITIES: stillborn)	the num	ber of prent husb	revious c and bein	hildren g	(surviv	ing, de	ad or	ncie M session
duration	Total	Ö	1	2	3	4	5	6	7	8	919	10-14	15 & over
Mothers	aged 30	-34								20	DA SKA	lo 619	Mieth
All durations	143,875	42,593	42,298	24,448	14,051	8,866	5,575	3,155	1,630	721	339	193	6
0- 8 mos. 9-11 ,, 0- yrs. 1- ,, 2- ,, 3- ,, 4- ,, 5- ,, 6- ,, 7- ,, 8- ,, 9- ,, 10- ,, 15-19,,	3,337 3,568 6,905 9,790 9,788 10,589 11,742 12,139 11,810 11,938 12,002 11,606 33,017 2,549	6,686 8,634 6,162 4,937 4,274 3,419 2,558 2,046 1,426 1,039 1,372 40	121 1,044 3,238 4,504 5,275 5,583 5,142 4,677 4,021 3,231 5,313 149	44 80 317 993 1,735 2,262 2,647 2,962 3,180 3,077 6,878 273	27 7 42 114 366 663 1,044 1,415 1,827 1,953 6,248 345	13 13 18 23 67 164 314 588 1,026 1,316 4,922 402	7 3 7 11 11 36 83 187 332 621 3,880 397	6 5 4 5 8 6 12 51 141 262 2,351 304	1 1 1 2 3 5 10 37 84 1,229 258			- - 4 1 2 - 1 101 84	111111111111111111111111111111111111111
Mothers	aged 35	-39	118									I was	
All	77,466	12,750	15,962	13,278	9,705	7,416	5,588	4,373	3,287	2,272	1,348	1,461	26
0- 8 mos. 9-11 ,, 0- yrs. 1- ,, 2- ,, 3- ,, 4- ,, 5- ,, 6- ,, 7- ,, 8- ,, 10- ,, 15- ,, 20-24 ,,	1,156 1,062 2,218 2,669 2,481 2,436 2,664 2,781 2,920 3,337 3,816 4,339 26,533 19,875 1,397	2,112 2,292 1,416 1,012 864 738 617 582 593 519 1,749 244 12	54 329 900 1,076 1,167 1,156 1,149 1,261 1,278 1,370 5,126 1,069 27	15 27 115 280 475 582 672 807 978 1,120 5,939 2,197 71	17 7 28 40 107 220 319 398 488 655 4,601 2,728 97	9 6 6 7 26 47 96 182 293 336 3,478 2,795 135	3 4 7 8 12 21 42 72 112 220 2,333 2,585 169	4 2 2 3 7 8 15 15 47 80 1,613 2,405 172	3 2 3 7 2 6 6 4 11 16 29 918 2,116 170	1 -4 3 4 6 7 7 7 469 1,623 142	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1,083	
Mothers	aged 40	and ov	er								8,935 4,935 8,935 8,935	2 8C1	8 -0
All	26,211	2,407	2,847	3,159	3,036	2,724	2,430	2,168	1,934	1,636	1,340	2,426	
0-8 mos. 9-11 " 0-yrs." 1- " 2- " 3- " 4- " 5- " 6- " 7- " 8- " 10- " 15- " 20- " 25- " 30 & over	318 210 528 520 452 462 435 437 425 464 501 613 4,252 9,667 6,470 973 12	498 445 266 183 126 117 87 71 64 68 292 160 28 2	111 644 1500 2055 1833 1500 14455 1229 1255 1466 7633 6377 1229 100	6 6 50 22 50 83 108 99 110 124 152 905 1,159 319 16	514	4 2 4 11 20 42 62 72 570 1,264 616 51 2	2 1 1 - 5 6 7 17 23 40 418 1,168 674 68	2 - 4 1 4 2 1 8 17 236 1,064 760 67 2	3 4 7 7 150 935 728 97	- 1 1 1 - - - 1 1 5 82 765 692 88 -	519 649	2 1 1 2 2 4 4 656 0 1,305	- - - - - 56 37

Table VI.—1940.

Marriage duration	L L	EGITIM	ATE MA	TERNIT	TES: th	e numbe	er of pront husba	evious cl	nildren	(surviv	ing, de		Mar
duration	Total	0	1	2	3	4	5	6	7	8	9	10-14	15 & over
Mothers o	f All A	ģes	46 a 34	k an		3 34	1	.0		450	65053	ļa 2161	Mors
0-8 mos.	56,644	252,428	145,052	75,030	40,540	23,769	15,055	9,718	6,297	4,255	2,822	3,845	116 u 8-0
9-11 ,, 0- yrs. 1- ,, 2- ,, 3- ,, 4- ,, 5- ,, 6- ,, 7- ,, 8- ,, 9- ,, 10- ,, 20- ,, 30 & over	38,139 94,783 82,969 61,614 53,518 45,406 38,018 31,033 25,286 22,146 19,787 65,475 29,195 8,766 916 15	93,627 69,858 32,697 20,365 12,493 7,788 4,951 3,153 2,198 1,522 3,242 489 42 3	968 12,514 26,005 25,121 20,656 16,027 11,698 8,193 6,276 4,820 10,787 1,806 176 5	115 500 2 655 7,116 9,598 9,461 8,487 7,064 6,101 5,359 14,581 3,512 456 25	33 56 184 768 2,270 3,694 4,147 4,196 4,012 3,833 12,408 4,173 741 24 1	15 20 34 92 303 859 1,340 1,885 2,187 2,409 9,443 4,256 862 64	11 11 24 26 54 129 321 594 956 1,212 6,871 3,850 934 62	9 5 9 15 16 34 68 151 301 456 4,221 3,377 990 64 2	2 2 5 12 9 16 14 31 125 2,183 2,754 980 82 1	2 1 1 2 5 6 4 1 9 18 33 1,048 2,037 987 101 1	1 	1 1 1 - 2 1 3 8 7 259 1,535 1,671 347 9	2 22 52 40
Mothers a	ged 16-	19	and In	4 DE	8 880	F WEE	2 118	ft #88.	41 Te	88.11	818,81	tions	ITA
All durations	22,350	19,782	2,401	154	12	1	Tes	-		-	ATT.	- 64 - 64	1 <del>1  </del> 0
0- 8 mos. 9-11 ,, 0- yrs. 1- ,, 2- ,, 3- ,, 4- ,,	14,138 2,755 16,893 4,155 1,108 190 4	16,777 2,770 220 15	112 1,357 802 126 4	4 26 79 45			11.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1	1 200 1 200		1			THE THEFT
Mothers a	ged 20-	24			4 1 955 4 1 955 8 1 955		1 12 E		A CONTRACTOR OF THE PARTY OF TH		Mels Mark	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	- St
All durations	136,105	90,877	32,600	9,560	2,443	508	86	26	2	2	1	-	<u></u>
0-8 mos. 9-11 ,, 0- yrs. 1- ,, 2- ,, 3- ,, 4- ,, 5- ,, 6- ,, 7- ,, 8- ,, 9- ,,	28,148 18,363 46,511 37,306 23,085 14,630 8,108 4,073 1,719 540 120	46,054 30,307 9,759 3,444 951 279 56 15 10 2	423 6,771 11,935 7,887 3,647 1,361 450 100 24 2	29 220 1,332 3,000 2,698 1,495 596 157 29 4	4 8 48 286 722 752 423 166 32 2	1 8 11 82 165 151 73 15 2	 2 1 8 18 30 19 8		- - - - 1			- 1259 A	· · · · · · · · · · · · · · · · · · ·
Mothers as	ged 25-	29	188	a a	1 34	121		1 201					To play to the
All durations	189,514	88,388	54,671	26,316	12,045	5,071	2,016	715	207	62	20	3	121
0-8 mos. 9-11, 0-yrs. 1-, 2-,, 3-,, 4-,, 5-,, 6-,, 7-,, 8-,, 9-,, 1J-14,	9,894 11,786 21,680 29,068 25,974 26,197 23,783 19,822 15,068 10,981 7,757 4,972 4,212	21,393 25,863 15,900 11,327 6,907 3,684 1,830 827 364 156 137	245 3,045 9,174 11,617 10,859 8,439 5,388 3,000 1,659 812 433	36 144 816 2,875 4,795 5,169 4,539 3,419 2,265 1,294 964	6 16 69 312 1,054 2,020 2,351 2,229 1,810 1,253 925	9 43 137 431 746 1,069 1,040 823 773	5 8 21 60 188 354 457 425 498	1 7 4 12 23 76 128 154 310	7 5 5 2 7 29 42 110	1 1 1 1 4 10 45	1 1 1 - - 1 3 14		-000 -000 -000 -000 -000 -000 -000 -00

# Table VI.—1940. (contd.)

duration	Total	0	1	2	3	4	5	6	7	8	9	10-14	15
10-14	lotai	1 8 9		2	2	1				0	(dinit		ove
lothers a	ged 30-	34								8.5 5	oga ii	6 74 m	Wik Tol
ll durations	133,100	39,082	37,701	23,359	13,802	8,469	5,230	2,859	1,472	685	283	158	-11
-8 mos11 ,, )- yrs. 1- ,, 2- ,, 3- ,, 4- ,, 5- ,, 6- ,, 6- ,, 7- ,, 8- ,, 9- ,, 9- ,, 5-19 ,,	3,039 3,898 6,937 9,303 8,710 9,666 10,638 10,961 10,996 10,457 10,494 10,452 32,206 2,280	6,763 8,220 5,294 4,435 3,766 3,037 2,371 1,760 1,302 831 1,272 31	115 969 3,060 4,217 4,886 4,915 4,623 3,902 3,316 2,678 4,881 139	28 72 297 858 1,559 2,107 2,570 2,668 2,841 3,003 7,094 262	11 21 37 113 348 678 1,033 1,355 1,668 1,916 6,313 309	11 10 9 27 53 179 316 552 847 1,156 4,930 379	5 8 8 11 14 30 61 162 351 585 3,645 350	2 1 3 3 5 7 17 40 128 210 2,147 296	1 1 1 2 2 6 5 12 32 50 1,142 218	1 1 1 4 2 - 2 7 15 488 164	1 1 4 1 5 196 76	- - - - - - 1 3 98 56	Sale Property and the property of the property
Iothers a	ged 35-	39				2 1×2.					21	1997	
ll durations	72,513	11,929	14,884	12,611	9,339	7,068	5,399	4,011	2,767	1,858	1,260	1,367	2
-8 mos11 ,, 0 - yrs. 1 - ,, 2 - ,, 3 - ,, 4 - ,, 5 - ,, 6 - ,, 7 - ,, 9 - ,, 0 - ,, 0 - 24 ,,	1,148 1,109 2,257 2,613 2,256 2,394 2,465 2,715 2,845 2,908 3,335 3,830 24,998 18,196 1,701	2,164 2,261 1,264 953 745 680 612 491 464 483 1,547 260 5	62 308 846 1,091 1,099 1,144 1,108 1,078 1,157 1,180 4,720 1,053 38	13 26 111 292 459 594 669 726 868 946 5,634 2,189 84	8 6 19 42 117 195 290 374 431 591 4,468 2,621 177	3 5 7 6 30 68 111 154 241 350 3,219 2,704 170	4 2 6 3 7 19 35 51 113 169 2,341 2,451 198	3 4 2 4 6 10 13 18 38 74 1,519 2,134 186	1 3 1 2 5 8 16 29 805 1,704 193	1 1 1 1 4 3 3 437 1,237 171	1 -2 2 2 2 180 885 188	1 1 2 2 2 3 1 128 944 285	
fothers a	ged 40	and over		- 1				24		12.35	891,81 53551	714	34
durations	25,345	2,370	2,795	3,030	2,899	2,652	2,324	2,107	1,849	1,648	1,258	2,317	
- 8 mos. 9-11 ,, 0- yrs. 1- ,, 2- ,, 3- ,, 4- ,, 5- ,, 6- ,, 7- ,, 8- ,, 9- ,, 0- ,, 5- ,, 0- ,, 0- ,, 0- & over	277 228 505 524 481 441 408 447 405 400 440 520 4,059 8,719 7,065 916	476 437 260 191 124 108 82 60 58 50 286 198 37 3	11 64 188 183 161 168 129 113 1120 148 753 614 138	5 12 20 46 87 96 113 94 98 112 889 1,061 372 25	4 3 4 12 29 49 50 72 71 71 702 1,243 564 24	-5 1 4 1 16 16 16 37 44 78 521 1,173 692 64 -	2 1 3 3 4 2 7 8 27 33 387 1,049 736 62	- 4 - 2 - 1 3 4 9 5 17 245 947 804 64 2	1 1 1 3 - 1 2 2 3 3 4 4 4 126 832 787 82 1	1 — 1 — 2 1 1 2 4 4 5 5 788 636 816 101 1 1	99	30 535 1,386 347	

Table VI.—1941.

Marriage duration	e id id kel	LEGIT	IMATE M	IATERN	ITIES:	the num	ber of pre	evious chand bein	nildren (	survivi	ng, dead	d or	attris.
duration	Total	0	1	2	3	4	5	6	7	8	9	10-14	15 & over
Mothers o	f All Ag	Control of the Contro	132,636	73,137	39,938	23,006	14,662	9,298	6,258	3,991	2,670	3,697	104
0- 8 mos. 9-11 ,, 0- yrs. 1- ,, 2- ,, 3- ,, 4- ,, 5- ,, 6- ,, 7- ,, 8- ,, 9- ,, 10- ,, 15- ,, 20- ,, 25- ,, 30 & over	43,363 34,491 77,854 99,594 60,139 46,580 40,828 35,208 29,671 24,797 20,665 18,303 66,362 29,869 9,880 873 11	77,094 88,371 33,381 17,584 11,487 7,596 4,779 3,223 2,064 1,465 3,589 537 65 2	635 10,723 24,316 22,039 18,479 14,359 10,843 7,914 5,788 4,430 10,899 2,001 204 6	70 387 2,230 6,207 8,635 9,017 8,446 7,174 6,079 5,110 15,177 3,990 598 17	23 62 151 661 1,930 3,349 4,067 3,683 3,529 13,072 4,530 907 "34	10 26 28 64 231 746 1,311 1,684 1,915 2,047 9,403 4,424 1,059 57	9 10 17 14 38 106 290 569 801 1,120 6,561 3,900 1,158 69	5 8 4 5 16 13 40 120 252 425 4,008 3,219 1,119 64	1 6 4 4 7 12 8 28 62 129 2,113 2,672 1,127 85	4 1 4 2 3 4 9 9 11 30 909 1,927 985 90 3	3 -2 4 3 5 4 11 383 1,239 911 101 1	1 - 2 2 4 6 7 246 1,389 1,688 346 6	
Mothers a	aged 16-	19	parat (		s i		63 P 18	(A)	18.6.17	.804.2	1 Ligs		utali
All durations	19,564	17,549	1,885	126	3	1	_	_	_	_	107		和·京村
0-8 mos. 9-11,, 0-yrs. 1-,, 2-,, 3-,,	10,493 2,875 13,305 4,998 1,087 168 6	13,219 4,017 291 22 —	85 974 731 94 1	1 7 65 48 5	_ _ _ _ _	= 1	1111			A STANSON AND A	401/10-6		
Mothers	aged 20-	-24								100 A 100 A			
All durations	139,702	97,893	30,557	8,665	2,075	428	75	4	4		1		403.70
0-8 mos. 9-11 ,, 0- yrs. 1- ,, 2- ,, 3- ,, 4- ,, 5- ,, 6- ,, 7- ,, 8- ,, 9- ,,	21,440 17,325 38,765 49,593 23,980 13,517 7,794 3,847 1,576 507 100 23	38,507 43,495 11,275 3,193 1,046 281 73 14 7	245 5,906 11,551 7,403 3,550 1,332 427 123 12 8	10 174 1,109 2,652 2,512 1,437 572 160 33 6	1 18 41 261 629 623 351 126 23 2	3 6 54 157 132 57 15	2 1 2 3 17 19 24 6	1112			THE PERSON		
Mothers	aged 25	-29			100				9		1 200		
All durations	176,914	84,042	49,156	24,732	11,403	4,764	1,904	639	189	64	14	7	1
0-8 mos. 9-11 ,, 0- yrs. 1- ,, 2- ,, 3- ,, 4- ,, 6- ,, 7- ,, 8- ,, 9- ,, 10-14,,	7,302 9,508 16,810 31,597 24,190 22,095 21,064 18,347 14,802 10,890 7,421 4,617 5,081	16,618 28,866 15,253 9,621 6,275 3,722 1,850 951 371 142 373	162 2,592 8,216 9,823 9,682 7,451 5,231 2,961 1,687 754 597	22- 113 663 2,388 4,115 4,882 4,585 3,430 2,298 1,219 1,017	5 14 51 236 867 1,847 2,259 2,208 1,610 1,097 1,209	2 8 4 25 111 388 709 957 938 763 859	1- 2 2 1 11 49 150 315 380 434 559		1 - 1 2 1 9 19 45 111		- - - - - - 1 3 10	- - - - - - - - - - - - - - - - - - -	

Table VI.—1941. (contd.)

Marriage duration -	go baob	LEGIII	MATE M.	ATERNI	TIES: tillborn) b	by presen	er of pre	nd being	ndren (s	HOLL)	is, dea	1	er i s i b
A & L	Total	0.	1	2	3	4	5	6	7	8	9	10–14	15 & over
others a	aged 30	-34	-							4	erse.	GA to	Today.
ll lurations	125,614	36,621	34,106	23,083	13,585	8,061	4,907	2,757	1,414	636	266	177	0/161
- 8 mos. -11 ,, 0- yrs. 1- ,,	2,693 3,445 6,138 9,771	6,007 8,830	95 857 2,799	16 55 261	8 15 34	5 9 10	4 2 9 5	2 7.5 2 7.5 3	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 2	2	- - 1	AND E
- 29 - 29 - 29 - 29 - 29 - 29 - 30 - 30 - 30 - 30 - 30 - 30 - 30 - 30	8,038 8,115 9,194 9,939 10,109	4,917 3,668 3,253 2,750 2,145	3,504 4,102 4,374 4,037	815 1,468 2,011 2,496	103 304 640 986	16 39 132 354	18 23 77	2 6 — 10	2 1 5 —	1. -3	2 3	1 1	
7- ", 3 3- ", 3 3- ", 3 3- ", 3 5-19", 3	10,069 9,571 9,660 32,276 2,734	1,643 1,160 835 1,341 72	3,689 2,986 2,523 4,935 205	2,729 2,767 2,808 7,279 378	1,306 1,527 1,755 6,517 390	483 709 944 4,941 419	165 284 517 3,411 392	40 97 205 2,072 320	12 29 62 1,053 247	2 7 7 446 167	2 4 179 74	101	- 1 -
2 82	Tean I	100	28 1 2									T RE	(0) %
Iothers all durations	aged 35	12,498	13,979	13,238	9,688	6,978	5,306	3,778	2,785	1,780	1,105	1,247	12
- 8 mos. -11 ,, 0- yrs.	1,102 1,166 2,268	2,209	33	13	6	2	1	1	8.3.1	248.C 1	#8 1		cilan:
1- ,, 2- ,, 3- ,,	3,019 2,377 2,236 2,312	2,626 1,358 894 753	328 872 1,026 970	32 110 248 441	10 22 48 106	2 8 9 10 24	6 3 6 5	1 2 8	5 - 1 4	1 2101	1	計二	
5- ,, 6- ,, 7- ,,	2,606 2,763 2,905	723 638 547 460	1,016 993 1,007 980	590 683 761 870	192 295 356 444	55 93 149 207	14 36 56 114	6 10 15 31	5 6 5 9	5 3 2	3	3 1 3 2	
8- ,, 9- ,, 10- ,, 15- ,, 20-24,,	3,120 3,511 24,791 18,598 1,888	427 1,591 251 21	1,008 4,562 1,135 49	959 5,993 2,418 120	594 4,588 2,840 187	286 3,080 2,837 218	142 2,198 2,489 236	1,390 2,036 213	19 796 1,716 218	341 1,223 189	153 778 161	98 865	1 10
Mothers	aged 40	0 and o	ver								104		013 3
All durations	26,446	2,634	2,953	3,293	3,184	2,774	2,470	2,120	1,866	1,511	1,28	4 2,266	91
0- 8 mos. 9-11 ,, 0- yrs. 1- ,,	333 235 568 616	534 537	15 66		5	1 1	1	-	-   - 1	2 1 1		()	-
2- ,, 3- ,, 4- ,, 5- ,,	467 449 458 469	287 186 160 120	147 189 174 186	56	10 24 47	1 2 6 3 14	$-\frac{2}{1}$			1	34		1 -
6- ,, 7- ,, 8- ,, 9- ,,	421 426 453 492	73 68 66 59	123 137	94 111 118	71 79 81	38 46 50	8 9 17 26	14	3 3	1 2 1	1 2 1	tion to	1 - 1 - 2 -
10- ,, 15- ,, 20- ,, 25- ,, 30 & over	4,214 8,537 7,992 873 11	2	661	1,194 478	1,300	1,168 841	393 1,019 922 69	863	709	533 796 5 90	7 38	37   45 50   1,41 01   34	4 3 5

# Table VI.—1942.

(See notes on first page of table)

Marriage	baeb :	LEGITI	MATE M	ATERN	ITIES:	the num	ber of pr	evious c	hildren		ing, dea	d or	TO THE STATE OF TH
duration	Total	0	1	2	3	4	odlizie v	6	7	8	9	10-14	15 & over
Mothers	of All A	ges											
All durations	628,241	288,236	158,986	78,220	40,690	23,240	13,945	9,282	5,909	3,843	06 bos	3,329	121
0- 8 mos. 9-11 ,, 0- yrs.	40,705 29,707 70,412		569	69	18	11	8	3	2	46,303	2,401	iong In	durati durati
1- ,, 2- ,, 3- ,,	89,897 88,419 59,704	81,630	7,959 27,725 25,776	253 1,884 5,789	31 134 591	9 32 67	5 14 17	3 6 8	3 7 4	2	\$\frac{1}{5} \frac{1}{6} \frac	1 2 1	0 yr
4- ,, 5- ,, 6- ,,	48,256 43,085 37,129	16,701 11,425 7,525	21,313 18,649 15,229	8,264 9,284 8,904	1,674 2,997 3,949	236 604 1,205	37 91 252	13 20 51	10 5 8	5 5 2 8	3 2 2	3 2	7000
7- ,, 8- ,, 9- ,,	30,740 25,092 20,861	4,808 3,143 2,153	11,224 8,142 5,678	8,226 6,921 5,792	4,081 3,906 3,638	1,681 1,936 2,077	569 768 976	112 207 398	27 49 121	8 11 18	08.4 20.5 8	4 2	
10- ,, 15- ,, 20- ,,	72,556 31,000 10,251	4,319 663 73	13,865 2,554 287	17,525 4,641 642	13,842 4,822 965	9,661 4,521 1,156	6,137 3,816 1,177	3,827 3,300 1,253	1,962 2,510 1,138	857 1,844 1,006	345 1,116 854	216 1,200 1,605	13
25- ,, 30 & over	826	_ 1		24 2	42	43	77	79	63	84	97	287	13
Mothers	aged 1	6-19				is la		2.64		PE-	ged 35	2 87	entro iv
All durations	18,660	16,983	1,586	83	8	2,1 31	5,01 80	37 [15,3]	18,6	15,221	2200	sos.	durai a <del>8</del> -4
0- 8 mos. 9-11 ,, 0- yrs.	9,973 2,485 12,458	12,395	63	8.	- 18.	4 21	25	150	2	1,996	281 2,057 2,978	2,4	1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-
1- ,, 2- ,, 3- ,,	4,788 1,225 185	4,031 517 38	745 665 111	12 41 30	- 2 6	1 20 20 20 20 20 20 20 20 20 20 20 20 20 2		2 - 22	1.2	1,246 1,246 209	\$28.5 \$28.5 \$200.5		1
4- ,,	4	2	2	88	100	2 T AL	2 XC 2 03 3 03	8 78	1.5	784	235.6		1
Mothers	aged 20	)-24		35   SE	12   24 26   24 27   24	10 1 10 10 10 10 10 10 10 10 10 10 10 10	99 46 84 51 83 29	150 150 150 250 150 250	6.0	547 2,088 342	4,248 8,455 8,435	1	· Property
		110,868	33,607	8,516	1,952	388	80	10	3	2	180	_	20-24
0- 8 mos. 9-11 ,, 0- yrs.	20,842 16,445 37,287	37,038	233	15	1	_	_		1997	o bas	04 b29	B BI	Morne
1- ',, 2- ',, 3- ',,	47,881 37,645 17,177	43,463 23,101 5,393	4,320 13,579 8,959	94 925 2,588	4 35 228	3 8	1 1 1	e.e1.		150.5	<u>51</u> 0,8	2 2001	ts <del>tub</del>
4- ,, 5- ,, 6- ,, 7- ,,	8,729 4,357 1,674 573	1,383 382 86 17	4,203 1,658 503 129	2,530 1,566 585 188	542 616 361 135	67 116 114 65	18 21 32	1 2 4 2		284 1	307 203 577 503	1080	2 2 -( 11-( 17-( 17-( 17-( 17-( 17-( 17-( 17
8- ,, 9- ,,	96 7	4	21 2	23 2	29	14	3	- 20		200 1 285	एकत इ.स.	= .	10000000000000000000000000000000000000
Mothers	aged 25	-29	- 1 1 2 2		249	1 83	140 20 20	1 100	1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	103	4010 610 5181		CONTRACTOR OF THE PARTY OF THE
All	195,938	95,810	57,426	24,725	10,846	4,544	1,717	594	214	40	823	9	中午中中
0- 8 mos.	6,070 6,884		140   158 151   151 151   151	8   (20) 0,1.   80	0.1   \$*	85.1 1.8 85.0 9	4.1 ST8	89 1,4	10 01	253	8,190 8,190 825		25-
0- yrs. 1- ,, 2- ,,	12,954 24,860 34,797	12,782 22,909 25,002	150 1,871 9,135	11 69 598	6 7 49	3 3 9	1 1 1	1			<u>81</u>	79%	2-08
3- ,, 4- ,, 5- ,,	28,303 24,739 22,010	14,907 9,333 5,736	11,036 10,830 9,552	2,120 3,752 4,764	208 717 1,610	27 88 307	17 35	1 3	1 1 3	=	=	=	=
6- ,, 7- ,, 8- ,,	17,742 12,666 8,179	2,936 1,311 523	7,086 4,118 2,068	4,641 3,808 2,484	2,222 2,152 1,695	693 926 912	140 297 383	23 45 96	9 17	1	=	1	=
9- ', 10-14',,	4,984 4,704	217 154	944 636	1,395	1,101 1,079	758 818	357 483	149 273	55 126	6 33	1 12	7	=

Table VI.—1942. (contd.)

Marriage	Base Age	LEGITIN	MATE M	ATERN	ITIES: tillborn)	the numb by prese	per of pront husba	evious ch nd being	ildren (	survivii	ng, dea	d or	Call Land
duration	Total	0	1	2	3	4	-5	6	7	8	9	10-14	15 & over
Mothers	aged 30	-34	1 miles							81	sa na Ka na	10 21X	ansolv Maraga
All durations	147,401	46,303	44,186	25,665	13,907	7,995	4,549	2,629	1,247	565	221	134	1 8 m
0- 8 mos. 9-11 ,, 0- yrs. 1- ,, 2- ,, 3- ,, 4- ,, 5- ,, 6- ,, 7  ,, 8- ,, 10- ,, 15-19,,	2,437 2,707 5,144 8,727 11,191 10,667 11,489 13,008 13,480 13,002 12,183 11,064 34,717 2,729	5,031 7,956 7,728 5,622 4,817 4,247 3,507 2,585 1,808 1,205 1,729 68	78 709 3,203 4,193 4,858 5,891 5,870 5,256 4,381 3,213 6,278 256	22 47 213 739 1,459 2,167 2,766 3,161 3,267 3,146 8,301 377	5 7 22 86 286 541 1,009 1,279 1,592 1,850 6,823 407	5 3 11 15 53 127 259 492 747 966 4,905 412	3 2 8 8 5 222 55 169 289 450 3,160 378	— 3 1 3 9 9 45 75 183 1,971 330	2 3 3 3 1 4 10 16 40 941 224	-1 -2 -3 6 7 404 138			
Mothers	aged 3	5-39											W
All durations	82 200	15,221	18,637	15,305	10,506	7,264	5,088	3,819	2,586	1,689	986	1,082	17
0- 8 mos. 9-11 ,, 0- yrs. 1- ,, 2- ,, 3- ,, 4- ,, 5- ,, 6- ,, 7- ,, 8- ,, 9- ,, 10- ,, 15- ,, 20-24 ,,	1,076 981 2,057 2,978 2,952 2,810 2,824 3,200 3,715 3,959 4,111 4,248 28,455 19,130 1,761	1,996 2,666 1,884 1,246 999 929 887 784 730 647 2,088 342 23	35 269 951 1,228 1,223 1,339 1,567 1,550 1,529 1,385 6,041 1,459 61	15 25 81 258 449 675 807 950 1,006 1,099 7,044 2,773 123	4 12 21 56 107 187 294 437 503 602 5,118 2,985 180	1 3 8 13 24 45 115 159 213 292 3,324 2,862 205	3 3 10 14 28 58 79 137 2,111 2,433 209	1 2 1 4 6 6 6 14 13 30 59 1,357 2,115 211	1 1 2 - 3 1 1 1 20 753 1,595 192		1 -1 -2 1 -2 3 4 167 683 122	1 -1 -1 -1 -1 -1 -1 -1 -2 7322 245	- - - - - - 7 10
Mothers	aged 4	0 and or	rer				3		9. 3. a	87,038	1000		
All durations	28,616	3,051	3,544	3,926	3,471	3,049	2,511	2,230	1,859	1,547	1,220	2,104	104
0- 8 mos. 9-11 ,, 0- yrs. 1- ,, 2- ,, 3- ,, 4- ,, 5- ,, 6- ,, 7- ,, 8- ,, 9- ,, 10- ,, 15- ,, 20- ,, 30 & over	307 205 512 663 669 562 471 510 518 540 523 558 4,680 9,141 8,490 826 13	489 605 382 244 167 131 109 111 78 83 348 253 50 1	10 45 192 249 197 209 203 171 143 134 910 839 226 16	6 6 6 26 54 74 112 105 119 141 150 1,097 1,491 519 24 2	2 1 5 7 22 43 63 78 87 84 822 1,430 785 42	2 -1 4 4 9 24 39 50 60 614 1,247 951 43 1	1 2 1 3 1 2 8 13 14 32 383 1,005 968 77	1 1 1 3 3 5 4 7 226 855 1,042 79 2	1 — 3 — 2 3 2 2 6 142 691 946 63 —	1 - - - 1 1 2 70 562 826 84	1 1 1 1 2 37 348 732 97 1	31 414 1,360 287	- - - - - - - - - - - - - - - - - - -

Table VI.—1943.

Marriage duration	heat yo	LEGITI	MATE M	ATERN	ITIES:	the num	ber of pr	evious c	hildren	(surviv	ing, dea	d or	sign.
duration	Total	0	1	2	3	4,	5	6	7	8	19	10–14	15 & over
Mothers o	of All A	ges								ASS	H. head	278 a	deets refs
All durations	652,386	295,697	176,724	80,175	40,030	22,636	13,530	8,718	5,688	3,537	2,399	3,146	106
0- 8 mos. 9-11 ,, 0- yrs. 1- ,, 2- ,, 3- ,, 4- ,, 5- ,, 6- ,, 7- ,, 8- ,, 9- ,, 10- ,, 20- ,, 25- ,, 30 & over	37,271 29,022 66,293 85,516 72,332 77,088 53,792 45,296 40,797 35,564 29,688 24,304 77,997 32,876 10,067 751 25	65,521 77,689 48,471 39,631 20,357 13,239 9,838 6,596 4,519 3,049 5,767 937 78 2	630 7,535 22,302 31,145 23,543 19,997 17,453 14,347 10,903 7,949 17,493 3,081 334 7	76 250 1,440 5,750 8,131 8,760 8,733 8,436 7,403 6,275 19,022 5,149 729 19	27 24 91 469 1,517 2,660 3,404 3,995 3,898 3,614 13,902 5,354 1,028 47	14 11 14 65 195 532 1,073 1,597 1,873 1,979 9,307 4,745 1,173 56 2	12 3 5 12 32 85 225 455 765 913 5,835 3,973 1,157 56	5 4 4 7 7 13 45 104 251 380 3,518 3,192 1,128 58 2	1 3 3 7 7 16 25 5 5 5 101 1,798 2,523 1,067 81	5 -1 1 1 1 5 3 1 3 3 827 1,659 905 86 1	1 5 2 2 2 5 9 338 1,121 841 72 1	2 — 1 — 2 3 4 3 5 186 1,126 1,565 246 3	4 16 62 21 3
Mothers	aged 16	-19	Side and	1.1.24	1 1 30	1 . 1 843	A 2 101			PE 25	254 <u>68</u>	Inexe	SAR HA
All durations	18,156	16,532	1,530	92	1	1		000,0			0.10	ranons nos 8 racs.	±0
0- 8 mos. 9-11 ,, 0- yrs. 1- ,, 2- ,, 3- ,, 4- ,,	9,439 2,736 12,175 4,639 1,139 198 5	12,110 3,866 505 50 1	64 758 593 113 2	1 15 41 33 2	三		44 BH F					11111	
Mothers	aged 2	0-24			A 1150		F 154			20,0 0 20,0 0	- 185t. P		01-1
All durations	162,581	115,993	35,596	8,619	1,873	400	79	16	4	1	10.1		00
0- 8 mos. 9-11 ,, 0- yrs. 1- ,, 2- ,, 3- ,, 4- ,, 6- ,, 7- ,, 8- ,, 9- ,,	19,093 16,732 35,825 49,582 34,090 25,314 10,525 4,659 1,829 610 129 18	35,528 45,286 21,870 10,568 2,128 477 101 30 2	284 4,190 11,499 11,906 5,088 1,872 562 157 30 8	11 102 687 2,658 2,729 1,578 632 190 25 7	1 1 33 171 531 607 365 140 24	2 1 11 49 111 141 60 25	1 1 - - 13 24 27 13 -	- - - - 1 3 5 7	112			2000 A	41411111
Mothers	aged 2	5-29		0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1					GRISS GRISS		1246 1256 1258		
All durations	189,041	90,491	59,037	23,400	9,654	4,097	1,569	557	167	60	5	4	
0- 8 mos. 9-11 ", 0- yrs. 1- ", 2- ", 3- ", 4- ", 5- ", 6- ", 7- ", 8- ", 9- ", 10-14",	5,128 5,886 11,014 20,051 24,729 34,474 26,364 22,293 18,176 13,373 8,861 5,019 4,687	10,850 18,402 17,790 19,730 10,835 6,346 3,644 1,695 761 268 170	133 1,571 6,491 12,575 11,369 9,992 7,648 4,812 2,575 1,114 757	17 68 417 1,974 3,474 4,367 4,383 3,643 2,497 1,396 1,164	6 6 29 171 600 1,302 1,798 2,058 1,652 1,044 988	5 1 21 75 249 587 868 872 673 745	2 - 2 10 34 96 245 375 341 464	1 3 1 — 3 17 42 111 145 234	1 - 3 8 17 29 109		1111114	1 1 1 1 1 1 4	

Table VI.-1943. (contd.)

Marriage	on AL	EGITIMA	TE MAT	ERNIT still	IES: the	number present l	of previ	ious chil being	dren (su	rviving	g, dead	or	120
duration	Total	0	1	2	3	4	5	6 .	7	8	9	10-14	15 & over
	aged 30	-34			Philas.			ol Sa		355	Capata	Twist.	STATE OF THE STATE
All	160,380	50,807	52,666	26,499	13,851	7,765	4,249	2,409	1,192	550	258	133	1
0- 8 mos. 9-11 ,, 0- yrs. 1- ,, 2- ,, 3- ,, 4- ,, 5- ,, 6- ,, 7- ,, 8- ,, 9- ,, 10- ,, 15-19,,	2,205 2,449 4,654 7,707 8,835 13,086 12,915 14,069 15,828 16,034 14,700 13,119 36,429 3,004	4,517 6,994 5,998 7,328 5,839 5,105 4,752 3,600 2,590 1,688 2,288 108	92 666 2,615 4,895 5,386 6,290 7,175 7,076 5,921 4,624 7,610 316	24 34 197 746 1,364 2,039 2,715 3,380 3,512 3,365 8,641 482	11 8 14 83 270 510 894 1,320 1,583 1,837 6,831 490	5 4 6 20 42 100 219 500 695 968 4,772 434	3 -1 6 9 20 60 119 272 410 2,978 371	2 1 2 5 1 4 6 29 99 160 1,799 301	2  4 1 5 7 24 54 874 221		3 - - - 1 1 4 4 169 80	- - - - 1 2 - - 69 61	1
Mothers	aged 35	-39											
All durations	91,695	18,183	23,606	17,155	10,902	7,274	5,033	3,537	2,502	1,538	968	982	15
0- 8 mos. 9-11 ,, 0- yrs. 1- ,, 2- ,, 3- ,, 4- ,, 5- ,, 6- ,, 7- ,, 8- ,, 9- ,, 10- ,, 15- ,, 20-24,	1,025 995 2,020 2,858 2,887 3,339 3,415 3,703 4,382 4,901 5,332 5,518 31,723 20,001 1,616	1,946 2,536 1,867 1,619 1,351 1,168 1,190 1,131 1,051 991 2,823 493 17	42 288 924 1,383 1,460 1,599 1,864 2,085 2,160 2,007 7,971 1,757 66	15 24 76 283 463 652 867 1,060 1,207 1,343 7,979 3,052 134	5 6 10 37 104 205 294 398 552 632 5,232 3,277 150	2 4 5 10 19 53 103 146 240 310 3,231 2,965 186	6  2 4 9 16 37 54 76 134 2,013 2,481 201	2 -1 1 2 5 3 14 17 24 66 1,237 1,966 200	16 694 1,571	1 -1 -1 1 1 3 3 1 1 5 11 326 1,062 126	12 69	2 1 1 1 7 8 6 6	2 2 6
Mothers	aged 4	and ov	er		To be			1 4/81	1 85	1		1 C.A.	
All	s 30,533	3,691	4,289	4,410	3,749	3,099	2,600	2,199	1,82	1,388	1,16	8 2,02	7 90
0- 8 mos. 9-11 ,, 0- yrs. 1- ,, 2- ,, 3- ,, 4- ,, 5- ,, 6- ,, 7- ,, 8- ,, 9- ,, 10- ,, 15- ,, 25- ,, 30 & ove	224 605 679 652 677 568 572 582 646 630 5,158 9,871 8,451 751	151 140 115 99 486 336 61 2	1,155 1,008 268	7 22 56 99 124 136 162 163 1,238 3 1,615 3 593 7 19	3 5 6 12 36 5 3 79 2 87 101 851 1,587 878	2 10 19 23 23 41 28 559 1,346 987	380 1,121 956 56	1 1 1 1 1 2 4 92 92 5 5	0   12 8   12 5   73 8   87 8   8	3 — — — — — — — — — — — — — — — — — — —	1 — 3 — 3 — 3 — 3 — 3 — 3 — 3 — 3 — 3 —	1 — 1 — 388 39 15 39 10 1,33	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$

Table VI.—1944.

Marriage duration	dead o	LEGITI	MATE M	ATERN	ITIES: stillborn)	the numl	ber of prent husba	evious cl	nildren	(surviv	ing, dea		ris M dora
1990	Total	0	1	2	3	4	5	6	7	8	9	10-14	15 & over
Mothers	of All A	ges	14							3.6	ed 30	) 8 ans	MEDIE
All durations	706,615	288,357	210,486	99,256	46,559	24,722	14,312	8,697	5,463	3,548	2,161	2,946	108
0- 8 mos. 9-11 ,, 0- yrs. 1- ,, 2- ,, 3- ,, 4- ,, 5- ,, 6- ,, 7- ,, 8- ,, 9- ,, 10- ,, 15- ,, 20- ,, 25- ,, 30 & over	37,746 29,818 67,564 79,719 68,916 67,127 74,130 53,243 44,161 40,800 35,511 30,355 95,688 38,165 10,444 770 22	66,637 71,779 43,809 31,440 26,955 14,025 9,444	767 7,650 23,566 30,162 35,237 24,699 19,262 16,924 13,471 10,334 23,798 4,191 407 16 2	103 248 1,423 5,074 10,181 10,883 10,440 10,355 9,290 8,270 25,053 6,960 938 35 3	26 26 87 387 1,495 2,968 3,696 4,260 4,501 4,423 16,771 6,668 1,201 50	12 9 19 41 204 531 1,050 1,561 1,930 2,232 10,291 5,515 1,279 45 3	7 4 4 12 35 99 207 435 745 942 6,225 4,304 1,217 76	3 2 1 5 10 24 45 96 229 342 3,490 3,240 1,133 74 3	1 1 2 2 8 6 6 7 19 52 99 1,751 2,449 973 91 2	4 -2 3 3 6 5 4 13 28 810 1,662 934 73 1	3 -2 1 1 -2 2 2 5 9 308 1,006 757 65	1 - 1 - 1 2 3 3 1 5 5 5 185 1,077 1,440 218 7	11-0 11-0 11-0 11-0 1-0 1-0 1-0 1-0 1-0
Mothers	aged 16	-19	3330	E.E. CO	1.8 BS	2,87	38 1135	15 22,0	1,081	19,386	7,925	ions Li	dura
All durations	17,727	16,071	1,567	82	6	1	+ 60	+ 14	_	08 <del>8,t</del>	1,030 1,030 1,000	7808	0-18 m 9-11 0-11
0- 8 mos. 9-11 ,, 0- yrs. 1- ,, 2- ,, 3- ,, 4- ,,	9,156 2,770 11,926 4,520 1,103 165 13	11,853 3,743 439 32 4	71 764 613 113 6	2 13 48 16 3		- 044 - 044 - 044	87 H 28 H	00 00 00 00 00 00 00 00 00 00 00 00 00		7,432 1,500 1,500 1,500 1,501 1,501 1,611	12.138 12.138 12.139 13.139 14.14 14.14 14.14 15.14 16		如何是自身在京
Mothers	aged 20	-24		20 1 2 1 20 1 2 1	, 1989 (4)	00 00 00 00 00 00 00 00 00 00 00 00 00	950 (5)	75   100 100 100 100 100 100 100 100 100 100		Pa Pa	3,350 1,350 10,782		159-20-24
All durations	174,745	118,497	43,539	10,098	2,105	417	69	15	2	3	reo.bs		-
0- 8 mos. 9-11 ,, 0- yrs. 1- ,, 2- ,, 3- ,, 4- ,, 5- ,, 6- ,, 7- ,, 9- ,,	19,654 17,240 36,894 47,693 36,802 26,194 17,268 6,560 2,383 773 157 21	36,517 43,070 22,860 10,677 4,466 740 137 21 7	342 4,515 13,178 12,978 8,676 2,827 791 192 32 8	31 106 739 2,380 3,540 2,115 874 258 50 5	3 2 23 152 534 756 412 184 35 4	1 -1 5 50 110 140 91 19	1 2 10 26 19 9 2	1 1 2 3 6 3 	2	1 - 2	02 33 3 3 1 3 4 1	2000	Mathania de Maria de
Mothers	aged 25-	29	5	161	4-8	188	1 20	Sio 2	10000	11 11	945 985 9304		100
All durations	191,496	80,663	67,192	26,968	10,339	4,082	1,511	510	163	49	13	6	10-1-
0- 8 mos. 9-11 ,,	5,173 6,139	11.00	7	96	7.4	l oa	35	2 2			822 7.01	2540	25-0- 30 &
0- yrs. 1- ,, 2- ,,	11,312 17,237 20,030	11,091 15,730 13,412	183 1,438 6,224	25 61 362	9 6 24	2 2 5	$-\frac{2}{1}$			=	=	=	
3- ,, 4- ,, 5- ,,	26,538 35,767 25,510	13,774 13,811 6,446	11,010 17,022 12,183	1,615 4,275 5,227	124 584 1,353	12 63 253	3 10 41	1 7	=	= /	=	_1	=
6 7 8 9	19,278 14,873 9,952 5,763	3,369 1,755 811 264	8,332 5,606 3,057 1,277	5,003 4,421 2,929 1,714	1,946 2,044 1,830 1,282	527 790 858 751	84 212 354 308	15 43 97	1 2 14 36	1 2	=.	=	
10-14,,	5,236	200	860	1,336	1,137	819	496	123 224	36 108	40	12	1 4	=

# Table VI.—1944. (contd.)

Marriage duration	ng, dead	LEGITIM	ATE MA	TERNI's	TIES: th	by preser	r of pre	vious ch	ildren (:	survivir	ng, dead	l or	Mark
0-14 15 3	Total	0	.1	2	3	4	5	6	7	8	9	10–14	15 8 ove
Aothers	aged 30	-34								83	a tta	10 21	Magr.
ll durations	181,147	49,765	62,799	34,363	16,454	8,569	4,563	2,466	1,234	552	236	145	i
- 8 mos11 ,, 0- yrs. 1- ,, 2- ,, 3- ,, 4- ,, 5- ,, 6- ,, 7- ,, 8- ,, 9- ,, 3-19 ,,	2,351 2,555 4,906 6,903 7,818 10,414 16,130 16,298 17,117 18,744 18,191 16,676 44,539 3,411	4,747 6,246 5,110 5,141 6,810 5,375 4,488 3,973 3,041 2,102 2,639 93	121 599 2,500 4,419 7,320 7,575 7,893 8,368 7,466 6,012 10,164 362	21 44 182 772 1,679 2,621 3,454 4,226 4,625 4,558 11,612 569	8 9 17 66 246 578 941 1,508 1,936 2,243 8,324 578	4 3 9 12 55 111 260 489 754 1,111 5,219 542	4 2 - 2 10 24 61 141 267 435 3,203 414	1   3 5 16 31 82 155 1,848 325		2 2 2 4 1 1 2 10 386 144	1 1 4 147 84	1 1 1 74 69	A THILLING
Mothers	aged 35	-39	To a	-   20	-   24	1.05	28	2 91			22	757	35.1
All durations	107,925	19,386	30,115	22,218	13,206	8,226	5,503	3,540	2,390	1,527	868	936	1
0-8 mos. 0-11 ,, 0- yrs. 1- ,, 2- ,, 3- ,, 4- ,, 5- ,, 6- ,, 7- ,, 8- ,, 10- ,, 15- ,, 20-24 ,,	1,037 930 1,967 2,735 2,534 3,169 4,274 4,681 5,694 6,462 7,065 39,711 23,559 1,787	1,889 2,432 1,575 1,500 1,585 1,301 1,271 1,244 1,263 1,171 3,558 576 21	41 270 867 1,374 1,937 1,894 1,991 2,483 2,654 2,771 11,238 2,501 94	23 18 71 245 587 778 944 1,285 1,511 1,780 10,491 4,304 181	4 8 17 33 112 232 328 440 611 761 6,296 4,180 184	3 4 3 8 32 49 100 160 255 321 3,649 3,408 234	1 1 1 5 11 22 31 56 99 179 2,167 2,720 210	2 1 - 2 5 8 8 13 40 54 1,181 2,010 216	1 1 - 4 1 2 2 8 14 15 618 1,548 178	1 - 1 1 - 2 3 6 9 312 1,047 145	2 2 2 2 5 2 118 612 124	2 2 2 2 4 2 83 650 193	
Mothers		and ov									145 p		d a
0-8 mos. 9-11 ,, 0- yrs. 1- ,, 2- ,, 3 ,, 4- ,, 5- ,, 6- ,, 10- ,, 115- ,, 20- ,, 30 & over	375 184 559 631 629 647 678 588 702 716 749	3,975 540 558 413 316 279 163 179 150 148 132 609 409 74 4	5,274 9 64 184 268 276 220 255 275 262 266 1,536 1,328 313 16	21 46 97 142 165 175 213 1,614 2,087 757	2 1 4 8 1 19 6 6 6 6 8 8 8 8 8 8 8 8 13 3 1,01 4 7 1,910 7 1,017 7 5 5 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	3,427 2  4 4 8 23 31 44 49 604 1,565 1,045 45 3	2,666  1 2 1 2 2 5 7 16 18 359 1,170 1,007 76	1 1 1 2 3 3 3 7 10 237 905 917	2 2 - - - 6 3 7 102 2 102 6 671 7795 91	1 3 72 471 789 73	1 — 2 — — — — — — — — — — — — — — — — —	2 2 3 3 3 1,24 21	1 - 1 - 1 - 1 - 1 1 1 4 8 7

Table VI.—1945.

Marriage duration	57 DEST.	LEGITI	MATE M	ATERNI	TIES:	the number of the	ber of prent husba	evious cl	hildren	(survivi	ng, dea	d or	Mician
duration	Total	0	. 1	,2	3	4	5	6	7	8	90	10-14	15 & over
Mothers o	f All A	ges								8.0	PAGIN	100 S F 20	nérfécs?
All durations	626,191	255,021	185,132	88,989	41,666	21,946	12,816	7,740	4,943	3,149	2,041	2,644	104
0- 8 mos. 9-11 ,,	38,176 33,161	37,690 32,762	405 364	47 19	17	8 7	5	1	0 _	2	1	10	11. <del>1</del>
0- yrs. 1- ,, 2- ,,	71,337 69,747	70,452 62,220	769 7,204	66 264	23 32	15 16	6 8	1 2		2 1	1	_2	
3- ,,	53,291 53,966 52,971	31,928 24,476 19,187	19,892 24,780 25,087	1,357 4,311 7,342	84 330 1,187	17 45 145	5 11 17	1 6 4	2 4 1	3		- 3 - 1	
5- ,, 6- ,, 7- ,,	58,539 41,425 34,442	16,829 8,680 5,809	27,447 18,187 14,164	10,988 9,897 8,834	2,669 3,474 3,744	484 935 1,382	83 188 382	23 39 94	7 12 26	7 10 3	1 2 2	1 1 2	
8- ,,	30,748 27,370 86 133	4,420 3,269 6,596	11,529 9,508 22,033	8,297 7,397 22,629	3,897 4,003 11,734	1,680 1,877 9,081	653 871 5,507	209 319 2,900	47 82 1,481	10 37 720	2 5 291	3 2 157	1
15- ,,	35,804 9,484	1,067	4,094 417	6,659 906	6,329 1,092	5,013 1,180	3,889 1,107	3,009 1,048	2,275 906	1,487 777	1,003	971 1,253	8 60
25- ,, 30 & over	911 23	1	19 2	40 2	66 2	72	88	82	99	92	76 2	243	31
Mothers a	ged 16-	19	ost, is	(S,C) 2.4	4.7 2.5	25. hg	1,2,8 (6,8)	35 25	LAIRS S	1181384	i de la casa de la cas	\$2 p.gr.00	aprop 5
All durations	16,994	15,383	1,532	77	2		+ + 1				trase		uka-1
0- 8 mos. 9-11 ,,	8,966 2,894	8,930 2,859	32 33	4 2	二二。	= 100	士	土	=	10 - 10 - 10 - 10 - 10 - 10 - 10 - 10 -		=	- L
0- yrs. 1- ,, 2- ,,	11,860 3,973 975	11,789 3,188 353	65 775 577	6 10 44	_ 		王	十五章	三	81.1 81.1 00.1	111	E	_
3- ;; 4- ;;	174 12	45 8	111	17	_ î	二二次	+ <del>-</del> -8		=	1	144		
1			100							26220 26220	1 9968		40
Mothers			10 1011					100		4	A CONTROL	i di	(40+0s
durations 0-8 mos.		105,653	37,538 157	8,592	1,778	340	74	13	4	er human	0.00		areas :
9–11 ,, 0– yrs.	18,871 38,688	18,702 38,351	161 318	5 12	-4	3 3 2	=	Ξ		=	=		=
2- ,,	39,817 28,450 22,649	35,657 16,734 9,441	4,055 11,016 11,035	673 2,037	26 124	1 12			=	=	-	-	
4- ,, 5- ,, 6- ,,	13,591 7,491 2,444	3,872 1,355 196	6,714 3,346 836	2,566 2,093 836	401 584 433	34 89 116	20 20	4 5	=	50E	111		
7- ,,	683 149 30	33 8 6	170 38 10	219 51 6	161 33 8	65 18	30	41	1	14— 18—	1	=	-
<del>3-</del> "	30		100	- 1	-	109.0					SAU SAU		1
	aged 25	-29	104			100	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	28		经	\$692. \$602.		- FE
All durations	168,674	71,553	58,937	23,710	8,959	3,579	1,286	442	153	40	13	2.	101
0- 8 mos. 9-11 ,,	5,752 7,431	5,615 7,312	117 108 225	15 5 20	3 3	2 1	1	<u> </u>	=	=	555 1		-4°
0- yrs. 1- ,, 2- ,,	13,183 16,671 15,422	12,927 15,091 9,686	1,489 5,338	76 374	6 8 19	3 4 4	- 1 - 2	_1 _1	ACCUPANT SERVICE	Mesot policio suscessi	$-\frac{1}{1}$	Raylangunar cons	Annie (augs)
3- ,, 4- ,, 5- ,,	20,473 24,993 29,489	10,015 9,763 8,436	8,892 11,706 14,114	1,448 3,000 5,376	106 462 1,307	11 60 223	1 - 29	- 1 4	1 1	=		=	=
6- ,,	18,449 12,496 8,301	3,223 1,406 634	7,994 4,708 2,539	4,848 3,627 2,488	1,778 1,802 1,467	498 725 763	90 178 297	15 47 89	1 3 22	$-\frac{2}{1}$	=	=	=
9- ;; 10-14;,	4,782 4,415	210 162	1,157 775	1,369 1,084	1,467 1,044 960	592 696	267 421	99	35 91	8 29	1 10	1	=
Contract State of												1	

Table VI.—1945 (contd.)

Marriage	ac BUILT	LEGITIM	ATE MA	TERNI	TIES: tl	ne numb	er of pre	vious chi	ildren (s	urvivin	g, dea	d or	erataka Siphik
duration	Total	0	1	2	3	4.	5	6	7	8	9	10-14	15 & over
Mothers	aged 30	-34		E 124 I	our la	972 6 18		1881				o Hon Edisa	o de restant
All durations	155,895	40,946	54,158	30,624	14,586	7,513	4,132	2,050	1,030	508	217	128	3
0- 8 mos. 9-11 ,, 0- yrs. 1- ,, 2- ,, 3- ,, 4- ,, 5- ,, 6- ,, 7- ,, 8- ,, 9- ,, 10- ,, 15-19,,	2,293 2,712 5,005 6,172 5,656 7,551 10,536 16,566 15,379 15,710 15,912 14,933 39,314 3,161	2,211 2,656 4,867 5,519 3,399 3,588 4,187 5,450 3,917 3,189 2,585 1,832 2,339 74	60 45 105 581 2,047 3,315 4,897 7,809 7,144 6,961 6,375 5,372 9,208 344	9, 5, 14, 52, 174, 562, 1,204, 2,623, 3,170, 3,711, 4,207, 4,069, 10,333, 505	7 3 10 10 19 64 208 547 872 1,286 1,761 2,074 7,170 565	3 3 6 9 13 33 106 222 421 649 960 4,602 486	3 3 3 4 4 4 7 24 44 110 236 428 2,878 391			2 - 3 1 - 2 15 342 143		18	1 2
Mothers	aged 3	5-39						atilia s da abi				2	FIX 6
All durations	98,154	17,553	27,547	20,466	12,042	7.294	4,821	3,213	2,141	1,388	865	808	16
0-8 mos. 9-11 ,, 0- yrs. 1- ,, 2- ,, 3- ,, 4- ,, 5- ,, 6- ,, 7- ,, 8- ,, 9- ,, 10- ,, 15- ,, 20-24,	1,026 1,027 2,053 2,460 2,250 2,540 3,201 4,289 4,408 4,856 5,647 6,745 36,348 21,609 1,748	3,431 579	30 12 42 252 764 1,166 1,496 1,917 1,920 2,075 2,328 2,668 10,477 2,342 100	10 1 11 20 62 212 469 748 902 1,102 1,366 1,739 9,633 4,007 195	12 28 91 181 319 416 555 743 5,690 3,795	3 2 2 8 14 58 79 141 192 280 3,199 3,086 230	1 -1 2 -4 5 6 29 49 99 143 1,881 2,399 203	2 8 7 17 29 50 1,036	2 - 2 4 7 9 15 532 1,407	2 1 - 2 5 5 2 4 11 296 917 148	10000	1 1 2 2 2 6 6 5 5 8	2   -   -   -   -   -   -   -   -   -
Mothers	aged 4	0 and ove	er			podii.	· Property in	d Sugar		go, ti	A. D	1 2 573	
All duration  0- 8 mos. 9-11 ,, 0- yrs. 1- ,, 2- ,, 3- ,, 4- ,, 5- ,, 6- ,, 7- ,, 8- ,, 9- ,, 10- ,, 15- ,, 20- ,, 30 & ove	322 226 548 654 538 579 638 704 745 697 739 880 6,056 11,034 7,736	310 220 530 589 348 268 234 4 222 202 7 137 9 131 129 664 414 414 61 61	261 270 261 293 250 249 301 1,577 1,400 31	2 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	2 — — — — — — — — — — — — — — — — — — —	1 1 4 8 20 30 58 45 45 45 1,441 950 72	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		2 2 2 2 1 5 3 4 4 8 8 1 1 101 7 652 7 743		22	1	1 1 1 222 239 1

# Estimates of Married Women Exposed to Risk of Fertility at various Durations of Marriage.

1. Under the present fertility tabulation scheme, the legitimate maternities of each calendar year are analysed by age of mother at maternity and duration of marriage (Tables OO-SS); and if the information is to be of statistical value it is necessary to express them in the form of rates by relating them to the sections of the population responsible for them, i.e., the numbers of married women (or, preferably stated, the numbers of years of their married life) exposed to risk. The rates are of sufficient importance in a fertility study to justify going to some length in an endeavour to obtain satisfactory estimates of such exposed to risk—at least for the earlier marriage durations, say up to 10 years.

For a critical expression of the said rate frequencies it will usually be desirable to calculate them (in the form of maternities per year of married life) to not less than 3 decimal places, and since the maximum frequency likely to be encountered may be as much as .500 or even more, an error of more than 1 in 500 or 2 per thousand in either the number of maternities or in the estimate of exposed to risk may affect the accuracy of the rate. It will not ordinarily be possible to ensure precision of this degree but, as a target to be aimed at, it will be useful as a guide in determining the elaboration of the construction processes.

- 2. Incompleteness in the recorded maternities.—As regards the maternities themselves, experience has shown that in a proportion of cases, at first rather more and now rather less than 1 per cent., the mother's age or duration of marriage or both are not recorded at registration. This amount of omission is not inconsistent with the circumstances of registration in view of the inclusion, amongst the informants qualified to register a birth, of persons not possessing the requisite knowledge of the mother's personal history; omissions in such conditions would not be likely to introduce distributional bias and the incorporation of the "not stated" cases with the remainder in accordance with an orderly rateable distribution scheme should complete the record without introducing significant error.
- 3. Married Women exposed to risk.—The exposed to risk embrace married women who have not contributed to the maternities as well as those who have, and for their combined measure, the primary data available are the marriage records of successive calendar periods. In identifying the marriages contributing to the various exposed to risk, it may be noted that the basic cohort of married women responsible for maternities at durations of less than a year in the total fertility experience of any given calendar year, is also responsible for the maternities at durations between 1 and 2 years in the experience of the following calendar year, at durations 2–3 years in the next calendar year and so on; so that when an exposed to risk at durations under 1 year is ascertained, the sequence of exposeds at advancing durations in successive calendar years is automatically available, subject only to slight modification to allow for survivorship mortality and migration. It will thus be sufficient at the outset to limit consideration to durations of less than 1 year.
- 4. In the maternity analyses by duration, published for calendar years from 1938, the intervals identified proceed by single months during the 1st year of marriage, by quarters during the 2nd year, by single years up to 9- and by quinquennial periods thereafter. They are, however, to be interpreted in the light of the head note to Table OO, which shows that the duration grouping

employed corresponds more nearly to the following continuous and mutually exclusive interval periods,

First year	Second year	Third to tenth year
0- ½ m.	$11\frac{1}{2}$ $-14\frac{1}{2}$ m.	1 yr. 11½ m2 yr. 11½ m.
$\frac{1}{2}-1\frac{1}{2}$ m.	14½ 17½ m.	$2 \text{ yr. } 11\frac{1}{2} \text{ m.} -3 \text{ yr. } 11\frac{1}{2} \text{ m.}$
$1\frac{1}{2}-2\frac{1}{2}$ m.	$17\frac{1}{2}$ $-20\frac{1}{2}$ m.	etc.
distretc. builties	$20\frac{1}{5}$ $-23\frac{1}{5}$ m.	

and it is these durations for which the exposed to risk are required. It is hardly necessary, however, to provide for separate monthly intervals during the first year of marriage since in nine out of the twelve the maternities proceed from pre-marital conceptions and are therefore of minor interest in a study of legitimate fertility by marriage duration; major interest will be satisfied with 3 monthly interval estimates of the exposed to risk during the first year of marriage, the choice being governed partly by the fact that these are required as the basic element in the exposeds for the quarterly intervals of the second year of marriage in the succeeding experience year.

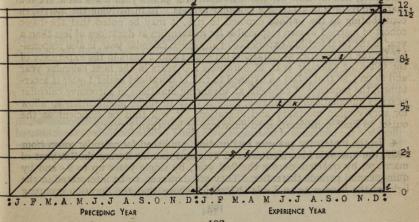
The primary problem is thus to compute exposed to risk for the separate marriage durations  $0-2\frac{1}{2}$  m.,  $2\frac{1}{2}-5\frac{1}{2}$  m.,  $5\frac{1}{2}-8\frac{1}{2}$  m.,  $8\frac{1}{2}-11\frac{1}{2}$  m., and  $11\frac{1}{2}-12$ m. in respect of each calendar maternity experience year from 1937, and such aggregations of these intervals for calendar years prior to 1937 as is necessary for the highest single year duration (viz., 8 yrs.  $11\frac{1}{2}$  m. to 9 yrs.  $11\frac{1}{2}$  m.) identified in the 1938 fertility experience, the latter requirement necessitating the computation of exposeds at durations  $0-k1\frac{1}{2}$  m. and  $11\frac{1}{2}-12$  m. in years back to 1929 inclsuive.

5. Exposed to Risk at all ages combined.—It will be convenient to examine the problem for all ages combined before proceeding to the distribution by ages or groups of ages.

It will be readily seen that a woman married at a date within any calendar year will spend part of her first year of married life in the calendar year in which the marriage takes place and part in the succeeding calendar year. Or to put it the other way, the exposed at durations under 12 months in any calendar year's fertility experience is furnished partly by the women married in the experience year and partly by those married in the preceding year.

The contributions of the various sections of married women involved to the relevant durations requiring identification will be best appreciated from the following diagram (P).

## DIAGRAM P



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The square abcd represents the total exposure at durations of less than 12 months in the fertility experience year and it is divided by the thick horizontal rules into its component durations  $0-2\frac{1}{2}$  m.,  $2\frac{1}{2}-5\frac{1}{2}$  m.,  $5\frac{1}{2}-8\frac{1}{2}$  m.,  $8\frac{1}{2}-11\frac{1}{2}$  m., and  $11\frac{1}{2}-12$  m. A woman married on 1st January of the experience year traverses the square diagonally, starting at a (0 duration) and reaching c (12 m. duration) at the end of the year; and the contribution of all the January marriages to the successive durations will be represented by the areas aefg, fghk, hklm, lmnop, and noc.

6. From this it can be seen that the number of quarter years exposure in the experience year at each of the successive durations will be obtained by aggregating the marriages of successive months in the following way.

Duration

Exposure (in quarter years)

- 0-2½ m.  $\frac{5}{6}$  of marriages in the 12 plus  $\frac{19}{2}$  October +  $\frac{19}{2}$  November +  $\frac{19}{2}$  months prior to October of experience year of experience year fractions of same months in preceding year.
- 2½-5½ m. All marriages in the 12 plus  $\frac{23}{4}$  July +  $\frac{16}{24}$  August +  $\frac{8}{24}$  September months prior to July of experience year minus similar fractions of same months in preceding verr.
- 8 $\frac{1}{2}$ -11 $\frac{1}{2}$  m. All marriages in the 12 plus  $\frac{2}{3}$  January +  $\frac{1}{2}$  February +  $\frac{2}{3}$  March +  $\frac{1}{2}$  April of experience year minus similar fractions of same months in preceding year.
- 11½-12 m. doing of marriages in the 12 plus 1/24 January of experience year minus 1/24 January of preceding year.

  January of preceding year.

7. The validity of the numerical coefficients used in these formulæ depends upon the assumption that the marriages of a month take place on average at the middle of the month and is certainly good enough for estimates within the permissible margin of error.

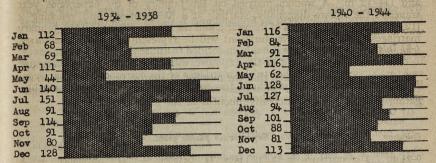
The marriages of England and Wales, however, have not hitherto been tabulated by months\*, but only by calendar quarters, and though the formulæ would be somewhat simplified if consideration were limited to quarterly records, reliance upon an assumption that a quarter's marriages take place on average at the middle of the quarter would be less acceptable since such assumption is contrary to general knowledge of such events.

8. Some light upon the position is provided by the following diagrams which illustrate the incidence of marriages in Scotland (where the records are tabulated by months) both for pre-war and war years; they also provide comparisons between the quarterly incidences in England and Wales and in Scotland.

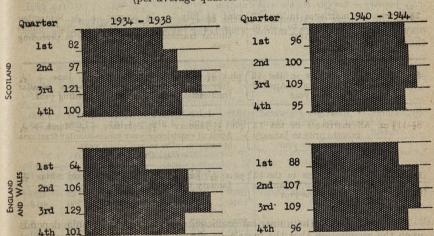
### DIAGRAM Q.

Monthly Incidence of Marriages. Scotland.

(Ratio of monthly daily average to yearly daily average, taken as 100)



Quarterly Incidence of Marriages. England & Wales and Scotland, (per average quarter taken as 100)



The monthly Scottish distribution illustrates the tendency for marriages to be concentrated at festival and holiday periods, the high incidence at Christmas, New Year, Easter and especially the midsummer months standing out in strong contrast with that of other months. The experience is similar in general respects to that observed in other countries where this type of information is available.

Evidence of these concentrations is entirely suppressed in the succession of quarterly records, from which the impression is rather that of a steady cyclical rhythm between a minimum at the early months of the year and a contrasting maximum after midsummer, an impression which derives from the Scottish quarterly record no less than from that of England and Wales. Moreover, comparison of the quarterly incidence of pre-war and war periods suggests that the seasonal variations were greatly reduced during the war years, whereas reference to the monthly records of Scotland shows, that, whatever the gross effect on the quarters may have been, the characteristic festival and holiday concentrations persisted in a marked degree.

<sup>\*</sup> Arrangements are being made for this to be done in future.

The only indication of special concentration in the published England and Wales records of successive years is that associated with Easter, in respect of which there is an obvious transfer of marriages from the 2nd to the 1st quarter in those years in which Easter falls in March; but from general administrative experience as well as the records of other countries there is little doubt that concentrations do occur in England and Wales in much the same general way as they do in Scotland.

9. In these circumstances it has been decided to utilize the Scottish incidence\* to determine the weighting of the exposure within each quarter of marriage and to assume that it applies to the marriages of the corresponding quarter in England and Wales. The weight factors required each year from the monthly marriages are given by the following fractions.

10. The process of estimation on the basis of the formulæ given in para. 6 may be illustrated by an example, 1940 being taken as the experience year for the purpose.

estres at all ages combined. An it will not usually be practicable		clate .	1947 li						
alternative method is employed to first obtained on an approxima-	da bas	4th	3rd	2nd	1st	- Year			
(i) Number of Marriages registered in England and Wales (hundreds).	1939 1940	1,368 1,126	1,529 1,319	1,028 1,167	471 1,093	4,396 4,705			
be understood from the following	lihy b	Marriage Duration (Months)							
no betelione enforcement in 114	bus 6	0-21	21-51	51-81	81-111	111-12			
(ii) Partial Exposure weights (from Scottish experience).	1939 1940	·480 ·455	·646 ·715	·650 ·655	·743 ·700	·020 ·018			
(iii) Partial Exposure, viz., (i) × (ii)	1939 1940	657 512	988 943	668 764	350 765	9 20			
(iv) Increase in (iii) as compared with preceding year.	1940	-145	-45	96	415	11			
(v) Marriages (hundreds) registered in the 12 months preceding October, July, April, January	1940	4,122	5,157	5,018	4,396	733			
and January respectively, the first being reduced to 5/6ths and the last to 1/6th.	siait year	the Soor	che calen	arinom	mistance materice the marr	INTERNATION			
tending the property of the property	Marriage Duration (Months)								
24 A004 - 1-1-0001   1001   1806.	$0-2\frac{1}{2}$	$2\frac{1}{2}-5\frac{1}{2}$	51-81	81-111	11½-12	0-12			
(vi) Exposed to risk in 1940 (hundreds) (a) In quarters (iv + v) (b) In years (vi (a) ÷ 4)	3,977 994	5,112 1,278	5,114 1,279	4,811 1,203	744 186	19,758 4,940			

<sup>\*</sup> Until monthly records for England and Wales are available.

11. The years of married life exposed to risk at the required durations in the calendar years 1929 to 1945, calculated in accordance with the foregoing procedure are shown in the following table. It will be seen that the exposures vary materially at successive quarterly durations. They frequently differ from  $\frac{1}{4}$  of the corresponding 0–12 m. duration to a significant extent showing that the latter alone is an unsafe guide to its quarterly components.

Years of married life exposed to risk (in hundreds at all ages) at the following durations (months)—England and Wales

Year	0-111	111-12	0-12	Year	0-21	$2\frac{1}{2}-5\frac{1}{2}$	51-81	81-111	111-12	0-12
1929	2,952	126	3,078	1937	750	901	904	922	149	3,626
1930	3.026	-130	3,156	1938	754	897	890	867	149	3,557
1931	2,988	131	3,119	1939	880	938	895	898	150	3,761
1932	3,003	131	3,134	1940	994	1,278	1,279	1,203	186	4,940
1933	2,931	127	3,058	1941	822	1,022	1,087	1,127	195	4,253
1934	3,205	134	3,339	1942	788	965	984	986	162	3,885
1935	3.304	142	3,446	1943	628	788	828	876	153	3,273
1936 3,357 145 3,50	3,502	1944	627	741	745	742	123	2,978		
				1945	807	896	815	778	127	3,423

12. The foregoing estimates relate to exposures at all ages combined. In computing similar estimates for separate ages, it will not usually be practicable to proceed in the same degree of detail and an alternative method is employed hereafter under which preliminary estimates are first obtained on an approximate basis and are then adjusted by correcting factors to conform to the all ages controls.

The type of factor correction employed will be understood from the following illustration, in which the 1940 exposures of para. 10 (vi) are compared with similar 1940 exposures at 0-3, 3-6, 6-9 and 9-12 m. durations calculated on the basis of two alternative assumptions as follows.

Assumption		1940 Exposures (in years) at durations				
Per Took Singl Hard Date Total	0-3 mths.	3–6 mths.	6–9 mths.	9–12 mths.		
(a) That the marriages of each quarter are distributed by months as in the Scottish	the state of	el disq	gulpi, (A	redotaŭ la		
experience (b) That the marriages of each calendar half year	1,199	1,288	1,274	1,177		
are evenly spread over the half year	1,205	1,261	1,242	1,147		
Ratios—			assign the			
i. $(a) \div (b)$ ii. Para. 10, vi. $(b) \div (a)$ ; — the $8\frac{1}{2}$ - $11\frac{1}{2}$ and	-995	1.021	1.026	1.026		
11 $\frac{1}{2}$ -12 durations of 10, vi. being related to 9-12 above iii. Para. 10, vi. (b) $\div$ (b); — the $8\frac{1}{2}$ -11 $\frac{1}{2}$ and	-829	.992	1.003	1.022 .158		
11½-12 durations of 10, vi. being related to 9-12 above	-825	1.013	1.030	1.049 .165		

Ratio (i) indicates the degree of error involved in the assumption that the marriages of each calendar year are evenly distributed over the half year; it will be seen to be between 2 and 3 per cent. in three out of the four quarters of 1940.

Ratio (ii) expresses the relation between the exposed at the actual durations employed, viz.,  $0-2\frac{1}{2}$  m.,  $2\frac{1}{2}-5\frac{1}{2}$  m., etc., and those of the more conventional type, 0-3 m., 3-6 m., etc.

Ratio (iii) combines (i) and (ii), and in this form may be regarded as supplying the factors necessary for converting exposures based on assumption (b) to those set out in para. 10. And since there is no reason to think that these corrections are likely to be influenced by or to differ according to age, the said factors calculated for all ages combined may be regarded as equally applicable for the conversion of separate age estimates, initially computed on the simpler and more approximate basis of assumption (b).

13. Factors similar to those of para. 12 (iii), as required for the relevant 1929-45 estimates, are shown in the following table.

Factors applicable to exposures at top line durations (half-yearly marriages) to convert to exposures at bottom line durations (allowing for monthly incidence of marriages)

1	AND DESCRIPTION OF THE PERSON NAMED IN COLUMN 2 IS NOT		7				The state of the s	
Year	$0-12 \\ 0-11\frac{1}{2}$	$0-12$ $11\frac{1}{2}-12$	Year	0-3 0-2½	$\begin{array}{c c} 3-6 \\ 2\frac{1}{2}-5\frac{1}{2} \end{array}$	6-9 5½-8½	$\begin{array}{c c} 9-12 \\ 8\frac{1}{2}-11\frac{1}{2} \end{array}$	$9-12$ $11\frac{1}{2}-12$
	Fa	Fb	Captaray	F1	F2	F3	F4	F5
1929	0.966	0.041	1937	0.838	1.012	1.019	1.039	0.168
1930	0.954	0.041	1938	0.833	0.990	0.983	0.963	0.166
1931	0.958	0.042	1939	0.840	0.993	0.999	0.996	0.166
1932	0.967	0.042	1940	0.825	1.013	1.030	1.049	0.162
1933	0.948	0.041	1941	0.823	0.972	0.985	0.978	0.169
1934	0.968	0.040	1942	0.840	1.000	1.007	1.012	0.166
1935	0.952	0.041	1943	0.827	0.990	0.983	0.977	0.171
1936	0.956	0.041	1944	0.833	0.995	1.004	1.001	0.166
	THE REAL PROPERTY.	NAME OF THE PARTY	1945	0.846	1.025	1.000	1.003	0.164

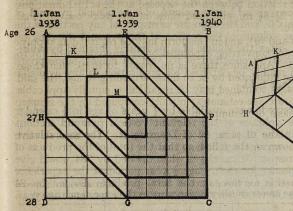
14. Exposed to risk at separate ages.—As was the case in para. 5 where the exposed at all ages was treated, the married women and their contributions to the exposure at specific ages will be most easily appreciated by reference to an illustration.

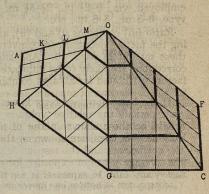
Let it be assumed that the exposed to risk is required for the maternities occurring in 1939 to mothers aged 27 last birthday at maternity and of marriage durations less than a year. The required exposure will be the aggregate of the years of married life spent by women in 1939 between the ages of 27 and 28 and within durations 0 to 1 year.

- Since (a) the maternities were spread over the whole calendar year 1939,
  - (b) the mothers may have been of any age between 27 and 28,
  - (c) the marriage duration may have been any period between 0 and 1 year,

it will be evident that all the mothers must have married at some time during the two years between 1st January, 1938, and 1st January, 1940, and must have been between the ages of 26 and 28 at date of marriage. But not all the marriages within these limits could have contributed to the recorded maternities, and of those which could, their contribution would vary according to the proportion of the full calendar year 1939 spent between ages 27 and 28 and within the first year of marriage.

#### DIAGRAM R.





Relative Volumes of Vertical pyramid

			1,	3	3	3	2
	54	1	6	9	9	8	3
745V	1	6	12	15	14	9	3
1	6	12	18	20	15	9	3
3	9	15	20	18	12	6	1
3	9	14	15	12	6	1	
3	8	9	9	6	1,	1207	
2	3	3	3	1			

Suppose ABCD to be a square in which calendar time is represented as moving from left to right (i.e., from 1st January, 1938, at AD to 1st January, 1940, at BC) and age from top to bottom (i.e., from 26 exact at AB to 28 exact at DC); the full square being divided into single age and year divisions by the thick lines HF and EG, and into quarter age and year divisions by the thin lines.

The maternities for which the exposed is required, namely, those at durations under one year may be regarded as distributed over the experience square OFCG and all the related marriages will have been located somewhere within the larger square ABCD.

Consideration of the diagram will show that all the marriages which could have contributed to the selected maternities must lie within the hexagon AEFCGH and that the amount of the contribution in respect of any particular marriage is determined by its position on the radius drawn through it from the

centre O to the hexagonal perimeter. Thus marriages falling outside or exactly on the perimeter will have no exposure to the selected maternity conditions, those falling on hexagon K will have ½ year's exposure, those on hexagon L, ½ year's exposure, those on M,¾ year's exposure while those occurring exactly at the centre point O, and only those, will be exposed for a full year. The total exposure will therefore correspond to the volume of a hexagonal pyramid of base A E F C G H and apex O, and the exposure in respect of any portion of the marriage field will be the volume of the section of the pyramid standing on such portion of the field. Since the volume of a pyramid is obtained by multiplying the area of its base by one-third of its vertical height, appropriate exposure coefficients can readily be obtained for application to any available sub-division of the marriage field.

If the basic marriage records were available by  $\frac{1}{4}$  years of age in  $\frac{1}{4}$  calendar year periods the relative volumes of the relevant vertical pyramid sections would be those shown in the third figure of Diagram R. The said relative volumes—or coefficients—aggregate to 384, so that the total of the products of the coefficients and the respective marriages when divided by 384 would give the average years of exposure for each  $\frac{1}{4}$  age  $\frac{1}{4}$  year period of the experience age year, and 16 times this average, or the total products divided by 24 (=384 ÷ 16), would give the total years of exposure in the experience age year.

16. Marriages, however, are not available by ½ years of age; and even if they were, the labour of obtaining and aggregating 52 products for the exposure at each age would be prohibitive. But the relative volumes shown above can be combined, and if reduced to the fewer and more practicable sections represented by marriages at integral ages in calendar half-years, yield the following coefficients,

				Previo	us year	Experience year		
				1st half	2nd half	1st half	2nd half	
Previous age	1		1	.5	1.1	.7	-1	
Experience age	a. pe			 -1	.7	1.1	.5	

and the sum of the products of these coefficients and the relevant marriages, when divided by 2.4, would provide the required years of exposure in the first year of marriage, on the assumption that the basic marriages of each calendar half-year occurred on average at the middle of the half-year and at the middle of each integral year of age.

17. The division of the exposure during the first year of marriage into its component exposures during successive quarter year marriage durations can be obtained in a similar way.

The catchment areas of the marriage field and the appropriate coefficients by  $\frac{1}{4}$  age  $\frac{1}{4}$  calendar year periods for marriage durations 0-3 m., 3-6 m., 6-9 m., 9-12 m. in a given experience age year are shown in the following diagrams; and below each are shown the derived coefficients applicable to marriages recorded at integral ages in  $\frac{1}{2}$  calendar years.

#### DIAGRAM S.

Coefficients applicable to Marriages at ½ ages in ½ Calendar years, the number of single age-year exposures being obtained by dividing the sum of the products by 24.

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10	PREV.	YEA	2 .		EXPC	E. YE	AR
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	office at a section of the section o	OFF	OF	PREV. YEAR	PREV. YEAR - 2 3 3 6 3 6 3 6	PREV. YEAR EXPC	2 3 3 3 3 6 6 6 3 6 6 6

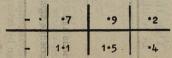
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		, was		5	500	W 100	No.
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and a		3	6	6	6	3	
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A SOUTH		3	6		6	3	
the state of		1	3	3	3	2	

D	REV.		6	E	EXPC	500	AD
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300	2	3	3	3	1,	200	
1000	3	6	6	6	3		
200 A	3	6	6	6	3	2	
\$-10 \$-10 \$-10	3	6	6	5			
Bu	1	3	3	9	63		
0.4			1250				

	Dui	rati	on	9-1	2m	• 50					
PREV. YEAR EXPCE. YEAR											
2	3	3	3	1,	100	100	10.00				
3	6	6	6	3	LICLS N.	X De	- 42 E C				
3	6	6	6	3	50	O June					
3	6	6	6	3	30	125	700				
1	3	3	3								
	0 0		City								
5	0.0	9017	944								
1.10		166									
100	15 . W	A SERVICE	10 Cap	Service of	NO SECTION	SO ADA	TO THE REAL PROPERTY.				

Coefficients (derived from above) applicable to Marriages at integral ages in ½ Calendar years, the number of single age-year exposures being obtained by dividing the sum of the products by 9.6.

9 6 6	が起	•3	•2
2, 200	•5	2.1	1•6



	•4	1•5	4.4	
2	•2	•9	7.	

1	1-6	20-			5		100		Series .
	•2	00 p	11.95	1	7	1956	1691	- P	1000

At each age the exposures for the four quarter-year durations obtained in this way will aggregate to the exposure for the whole of the first year of marriage as obtained by the coefficients of para. 16; and in the same way, they are subject to the assumption that the marriages occurred on average at the middle of each calendar half-year and at the middle of each integral year of age.

18. Finally it remains to apply such adjustments as are deemed necessary to convert the approximate figures obtained as in para. 17 to the more specific estimates required. The adjustments are theoretically of four types.

(a) correction to allow for the seasonal (monthly) distribution of marriages,

(b) adjustment to allow for the fact that in converting the durations, e.g., from 3-6 m. to  $2\frac{1}{2}$ - $5\frac{1}{2}$  m. the catchment *period* of marriages is advanced by  $\frac{1}{2}$  a month;

(c) adjustment to allow for the fact that in converting the durations the catchment age at marriage is similarly advanced by ½ a month (= ½ of a year);

(d) possible adjustment to allow for unevenness of distribution of marriages within an integral year of age.

Adjustments (a) and (b) were referred to in para. 12. They are deemed to be independent of age and will be effected in their combined form by multiplying the para. 17 results by the appropriate all age factors shown in para. 13.

Adjustment (c) will be effected by advancing the estimates  $\frac{1}{24}$  year of age

by interpolation.

Adjustment (d) it is proposed to disregard. It can be assumed that marriages proceed steadily and continuously with advance of age and an assumption that they take place on average at the middle of each age can involve very little error except, perhaps, at the youngest ages where it is quite overshadowed by the deliberate mis-statements in the registered ages themselves.

19. Thus the computation of the exposed to risk for the 1939 example of para. 14 would proceed as follows:—

Live State of the state of the	ig been	Acc	10 re l b	Durat	tion	פונטר של
CONDITION TO BE AND	(中)(有數量	Age	0-3 m.	3–6 m.	6–9 m.	9–12 m.
<ul> <li>(i) Initial calculation on half-yearly marriages ages (para. 17)</li> <li>(ii) Advancement of ½ age by interpolation</li> </ul>		ral 28	5,306 4,279 5,263	5,218 4,179 5,175	5,273 4,229 5,230	5,634 4,490 5,586
THE PROPERTY OF STREET	Age	0-2½ m.	$2\frac{1}{2}-5\frac{1}{2}$ m.	5½-8½ m.	8½-11½ m.	11½-12 m
(iii) (a) and (b) adjustment factor (from para. 13)	-	·840	-993	-999	•996	·166
(iv) No. of years exposed to risk, viz., product of (ii) and (iii)		4,420	5,140	5,220	5,560	930

20. Exposed to risk at marriage durations over 1 year.—From what is said in para. 3 it will be recognized that the exposed to risk at any age for a duration over 1 year is the same as the exposed at duration 12 months less at the appropriately younger age in a preceding experience year, subject only to allowance for the population flux represented by deaths, widowhoods, divorces, and migration. Normally the rate of flux is small, rising with age to an order of

1 per cent, loss per annum at about age 45. For all married women irrespective of their marriage durations, the rate of flux at each age is known from the records of the deaths, etc., themselves and in the construction of the exposed to risk by durations, it is assumed that the flux rate derived from the "all durations" experience applies also to the several durations comprised within the all durations exposure. That is to say, that the exposures at age x and a series of durations over 12 months in an experience year are derived from the exposures at age x—1 and 1 year shorter durations in the previous experience year by application of the common rate of flux observed for the year from the records of all married women at the appropriate age.

21. Care must be taken to recognize the distinction between the years of married life exposed to risk and the related numbers of married women. Where the marriage duration identified is a complete year, e.g., from one to two years or from 11½ months to 1 year 11½ months, the number of years exposed to risk and the equivalent number of married women are identical, but where the duration period is anything other than a complete year the number of years exposed is the product of the duration period in years and the number of married women; thus for example, the years of life exposed at duration 2½ months to 5½ months will only be one quarter of the corresponding number of married women involved.

22. Constructed Estimates 1938–1945.—Estimates of the years of married life spent by women within successive marriage durations up to 10 years (i.e., 9 years 11½ months) at individual ages from 16 to 49 have been constructed on the basis described in preceding paragraphs for each of the years 1938 to 1945; and in connection therewith it should be noted that they embrace second and subsequent marriages as well as first marriages, the duration in all cases being calculated from the date of the last (i.e., the existing) marriage.

Though the identification of individual years of age is necessarily involved in the construction work, the use of the figures in that degree of detail will not as a rule be either feasible or statistically justifiable in view of the margin of error which must be assumed to attend them and practical requirements will ordinarily be satisfied with their aggregation in quinary groups of age. Estimates of married women's years of life prepared in this way for quinary groups of age between 15 and 50 and for successive marriage durations are shown in respect of calendar years from 1938 to 1945 in Table III of Appendix I on page 164. To complete the exposure statement, estimates of non-married women in the several age groups have been added in an adjoining column of the table.

The Standard Replacement Index (E.R.R.) (a) as at present employed and (b) as modified to conform to a system of population measurements in terms, not of persons, but of reproductive capacity.

Note.—Many enquiries reach the Department concerning the use and meaning of the reproduction rate. It is a function that cannot adequately be described in a few words and as one objective of the following memorandum, it is hoped that it will be of service in explaining the nature of the index and of the main implications and limitations associated with it.

#### (a) The Effective Reproduction Rate (E.R.R.) as at present employed.

When the principle of the replacement rate as a fertility measure was first introduced in the published population statistics of this country by the Registrar General in 1926,\* it was primarily as an improvization designed to throw light on a situation which then seemed to be developing adversely to the interest of the nation. After the disturbance to the annual records produced by the first war had subsided, it was seen that the numbers of children being born were not only much fewer than they had been prior to the war but that year by year they were continuing to fall further and further without any obvious sign of cessation. A question which began to obtrude itself with increasing insistence was "how much further can the annual numbers fall before the reduction begins to menace the prospects of the future population"; and it became necessary to consider what the consequences of a continuing fall would be and whether there was any way of determining a desirable or standard quantum of births with which the numbers actually recorded year by year could be compared and their sufficiency measured.

On the premise that reproduction is primarily the function of the female sex, it was seen that a suitable condition of population stability would be one in which the content of reproductive women in a population was maintained at a constant level; further, that the achievement of such stability would be conditioned by a general necessity for the women of each generation to produce sufficient female children to take their place in the ensuing generation; from which it followed that the extent by which the female births actually recorded in any particular year, exceeded or fell short of the standard could be shown by first ascertaining how many of the said births would survive to the reproductive ages and then comparing the survivors with the reproductive women originally responsible for the births. If the ratio of surviving progeny to progenitors were exactly unity, replacement would have been precisely achieved, or alternatively, if the ratio were above or below unity, the excess or defect would represent the proportion by which the recorded births exceeded or fell short of the standard requirement.

The above indicates the general principle upon which the sufficiency test was envisaged. Its incorporation in the actual construction of the E.R.R. is explained in greater detail below, with the aid of a numerical illustration based upon the 1938 birth experience of England and Wales.

There was estimated to have been a total of some 11,421 thousands of women between the ages of 15 and 50 in the national population in 1938, and between them they were responsible for the 621.2 thousands of live births recorded in that year. The births comprise legitimate and illegitimate, and of the total, 302.8 thousands were females. The question to be answered is to what extent do the 302.8 thousand females thus born in 1938 satisfy the replacement condition described above.

The ages of the 11,421 thousand women and the rates at which they bore the children (per 1,000 women in each age group) are set out below.

	Age								Totals	
ore criticism of	15-	20-	25-	30-	35-	40-	45-	15-45	15-50	
Women in population (thousands)	1,731	1,588	1,766	1,753	1,635	1,520	1,428	9,993	11,421	A
Female births per 1,000 women	7.1	44.9	55.2	40.5	23.1	8.0	0.8		Line of	В

It may be noted first of all that, in numbers of individuals, the births (302.8) are little more than  $2\frac{1}{2}$  per cent. of the women (11,421) and that in this form there is little evidence of any likely relationship between them. If a test of equivalence is to be sought it will have to be in terms of some common attribute attaching to them; and this is found in what may be called the reproductive opportunity which can be associated with each of them, reproductive opportunity being interpreted in its widest sense.

The births are those produced by the 11,421 women in the course of a single year—1938—and may thus be regarded as the product of 11,421 years of reproductive opportunity. The corresponding reproductive opportunity of the 302.8 births will be the number of future years to be lived through by them between the ages of 15 and 50, that is by those of them who survive to that age period, and is a matter of estimation depending on the mortality assumptions made in determining the numbers who are likely to survive.

Future mortality cannot of course be forecast precisely. Its destructive effect at ages under 50 is however relatively light and with our long experience of its behaviour in this country it is possible to say with considerable confidence that the error in the calculated survivors due to the error in a considered mortality assumption adopted for the calculation is likely to be of a quite insignificant order. The death rate projections actually employed were described in the 1938–39 Text, where it was suggested that alternatives preferred by any responsible authority would be hardly likely to vary the ultimate E.R.R. in more than the third decimal place.

On the basis of the mortality assumed for the females born in 1938, about 280 of the 302.8 originally born would survive to reach the age of 15 and 262 to age 50 and the total years of life lived by them in the 15-50 age field would be approximately 9,503 distributed by age groups as follows:—

	bobse	orisado	da ring	Age		10 FOR	TOWNSON A			
eaky para Masenko	15-	20-	25-	30-	35-	40-	45-	15-45	15–50	40.00
Years of life lived by sur- vivors of 302.8 female births	1,393	1,382	1,370	1,359	1,347	1,334	1,318	8,185	9,503	c

It is at this point that the sufficiency comparison begins to emerge since the figures show that the 11,421 years of reproductive opportunity between ages 15 and 50 consumed by the progenitor women in 1938 succeeded in producing only 9,503 similar years of opportunity in their female offspring, yielding a replacement rate of .832 (=9,503÷11,421), or one nearly 17 per cent. below standard.

<sup>\*</sup> As a matter of chronology, it may be recorded that it was not until some time later that the Net Reproduction Rate, as developed by R. R. Kuczynski, came to notice.

The test so far uses the ages 15-50 as representing the childbearing period; a somewhat extreme range since the numbers of children born to women after age 45 are microscopically small. The age period 15-45 which is frequently preferred for fertility measurements, could equally be employed for the replacement test, in which case from the totals provided on lines A and C above, the alternative measure is directly obtainable by relating the 9,993 reproductive years consumed by the progenitor women at ages 15-45 with the 8,185 similar years replaced in their offspring, yielding a replacement ratio of 819 (8,185÷9,993), or one about 18 per cent. below standard. The results by either test are not substantially different and either provides a tolerable measure of the desired degree of sufficiency—or rather insufficiency—in the 1938 birth experience.

In the tests thus considered the age range chosen for the comparison appears to be a matter of personal choice and it draws attention to an obvious weakness in the constructions arising from the fact that in measuring the respective reproductive opportunities, the women involved are treated as of the same relative reproductive weight at all ages throughout the age range whereas experience shows that reproduction is relatively high between the ages of 20 and 35 and is of far less significance outside this narrow field. An indication of the distribution of relative fertility intensity is available in the age fertility rates shown on line B above and it at once suggests that instead of comparing the numbers provided by lines A and C as they stand, the reproductivity comparison will be improved if the numbers of each at successive ages are first weighted by the intensity age weights of line B. The weighted distributions are as follows:—

and in tragrationer	स्थाप है।	H. Him	struite	a bate A	ge	BLEEZE	dujar je	
Thursday of the	15-	20-	25-	30-	35-	40-	45-	Total
Progenitors	12.3	71.3	97.4	70.9	37.7	12.2	11.10	302.8
Progeny	9.9	62.0	75.5	54.9	31.0	10.7	1.1	245.1

The 1938 replacement ratio on the basis of the distributions so weighted now becomes ·810 (=245·1÷302·8) and this is the E.R.R. for 1938 hitherto adopted and published in the Registrar General's records. The rates for other years have been similarly constructed, viz., by first estimating the years of life expected to be lived by the female births of the year and relating them to the reproductive years of the women of the year after weighting each series by the experienced age fertility rates of the year.

Referring again to the 1938 example, it will be seen that the weighting of the progenitor women by the 1938 fertility age rates does nothing more than restate the 1938 female births; while the application of the same weights to the progeny generation produces the female births, which—in the descriptive language used in previous reports in attempting to describe the situation—the girl infants of 1938 would in their turn produce if they experienced the fertility rates at which they themselves were born. Whatever the language used to describe a somewhat difficult concept, it will be understood from the foregoing that the objective has not been primarily to measure the replacement of children by children, or of women by women, but to measure the sufficiency of something created to take the place of something consumed, the said something being that implied by the term reproductive opportunity, itself a somewhat vague concept, and deliberately kept vague at the moment in order to lead naturally to its more specific resolution in the second part of this note.

Before proceeding further, attention may be directed to certain aspects of the E.R.R. which, judging by current comment, seem to need added explanation or emphasis. In the first place, it will have been evident from the description of the construction, that the object of the index is limited to measuring the events of a given year or period as and when they take place; it needs to be asserted that the construction carries no implication regarding the likely behaviour of fertility in the future and there is no stage in the construction procedure from which such implication is remotely to be construed.

In the second place, the type of population stability to be associated with the indefinite maintenance of the index at its standard rate of unity, is not constancy in the total numbers of the population at all ages, but constancy in its primary growth factor represented by the reproductive opportunity of its female element—below age 45 or 50 or thereabouts. The maintenance of the growth factor at a constant level would in practice tend to keep the numbers of males at all ages and of the females at the older ages within recognizable bounds but their absolute numbers would not remain fixed since they would depend on the mortality to which they were subject and which would vary from time to time independently of the maintenance or otherwise of the

primary growth factor.

A third aspect of significance arises from the fact that the E.R.R. treats reproduction exclusively as a function of the female sex. That there is a growing tendency for investigators to have regard to the analogous male construction, sometimes treated on terms of equality with its female counterpart, has not been overlooked. Whatever virtue there may be in such treatment, it is difficult to divorce the concept from the biological fact that the female is the medium of reproduction and that the male is not. Not only is the female responsible for both the male and the female progeny, but every single maternity exposes the female organism to strain and risk for a full year (allowing for lactation), a strain so great as sometimes to result in the death or injury of the female herself, and a strain which has no counterpart in the case of males. The participation of the male may be indispensable at the momentary initiation of the reproductive process but as regards the amount of reproduction, which is what the E.R.R. is concerned with, the male influence from the biological point of view can be regarded as little more than dust in the balance. Nor is the biological consideration merely a theoretical one. In a society in which the children are born and reared in natural family groups of a wide range of sizes, it is the physical limitation of the female which, in actual practice, determines the upper limit of the size range; again, in the making good of births postponed during the war, the female functions of gestation and lactation must have played an outstanding part in determining the extent and time to which the replacements could be accommodated. It is, of course, recognised that under existing social conditions reproduction is influenced to some extent by the numbers and ages of the male population, but the degree of limitation imposed thereby is far less rigid than it is in respect of the female element; for example, notwithstanding the pronounced shortage of males at the customary marrying ages produced by the heavy casualties of the first war, the pre-war marriage rates amongst females and their ensuing fertility opportunity were to a large extent maintained simply by drawing more liberally on the men of rather older groups; or again, artificial insemination could be cited as a factor offering compensatory possibilities in the case of a male deficiency but having not the slightest bearing upon the basic female potentiality. In such circumstances it is felt that the influence of the male would tend rather to be a contributory element in the behaviour of economic and social factors, and that these would be better regarded as variables to be measured against an absolute framework which only the biological facts of reproduction can supply. The justification for this would seem to be supported rather than otherwise by the development suggested in the second part of this note.

Finally, reference may be made to a rather more subtle criticism that has been levelled against the E.R.Rs. of the war years. It has been rightly observed that the actual fertility rates of the war years have been exceptional in that they have been influenced by quite abnormal variations in the flow of marriages, and that the same conditions are not likely to occur again; it has

been suggested that the E.R.R. which compares the numbers born with the future births which the war babies would produce in their turn at the rates at which they themselves were born is invalid and unrepresentative because the said rates are abnormal and cannot be or are highly unlikely to be repeated in the next generation. The comment has been carried further by the suggestion that so called standardized E.R.Rs. should be sought and preferred for the war years under which the constructed births to be associated with the survivors should be ascertained on the basis of more normal age-fertility rates and the resulting constructed numbers compared with the numbers actually experienced. Both the criticism and the suggested alternative of standardization spring from a misunderstanding of the primary objective of the E.R.R. which, as stated above, is to provide a measure of the fertility relationship between progenitors and progeny in the actual experience. From what has been said earlier, it should be clear that the age rates are nothing more than weighting factors, the use and effect of which is to impart a very small improvement to the equivalence between the unweighted progenitor and progeny populations. The weights are not critical and the weighting process could be omitted altogether without great loss, though if any alternative weights were to be preferred, it is axiomatic that they should be applied simultaneously to both populations—a condition which is disregarded in the suggested standardized alternative. The weighting aspect is further developed in the second part which follows.

(b) Population Measurements in terms of units of reproductive capacity.

It will have been noted from the preceding section that in comparing progenitor and progeny populations in order to obtain the E.R.R. relationship between them, the treatment was considered at two stages, viz., (a) a comparison of their simple unweighted numbers of reproductive years between the conventional age limits of 15 and 50 or 15 and 45, and (b) a similar comparison of the same populations but after weighting their several age components by a series of common weights reflecting the relative intensity of reproduction in successive quinquennia of the reproductive age field.

If the age distributions of the unweighted numbers had been proportionately the same in the two populations, then the ratios between them would obviously have been identical whichever basis of comparison was used, whether by the unweighted 15–50, or 15–45 tests or by the alternative weighted test. That the ratios in the 1938 example were not the same was due solely to the fact that the age distributions of the populations compared differed from one another; the difference in age distribution itself imparting an influence to the unweighted tests, which it was the object of the weighting to remove or

minimize as far as possible.

Two observations concerning the weighting process call for notice. In the first place, the amount of the correction to be effected by the weighting is comparatively small; in 1938 the alternative unweighted ratios were '832 and '819 and were only varied to '810 in the corrected or weighted version; experiment shows that the relationships are not essentially different in other years. In the second place, the choice of the fertility age rates of the experience year as the weights is not the only choice nor even the necessarily best choice. The two populations being compared are those of the experience year and those of the succeeding generation and in choosing weights to eliminate age differences between them it would obviously be as valid to use weights derived from the succeeding generation's fertility experience (if we knew it) as from that of the experience year, or, better still a mean between the two, analogous to the principle now followed in standardizing mortality comparisons. It is sufficient to note that the choice is not critical and certainly need not be regarded as being tied to the events of the experience year.

A first important conclusion follows from these considerations. If the correction to be made by the weighting is small in any case and the choice of

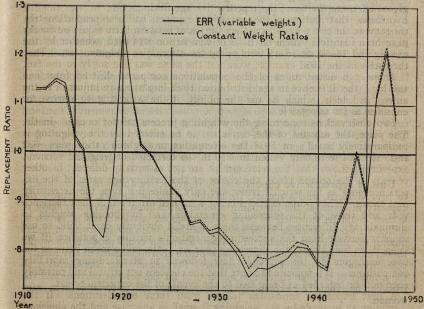
weights is not critical, why use a different set of weights for every different experience? And why limit the test, as is now done, only to experiences for which age fertility rates are available or can be estimated with considerable trouble? The conclusion is that a fixed system of weights, applicable indiscriminately to all fertility experiences of this country, national and local, would lead to replacement rates of no less validity than those now evaluated and would be of great advantage in that they would avoid the necessity of ascertaining age fertility rates and would enable the replacement test to be applied to areas for which such age rates are not ordinarily available. The use of fixed weights would be of similar advantage in the international sphere since they would facilitate the production of reproduction indexes for many communities possessing moderately similar racial characteristics from which they are not at present forthcoming.

An illustration of the extremely small differences imparted to the replacement rates by the adoption of a system of constant weights in place of the variable weights now employed is provided by the following diagram which displays the E.R.Rs. of England and Wales as previously published for the years since 1911 in conjunction with corresponding replacement ratios using the same fixed weights throughout. The constant weights used are referred to later; they are considerably different from the variable weights as may be judged by their

comparison with the 1938 weights.

svirudorque le atinu le am	15-	20-	25-	30-	35-	40-	Total
Constant Weights	12	22	21	19	17	9	100
1938 E.R.R. Weights (Line B, (page 205) —%)	4	25	31	22	13	5	100

DIAGRAM T.—Comparison of Replacement Ratios, 1911-1948. England and Wales.



Note.—For numerical values see cols. 6 and 7 of Table III on page 216.

It will be seen that the year to year gradations of the ratio based upon constant weights faithfully follow the course of the published E.R.Rs. throughout the whole of the 37 year range, that for many of the years the two are virtually indistinguishable on the scale in which they are portrayed and that where a difference is observable it is extremely small. And even in the latter case there is nothing to choose between them as regards their basic

validity.

If it be conceded that the use of a system of fixed weights is practicable and desirable, the question arises as to what weights shall be chosen for the purpose. So far as the replacement ratio alone is concerned, the latitude of choice is obviously a wide one since the effect of the weighting is small; and the further question arises as to whether there is any additional objective that might be appealed to as a guide in their selection. This takes the matter back to the circumstances of the original problem which was to assess a relationship between a mass of progenitor women on the one hand and a mass of infant progeny on the other, and re-opens the question as to what precisely is the common fertility attribute possessed by each of these very different conglomerations of individuals which is capable of being measured and compared. The logical answer is hardly in doubt since the only attribute that they both possess is their fecundity or reproductive capacity, of which a certain amount has been expended by the progenitor class in producing the progeny and has been replaced in a latent form by the greater or lesser capacity in the progeny created

Capacity in this sense implies maximum reproductive power, and as such it is never used to the full; but the extent to which it can be used must depend in the first place on how much there is to use and since it is impossible to foresee the future extent to which the capacity of the progeny will be used, the only possible basis of comparison, between progenitors and progeny must, by implication, be by reference to the full capacity itself. This is what must be regarded as meant by the vaguer expression "reproductive opportunity" employed above in discussing the construction of the E.R.R.; and it was given effect to in that construction by the introduction of the implied hypothesis that the proportion of total capacity to be expended by the progeny would be the same as the proportion of total capacity expended by the progenitors in giving them birth—otherwise expressed in the assumption that the girl children in their turn would produce offspring at the rate at which they themselves were born.

There is, however, an element of unreality about an implied hypothesis of this kind since it is obvious that total capacity cannot be gauged by the varying extent to which it may be used from time to time, and the question for consideration is whether it is possible to approach the measurement of the total capacity without recourse to any hypothesis as to the extent of its employment. The suggested solution, which leads to an extended system of population measurements based upon reproductive capacity, and in which the replacement ratio is but one feature, is outlined in the succeeding paragraphs.

Unit of reproductive capacity.—By reproductive ability is meant ability to bear children, and a natural inclination would be to seek to express the capacity in terms of the maximum number of children a woman or body of women could be expected to bear. Measurement on this basis is, however, unlikely to prove feasible in practice since there is no obvious way of determining the maximum number of children a woman could produce nor would there be likelihood of general acceptance of the appropriateness of any number conventionally adopted for the purpose. Fortunately the identification of the number of possible children is not critical for the present purpose and the issue can be avoided by expressing the measurement unit in terms of an average woman.

In the following demonstration, the unit of total reproductive capacity adopted is the total ability to bear live born children exercisable by an average woman who lives throughout the full range of child-bearing ages; the general definition being governed in its application by certain conditions in respect of which common knowledge or experience shows or suggests that it is attended.

In the first place, absolute fecundity or total reproductive power in the sense used here is assumed, from such evidence as is available, not to have changed over the century or so for which registration records of this country are forthcoming. The possibility of a decline over this period has recently been carefully examined by the Biological and Medical Committee of the Royal Commission on Population. The Committee reported that in general there was little evidence of a positive kind one way or the other, that such indications as existed might be held to support the possibility of either improvement or decline, and their conclusions, largely negative in character, were "that while we cannot exclude a possible decline since the 1870's, there is no definite evidence that such a decline has occurred." Thus, though the evidence may not be wholly conclusive, it is fair to expect that measurements on the assumption of no change will be reasonably comparable in respect of conditions as far as a century apart, while as between succeeding generations there should be little doubt regarding their validity. The decline in the frequency of stillbirths since about 1936 is a feature which might be construed as a pointer to a slight improvement in live birth capacity during recent years but it is of comparatively short range so far and is merely noted without being taken into account.

A second consideration arises with regard to the distribution of the total capacity over the full child-bearing range of ages. About this there is little specific knowledge beyond the fact that it commences with puberty in the neighbourhood of age 15 and ceases with the climacteric somewhere in the region of age 45. Common observation suggests that it probably rises to a maximum at a very early age and is thereafter substantially maintained, subject possibly to a slight decline mainly through pregnancy casualties, until the terminal period begins to be approached. The general notion is given effect to in application by the use of the following simple but quite arbitrary division of the total unit over six quinary groups of age between 15 and 45.

15–19	20–24	25–29	30–34	35–39	40-44	Total unit
-12	-22	-21	•19	17	-09	1.00

The allocation has no scientific basis and might well be bettered by the biologist or demographer. The justification for its adoption here must be mainly found in the fact that a critical distribution is not necessary since, provided that the items aggregate to unity, quite wide variations in the distribution are possible without materially affecting the significance of the ultimate population measurements. It may be noted that these age allocations were those employed as the constant weights referred to in connection with the E.R.R. comparison of Diagram T on page 209.

With the aid of a unit so defined and circumscribed, a capacity value can be associated with every female in the community of any age and for any year. The said value in the case of a girl under 15 is the full unit discounted by the chance of loss through mortality occurring before reaching age 45; in the case of a female already within the child-bearing range, it is the unexpended portion of the unit similarly discounted by the remaining mortality risk. Capacities assessed in this way can be aggregated to shew the total capacity

possessed by the population at any time, the amounts expended from time to time and the replenishments that accrue in the shape of new births.

The actual application of the measurement system to the population of this country is largely a mechanical procedure and its understanding and the explanation of such minor conventions as have been employed will be best followed in relation to the calculations themselves. The successive stages are shown in the sections numbered seriatim in the adjoining tables, and will be understood with the aid of the following brief notes.

The first step is the ascertainment of the individual female capacity assessment according to her age and year of birth and this is developed in

sections 1 to 6.

Table I.—Individual Female Reproductive Capacity Assessments by Year of Birth and Age. England and Wales.

		Year	of Bi	rth a	nd Ag	e. E	nglar	id and	1 Wal	es.	mate	
PAGE 1	91.27	57.98		1	capar	Year of	Birth	1 1690	i siT		onasa	
Age	1841	1851	1861	1871	1881	1891	1901	1911	1921	1931	1941	1951
1. Female	Generati	on Death	Rates (	per 100,	000 per a	nnum).						
0-4 5-9 10-14 15-19 20-24 25-34 35-44	5,990 880 513 724 816 918 1,115	6,260 832 460 632 708 800 1,020	6,340 738 392 519 585 664 860	6,040 604 325 417 466 531 650	5,420 499 268 333 371 411 550	5,190 414 225 277 330 425 438	4,560 360 214 365 320 309 370	3,550 320 174 232 268 252 280	2,400 217 132 186 226 209 235	1,650 166 96 150 190 176 200	1,210 124 77 124 160 148 172	990 101 63 104 136 126 147
2. Years of		ACCUSED NO. ACCUSED	PETER SECURITY OF									uditor.
0- 5- 10- 15- 20- 25- 30- 35- 40-	4,096 3,688 3,562 3,453 3,323 3,185 3,040 2,889 2,731	4,077 3,644 3,528 3,435 3,323 3,203 3,076 2,940 2,792	4,073 3,638 3,536 3,456 3,363 3,263 3,156 3,040 2,910	4,104 3,704 3,618 3,550 3,472 3,388 3,299 3,204 3,102	4,153 3,826 3,752 3,695 3,629 3,560 3,487 3,408 3,315	4,150 3,875 3,813 3,766 3,709 3,641 3,564 3,486 3,410	4,222 3,996 3,943 3,881 3,813 3,752 3,694 3,634 3,567	4,395 4,188 4,136 4,094 4,044 3,992 3,942 3,892 3,892 3,837	4,566 4,428 4,387 4,352 4,307 4,260 4,215 4,170 4,120	4,681 4,593 4,562 4,534 4,496 4,456 4,416 4,376 4,333	4,758 4,696 4,673 4,650 4,616 4,581 4,547 4,511 4,473	4,783 4,750 4,731 4,712 4,684 4,653 4,624 4,594 4,560
3. Capacity unit	units at	each ag	e group	×5 (per	1,000 fer	males bo	rn).	Section				
value 15- ·12 20- ·22 25- ·21 30- ·19 35- ·17 40- ·09	414 731 669 578 491 246	412 731 673 584 500 251	415 740 685 600 517 262	426 764 711 627 545 279	443 798 748 663 579 298	452 816 765 677 593 307	466 839 788 702 618 321	491 890 838 749 662 345	522 948 895 801 709 371	544 989 936 839 744 390	558 1,016 962 864 767 403	565 1,030 977 879 781 410
4. Capacity 15 & under			age to 4:	$5 \times 5$ (per 3,352	3,529	emales t	orn).	2.075	1 016	4 440	4 570	4.640
20 25 30 35 40	3,129 2,715 1,984 1,315 737 246	3,151 2,739 2,008 1,335 751 251	2,804 2,064 1,379 779 262	2,926 2,162 1,451 824 279	3,086 2,288 1,540 877 298	3,158 2,342 1,577 900 307	3,268 2,429 1,641 939 321	3,975 3,484 2,594 1,756 1,007 345	4,246 3,724 2,776 1,881 1,080 371	4,442 3,898 2,909 1,973 1,134 390	4,570 4,012 2,996 2,034 1,170 403	4,642 4,077 3,047 2,070 1,191 410
5. Unexpen	ded capa	city uni	ts at eac	h age ×	5 (per 1,	000 fema	les born	· love	Sorto Ro			
0- 5- 10-	3,129	3,151	3,219	3,352	3,529	3,610	3,734	3,975	4,246	4,442	4,570	4,642
10- 15- 20- 25- 30- 35- 40-	2,922 2,349 1,650 1,026 491 123	2,945 2,373 1,672 1,043 501 125	3,011 2,434 1,722 1,079 521 131	3,139 2,544 1,806 1,137 552 139	3,307 2,687 1,914 1,208 587 149	3,384 2,750 1,960 1,239 604 153	3,501 2,848 2,035 1,290 630 160	3,729 3,039 2,175 1,382 676 172	3,985 3,250 2,328 1,481 726 185	4,170 3,404 2,441 1,553 762 195	4,291 3,504 2,515 1,602 786 201	4,360 3,562 2,559 1,630 801 205
6. Reproduc	•6258	6302	female	at each	·7058			birth).	9402	.0004 1	01404	0204
0- 5- 10- 15- 20- 25- 30- 35- 40-	.7639 .8484 .8784 .8462 .7069 .5181 .3375 .1700	-7729 -8647 -8931 -8574 -7141 -5220 -3391 -1704 -0450	·7903 ·8848 ·9104 ·8712 ·7238 ·5277 ·3419 ·1714 ·0450	-8168 -9050 -9265 -8842 -7327 -5331 -3446 -1723 -0450	·8497 ·9224 ·9406 ·8950 ·7404 ·5376 ·3464 ·1722 ·0450	-7220 -8699 -9316 -9468 -8986 -7414 -5383 -3476 -1733 -0450	-7468 -8844 -9344 -9470 -9021 -7469 -5424 -3492 -1734 -0450	-9044 -9491 -9611 -9108 -7515 -5448 -3506 -1737 -0450	·8492 ·9299 ·9589 ·9679 ·9157 ·7546 ·5465 ·3514 ·1741 ·0450	·8884 ·9489 ·9671 ·9737 ·9197 ·7571 ·5478 ·3517 ·1741 ·0450	.9140 .9605 .9732 .9780 .9228 .7591 .5490 .3523 .1742	·9284 ·9705 ·9773 ·9812 ·9253 ·7605 ·5500 ·3525 ·1744 ·0450

Section 1 shows the generation death rates associated with females born in England and Wales at successive dates from 1841 to 1951; they are derived from registration records to date, supplemented by projections in respect of future mortality. The basis was fully described in the 1938-39 Text, the only modification being a slight variation in the forecast values to conform to the projections now employed in the Department.

Section 2 shows the numbers of years of life lived in quinary sections of age by 1,000 female infants of each birth year as they progressively diminish by the death rates of section 1 up to the age of 45. Standard life table technique is employed in the construction of the numbers, approximations having been freely resorted to, commensurate with the approximate nature of the construction generally.

Section 3. The total reproductive capacity of each generation is next obtained by multiplying the years of life lived in the six quinary age sections between 15 and 45 by the adopted capacity unit fractions set out above. It may be noted that the products as shown represent five times the actual capacities, the quinary age capacity factors having been applied to aggregates of individual survivorship years.

Section 4. In this section the capacity values in the separate age groups of section 3 are summed to show the total capacity value from and above each age identified, and in

Section 5 the total capacities of section 4 are abated by one-half of the capacity in the single age group to shew approximately the unexpended capacity possessed by each generation when it reaches the middle of the quinary age period identified.

Section 6. This section shows the final individual female capacity assessment and is obtained by dividing the unexpended capacity at each age by the average number of female survivors at the same age (=section 5 ÷ section 2).

The values of section 6 provide the frame from which the reproductive capacity of every female in the populations of the past century can be assessed in terms of the capacity unit adopted, the assessments in respect of females born in years other than those identified in the table being adequately obtained by interpolation from the stated numbers on the several age lines.

Reading the columns of section 6 downwards, it will be observed how the latent capacity per female survivor of each generation rises with the gradual reduction in the number of survivors up to the maximum which is reached at age 15, from which age the capacity begins to be expended with a consequential and steady decline in the unexpended capacity from that age to the terminal age of 45, at which the capacity is assumed to be finally exhausted.

The top line of section 6 assessing the capacity at birth is of interest in showing the remarkable improvement which has been recorded over the century, the present prospective population-producing power possessed by the girl infant of to-day being half as much again as that of her forerunner of 100 years ago.

In the remaining sections the individual female assessments are applied to the actual population conditions of England and Wales at decennial intervals since 1871.

Table II.—Population Reproductive Capacity Assessments, 1871-1941.

England and Wales.

Age	MORDE!	qui ot .	reliev t	Calen	dar Year	worls.7	To for	
	1871	1881	1891	1901	1911	1921	1931	1941
7. Capacity per female at each age (by interpolation from Section 6).	1000		i rentë	Casa Y	GALLS GARCES	14000		
0-	·810 ·889	·843 ·909	·866 ·926	·881 ·933	·900 ·936	·924 ·952	·945 ·961	-958
10-	.906	.922	.937	•933	.936	-952	-961	·968
20-1-1-1	·860 ·712	·874 ·721	·887 ·730	·896 ·738	·900 ·741	·903 ·745	.912	.910
919/04/07/70 44 25- 000000 000 0000	.519	·523 ·339	.529	.534	-538	.539	·750 ·543	·75
30-	·337 ·170	·339 ·170	·341 ·171	·344 ·171	·346 ·172	·347 ·173	·349 ·173	.35
40-	.045	.045	.045	.045	.045	.045	.045	·17:
8. Female Population in thousands—(Censuses to 1931, Estimate in 1941).	\$1101f	v Sarg	011-74	Helichy	100 P	64, Of	ANIBE	2
- 10- 10- 10- 10- 10- 10- 10- 10- 10- 10	1,535	1,763	1,778	1,861	1,918	1,640	1,480	1,39
5- 10-	1,356 1,203	1,579 1,398	1,702	1,748	1,850	1,640 1,752	1 1 645	1,35
15-	1,096	1,279 1,216	1,613 1,486	1,671 1,639	1,752	1,823 1,775 1,703	1,587 1,725 1,795	1.63
20- 25-	1,053	1,216	1,399	1,648 1,496	1,673 1,623	1 1 620	1,795 1,728	1,61
30-	814	905	1,050	1,274	1,501 1,352	1,520	1,622 1,520	1.76
35- 40-	701 640	796 726	916 801	1,274 1,111 953	1,352 1,158	1,472 1,378	1,520 1,434	1,69 1,57
Total under 45	9,335	10,729	11,984	13,401	14,509	14,683	14,536	14,21
Population (thousands).	i mon	es io. aeim	antage of the			adtit	nonos mugni	
0- 5-	1,243 1,205	1,486	1,540 1,576	1,640	1,726 1,732	1,515	1,399	1,33 1,31 1,42
10-10-10-10-10-10-10-10-10-10-10-10-10-1	1,090	1,435 1,289	1.511	1,631	1.659	1,668	1,581	1,31
15-	943 750	1,118	1,318 1,021	1,469	1,514 1,240	1,603	1,573	1 1.49
25-	486	558	655	1,469 1,216 799	873	1,269	1,346	1,21
30- 35-	274 119	307 135	358 157	438	519	527	566	61
40-	29	33	36	190 43	233 52	255 62	263 65	29
Total	6,139	7,238	8,172	9,007	9,548	9,518	9,264	8,70
O. Capacity Units expended in calendar year × 5 (thousands).	eigeslig moorte	inella.	peti nin	kinin :	i engin	12-30	rri 63	
unit value 15- ·12	131.5	153.5	178.3	196.7		212.0	007.0	100
2022	231.7	267.5	307.8	362.6	201·8 368·1	213·0 374·7	207·0 394·9	196
25- ·21 30- ·19	196·8 154·7	224·1 172·0	260·2 199·5	314·2 242·1	340.8	340.2	362.9	360.
35- •17	119.2	135.3	155.7	188.9	285.2	288.8	308·2 258·4	335.
40- ·09 Total (×5)	57·6 891·5	65·3 1,017·7	72.1	85.8	104·2 1,529·9	124.0	129·1 1,660·5	141.
Island were ariest non-the	(Billional)	A Services	CALCUS CA	(1) (m) (m)	A COLORES	1500 163	* ISA 18	1,677
Total units expended	178.3	203.5	234.7	278.1	306.0	318.2	332.1	335.
Percentage of total capacity expended in calendar year.	2.90	2.81	2.87	3.09	3.20	3.34	3.58	3.8
Female Births in calendar year	400.2	434.2	439-2	457.8	432.2	413.6	308.5	282
(thousands).  Capacity value per female born.	-6704	.7058	-7220	·7468	•7950	-8492	·8884	-914
. Capacity Units produced in	268-3	306.5	317.1	342.0	343.6	351-2	274.1	257.
Capacity Units produced in calendar year (thousands).	j sentu	r minim	poid .	sis a lan	A1 341	331.2	11000	237
. Ratio of units produced to units	1.505	1.506	1.351	1.230	1.123	1.104	-825	•76
expended in calendar year, Published E.R.R. (for com-		A Farm	2353000	5114 by	1010100	To service of	483786	Car D
parison).	1.562	1.576	1.413	1.263	1.127	1.110	-816	.76

Section 8 shews the numbers of females by age groups under 45, enumerated at successive censuses (estimate for 1941), and

Section 7 shows the capacity value to be associated with each female in the successive age groups. The females of the several age groups will have been born in different quinquennia prior to each census and their appropriate capacity assessments have been ascertained from section 6 by interpolation.

Section 9 is obtained by multiplying the individual assessments of section 7 by the actual populations of section 8 and, in the total line, provides the first objective in shewing the total capacity units in the population in each census year.

Section 10 shews the number of capacity units expended in the course of the year; and it is obtained by multiplying the female populations at the reproductive ages (section 8) by the proportions in which the basic capacity unit is distributed over the reproductive range of ages and dividing the aggregate of the products by 5. The capacity expended is the capacity consumed by the passage of the females through a year of their reproductive life and is not to be confused with the exercise of the capacity as revealed by the number of births produced.

Section 11 shews the percentage of section 10 aggregate to section 9 aggregate.

Sections 12-14 ascertain the corresponding capacities produced in the course of each year (section 14); by multiplying the female births of the year (section 12) by the capacity value per birth (section 13) ascertained from section 6.

Sections 15 and 16 shew the replacement ratios; the capacity replacement value, obtained by relating the capacity produced (section 14) to the capacity expended (section 10) in the calendar year, being shewn at 15; and the previously published E.R.R. for comparison at 16.

Calculations similar to those described above have been made for individual calendar years since 1911 and the combined results are summarized in Table III.

The leading feature of this table is that provided by column 2 which purports to shew the total reproductive capacity of the population at the several dates identified from 1871 to the present time.

If, as has been suggested, the reproductive power of a population at any time is a governing factor in the subsequent development of the population, it is clearly desirable that means should be sought, if possible, of measuring that power, even though the precision of the measuring instrument may not be such as to yield results entirely free from some approximation error.

It is common knowledge, for example, that the population position in this country has for some time been such as to give rise to uneasiness, mainly because the birth rate fell below a normal replacement standard in 1923 and has, at any rate until recently, been persistently below such standard; but how far is it known that the decline in the basic reproductive power of the population began after 1916, some seven years before 1923; that the fall in the seven years prior to 1923 was nearly as much as that of the following

Table III.—Population Measurements in Units of Reproductive Capacity, 1871-1948. England and Wales.

The state of the	Total re-	Units consumed	Percentage	Units	Capacity		arison with
Calendar year	productive capacity of population (thousands)	in calendar year (thousands)	of total capacity consumed . in year	replaced by new births in year (thousands)	replacement ratio (5)÷(3)	E.R.R. as published	Ratio of unweighted populations 15-45
1	2	3	4	5	6	7	8
Long Range	a transmission			ar Herry			
1871	6,139	178·3	2·90	268·3	1·505	1·562	1·529
	7,238	203·5	2·81	306·5	1·506	1·576	1·528
	8,172	234·7	2·87	317·1	1·351	1·413	1·375
	9,007	278·1	3·09	342·0	1·230	1·263	1·259
1911	9,548	306·0	3·20	343·6	1·123	1·127	1·145
	9,518	318·2	3·34	351·2	1·104	1·110	1·113
	9,264	332·1	3·58	274·1	·825	·816	·836
	8,705	335·6	3·86	257·7	·768	·761	·773
Individual Calendar	Years	*.f.cargo		avertue [1]			1 1/5
1911	9,548	306·0	3·20	343·6	1·123	1*127	1·145
	9,541	304·9	3·20	342·4	1·123	1·127	1·138
	9,557	305·7	3·20	348·8	1·141	1·147	1·155
	9,607	308·1	3·21	348·5	1·131	1·138	1·142
	9,657	311·3	3·22	320·1	1·028	1·031	1·038
1916	9,671	313·9	3·25	313·6	.999	1.004	1.010
	9,656	316·0	3·27	268·1	.848	.851	.855
	9,592	317·2	3·31	261·3	.824	.826	.831
	9,473	316·6	3·34	297·6	.940	.944	.947
	9,488	315·8	3·33	394·5	1.249	1.265	1.253
1921	9,518	318·2	3·34	351·2	1·104	1·110	1·113
	9,527	319·6	3·35	322·8	1·010	1·013	1·017
	9,512	320·8	3·37	318·3	·992	·994	1·001
	9,493	322·2	3·39	307·7	·955	·954	·963
	9,471	323·9	3·42	301·1	·930	·928	·938
1926	9,447	325·5	3·45	296·4	·911	-908	·919
	9,445	327·0	3·46	280·2	·857	-853	·865
	9,409	328·7	3·49	283·7	·863	-859	·872
	9,353	330·0	3·53	277·7	·842	-835	·850
	9,300	331·2	3·56	280·9	·848	-840	·857
1931	9,264	332·1	3·58	274·1	·825	·816	·836
	9,212	332·2	3·61	267·0	·804	·790	·815
	9,156	331·9	3·62	253·8	·765	·747	·777
	9,085	331·4	3·65	261·0	·788	·•766	·803
	9,023	334·0	3·70	262·1	·785	·764	·798
1936	8,976	335·9	3·74	266·1	•792	·774	·805
	8,929	336·2	3·77	268·8	•800	·785	·808
	8,892	335·1	3·77	274·8	•820	·810	·824
	8,868	334·3	3·77	271·9	•813	·808	·813
	8,819	336·7	3·82	262·2	•779	·772	·782
1941	8,705	335.6	3.86	257·7	.768	•761	•773
	8,668	335.8	3.87	289·1	.861	•853	•865
	8,666	335.0	3.87	304·2	.908	•900	•915
	8,668	333.4	3.85	334·5	1.003	•996	1•008
	8,640	331.1	3.83	303·8	.918	•909	•920
1946	8,638	330·1	3·82	367·5	1·113	1·103	1·116
1947	8,692	325·2	3·74	394·8	1·214	1·205	1·214
1948	8,765	323·0	3·69	348·0	1·077	1·070	1·080

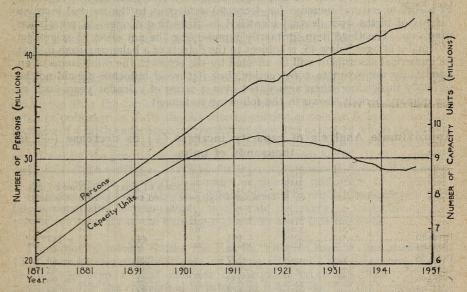
seven years, or that, in spite of a subsequent increase of 11 per cent. in the size of the population, its inherent reproductive power to-day is some 9 per cent. less than it was during the first world war?

A particular advantage of the capacity type of measurement is that it enables important changes to be associated with the dates at which they occur rather than with more indefinite conditions of the future, and it avoids the danger of misunderstanding which has arisen in the past through such changes having been masked by the quite different changes suggested by the more customary

Ineasures of population movement. The latter is usefully illustrated by Diagram U, in which changes in the numbers of individuals in the population over the period 1871–1948 may be seen in relation to the simultaneous changes in the reproductive capacity of the population as set out in column 2 of Table III.

DIAGRAM U.—Course of the Population of England and Wales, 1871-1948, Measured in Terms of: (a) Number of Persons, (b) Units of Reproductive Capacity.

(Decennial intervals to 1911, single years thereafter)



The top curve shews the familiar course of the population measured in the customary form of the numbers of persons at successive periods and exhibits the steady and continuous increase associated with the whole of the period covered

The lower curve which shows the reproductive capacity of the population is seen to have taken a radically different course. From 1871 to 1901 the capacity increased by 47 per cent., an increase not very different from that of the population, viz., 43 per cent.; but thereafter the two began to diverge, the population continuing to increase at much the same gradient while the growth in reproductive power began to slacken and by 1911 had nearly ceased, achieving a capacity maximum in the neighbourhood of  $9\frac{1}{2}$  million units during the first world war. From that time, notwithstanding the continued increase in the numbers of individuals, the reproductive capacity began a decline which has persisted for more than two decades and has lowered the level to a point some 9 per cent. below its maximum of the first war period. There is no doubt that from the point of view of its prospective influence upon future numbers, the population of to-day is some 9 per cent. poorer off than it was after the first war.

Since about 1940 the fall appears to have been arrested, and, allowing for the unevenness of the war births due to temporary postponements, would appear to have levelled itself out for the time being in the region of 8,700 thousand units, a level which, under the mortality conditions anticipated in the future,

may be regarded as commensurate with a stable population of about 45 million persons.

The change in total capacity from time to time may be regarded as due in the main to three factors, two of them directly associated with reproduction itself, viz., the units added by the new births, and the units consumed in the course of producing the births, together with a third balancing item, mainly ascribable to migration, but including a mortality component if the mortality experienced is significantly different from that anticipated by the construction. The additions and deductions associated with reproduction are shown in columns 5 and 3 of Table III and the difference between them may be regarded as a sort of natural increase (or decrease) analogous to the natural increase (excess of births over deaths) identified in measuring changes in population numbers. The third item, primarily representing the net effect of migration of females at ages below 45, is subject to the defects of a balancing item in that its numerical assessment will be affected by the errors in the other items of an admittedly approximate construction, but its broad influence should not be seriously misleading when aggregated over a series of calendar years such as the quinary periods shown in the following statement:

Approximate Analysis of capacity increase (+) or decrease (-) in thousands of units.

brabuste off and has be lighted to Period delister at the rest and maintain of vices	Total capacity loss	Excess of units created over units consumed	Balance of gain or loss mainly due to migration		
1916–20. 1921–25.	-161 - 44	- 44 - 4	-117* - 40		
1926–30 1931–35	-177 -282	$ \begin{array}{r} -223 \\ -344 \end{array} $	$\begin{array}{c} -40 \\ +46 \\ +62 \end{array}$		
1936–40	-232 $-238$ $-123$	-344 $-334$ $-182$	+ 62 + 96 + 59		

<sup>\*</sup> The exceptional influenza mortality of 1918 and 1919 was a contributory factor here.

It will be seen from this analysis that during the first two quinquennia 1916–1925, influenced as they were by the disturbance of the first world war, there was a comparatively minor loss from the natural factors but that it was markedly worsened by an adverse balancing loss over the period. It was clearly due to the latter rather than an insufficiency of births that the first fall in the reproductive capacity of the population was primarily due.

In contrast thereto, the generally larger total falls registered over the four succeeding quinquennia have been entirely due to birth deficiencies which have this time been mitigated rather than otherwise by the migration component, the course of the latter having changed from an outward to an inward direction on balance during these periods. The last, 1941-45, record is abnormal and unrepresentative as it stands as it takes account only of the adverse portion of the recent war disturbance without the complementary restoration to be associated with the as yet incomplete post-war record.

The fourth column of Table III is of some interest in showing that the proportion of the total capacity consumed each year has been by no means constant over the period portrayed. During the latter half of the last century it was comparatively low at less than 3 per cent. per annum, owing to the

large and increasing numbers of births which were being added to the population each year, by reason of which the numbers of females actually within the child-bearing ages tended to be depressed in relation to the total females below age 45. After the turn of the century when the numbers of births began to fall, the position began to change with the adult child-bearing section assuming a gradually increasing representation and the annual capacity consumption thereby continually rising to the maximum of nearly 4 per cent. per annum reached at the beginning of the recent war, a level some 35 per cent. in excess of the nineteenth century minimum. Since then the position has once again changed, the annual rate of consumption having declined since 1943 and being likely to continue to do so for some time, owing to the smaller numbers of females now coming forward in the child-bearing ages, with the consequence that the numbers of new births necessary to replace the capacity consumed and to maintain the total capacity unaltered will be on a like decreasing scale for some years to come.

Finally, there remain the replacement ratios of column 6 which brings the subject back to the point from which it started. It will be clear from the discussion that the replacement ratio, whether in the form of the E.R.R. as hitherto published or in its slightly altered version of column 6, is an objective measure of a birth experience purporting to show the extent to which the latent reproductive capacity of the progeny replaces the similar reproductive capacity consumed by the progenitor generation in giving them birth. If the capacity created is of the same magnitude as the capacity consumed, the total capacity of the population necessarily remains unchanged and thus the standard replacement rate of unity, instead of being defined in relation to a hypothetical future population is seen simply as the rate necessary to maintain the reproductive capacity of the existing population at its existing level.

The ratios of column 6, like the E.R.Rs. hitherto used or the unweighted 15-45 population ratios, which are set out in columns 7 and 8 for comparison, are derived from a more complex construction procedure than is usually associated with the calculation of rates and indexes and for that reason they are necessarily subject to a margin of approximation. But the limited assumptions that have had to be employed in the construction have in no case been critical and their effect has been rather that of blunting the sensitiveness of the measuring instrument than in weakening the basic validity of the measurement itself.

The object of the examination has been to seek a clearer understanding of the E.R.R. rather than to change its substance, and though the general conclusion is that E.R.Rs. of the type of column 6 are generally to be preferred to those as at present calculated, it is not because of any great improvement in the numerical values, since the differences are usually negligible, but because the use of constant in place of variable weights simplifies the construction and vastly extends its range of application, and because ratios so constructed fit naturally into a wider system of population capacity measurements as has been described.

Regarding the capacity measurements generally, it is thought that the tentative constructions described above will have been helpful in throwing light on the behaviour of the primary growth characteristic of the population of this country over the past 80 years; the general picture could no doubt be improved in the light of informed demographic opinion in regard to the way the subject should be handled and to the conventions to be employed in its treatment.

### APPENDIX IV.

Government, Inter-Departmental and other Committees on non-medical subjects on which the Registrar General was represented during the six years, 1940 to 1945, included the following:—

Boundary Commission for England.
Boundary Commission for Wales.
Electoral Machinery Committee.
Industrial Classification (Inter-Departmental Committee).
Official Statistics (Consultative Committee).
Overseas Travel Committee (Irish Section).
Royal Commission on Population (Statistics Committee).

#### INDEX

Index to the Tables and Diagrams in this Volume, and to the Tables in the related Parts II of the Registrar General's Statistical Reviews

Notes.—1. Unless otherwise stated, all items relate to England and Wales.

Unless otherwise stated, the tables in the Parts II relate to the years 1940 to 1945
respectively, and in the Text volume to the years 1938 to 1945 inclusive, either
separately, or over the period as a whole.

3 An asterisk (\*) indicates that the data are distributed according to the age of the mother, or in the case of the Infertility section, the age of the deceased.

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maries; administrative		T.	type and legitimacy		W
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