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COUNTY OF ANGLESEY

ANNUAL REPORT

OF THE

Medical Officer of Health

FOR THE YEAR 1954

G. WYNNE GRIFFITH,
M.D., D.P.H.

W. O. Jones (*Printers*), Ltd., Foundry Printing Works, Llangefni.

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To:

The Chairman and Members of the Health Committee.

My Lord, Ladies and Gentlemen,

I have the honour to present the forty-third Annual Report of the County Medical Officer of Health, being a report on the health of the county in 1954.

Vital Statistics.

The *population* of the county, estimated at mid-year to be 51,280, shows a slight increase on 1953. The *birth rate*, although still higher than that in England and Wales, again registered a slight fall in 1954.

The *stillbirth rate* was slightly higher than last year, but the *infant mortality rate* was the lowest ever recorded in the county. The *neonatal mortality rate* (relating to infants in the first month of life) was also the lowest on record, and for the first time ever was lower than the rate for England and Wales.

The danger of attaching too much importance to these rates as recorded in any single year for a county of this size has been repeatedly stressed and although it is gratifying to be able to report from time to time a fall in this rate or that, it is the trend over a number of years that should receive attention.

There was one *maternal death* during the year.

The notifiable *infectious diseases* were not unduly troublesome in 1954. *Measles* was much less prevalent than in the previous year, while *whooping cough* showed no great change. A few sporadic cases of *poliomyelitis* occurred. There was a sharp outbreak of *food poisoning* at a military establishment in May. Complete freedom from *diphtheria* has now continued for five successive years, and the last fatal case of this once common disease occurred in 1946.

An epidemic of *influenza B* swept through the county in November and December affecting school children in particular. A report on the outbreak has been submitted to the Education Committee.

The Census of 1951.

The detailed figures for the county of the 1951 census have now been published. As an appendix to this annual report will be

found an analysis of the census findings and information relating to the vital statistics of the county based on the census data. The analysis does not profess to exhaust the rich mine of information which a census provides for the working. The more evident features only have been examined and the more obvious comparisons only have been drawn. Much more could be done if time allowed and the necessary statistical facilities were available. To take one example, the differing incidence of mortality from separate causes in the several county districts has not been examined with the exception of mortality from cancer.

The reader is referred to the appendix for the detailed treatment, but certain salient findings deserve to be noted here.

The population in 1951 was almost exactly the same in size as in 1901 despite a relatively high fertility locally, in recent years at all events. The lack of growth of our population cannot be accounted for by a higher local mortality and indeed is but the obvious consequence of the emigration of young people. This selective depopulation contributes to the different age structure of the Anglesey population when compared with England and Wales. Relative to the size of the population there are 5 persons in Anglesey aged 70 to 79 years for every 4 in England and Wales, and 2 persons in Anglesey aged 80 years or more for every one in the country generally. The implications of such imbalance of population structure on the demand for certain services are obvious.

The decline in mortality in Anglesey during the twenty years from 1931 to 1951 is nothing short of remarkable, particularly at the younger ages. If the death rates that were operating in this county in 1931 were to operate at the present time there would be 200 more deaths per annum in the county and more than half of these would be deaths of persons under the age of 45 years. The figures show how improvement in the care of mothers and infants, and the success, as yet incomplete it is true, in the battle against tuberculosis have all contributed to this saving of life. Lest we become complacent about our successes the picture of mortality in Anglesey is held against that in England and Wales at the present time. This comparison tells us of the ground yet to be gained in tuberculosis and particularly in infant mortality. At the same time it reveals certain interesting differences that cannot in the present state of knowledge be satisfactorily accounted for. Why should our mortality from cancer of the stomach be so much higher than in England and Wales, or our mortality from cancer of the lung be so much lower ? Why should suicides be relatively less common in Anglesey to such a remarkable extent ? Mortality from cancer has been analysed in greater detail and the experience

of the several county districts is described. It is not that cancer was the only profitable subject for study—the necessary data happened to be available. A similar analysis for tuberculosis, for infant deaths, etc., would no doubt have proved equally interesting, but to seek out the material needed for such studies would have been impossible with our present resources.

Housing statistics show that in 1951 nearly one family in every five would be regarded as living in over-crowded conditions judged by an "ideal" standard relating the number of rooms to the size of the family. There had been a considerable improvement in this respect since 1931, but there was still a long way to go. One of the most disturbing features revealed by the census was the widespread lack of certain basic household amenities. Only one household in four in the county had the exclusive use of the five amenities listed, and half the households in Anglesey were entirely without the use (even the shared use) of a piped water supply, a water closet and a kitchen sink.

Research into the Causation of Cancer.

The department has continued to assist the large scale research project into the causation of cancer, which is being conducted by the Cheshire and North Wales Branch of the British Empire Cancer Campaign.

Confidential information relating to environment, diet, smoking habits and, in the case of women, reproductive history, is obtained for all cases of malignant disease occurring in Anglesey residents. In selected instances soil samples are taken from the vicinity of the last known residence of persons dying from cancer. The apparatus to measure atmospheric pollution has been installed by the British Empire Cancer Campaign at Llangefni and is being operated under the supervision of the Chief Inspector of Food and Drugs. The research is being conducted throughout North Wales and parts of Cheshire and Lancashire under the direction of Dr. Percy Stocks, C.M.G., and already, during the first half of the planned 5-year period, information has been obtained for more than 10,000 fatal cases in this region.

Preliminary analyses of the data so far obtained afford grounds for hoping that this research will succeed in elucidating certain aspects of this most difficult and complex of problems. Some indication has appeared of the role, for instance, of atmospheric pollution in the causation of cancer of the lung, and of the influence of marital and reproductive history on the incidence of cancer of the breast.

Another interesting clue that has been unearthed is an association between cancer of the stomach and the nature of the soil in the vicinity of the deceased's residence. In collaboration with Mr. R. I. Davies, an expert on the chemistry of soils, working in the Department of Agriculture, U.C.N.W., Bangor, an analysis of mortality from cancer of the stomach in Anglesey during the ten year period 1943/52 has been made and the results published in two papers. Dr. Stocks' preliminary analysis of his data tends to confirm the existence of a relationship between mortality from this cancer and certain varieties of soil.

This research has meant a certain amount of additional work for the department, but the value of the work is unquestionable. The Medical Officer of Health and his staff are uniquely placed to assist in projects of this kind, and indeed without his co-operation field research of this sort would hardly be practicable. We have a duty to assist to the best of our ability in these efforts to throw light on dark places.

Sanitary Circumstances.

The continued progress of the district councils in the provision of council houses is most gratifying to all concerned with the health of the public. Detailed comment will be found elsewhere in this report. One council only, Holyhead Urban District Council, has not in recent years made as much progress as one would wish. One-fifth of the county's population lives in Holyhead, and many of the existing houses are unfit. A major housing drive in this district seems to be overdue.

In the provision of water-borne sewage disposal, marked progress has been made in the Valley Rural District, and work should commence in 1955 on several schemes in this district. Aethwy Rural District have a major scheme (Newborough) about to commence. No major scheme appears to be imminent in Twrcelyn Rural District. There are three seaside villages in this district whose populations increase greatly during the summer months. At the height of the season the present state of affairs is reported to be most unsatisfactory. In view of the rapid growth of the town in recent years there is urgent need to modernize and enlarge the sewage disposal arrangements in Llangefni.

Clinic Premises.

In 1953 clinic premises were adapted at the Old Gaol, Beaumaris, and have proved to be highly successful,

During 1954 the Council acquired and adapted St. David's Priory, Holyhead, as a clinic and ambulance station. This, too, has turned out to be a very successful operation. The buildings were formally opened by Mrs. Walter O. Jones, J.P., the senior lady member of the County Council, on 6th December, 1954.

The need for improved clinic accommodation at Llangefni is acknowledged and plans are being prepared for a new building which will also incorporate an ambulance station.

Personal.

The county sanitary inspector (Mr. I. Wynn Jones) took up his appointment in April. It is hoped to include a special section dealing with his work in future reports.

Acknowledgements.

Once again I am glad of the opportunity to bring to your attention the many services rendered by voluntary workers, particularly the voluntary helpers at the infant welfare clinics, the St. John Detachments and the British Red Cross Society.

It is a pleasure, too, to acknowledge the kindness and co-operation shown by the other officers of the council. I am particularly indebted to the Clerk of the Council and his department for assistance and advice frequently sought and readily given. The County Water Engineer (Mr. W. H. Austin), and the Inspector of Food and Drugs (Mr. H. A. Thomas) kindly provided information relating to their departments for inclusion in this report. I am indebted to the district medical officers of health, the assistant county medical officers, the nursing and clerical staff for their loyal co-operation. I welcome, too, the opportunity to thank you, Sir, and the members of the Health Committee, for the interest you have evinced in the work of the department and for the support you have accorded to me at all times.

I am,

Your obedient servant,

G. WYNNE GRIFFITH,
County Medical Officer.

September, 1955.

Table 1.

GENERAL STATISTICS.

District	*Area in Acres*	**Population*	*Rateable Value (1.4.54)*
			£
Beaumaris Borough	3,135	2,250	13,870
Amlwch Urban	4,494	3,020	13,533
Holyhead Urban	730	10,340	53,181
Llangefni Urban	2,510	2,370	17,163
Menai Bridge Urban	824	1,980	11,852
Total Urban Districts	11,693	19,960	109,599
Aethwy Rural	52,352	10,690	36,427
Twrcelyn Rural	53,865	8,530	29,209
Valley Rural	58,784	12,100	49,069
Total Rural Districts	165,001	31,320	114,705
Total Administrative County..	176,694	51,280	224,304

*Registrar General's estimate for mid year 1954

Product of 1d. rate for County 1954/55 ..... £894

METEOROLOGY

Monthly climatological data relating to R.A.F. Establishment, Valley, and supplied by courtesy of the Director of the Meteorological Office, Air Ministry.

Table 2

Year	Rainfall		Sunshine		Temperature.		Fog
1954	*Mean dly. rainfall mms.*	*No. of Wet Days*	*Mean dly. hrs. of sunshine*	*No. of sunny days*	*Mean Max. Day Temp.*	*Mean Min. Night Temp.*	*No. of days fog record-ed.*
January	1.8	10	1.86	4	45	38	2
February ..	2.9	17	2.90	5	45	35	3
March	2.4	12	4.85	12	50	39	1
April	1.1	6	7.58	18	53	40	3
May.....	2.2	8	6.50	15	58	46	5
June	2.7	10	6.04	8	60	50	4
July	2.5	13	4.13	4	61	52	4
August	2.8	13	5.13	8	62	53	7
September ..	2.9	17	5.49	10	60	51	0
October	5.1	19	1.85	4	57	51	3
November ..	5.6	18	2.33	4	51	44	2
December ..	2.6	13	1.98	2	49	43	0

(1) "Wet day" is a day when 1.0 mm. or more of rain was recorded.

(2) "Sunny day" is a day when 60 per cent. of possible hours of sunshine was recorded.

(3) Temperature in degrees Fahrenheit.

Rainfall was considerably higher than in the previous year, whilst fog was somewhat less prevalent. The number of sunny days was approximately the same, but the mean temperatures were lower, especially during the summer months.

VITAL STATISTICS

Where possible the comparable rates for England and Wales are shown. For the current year these are provisional figures issued by the Registrar General.

A table will be found at Appendix "D" showing the statistics for the individual county districts.

Births.

There were 814 *live births* registered during the year, corresponding to a birth rate of 15.9 per 1,000 population.

The trend of the birth rate over the past 10 years can be seen from the table set out overleaf, which gives the England and Wales data for comparison.

Table 3

BIRTH RATE PER 1,000 POPULATION

	Anglesey	*England and Wales*
1945	17.7	15.9
1946	18.9	19.2
1947	19.9	20.5
1948	18.7	17.9
1949	17.8	16.7
1950	16.8	15.8
1951	16.1	15.5
1952	17.0	15.3
1953	16.1	15.5
1954	15.9	15.2

Illegitimate live births accounted for 43 out of the total of 814 live births. The illegitimate birth rate is thus 0.84 per 1,000 population. The trend of the illegitimate birth rate over the past 10 years can be seen from the table set out below, which gives for comparison the corresponding rates for England and Wales.

Table 4.

ILLEGITIMATE BIRTH RATE PER 1,000 POPULATION

	Anglesey	*England and Wales*
1945	2.1	1.5
1946	2.3	1.3
1947	1.8	1.1
1948	1.7	1.0
1949	1.0	0.8
1950	1.3	0.8
1951	0.9	0.7
1952	1.2	0.7
1953	1.2	*0.7
1954	0.8	Not available

* Provisional.

Stillbirths during the year numbered 21, which gives a stillbirth rate of 0.41 per 1,000 population. The corresponding rate for England and Wales was 0.36. To express stillbirths as a rate per 1,000 population is liable to mislead, because if the population is ageing, that fact alone would cause a decline in the rate computed

in this way. It is of more interest to know what proportion of developing pregnancies (i.e. pregnancies which advance to the 28th week) have live issue. Table 5 shows the stillbirth rate per 1,000 total (live and still) births for the past 10 years, with the England and Wales figures for comparison.

Table 5.

STILLBIRTHS PER 1,000 BIRTHS (LIVE AND STILL)

	Anglesey	*England and Wales*
1945	30	28
1946	34	27
1947	33	24
1948	34	23
1949	28	23
1950	29	23
1951	19	23
1952	25	23
1953	17	22
1954	25	24

Infant Mortality.

There were 23 deaths of infants under 12 months of age during the year. This gives an infant mortality rate of 28.2 per 1,000 live births. The corresponding rate for England and Wales was 25.5 per 1,000 live births.

The trend of the infant mortality rate over the past 10 years can be seen by reference to Table 6, where England and Wales rates are shown for comparison.

Table 6.

INFANT MORTALITY RATE.

	Anglesey	*England and Wales*
1945	74	46
1946	46	43
1947	43	41
1948	39	34
1949	45	32
1950	38	30
1951	55	30
1952	47	28
1953	33	27
1954	28	26

Neonatal Mortality.

It is convenient when considering the mortality of infancy to differentiate between deaths in the first month of life (neonatal deaths) and subsequent deaths in the first year of life. The neonatal mortality is closely allied to stillbirth in-so-far as factors operative during the pregnancy and the confinement are largely responsible for both. The table below sets out the neonatal mortality for the county alongside the figures for England and Wales for the past 10 years.

Table 7.

NEONATAL MORTALITY RATE.

(*Deaths under* 1 *month per* 1,000 *live births*)

	Anglesey	*England and Wales*
1945	32	25
1946	26	24
1947	25	23
1948	27	20
1949	29	19
1950	19	18
1951	28	19
1952	33	18
1953	22	18
1954	17	*18

*Provisional

Maternal Mortality.

There was one maternal death during the year. Table 8 gives details of maternal mortality for the past 10 years.

Table 8.

MATERNAL MORTALITY

		Rate per 1,000 total births (live and still)	
	Actual Number	*Anglesey*	*England and Wales*
1945	1	1.2	1.8
1946	2	2.1	1.4
1947	—	—	1.2
1948	—	—	1.0
1949	1	1.1	1.0
1950	—	—	0.9
1951	—	—	0.8
1952	1	1.1	0.8
1953	1	1.2	0.8
1954	1	1.2	0.7

General Mortality.

There were 731 deaths of persons at all ages registered during the year after allowing for transferable deaths (inward and outward). This gives a crude death rate of 14.2 per 1,000 population. The corresponding rate for England and Wales was 11.3. Because the rates, as computed, take no account of differences in the age composition of the population in question (hence the appellation "crude") whereas as a matter of common experience, mortality is correlated to age, valid comparisons of crude rates are impossible to make. Applying the comparability factor given by the Registrar General to the crude death rate gives a corrected death rate of 11.9 per 1,000 population.

Tables 9 and 10 show the deaths according to the cause and classified by age at death and by county district respectively.

There were 9 fewer deaths in 1954 than in the previous year.

Table 9.

CAUSES OF DEATH AT DIFFERENT PERIODS OF LIFE, 1954.

	Causes.	Males								Females								*Total*
		0-	1-	5-	15-	25-	45-	65-	75-	0-	1-	5-	15-	25-	45-	65-	75-	
1	Tuberculosis, respiratory	—	—	—	—	2	2	3	—	—	—	—	1	1	3	2	—	14
2	Tuberculosis, other	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3	Syphilitic disease	—	—	—	—	1	1	—	—	—	—	—	—	—	2	—	—	4
4	Diphtheria	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5	Whooping Cough	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
6	Meningococcal Infections	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
7	Acute poliomyelitis	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8	Measles	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1
9	Other infective diseases	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	1
10	Cancer of stomach	—	—	—	—	—	8		3	—	—	—	—	—	3	9	7	35
11	Cancer of lung	—	—	—	—	1	7	3	—	—	—	—	—	1	1	2	—	15
12	Cancer of breast	—	—	—	—	—	—	1	—	—	—	—	—	1	3	3	3	11
13	Cancer of uterus	—	—	—	—	—	—	—	—	—	—	—	—	1	—	2	—	3
14	Cancer of all other sites	—	—	—	—	—	9	17	12	—	—	—	—	—	6	13	10	67
15	Leukaemia	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	1
16	Diabetes	—	—	—	—	—	1	1	—	—	—	—	—	—	1	1	2	6
17	Vascular lesions of nervous system	—	—	—	—	—	6	14	32	—	—	—	—	—	12	27	48	139

18	Coronary disease, angina	—	—	—	—	1	14	18	16	—	—	—	—	—	7	4	8	68
19	Hypertension with heart disease	—	—	—	—	—	4	4	1	—	—	—	—	—	2	5	5	21
20	Other heart diseases	—	—	—	—	—	6	7	33	—	—	—	—	2	5	13	53	119
21	Other circulatory diseases	—	—	—	—	—	1	7	7	1	—	—	—	—	2	7	9	34
22	Influenza	—	—	—	—	—	—	1	3	—	—	—	—	—	—	1	4	9
23	Pneumonia	2	2	—	—	—	—	3	1	1	—	1	—	—	2	—	5	17
24	Bronchitis	1	—	—	—	1	8	8	8	—	—	—	—	—	3	2	9	40
25	Other diseases of respiratory system	—	—	—	—	—	1	—	1	—	—	—	—	1	—	1	—	4
26	Ulcer of stomach and duodenum	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	1
27	Gastritis, enteritis and diarrhoea	1	—	—	—	—	—	1	—	—	—	—	—	—	1	—	—	3
28	Nephritis and nephrosis	—	—	1	—	—	—	—	4	—	—	—	—	—	—	1	2	8
29	Hyperplasia of prostate	—	—	—	—	—	—	4	9	—	—	—	—	—	—	—	—	13
30	Pregnancy, childbirth, abortion	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	1
31	Congenital malformations	1	—	—	—	—	2	—	—	2	—	—	—	1	—	—	—	6
32	Other defined and ill-defined diseases	10	1	1	1	—	3	4	6	3	—	—	—	1	7	7	18	62
33	Motor vehicle accidents	—	—	—	—	1	2	1	1	—	—	—	—	—	—	—	—	5
34	All other accidents	—	—	1	2	2	2	—	2	1	1	—	—	—	—	1	5	17
35	Suicide	—	—	—	—	—	1	3	—	—	—	—	—	—	—	1	—	5
36	Homicide and operations of war	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	All causes	15	4	4	3	10	79	105	139	8	1	1	1	10	61	102	188	731

Table 10.

CAUSES OF DEATH CLASSIFIED BY COUNTY DISTRICTS, 1954

	CAUSES	*Amlwch*	*Beaumaris*	*Holyhead*	*Llangefni*	*Menai Bridge*	*Aethwy*	*Twrcelyn*	*Valley*	*Total*
1	Tuberculosis, respiratory	1	—	2	2	2	3	—	4	14
2	Tuberculosis, other	—	—	—	—	—	—	—	—	—
3	Syphilitic disease	—	—	1	—	—	1	1	1	4
4	Diphtheria	—	—	—	—	—	—	—	—	—
5	Whooping Cough	—	—	—	—	—	—	—	1	1
6	Meningococcal Infections	—	—	—	—	—	—	—	—	—
7	Acute Poliomyelitis	—	—	—	—	—	—	—	—	—
8	Measles	—	—	—	—	—	1	—	—	1
9	Other infective diseases	—	—	—	—	—	—	1	—	1
10	Cancer of stomach	1	1	4	1	—	4	14	10	35
11	Cancer of lung	1	—	5	—	—	4	2	3	15
12	Cancer of breast	—	1	1	—	—	4	3	2	11
13	Cancer of uterus	—	—	2	—	—	1	—	—	3
14	Cancer of all other sites	2	1	17	1	—	14	12	20	67
15	Leukaemia	—	—	—	—	—	—	1	—	1
16	Diabetes	1	—	1	—	—	1	2	1	6
17	Vascular lesions of nervous system	13	4	20	5	5	21	27	44	139
18	Coronary disease, angina	—	—	20	2	2	18	11	15	68
19	Hypertension with heart disease	2	1	6	—	—	6	3	3	21
20	Other heart diseases	5	4	23	5	7	25	14	36	119
21	Other circulatory diseases	—	1	2	1	—	6	7	17	34
22	Influenza	—	2	—	—	2	—	—	5	9
23	Pneumonia	—	1	4	—	—	3	7	2	17
24	Bronchitis	2	1	11	1	—	8	9	8	40
25	Other diseases of respiratory system	—	—	2	—	—	1	—	1	4
26	Ulcer of stomach and duodenum	—	1	—	—	—	—	—	—	1
27	Gastritis, enteritis and diarrhoea	—	—	—	—	—	3	—	—	3
28	Nephritis and nephrosis	—	—	1	—	—	—	1	6	8
29	Hyperplasia of prostate	2	—	1	1	—	3	3	3	13
30	Pregnancy, childbirth, abortion	—	—	—	—	—	—	—	1	1
31	Congenital malformations	—	1	2	—	—	1	—	2	6
32	Other defined and ill-defined diseases	2	3	13	—	1	20	13	10	62
33	Motor vehicle accidents	—	1	—	—	—	1	—	3	5
34	All other accidents	1	—	3	—	1	6	—	6	17
35	Suicide	—	—	1	—	1	2	—	1	5
36	Homicide and operations of war	—	—	—	—	—	—	—	—	—
	Totals	33	23	142	19	21	157	131	205	731

The Main Causes of Death.

A summary of the deaths showing the principal causes is given below.

Table 11.

	Number	*Per cent. of all deaths*
Heart disease	208	28.5
Cancer	131	17.9
Intra-cranial vascular lesions	139	19.0
Bronchitis and Pneumonia	57	7.8
Tuberculosis	14	1.9
Violence	22	3.0
Congenital Malformations, etc.	6	0.8
All other causes	154	21.1
	731	100.0

The following table shows the relative importance of the principal causes of death in Anglesey over a period of years.

Table 12.

Years	*Total deaths all causes*	*Per cent. of total deaths due to*				
		Heart disease	*Cancer*	*Bronchitis Pneumonia*	*Tuber-culosis*	*Fevers**
1915/19	.. 4,151	11.2	9.2	13.4	10.5	9.3
1920/24	.. 3,733	13.6	11.4	9.5	9.7	8.2
1925/29	.. 3,810	14.2	12.6	10.1	8.7	7.9
1930/34	.. 3,744	21.6	14.1	7.3	8.1	4.6
1935/39	.. 3,775	26.4	14.8	6.9	5.7	7.6
1940/44	.. 3,772	26.0	14.0	9.5	5.6	4.0
1945/49	.. 3,508	30.6	16.0	7.1	4.8	0.9
1950/54	.. 3,622	29.4	16.1	7.2	2.3	0.6

*Fevers include diphtheria, measles, whooping cough, cerebro-spinal fever, scarlet fever, typhoid and enteric fever.

MORBIDITY.

Information relating to the causes of death is, and always has been, supplied to the medical officer of health. Data on which to judge the volume of sickness in the community is, with the exception of certain infectious diseases, very inadequate. Indeed, the only numerical data at present being supplied relates to the number of new claims to sickness benefit. Weekly figures are supplied from the Ministry of National Insurance, but these suffer from certain drawbacks which have to be borne in mind when seeking to interpret them. In particular they do not relate to the population of the whole county, because the Beaumaris/Menai Bridge areas, together with the contiguous parts of Aethwy Rural District, are shown by the Ministry in the figures for the Bangor Office, which serves these areas, and these figures are not separately available.

Claims for sickness benefit must be related to the population eligible to claim, and I am indebted to the Ministries of Labour and National Insurance for providing data on which to estimate the size of this population.

In Table 13 is set out the average weekly number of new claims month by month per 1,000 persons eligible to claim as estimated for the major part of the county and, for comparison, the corresponding figures for Great Britain are quoted.

Table 13

1954 : Weekly new Claims to Sickness Benefit per 1,000 eligible to Claim.

	Great Britain	*Anglesey (less Beaumaris and Menai Bridge areas)*
January	9.6	9.9
February	9.1	12.3
March	7.5	9.1
April	5.9	7.1
May	6.2	8.1
June	5.2	6.3
July	4.7	5.6
August	4.6	5.3
September	5.7	6.9
October	6.9	7.3
November	7.7	11.1
December	7.5	9.7

The Anglesey rate is slightly higher each month than that of Great Britain. The curves follow the same general pattern except for a sharp peak in Anglesey in November, corresponding to the localised epidemic of Influenza "B."

EPIDEMIOLOGY.

The notifications of infectious diseases during the year are set out below.

Tables 14 and 15 include cases diagnosed in Caernarvonshire hospitals and therefore notifiable to the Medical Officer of Health of the district in which the hospital is situate.

Table 14.

NOTIFICATIONS OF INFECTIOUS DISEASES, 1954

	Urban					Rural			
DISEASE.	*Amlwch*	*Beaumaris*	*Holyhead*	*Llangefni*	*Menai Bridge*	*Aethwy*	*Twrcelyn*	*Valley*	*Total*
Diphtheria	—	—	—	—	—	—	—	—	—
Scarlet Fever	38	1	4	20	—	19	9	8	99
Dysentery	—	1	—	—	—	2	—	—	3
Acute pneumonia	1	1	—	2	—	3	10	4	21
Ac. poliomyelitis	—	—	2*	—	—	—	1	1*	4
Malaria†	—	—	—	—	1	—	—	—	1
Measles	4	20	1	—	—	55	72	7	159
Whooping Cough	—	—	104	11	7	6	9	31	168
Food Poisoning	—	4	—	—	—	—	—	55	59
Paratyphoid Fever	—	—	—	—	—	—	—	1	1

* Paralytic. † Contracted abroad.

In Table 15 will be found the trend of notifications over the last 10 years.

Table 15.

NOTIFICATIONS OF INFECTIOUS DISEASES 1945/54

Disease	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954
Diphtheria	75	27	9	4	2	—	—	—	—	—
Scarlet Fever	77	36	27	21	14	65	27	58	49	99
Paratyphoid	—	—	—	1	—	—	—	—	—	1
Dysentery	—	—	1	2	—	23	50	6	63	3
Pneumonia.....	31	48	42	43	31	28	81	29	10	21
Meningococcal Infections	1	1	1	1	—	—	—	—	1	—
Ac. Poliomyelitis ..	1	—	2	1	2	3	4	2	5	4
Puerperal Pyrexia..	—	1	1	—	—	—	—	—	1	—
Erysipelas	3	1	2	5	4	4	3	2	2	—
Measles	97	543	291	379	227	175	1191	70	763	159
Whooping Cough ..	134	33	90	196	44	72	430	286	144	168
Ophth. Neonatorum	—	—	—	—	1	—	—	—	—	—
Food Poisoning ..	—	—	—	—	—	—	—	7	3	59
Encephalitis	—	—	—	—	—	—	—	—	1	—
Malaria*	—	—	—	—	—	—	—	—	—	1

* Contracted abroad

There were no cases of *diphtheria, smallpox* or *ophthalmia neonatorum* notified during the year. *Scarlet fever* was rather prevalent, the number of cases (99) being the highest number notified since 1944.

This is the fifth year in succession in which no confirmed cases of *Diphtheria* has been notified, and the eighth consecutive year in which no death has occurred from this disease. That this happy state of affairs is the result of widespread immunisation cannot be contested.

Pneumonia was rather more prevalent than in the previous year, due to a sharp epidemic of influenza "B" in November and December. The incidence of *measles* was considerably less, but there was a slight rise in the incidence of *whooping cough.* Four sporadic cases of *poliomyelitis* came to notice during the year, three of which were of the paralytic type. The county was again, however, spared any major prevalence of this disease.

Two food poisoning outbreaks came to notice during the year. The first, in April, affected three members of a family in Beaumaris and was shown to be due to S. typhi-murium. Despite full investigation by the M.O.H. of the Borough the source of the outbreak

was not discovered. The second epidemic in May affected 54 servicemen at a camp in Valley Rural District. Investigations revealed the cause to be a toxigenic strain of Staphylococcus aureus traced to a member of the catering staff.

The year will go down in farming history as the year when *myxomatosis* wiped out the rabbits in the county. Alarming rumours of humans being affected proved of course to be unfounded, and even the pollution of water courses by decomposing animals in large numbers had no detectable effect.

Mortality from infectious diseases during the year is shown in Table 16, together with the trend of mortality over the past 10 years. Tuberculosis excepted, only 2 deaths occurred from notifiable infectious diseases.

Table 16

MORTALITY FROM INFECTIOUS DISEASES, 1945/54
(including certain diseases which are not notifiable)

Disease	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954
Diphtheria	5	3	—	—	—	—	—	—	—	—
Scarlet Fever	2	—	—	—	—	—	—	—	—	—
Typhoid and Paratyphoid	—	—	—	1*	—	—	—	—	—	—
Meningococcal Infections	—	—	2	1	—	1†	—	1†	1*	—
Ac. inf. enceph.....	1	1	1	1	—	—	—	—	—	—
Ac. poliomyel. and polioenceph. ..	—	—	—	1	—	1	—	—	1*	—
Enceph. Leth.	—	—	—	—	—	—	—	—	—	—
Measles	—	1	—	3	—	1	—	—	1	1
Whooping Cough ..	3	—	1	3	1	—	1	1	1*	1
Influenza	14	17	9	3	9	5	38	5	4	9
Diarrhoea under 2 years	7	1	5	1	—	2	8	2	3	1
Puerperal Sepsis ..	1	—	—	—	—	—	—	—	—	—

* Inward Transferable Death. † Not notified.

Note—The Registrar General also allocated one death in 1954 to "Other Infective and Parasitic Diseases," i.e., Jaundice.

Venereal Disease.

Details of the work done at the Caernarvon and Anglesey Clinic and at the St. David's Hospital for Anglesey patients were as follows :—

Table 17.

	Syphilis		*Gonorrhoea*		*Non-Venereal conditions*	
	M.	F.	M.	F.	M.	F.
New Cases			1	3	17	11
Early	5	—				
Late	1	1				
Congenital	2	4				
Old Cases and transferred Cases	32	61	4	—	13	11
Defaulters :						
From treatment	—	12	—	—	—	—
From observation ..	—	—	—	—	—	—
Total remaining	36	50	1	3	7	9

The number of new adult cases of venereal disease showed a further slight decline in 1954 and fewer new cases of congenital syphilis were seen. In many of these latter cases the disease is of long standing.

The disturbing feature of these statistics is the number of defaulters. Twelve females defaulted before their treatment was completed.

VACCINATION AND IMMUNISATION.

Vaccination against smallpox and whooping cough, and immunisation against diphtheria are offered to the public free of charge either by their own general practitioner or at one of the authority's clinics.

Smallpox Vaccination.

During the year vaccination records were related to the area of residence as follows :

Table 18.

VACCINATION RECORDS RECEIVED IN 1954

	Primary	*Re-vaccinations*	*Total*
Amlwch.....	28	3	31
Beaumaris	15	8	23
Holyhead	30	6	36
Llangefni	27	8	35
Menai Bridge	22	16	38
Aethwy	129	99	228
Twrcelyn	76	9	85
Valley	79	7	86
	406	156	562

The number of primary vaccinations in Anglesey in 1954 is equivalent to 50 per cent. of the number of live births notified. The corresponding figure for England and Wales, as a whole, is 34.5 per cent.

That we enjoy a higher level of protection than the country generally is due to the good work in health education of the local medical profession and the health visitors. Nevertheless, there is room for improvement, and our aim should be the successful vaccination in early infancy of every healthy baby. The resulting level of immunity would in due course enable us to face with equanimity the prospect of the introduction of virulent smallpox into our community—a contingency which is everpresent in these days of rapid and extensive air-travel.

Diphtheria Immunisation.

579 children were immunised during 1954 as follows :

Under 1 year	413
From 1--4 years	295
From 5--14 years	169

In addition, 1,258 children received a "boosting" dose during the year.

All available records of diphtheria immunisation in the county have been carefully analysed in order to obtain a realistic estimate of the state of protection of the child population.

At the end of 1954 it is estimated that the following percentages of children were fully protected by immunisation against diphtheria.

Aged.	*Per cent. protected.*
Under 1 year	12.7
From 1 to 4 years	69.7
From 5 to 14 years	83.1
Total : Under 15 years	74.7

These figures, resulting from a physical check of all records, cannot be compared with previously published estimates which were obtained by a less accurate method.

Whooping Cough Vaccination.

Combined whooping cough and diphtheria prophylaxis is made available at clinics and to general practitioners.

The numbers of children protected against whooping cough during 1954 were :

Under 1 year	1
From 1 to 4 years	215
From 5 to 14 years	20
Total	236

TUBERCULOSIS.

There were 59 (52 respiratory and 7 non-respiratory) new notifications received during the year, and 14 deaths due to tuberculosis were registered. The data for notifications and deaths over the past 10 years has been as follows :

Table 19.

	Notifications.			*Deaths*		
	Resp.	*Non-resp.*	*Total*	*Resp.*	*Non-resp.*	*Total*
1945	55	8	63	24	4	28
1946	54	11	65	37	6	43
1947	63	7	70	32	6	38
1948	68	8	76	31	2	33
1949	55	17	72	23	2	25
1950	55	13	68	14	5	19
1951	67	20	87	14	3	17
1952	56	14	70	14	3	17
1953	68	14	82	12	5	17
1954	52	7	59	14	—	14

In addition, 3 respiratory cases came to my knowledge during the year through the death returns. 13 respiratory and 1 non-respiratory cases were transferred from other areas.

The number of known cases on the register increased by 9 during the year.

The figures quoted in Table 19 for 1954 include all cases known to have occurred among the population resident in the county, although some were notified to other authorities. The figures for 1954 are therefore comparable with those for previous years.

The county has shared in the spectacular decline in mortality which has been a feature of the national figures for this disease in recent years. The annual average number of deaths for the last three years is only half the figure for the years 1943/48. For the first time we can record that no deaths occurred from the non-respiratory forms of tuberculosis.

Admissions to hospital totalled 47 in 1954, and while there were 8 cases awaiting admission at the end of 1953, there were 9 on the waiting list at the end of 1954.

The following is the report of Dr. J. Glyn Jones, Area Chest Physician :

"There has been a further fall in mortality and, perhaps even more gratifying, the notification rate has also dropped. The waiting list for females has been virtually abolished, but it is still very difficult to obtain early admission for males. The reason for this is that the average age for male patients is considerably higher than for females, and many cases from the neighbouring counties are complicated by pneumonoconioses. They are, therefore, seldom suitable for surgical treatment ; neither is the response to chemotherapy so dramatic. The disease thus runs a more chronic course, treatment is prolonged, and segregation is often the main purpose of hospitalisation. The continued delay in rebuilding the Llangefni Sanatorium after the fire of 1951 is consequently deplorable, as the re-establishment of the full quota of beds at this institution would speedily overcome our difficulties."

Care and After Care.

Table 20 gives details of the number of cases in each area and of the number of visits paid.

Table 20.

Area.	*No. of Visits paid.*	*No. of cases on Register at* 31/12/54
Amlwch	111	36
Beaumaris	153	31
Bodedern	155	49
Bodorgan	170	32
Holyhead	593	136
Llangefni	149	37
Llanfechell	164	35
Marianglas	201	47
Menai Bridge	153	38
Totals	1,849	441

Shelters are still not popular, and at the end of 1954 only one shelter was in use.

Supplies of milk and extra nourishment were given free of charge to 12 cases during the year.

It is the practice to urge the immediate household and family contacts of a new case to submit to examination by the chest physician. In 1954 191 contacts of 62 new cases were examined in this way.

B.C.G. Vaccination.

In Table 21 is set out the work done during the year in the routine testing and vaccinating of young contacts of notified cases of tuberculosis. Since vaccinations commenced in 1949 a total of 565 contacts have been vaccinated with B.C.G.

The number of new cases coming to light (whether by notification or otherwise), and the number of contacts examined were as follows :—

	1953	1954
New cases of tuberculosis	87	62
Contacts examined :		
Children	150	123
Adults	167	68

Table 21.

B.C.G. VACCINATIONS 1954

Age Group	*Total Tested*	*Multiple Puncture*		*Vaccinated*	*Refusal of test and/or vaccination*
		+ ve	*— ve*		
Up to 5 years ..	64	9	55	71*	5
5-9 years	56	23	33	33	3
10 and over ..	19	3	16	16	—
Total ..	139	35	104	120	8

* Includes 16 vaccinations of new-born babies.

B.C.G. Vaccination of School Children.

During the year B.C.G. vaccination was offered to all children attending schools in the county aged 13 to 14 years, and also, at the request of the Board of Management, to the cadets of H.M.S. Conway. This event may well prove to be an important milestone in the long struggle against tuberculosis. The proceedings

were eminently successful, thanks to good work by the staff of the department and the co-operation shown by the Head Teachers concerned and by the Welsh Regional Hospital Board Mass Radiography Service.

A detailed report has been submitted to the Education Committee, and a few of the salient facts only need to be repeated here.

Consents.—Written consent of the parent to testing and, where necessary, to vaccination, was obtained for 81 per cent. of the children concerned.

Positive Reactors.—Among children aged 13 to 14 years it was estimated that between 25.3 per cent. and 26.9 per cent. were "naturally" positive reactors to tuberculin. This appears to be a rather lower percentage than that reported in the recent literature from other areas.

Numbers involved.—The numbers tested and vaccinated in the secondary schools were 475 and 368 respectively. In addition 263 cadets of H.M.S. Conway were tested and 148 vaccinated.

X-ray results.—Following the tuberculin tests 215 positive reactors (100 secondary school children and 115 cadets) were examined by the Miniature Mass Radiography unit, and all but 10 were found to present no radiological abnormality. It has been necessary to continue to keep 2 of the remaining 10 cases under observation.

Mass Radiography.

No survey of the general population was made in 1954. Senior pupils and school staffs were examined as usual and a full report has been submitted to the Education Committee.

The results were as follows :—

	County Sec. Schools.		*H.M.S. Conway.*	
	Pupils	*Staff*	*Cadets*	*Staff*
No. examined	1234	207	150	32
Definite pulmonary tuberculosis	1	—	—	—
Needing further observation for P.T.	2	1	—	—
Showing sign of healed P.T. including primary complex.	29	2	2	1
Other abnormalities	26	2	1	1

MIDWIFERY AND MATERNITY SERVICES

Births.

The number of births *notified* during the year classified by place of occurrence was as follows :—

Table 22.

	Live Births.	*Stillbirths.*
At Home	139	3
St. David's Hospital	357	13
Gors Maternity Home	272	5
Private Nursing Homes	14	1
	782	22

In 1954 82 per cent. of all births took place in institutions.

The Council's midwives attended 143 deliveries, including miscarriages during the year. 56 were midwives' booked cases and 87 were doctors' booked cases, the doctor being present at the time of delivery in 43 of these confinements.

Four applications were received during the year for the Committee to accept financial responsibility for the ante-natal care of unmarried mothers. Three of the applications were granted.

Analgesia in Domiciliary Midwifery.

Fourteen out of the 17 District Nurse/Midwives employed by the Council hold the certificate of the Central Midwives Board authorising them to administer gas and air analgesia in midwifery cases, and the necessary apparatus is available to them all.

The number of domiciliary cases who received gas and air analgesia during the year was 86 or 60 per cent. of all cases confined at home. In addition, pethidine was administered in 58 cases.

Medical Aid.

During the year midwives called in medical aid for domiciliary cases on 27 occasions, and this Authority was responsible for the payment of the doctor in 8 cases.

Midwifery Packs.

Midwifery packs are issued by the midwives for domiciliary confinements on demand.

Domiciliary Ante-Natal Care by Midwives.

As soon as the expectant mother "books" with her, the midwife undertakes ante-natal supervision and, unless the mother is reluctant to attend, all midwives in the county service are instructed to arrange for their cases to be seen periodically at the county ante-natal clinics. The midwives attend with their cases. In addition, they undertake regular ante-natal supervision of all booked cases in the patient's home.

Details of the work done by domiciliary midwives in 1954 are given in Table 23.

Table 23.

District.	*No. of Domiciliary Confinements*	*No. of ante-natal cases visited*	*No. of visits paid*	*No. of Still-Births Regd.*	*No. of Infant Deaths Regd.*
Amlwch	15	83	232	2	2
Beaumaris ..	10	45	173	3	1
Bodorgan	13	53	164	1	2
Holyhead	35	70	210	4	7
Llanerchymedd.	8	20	99	4	1
Llanfechell	15	38	172	1	3
Llangefni	11	152	768	4	1
Llanddona	9	16	61	1	—
Marianglas	5	18	61	1	—
Menai Bridge ..	6	15	72	—	—
Newborough ..	16	49	152	—	6
Total	143	559	2164	21	23

Ante-Natal Clinics.

Ante-Natal clinics were held at three centres in the county as follows :—

Holyhead	Weekly
Amlwch.....	Fortnightly
Llangefni	Fortnightly

Details of attendances at these clinics are appended:

Table 24

	Number of Cases.			*Attend-ances*
	Ante-natal	*Post-natal*	*Gynaeco-logical*	
Amlwch.....	109	23	19	359
Holyhead	316	51	147	1,488
Llangefni	131	40	2	481
Total	556	114	168	2,328

CHILD WELFARE.

Infant Mortality.

The infant mortality rate for 1954 was 28.3 per 1,000 live births as compared with 32.8 in 1953. The causes of infant deaths are shown in the following table :

Table 25.

CAUSES OF INFANT DEATHS 1954

Cause.	*Age at Death.*					*Total*
	Under 1 day	*1-7 days*	*1-4 weeks*	*1-3 mths.*	*3-12 mths.*	
Pneumonia	—	—	—	2	1	3
Gastro-enteritis	—	—	—	1	—	1
Cong. malformations ..	—	—	—	3	—	3
Prematurity	4	6	—	—	—	10
Other causes.....	1	—	2	2	—	5
Violence	1	—	—	—	—	1
Total	6	6	2	8	1	23

Child Mortality.

There were 10 deaths in the age group 1 year to 15 years, and the causes were :

Measles	1
Nephritis	1
Whooping Cough	1
Pneumonia	3
Accidents	2
Other defined diseases	2

The Care of Premature Infants.

Details of cases notified in 1954 were as follows :—

(a)	Number of premature babies who were born :	
	(i) At home	10
	(ii) In private nursing homes	—
	(iii) In hospitals	44
(b)	Number of those born at home who were nursed entirely at home	10
(c)	Number of those born at home and nursed entirely at home :	
	(i) Who died during first 24 hours	—
	(ii) Who survived at the end of 28 days	9
(d)	Number of those born in nursing homes who survived 28 days	—
(e)	Number of those born in hospitals who survived 28 days	36

Infant Welfare Centres.

One thousand two hundred and seventy-three children were on the rolls during 1954, and the total attendances numbered 6,604, a decrease of 220 compared with 1953.

Details of the work done are shown below.

Table 26.

INFANT WELFARE CENTRES.

(1)	No. of centres provided at end of year		13
(2)	No. of sessions held per month at centres		28
(3)	No. of children who attended centres during the year and who were born in : 1954.....	428	
	1953.....	431	
	1952--49	414	
			——1273
(4)	No. of children who first attended the centres during the year who at their first attendance were under 1 year		527
(5)	Total number of attendances made by children included in (3) during the year :		
	Under 1 year 4447		
	1 year but under 2 1222		
	2 years but under 5..... 935		
			——6604

Clinics are held at 13 places in the County as detailed in Appendix C.

Because of poor attendance the Llanddona Clinic was closed at the end of 1954 and transport arranged for the mothers and babies from the village to attend the Beaumaris Clinic.

St. David's Priory, Holyhead, was acquired and adapted as clinic, etc., premises. The new premises were formally opened by Mrs. Walter O. Jones, J.P., senior lady member of the County Council on 6th December, 1954.

The experiment of assisting a general practitioner to conduct an infant welfare clinic for patients in her practice at the doctor's surgery, referred to last year, was continued in 1954. Sessions are held twice monthly, and 83 children attended during the year. Attendances made according to age were as follows :

Under 1 year	139
From 1 to 2 years.....	119
Over 2 years.....	—
Total	258

Dental Care of Young Children (under the age of 5 years).

Table 27 gives details of the work done in 1954.

Table 27.

Number inspected	29
Number found to need treatment	23
Number treated	23
Number rendered dentally fit	23

Forms of dental treatment provided :

Number of teeth extracted	39
Number of teeth filled	5
Number of silver nitrate treatments	4
Number of scalings and gum treatment	2

No expectant or nursing mothers were seen during the year by the authority's dental officers.

Distribution of Welfare Foods.

On the 28th June the Council took over responsibility for the distribution of national dried milk, cod liver oil, orange juice and vitamin tablets, which had previously been distributed to beneficiaries under arrangements made by the Ministry of Food. The change-over proceeded smoothly and my thanks are due to the local officers of the Ministry of Food for their co-operation in this matter.

18 out of 19 voluntary distributing centres in the county used by the Ministry of Food, continued in use. A somewhat curtailed service was provided at 8 other places previously covered by Ministry of Food offices, but on the other hand 4 additional centres were opened and a van (acting as a mobile distributing centre) paid weekly visits to 6 other villages. All infant welfare centres now participate in the distribution.

Between the 28th June, 1954 and 1st January, 1955, the following welfare foods were distributed in the county :—

National Dried Milk, full cream	17285 tins.
National Dried Milk, half cream	537 tins.
Cod Liver Oil	3302 bottles.
Orange Juice	10578 bottles.
Vitamin A. and D. Tablets	409 packets.

HEALTH VISITING.

Staff.

During 1954 further steps were taken to implement the policy of the Council to increase the health visiting staff. On the 1st January, 1954, two additional health visitors took up duties and the health visiting areas were increased from 7 to 9 as from that date. One suitably qualified nurse was accepted as a student health visitor and commenced training on the 11th January. It was intended that she should take up an appointment as an additional health visitor in 1955, thus further implementing the above policy. Unfortunately, however, one health visitor resigned during the year, and the student health visitor on completion of her training replaced this member. During the interim period one of the district nurse/midwives was transferred to the health visiting staff under a dispensation granted by the Welsh Board of Health.

Statistics.

Tables 28 and 29 give some details of the work done by the health visitors during the year.

Table 28.

	Births	*First Visits*		*Other visits to babies*		
		0-1 *yr.*	1-5 *yrs*	0-1 *yr.*	1-2 *yrs*	2-5 *yrs*
Amlwch	73	70	9	555	406	755
Beaumaris	52	60	—	557	509	604
Bodedern	107	107	3	649	477	788
Bodorgan	85	83	—	955	889	844
Holyhead	198	185	—	699	324	876
Llanfechell	55	52	—	752	617	1348
Llangefni	65	62	1	498	272	261
Marianglas	61	68	—	648	247	501
Menai Bridge ..	94	86	—	842	267	536
Totals	790	773	13	6155	4008	6513

The health visitors also visited other cases as follows —

Table 29.

Tuberculosis	1849
Home Help cases.....	438
Mental Defectives	507
Miscellaneous	1043
Total	3837

HOME NURSING.

The qualifications of the nursing staff at present in post are as follows :—

S.R.N., S.C.M., Q.N.	6
S.R.N., S.C.M.	1
S.E.A.N., S.C.M.	9
S.C.M. (engaged entirely on Midwifery)	1

Table 30 shows the work done during 1954 in the separate districts.

Table 30.

	Cases.	*Visits.*
Amlwch	192	2,701
Beaumaris	158	2,365
Bodorgan	149	2,313
Holyhead	279	6,502
Llanddona	116	2,457
Llanerchymedd	124	1,893
Llanfechell	147	1,909
Llangefni	281	3,662
Marianglas	126	2,786
Menai Bridge	98	1,834
Newborough	124	1,223
Total	1,794	29,645

The following table gives further details of these cases :

Table 31.

Group.	*Total No. of Cases*	*Total No. of visits*
Medical	1,210	20,120
Surgical	541	8,085
Tuberculosis	37	1,377
Maternal complications	6	63
Total	1,794	29,645

15,849 visits were paid to 687 patients who were over 65 years of age at the time of the first visit during the year, and 563 visits were paid to 96 children who were under 5 years of age at the time of the first visit.

267 patients received more than 24 visits each during the year, 17,076 visits being paid to these cases.

Loan of Sick Room Equipment.

Nursing equipment, such as air rings, bed cradles, bed pans, bed rests, crutches, feeding cups, invalid chairs, rubber sheeting, Dunlopillo mattresses, sputum mugs, urinals, etc., are available on loan.

The district nurses hold a small supply of the inexpensive articles for use by them on their districts.

Normally a deposit is required when an article is borrowed, such deposit being refunded on return of the article to the store. In addition a small weekly hire charge is made for the loan of the more expensive type of articles, e.g., invalid chairs, Dunlopillo mattresses, etc. If a person states that he is unable to pay a deposit or hire charge, an assessment of means is made and, if necessary, the equipment is issued free.

During the year 159 items of medical equipment were issued on loan, compared with 112 items in 1953.

DOMESTIC HELP SERVICE.

The service is provided by five whole-time home helps and by 68 part-time persons employed on a casual basis. The number of persons who received help increased in 1954 to 165 as compared with 156 in the previous year.

Of the 165 cases assisted in 1954 the largest group (108 cases) was aged and infirm persons. Maternity (10) and tuberculous (9) cases by comparison were small in number. The remaining 46 cases were a miscellaneous group of sickness, mental deficiency, etc. Three more whole-time home-helps were engaged for the first time in 1954 to work in Llangefni, Holyhead and Menai Bridge.

The Council has watched with concern the rising cost of this service and ways of reducing it are being constantly sought. All cases are reviewed frequently to ensure that no abuse occurs, and the duties which a home help may undertake are strictly defined. During 1954 the Council laid down a minimum contribution of 10/- per week (irrespective of the weekly hours allotted to the case) from all persons receiving domestic help. Special provisions were made to avoid hardship to individual cases, but in the event these did not have to be invoked.

The service is predominantly occupied in seeing that old people are not prevented through lack of help with the housework from continuing to live in their own homes, and once accepted in any given case there may be no release from this obligation for years. During 1954, two cases out of every three assisted were aged and infirm persons, and two out of every three of these were assisted throughout the year. Indeed, some of them have now been assisted for several years. It is true that, but for the home help service many of these old people would have needed a place in a hospital or a Home and to that extent the service is probably effecting an over-all economy. (The unhappiness consequent upon removal from familiar surroundings does not lend itself to measurement). The cost of the home help service must therefore be closely related to the number of old people in the population. As the 1951 Census Report shows, nearly one person in every 20 in Anglesey is aged 75 years or over, and in this respect our population differs markedly from that of England and Wales. Indeed, we have about 600 *more* persons in this age group than we would have if the national average applied to us.

I can see no prospect of any great reduction in the cost to the local authority of this service unless the National Assistance Board are prepared to interpret differently the duty laid on them by Section 4 of the National Assistance Act "to assist persons . . . . . who are without resources to meet their requirements."

MENTAL HEALTH.

Administration.

The mental health services are administered by the Health Committee through the Nursing Services Sub-Committee, which meets quarterly. The Medical Officer of Health is the executive officer in charge of the service.

Staff.

The Deputy Clerk to the Council, and the Council's Assistant Solicitor, are authorised officers, and the County Medical Officer is authorised to give medical certificates for the purpose of presenting petitions under the Mental Deficiency Acts 1913-38.

There are three duly authorised officers under the Lunacy Acts who are also district welfare officers and registrars of births and deaths ; two other officers, who act as reliefs, are on the administrative staff of the Health Department.

Six general practitioners in the county are approved for the purpose of giving certificates under the Mental Treatment Act 1930.

The council do not employ any trained social workers ; the health visitors, under the supervision of the superintendent nursing officer, visiting periodically all persons in the community known to be mental defectives. The council has agreed in principle to the employment of a psychiatric social worker, and it is hoped that the hospital management committee will share the services and cost of this member of the staff. At present the nearest psychiatric social workers are on the staff of the North Wales Hospital for Mental Disorders, Denbigh, and owing to the large area to be covered it is freely admitted that they cannot provide in Anglesey as full a service as one would desire.

Co-ordination.

Close co-ordination exists with hospital and institution authorities. Enquiries are made on behalf of hospitals and reports submitted as required. The supervision of patients on licence is undertaken.

There is no delegation of duties to voluntary associations and no special facilities exist for the training of staff.

The following statistics show the work done under the Mental Deficiency Acts 1913-1938 during the year 1954.

Table 32.

MENTAL DEFICIENCY ACTS, 1913 TO 1938

	During 1954				*Total as at 1st January* 1955			
	Under age 16		*Aged* 16 *and over*		*Under age* 16		*Aged* 16 *and over*	
	M	F	M	F	M	F	M	F
I. *Particulars of cases reported during* 1954 :								
(a) Cases reported by Local Education Authorities (Sect. 57 Education Act, 1944) :								
(i) Under Sect. 57(3)	2	—	—	—	—	—	—	—
(ii) Under Sect. 57(5) :								
On leaving special schools.....	—	—	—	1	—	—	—	—
On leaving ordinary schools....	1	2	—	1	—	—	—	—
(b) Cases referred by the police or by the courts under Sect. 8(1) (a) (or as a result of other action by the Courts) :	—	—	—	—	—	—	—	—
(c) Other sources	—	—	2	1	—	—	—	—
(d) Other defectives reported during 1954 :								
(i) Not confirmed at 31/12/54	—	—	—	—	—	—	—	—
(ii) Not at present "subject to be dealt with".....	—	—	—	1	—	—	—	—
Total No. of cases reported during year..	3	2	2	4	—	—	—	—
II. *Disposal of cases* :								
(a) Those found "subject to be dealt with" :—								
(i) Placed under statutory supervision	2	2	2	3	11	2	21	18
(ii) Placed under Guardianship	—	—	—	—	—	3	1	—
(iii) Taken to "places of safety"	—	—	—	—	—	—	—	1
(iv) Admitted to Institutions	1	—	—	—	5	1	14	22
(b) Those not at present "subject to be dealt with ":—								
(i) Placed under vol. supervision ..	—	—	—	1	—	—	29	30
(ii) Action unnecessary	—	—	—	—	—	—	—	—
Total of Item II.....	3	2	2	4	16	6	65	71*

*In addition action not yet taken 1 M. and 1 F.

At the end of the year 10 cases were awaiting institutional treatment. 4 male and 1 female medium grade, and 1 male and 3 female high grade cases were in need of urgent admission. No case was awaiting admission only because of poor environment.

Two females died and one male and one female left the area during the year.

One defective gave birth to a child while unmarried, no defective married during the year.

Lunacy and Mental Treatment Acts, 1890-1930.

The North Wales Hospital for Mental Disorders, Denbigh, is the only mental hospital in North Wales, and if a bed cannot be obtained there for a patient certifiable under the above Acts it is practically impossible to obtain the admission of a patient to a suitable hospital elsewhere.

In 1954 68 Anglesey cases were admitted to the Mental Hospital, Denbigh, 20 of whom were admitted on Summary Reception Orders.

Details are given in Table 33.

Table 33.

ADMISSIONS, DISCHARGES AND DEATHS DURING THE YEAR 1954

	Admissions		*Discharges*		*Deaths*	
	M.	F.	M.	F.	M.	F.
Voluntary	28	12	27	12	—	—
Temporary	2	6	1	11	—	1
Certified	7	13	9	9	—	4
Total	37	31	37	32	—	5

AMBULANCE SERVICE

Administration and Staff.

Ambulances were stationed at Amlwch, Menai Bridge, Llangefni and Holyhead. The two latter stations are manned throughout the 24 hours by whole-time staff.

Seven ambulances were in commission at the end of 1954.

The sitting car service was organised throughout the year on the same lines as hitherto, and the authority are greatly indebted to the County Organiser W.V.S. (Mrs. G. Hughes-Jones, M.B.E.) for the highly efficient way in which this work was done. The voluntary drivers carried out their duties in a thoroughly satisfactory manner and responded to all calls made upon them. A total of 36 drivers was available at the end of December.

At the end of the year the whole time staff consisted of a Deputy Ambulance Officer, one duty room attendant and 8 drivers. No whole time attendants are employed, but members of the Holyhead St. John Ambulance Brigade fulfill these duties when required. I should like once again to express my appreciation of the able way in which members of this contingent carried out their duties. It would be a considerable asset if a similar body of volunteers were available at other ambulance stations. The council's district nurse/midwives assist by accompanying maternity and other emergency cases.

Statistics.

Statistics relating to 1954 are given in Table 34.

Once again I have to report an increase in the number of cases the ambulance service was called upon to carry. This has been the story every year since 1948 when the council was made responsible for providing an ambulance service. The rate of increase (5 per cent. more cases than in 1953) was about the same as last year, and I find it hard to believe that the volume of work done in our local hospitals has increased by 10 per cent. since 1952.

Administrative measures, by conveying more than one patient in a vehicle on any given journey, can effect some economy, and a further slight improvement can be recorded in 1954.

No. of journeys needed to move 100 *patients*

1950	..	..	74
1951	..	..	64
1952	..	..	59
1953	..	..	59
1954	..	..	55

During 1954, at the council's invitation, an "efficiency team" from the Ministry of Health and the Welsh Board of Health visited the county in October and investigated the administration of the service. The report subsequently sent to the council stated :

"As indicated in Circular 7/54 the object of the survey was to investigate the possibility of economy in the operation of the service and to advise the Authority how savings could be brought about. Contrary to achieving this result the survey, in the case of Anglesey, has established that, so far as factors within the control of the Council and its officers are concerned, the service is operated at minimum cost. In particular, expenditure under the headings of staffing (administrative control and operative) maintenance and repair of vehicles and equipment, was found to be reasonable. The Council will be gratified to receive this information and will wish to congratulate the officers concerned ; the Department would wish to join them in doing so."

Table 34.

AMBULANCE SERVICE, 1954.

	Ambulances			Sitting Cars			Taxis		
	Cases	Journeys	Mileage	Cases	Journeys	Mileage	Cases	Journeys	Mileage
First Quarter	1,766	842	28,759	1,205	768	30,525	4	4	551
Second Quarter	1,813	905	27,679	1,239	740	32,086	2	2	268
Third Quarter	1,544	806	28,853	1,110	681	26,362	5	5	620
Fourth Quarter	1,604	822	24,754	1,144	657	27,310	6	6	859
	6,727	3,375	110,045	4,698	2,846	116,283	17	17	2,298

	Ambulances	Sitting Cars
Average mileage per journey	32.6	39.8
do. do. patient carried	16.38	24.75

WELFARE SERVICES.

The Council's responsibilities under Part III of the National Assistance Act, 1948, stand referred to the Health Committee, who appointed a Welfare Sub-Committee to deal with these functions. The duties referred to are :

(a) the provision of accommodation :

(i) for persons in need of care and attention because of age, infirmity, etc. ;

(ii) temporarily and, in certain circumstances, for persons in urgent need thereof.

(b) the provision of welfare services for handicapped persons. At the present time the only categories of such persons for whom the provision is obligatory are the blind and the partially sighted.

Details of the work done for the blind will be found on pages 44-45. The Council make a financial contribution to the North Wales Society for the Deaf and Dumb.

The Provision of Accommodation.

Accommodation under Part III of the Act was provided throughout the year at Valley Hospital (which is administered by the Caernarvonshire and Anglesey Hospital Management Committee, but the County Council as minor user reserve a total of 32 beds), Llys-y-Gwynt, Holyhead (20 beds) and Park Mount, Llangefni (28 beds).

Details of the use made of these places are shown below:

Table 35

	Valley	*Llys-y-Gwynt*	*Park Mount*	*Total*
Residents at 1/1/54 ..	29	19	21	69
Admitted	29	10	21	60
Discharged*	27	8	20	55
Died	—	1	—	1
Residents at 31/12/54.	31	20	22	73

*Includes residents sent to hospital and who subsequently died.

The Council exercised their powers under the Act to maintain during 1954 a total of three persons in accommodation provided by voluntary organisations outside the county, and one case in a Home maintained by a neighbouring Local Welfare Authority.

Welfare of the Blind.

The Council employ one whole-time teacher of the blind.

Table 36

REGISTER OF BLIND PERSONS

	On 1/1/54	*On* 31/12/54
Males	62	58
Females	94	99
Total	156	157

Changes during the year:

New cases registered	24
Deaths of persons on register	22
Transfers "In"	2
Transfers "Out"	3

The age composition of the blind population on 31/12/54 was as follows:—

Table 37

Age in years	*No. on Register*
0-4	1
5-15	2
16-20	—
21-39	5
40-49	6
50-64	32
65 upwards	111
Total	157

As will be seen from the above table the number of registered blind persons in the county remains steady. The number of observation cases, however, has increased slightly and there are now 29 cases which are visited periodically, the majority of whom are suffering from failing eyesight owing to advancing age or congenital causes, and who may, after a later examination, become registered as blind persons.

The Home Teacher paid 1,319 visits to registered persons and 65 to observation cases during the year. She also organised a summer outing to Pwllheli in July, and arranged a Christmas party at Llangefni in December, both of which were financed by the North Wales Society for the Blind, who have also granted financial help to provide clothing, bed-linen, extra nourishment in cases of sickness, etc., at the request of the Home Teacher.

The Social Clubs at Holyhead and Newborough meet monthly and are well attended, and the willing assistance of many voluntary workers has been much appreciated. On one occasion the Holyhead Club entertained the Colwyn Bay Club members, and a very pleasant afternoon was spent together.

The teaching of Braille reading and crafts, etc., continues, and the finished articles are disposed of at the N.W. Society Depot at Bangor.

Holidays were arranged for three cases at Llys Owen Home for the Blind, Abergele, and at Fellowship House (for the Deaf-Blind), Hoylake, and much benefit was derived from their stay by these blind persons.

Preventable Causes of Blindness.

Of the newly registered blind persons, their condition was due to glaucoma in 4 cases, and to cataract in 12 cases. No cases were due to ophthalmia neonatorum. Of the 16 cases referred, 5 were considered to require treatment, and this has now been given to two cases.

THE CONTROL OF FOOD AND DRUGS.

Pasteurisation.

Two pasteurisation plants were licensed during 1954. The County Sanitary Inspector reports that during the last three quarters of the year 108 visits were paid to these plants and 219 samples of milk were obtained for the methylene blue and phosphatase tests. No samples were adversely reported upon. In addition, 156 bottle rinses were taken of which 6 proved unsatisfactory.

Report of the Chief Officer of the Food and Drugs Department upon the Administration of the Food and Drugs Acts, 1938—1950. and other Allied Duties.

FOOD AND DRUGS ACTS, 1938—1950.

During the year 150 samples of food were submitted to the Public Analyst for analysis. Adverse reports were received in respect of 23 samples.

124 samples of milk were examined for butter-fat and non-fatty solids in the Department's Laboratory. Samples being below the presumptive standards laid down in the Sale of Milk Regulations, 1939, were followed up by formal samples which were submitted to the Public Analyst. The average figures were :

Fat	3.66 per cent.
Non-fatty Solids	8.74 per cent.

Details of Samples submitted to the Public Analyst.

Food.	*No. submitted*	*No. "Not Genuine"*
Milk	35	16
Milk Products	14	1
Medicines	14	2
Fruit	13	—
Confections and Confectionery	12	2
Alcoholic Beverages	10	1
Condiments	9	—
Ice-cream	8	—
Non-alcoholic Beverages	7	—

Details of Samples submitted—continued.

	No. submitted	*No. "Not genuine"*
Meat and Fish Products	7	—
Fats	6	—
Vitamin Foods	4	—
Tinned Fruit	4	—
Soups, soup powders, etc.	4	1
Cereals	1	—
Flavourings	1	—
Bread	1	—
	150	23

Non-Genuine Samples.

I. Milk.

(a) *Deficient in Fat.*

1 sample was reported as being 3 per cent. deficient in Fat but not such as to warrant any administrative action.

(b) *Deficient in Solids-not-Fat.*

4 samples of milk, which were reported as being unsatisfactory, were low in non-fatty solids. The freezing points were genuine, indicating that there had been no addition of water.

(c) *Deficient in Fat and Solids-not-Fat.*

1 sample was reported as being slightly deficient in Fat (3 per cent.), also below the presumptive standard for solids-not-fat. As the freezing point was normal there was no evidence of added water. Details of the analyst's certificate were brought to the notice of the vendor.

(d) *Added water.*

6 samples were reported as containing added water to the extent of 6 per cent., 5 per cent., 4 per cent., 5 per cent., 6 per cent. and 1 per cent. respectively. Appeal-to-cow samples were taken from each of the three producers concerned. In each case it was decided that proceedings were not advisable.

(e) *Sediment.*

1 sample was reported as containing sediment to the extent of 5 parts per 100,000, half of which consisted of dung. The generally accepted standard is 3 parts per 100,000. Details were brought to the notice of the Ministry of Agriculture and Fisheries. The Local Sanitary Authority's attention was also drawn to the condition of the hands of the person distributing the milk.

(f) *Guernsey Milk.*

(i) 2 samples of milk were exposed for sale in bottles which bore the words "T.T. Guernsey Milk.". The description given on the cap omitted the words "Guernsey Milk." Investigations proved that the milk was not Guernsey milk as described on the bottles. It was tuberculin tested. Because of the difficulty of keeping the bottles separate during cleaning, each customer had been advised to have regard only to the wording on the caps. The vendor promised that he would ensure, as far as possible, that in future the bottles bearing the Guernsey description would be used only for Guernsey milk.

(ii) *Reported to be* 15 *per cent. deficient in Fat as compared with the Minimum Standard of* 4 *per cent. for "Channel Island" Milk.*

The appeal to cow samples were above the prescribed standard and it was felt that the deficiency was due to inadequate equipment. This has been remedied.

II. Miscellaneous.

(a) *Mentho-Lyptus Tablets.*

Reported to be 12 per cent. deficient in sucrose. This deficiency was balanced to some extent by an excess of glucose. The formula has been amended by the manufacturers.

(b) *Tablets of Concentrate of Liver.*

It was claimed that each tablet contained 0.8 grammes of pure concentrate of whole liver. The analyst certified that the statement was correct, but that the liver extract comprised of only 41 per cent. of the whole tablet, the balance of 59 per cent. being of sugar. In the opinion of the analyst the name "Concentrate of

Liver" was misleading and the label should state that the tablets contained sugar as well as liver extract, particularly as diabetics might take them. The necessary modifications to the label have now been made by the manufacturers, specimen labels having been submitted to and approved by the Public Analyst.

(c) *Processed Dutch Cheese.*

Stated to contain "Full Cream 48 per cent.", but the Public Analyst certified that the sample contained only 23 per cent. of butter-fat. The matter arose because of a difference in the methods of declaring the proportions of ingredients of articles of food. In Holland the proportions are given against the total dried matter, whereas in this country they are given against the entire product including moisture. The Ministry of Food agreed with the opinion of the Analyst and after some lengthy correspondence between various interested parties, including the Dutch Embassy, it was decided to remove from all future consignments any reference to the quantity of butter-fat in the cheese.

(d) *Soup Mix.*

The label applied to a sample of soup mix was reported as being incomplete, in that it contained potato flour, which was not mentioned on the label. The matter was taken up with the packers of the article.

(e) *Confectionery.*

A sample of a sugar/sherbet confection was found to be sub-standard by reason of damp storage. Faulty stocks were removed and advice given as to adequate arrangements for the storage of such articles.

A sample of "Butter Maid" toffees was reported to contain 2 per cent. butter-fat. In the opinion of the Public Analyst articles bearing this description should contain at least 4 per cent. butter-fat. The matter was brought to the notice of the manufacturers and a follow up sample has been taken which was reported as "Genuine."

(f) *Alcoholic Beverages.*

A sample of spirits was reported to contain 6 per cent. excess water. Investigations carried out by the analysts to the manufacturers indicated that the article was not genuine by reason of an evaporation of spirit during bottling rather than an addition of water.

Milk and Dairies Regulations.

(a) *Samples of Tuberculosis and Brucella Abortus.*

During the year 693 samples of milk were submitted for biological examination. The 708 results received were classified as follows :—

Negative results	662
Evidence of Brucella Abortus	45
Evidence of Tuberculosis	1

In the case of 45 samples, there were no results because of the premature death of the guinea-pigs.

Details of the positive brucella abortus and tuberculous results are forwarded to the appropriate officers of the Local Sanitary Authority who, in all cases, have exercised their powers under Regulation 20 of the Milk and Dairies Regulations.

(b) *Pasteurised Milk.*

196 samples of pasteurised milk were submitted for examination. All samples were reported as being satisfactorily heat treated.

In addition, 100 bottle rinses were taken from cleansed milk bottles immediately before they were to be filled with milk. All were reported as satisfactory.

(c) *Bacteriological Examination of Milk Supplies.*

181 samples of milk were taken from retailers in the county and were examined at the Ministry of Agriculture Laboratory. 26 samples failed the prescribed methylene blue test. The results of these examinations were submitted to the advisory officers of the County Agricultural Executive Committee for any necessary action.

Now that Anglesey has been scheduled as a Specified Area, this scheme will be discontinued. Thanks are due to the various officers of the Ministry of Agriculture and Fisheries, who so willingly co-operated in both the examination and reporting of the samples and in the necessary advisory action following unsatisfactory reports.

Ice Cream.

357 samples of ice-cream were submitted for bacteriological examination to the Public Health Laboratory at Conway. The results of the examination were classified as follows :—

	1954	1953	1952
Provisional Grade 1	330 (92.4%)	355 (71.7%)	254 (63.8%)
Provisional Grade 2	25 (7.0%)	85 (17.2%)	93 (23.4%)
Provisional Grade 3	2 (0.6%)	28 (5.7%)	26 (6.5%)
Provisional Grade 4	—	27 (5.4%)	25 (6.3%)

Pharmacy and Poisons Acts, 1933--1941.

At December 31st, 1954, 123 premises were registered for the sale of Part II poisons, an increase of 3 over the previous year. These premises were regularly inspected and no serious infringements of the Rules were detected.

One alleged infringement of the labelling requirements of the 1941 Act was brought to the notice of the manufacturers.

SANITARY CIRCUMSTANCES

Housing.

Table 38 (which is adapted from Appendix B of the Quarterly Housing Return of the Ministry of Housing and Local Government) gives details of the housing progress up to 31st December, 1954, in the various county districts since the end of the war.

Table 38

District.	*No. of houses built or under construction*		*Increase since 31 Dec., 1953.*		*Total No. of houses built or under construction per 1,000 population*
	by council	*by private builders*	*council*	*private*	
Beaumaris Bor..	157*	5	—	—	73.1
Amlwch Urban	124	33	32	2	52.0
Holyhead Urban.	323*	29†	48	7	35.0
Llangefni Urban	310*	28	31	1	142.6
Menai B. Urban..	90	53	10	9	72.2
Aethwy Rural ..	277	44†	67	6	30.0
Twrcelyn Rural..	201	61	24	13	30.7
Valley Rural ..	309	68	38	20	31.2
Total	1791	321	250	58	41.2

* Includes temporary houses completed.

† Includes rebuilding of war destroyed buildings.

In Table 39 are set out the figures for each local authority at the year's end for the years 1950 through 1954.

Table 39

HOUSES (BUILT OR UNDER CONSTRUCTION) PER 1,000 POPULATION.

At 31st December each year.

	1950	1951	1952	1953	1954
Beaumaris	50	61	66	73	73
Amlwch.....	22	35	41	41	52
Holyhead	24	24	26	29	35
Llangefni	99	105	115	133	143
Menai Bridge	27	51	53	65	72
Aethwy	9	12	15	23	30
Twrcelyn	14	16	22	26	31
Valley	8	13	19	26	31

The figures for Llangefni are seen to be outstanding. Beaumaris and Menai Bridge have good records. Amlwch, too, is making steady progress, but the showing of Holyhead through the years is distinctly disappointing, although there was some improvement last year. The figures show that the rural districts, despite the formidable difficulties which confront them, have continued to make progress.

Up to the end of 1954 urban areas in Wales had an average record of 42.1 houses per 1,000 population (built or under construction by council or private builders). All the urban authorities in Anglesey are therefore above the average except for Holyhead. The comparable figure for Welsh rural authorities is 43.3, so that all the rural areas in Anglesey are still below the average.

Housing statistics are best studied for areas of comparable size because it can be shown that the number of houses built by a council is in general related to the size and therefore to the resources of the authority. An analysis has been made of the official statistics which gave the data at the end of 1954 so that the performance of the housing authorities in Anglesey could be compared with the average for authorities of like size in Wales.

The results are set out below :

Table 40.

COUNCIL HOUSE BUILDING AT 31/12/1954.

Houses built by council or under construction per 1,000 *population*

	Welsh average	*Anglesey authorities*		*As Percentage of Welsh average.*
Boroughs and Urban Districts—with popns. up to 5,000. 45 such authorities in Wales	39.0	Beaumaris	71.0	182
		Amlwch	41.3	106
		Llangefni	155.0	398
		Menai Bridge	45.0	116
Do. with popns. 5,000 to 15,000. 37 such authorities in Wales.	44.9	Holyhead	32.3	72
Rural Districts, popn. 7,000 to 14,000. 24 such authorities in Wales.	29.5	Aethwy	25.2	85
		Twrcelyn	22.3	76
		Valley	25.7	87

Water Supplies.

Work on the construction of the *County Water Scheme* continued during the year, and the following note by the County Water Engineer gives details of the progress made :

(a) *Development during* 1954.

The main from Gwalchmai Uchaf to Rhosneigr was completed and brought into use 18.11.54.

The main from Llangaffo to Holland Arms was completed 24.3.54 and first connection was made 23.6.54.

The main from Cefn Cwmwd to Aberffraw was commenced 2.2.54 and brought into use 29.12.54.

The main from Maenaddwyn to Marianglas was commenced 17.2.54 and brought into use 31.8.54.

The mainlaying from Caergeiliog to Llanfachraeth, Llanfwrog and Llanddeusant was commenced 31.5.54 and is not yet completed,

The Aethwy, Twrcelyn and Valley Undertakings were taken over by the County Council under the provisions of the Anglesey County Council (Water, etc.) Act, 1944, as from the 1st October. 1954.

(b) *Lengths of Mains laid during* 1954.

County Scheme Mains : By Contract—51,231 yards.
Routine Extensions : By Department labour—4,735 yards.

(c) *New supplies.*

The following schedule shows the number of new communication pipes which were installed during 1954 :—

Beaumaris Borough	20	Menai Bridge U.D.	23
Amlwch U.D.	152	Aethwy R.D.	178
Holyhead U.D.	34	Twrcelyn R.D.....	61
Llangefni U.D.....	34	Valley R.D.	101
		Total	603

Public Health Act, 1936, *Section* 138.

Powers under this section, delegated to the County Council by the county district councils, are exercised by the Health Committee. The section requires property to be connected under certain circumstances to a piped water supply. Each individual property has to be separately considered, and much detailed work has therefore fallen on the County Sanitary Inspector.

During 1954 surveys of 10 villages were in progress or had been completed, resulting in a total of 420 properties being reported on as suitable for action under the section. 221 properties were found not to be suitable for action.

Samples of piped water supplies were submitted for analysis with the following results :—

Table 41

Bacteriological Results of Water Samples.

Supply.	*Ministry of Health Classification.* I.	II.	III.	IV.	*Total*
Plas Bach, Benllech, Moelfre	19	—	1	7	27
Cemaes	11	—	—	—	11
Rhosneigr	15	—	—	—	15
County Supply.....	347	—	2	20	369
R.A.F., Valley	1	—	—	—	1
Bryn Siriol, Benllech.	—	—	—	5	5
Total	393	—	3	32	428

Well waters were submitted for analysis by the sanitary inspectors and others on 109 occasions, and as was to be expected, the majority of samples (44 per cent.) showed evidence of pollution serious enough to condemn the supply as a safe source of water for human consumption.

Sewage Disposal.

I am indebted to my colleagues in the county districts for the following information as to the position at the end of 1954 :

Amlwch—further action being taken to ensure house connections to the scheme which was brought into use in 1951.

Beaumaris—No change.

Holyhead—The joint scheme to serve the western area of the town has not yet materialized.

Llangefni—Extensions to connect 46 new dwellings to existing scheme were completed during the year. The proposed new disposal arrangements have not yet materialized.

Menai Bridge—No change.

Aethwy.

Newborough—Work has commenced on comprehensive scheme.

Brynsiencyn, *Dwyran and* *Malltraeth*—Proposed comprehensive schemes have not yet reached the public enquiry stage.

Minor schemes in connection with newly erected council houses were in progress or had been completed in Dwyran, Gaerwen, Hermon, Llandegfan, Llangoed and Llansadwrn.

Twrcelyn

Not one of the four proposed comprehensive schemes to serve Benllech, Cemaes, Llanerchymedd and Moelfre had reached the public enquiry stage at the end of 1954.

Valley

Aberffraw, Bodedern and Bryndu comprehensive schemes were at the stage when work on the ground could be expected to commence in 1955. The necessary float tests at the outfall of the Valley and Four Mile Bridge scheme had not been completed at the end of the year.

The Bryngwran scheme had not yet reached the public enquiry stage.

A minor scheme to serve Llanfaethlu was under consideration.

Administration

Aethwy and Valley Rural District Councils each appointed an additional sanitary inspector during the year.

APPENDIX "A."

CONSTITUTION OF HEALTH COMMITTEE (YEAR 1954/5)

Chairman : J. F. Chadwick, Esq., B.A., M.C.

Vice-Chairman : Hugh Jones, Esq., J.P.

The Marquess of Anglesey.
Mrs. Margaret Hughes, B.E.M.
*Mrs. G. Hughes-Jones, M.B.E.
*Miss I. Johnston.
Mrs. Walter O. Jones, J.P.
Mrs. J. Morris.
Mrs. E. G. Williams, J.P.
Mr. R. D. Briercliffe, C.B.E., J.P.
Sir Wynne Cemlyn-Jones.
Mr. William Davies.
Mr. David Evans, J.P.
*Mr. O. Glynn Foulkes.
*Mr. D. A. Godfrey, L.D.S., R.C.S.
Mr. Owen Griffith.
*Dr. T. Alun Griffith, J.P.
Rev. D. R. Hughes.
Mr. O. T. L. Huws.
Mr. A. Ifan Jones, M.B.E., J.P.
*Prof. O. Herbert Williams, F.R.C.S.
Rev. J. Lambert Jones.
Mr. Llewelyn W. Jones, M.P.S.
*Dr. W. Parry-Jones.
Mr. R. D. Jones.
Mr. T. O. Jones.
Mr. W. P. Jones.
Mr. E. R. Oliver.
Mr. W. Charles Owen.
Mr. Griffith Pritchard.
Mr. Hugh Pritchard.
Mr. O. M. Pritchard.
†Mr. Robert Roberts, J.P.
Mr. A. Robertson.
Mr. D. Thomas.
Mr. J. Hugh Thomas.
Mr. William Thomas.
Sir Harry Verney, Bart., D.S.O. (Resigned)
Mr. E. R. Williams.
Mr. J. Morris Williams.
†Sir Richard H. D. Williams-Bulkeley, Bart., J.P.

* Co-opted members. † Ex-officio.

APPENDIX "B."

STAFF OF THE COUNTY HEALTH DEPARTMENT

County Medical Officer of Health, Principal School Medical Officer and County Welfare Officer.	G. Wynne Griffith, M.D., D.P.H.
Assistant County Medical Officers of Health and School Medical Officers.	†G. H. Browse Roberts, M.A., M.B., B.Ch., B.A.O., D.P.H., L.M.
	Mrs. Mair Humphreys-Jones, M.B., Ch.B., C.P.H.
	†H. Merfyn Thomas, M.B., Ch.B., D.P.H., D.C.H. (Left 31/7/54).
	†T. Dulyn Thomas, M.B., Ch.B. (Temporary) (Commenced 23/8/54).
Dental Officers.	Dr. Catherine Rolant Thomas, M.R.C.S., L.R.C.P., L.D.S.
	Mr. Elwyn Jones, L.D.S.
Dental Attendants.	Mrs. Megan Pritchard. (Left 31/3/54).
	Miss E. M. Jones.
	Miss Gwen Jones. (Commenced 1/4/54)
Consulting Obstetricians.	*O. Vaughan Jones, M.D., F.R.C.S., F.R.C.O.G.
	*W. Macfarlane, M.B., Ch.B., M.R.C.O.G.
Consulting Paediatrician.	*Gwyn R. Griffith, M.D., F.R.C.P., D.P.H., D.C.H.
Chest Physician.	*J. Glyn Jones, M.A., M.D., B.Chir., M.R.C.S., L.R.C.P.
Consulting Ophthalmologists.	*G. C. Laszio, M.D., L.R.C.P., D.O.
	*T. G. Wynne Parry, M.R.C.S., L.R.C.P., D.O.M.S.
Consulting Orthopaedic Surgeons.	*Prof. B. L. McFarland, M.D., M.Ch. (Orth.), F.R.C.S.
	*G. I. Roberts, M.B., Ch.B., M.Ch. (Orth.), F.R.C.S.
Consulting Venerealogist.	*H. Vernon Williams, M.R.C.S., L.R.C.P.

† Also part-time District Medical Officers of Health.

* Under contract with Regional Hospital Boards.

Duly Authorised Officers.	*T. L. Jones, 7, Corn Hir, Llangefni (Tel. Llangefni 2254).
	*A. Pretty, Fair View, Llanfairpwll (Tel. Llanfairpwll 41).
	*J. Roberts, Hafanedd, Bron y Graig, Llangefni (Tel. Llangefni 3153). (Commenced 1/3/54).
	†H. Betts, D.P.A., 39, Pennant, Llangefni.
	†R. J. Jones, Ty Capel Gad, Bodffordd.

* Also District Welfare Officers.

† Relief D.A.O.

County Sanitary Inspector.	I. Wynn Jones, M.S.I.A., M.R.San.I. (Commenced 1/4/54).

ADMINISTRATIVE STAFF

Chief Administrative Assistant.	Horace Betts, D.P.A.
Clerical Staff.	Maldwyn Jones.
	Miss D. M. Williams.
	Mrs. E. Griffiths.
	R. J. Jones.
	Miss Eliz. C. Parry.
	Miss Eunice Jones.
	Miss Norah M. Williams.
Deputy Ambulance Officer.	W. T. Rowlands.
Administrative Assist. (Welfare).	Miss Gladys Roberts.

ASSOCIATED OFFICERS OF THE COUNTY COUNCIL

Clerk of the County Council	William Jones, O.B.E.
Deputy Clerk of the County Council	Idris Davies, LL.B.
County Architect	N. Sq. Johnson, A.R.I.B.A., A.M.T.P.I.
County Treasurer	J. E. Hughes.
Inspector of Food and Drugs	H. A. Thomas.
Public Analyst	Harold Lowe, M.Sc., F.R.I.C.
Children's Officer	Miss M. Rowland.
County Water Engineer	W. H. Austin, B.Sc. (Eng.), A.M.I.C.E., M.I.W.E.

NURSING STAFF

Superintendent Nursing Officer	Miss Hilda V. Parry, S.R.N., S.C.M., Q.N., H.V.Cert.
Deputy Supt. Nursing Officer	Miss Margt. Rh. Parry, S.R.N., S.C.M., H.V.Cert.
Health Visitors	*Miss G. Hughes.
	*Miss E. C. Parry.
	*Miss E. C. Pritchard.
	*Mrs. M. M. Williams.
	*Miss Glenys Pritchard.
	*Miss M. Williams.
	*Miss E. Owen (Left 4/9/54).
	Miss L. M. Jones. (Commenced 4/1/54).
	*Miss A. Williams (Commenced 1/1/54).
	*Miss G. Pritchard (Temporary). (Commenced 1/10/54).

*Also School Nurses.

Student Health Visitor	Miss E. E. Hughes. (Commenced 11/1/54).
District Nurse/Midwives	Nurse E. Clarke, Ty Fry, Tynygongl (Tel. Tynygongl 289).
	Nurse C. Davies, Ty Newydd, Llanddaniel (Tel., Gaerwen 58).
	Nurse A. Evans, 15, Rose Hill, Beaumaris (Tel., Beaumaris 83).
	Nurse E. M. Hughes, 7, Pennant, Llangefni (Tel., Llangefni 3208).
	Nurse E. Wyn Hughes, Llain Nest, Newborough (Tel., Newborough 213).
	Nurse E. Jones, Tyddyn Ball, Llanfechell (Tel., Cemaes Bay 247).
	Nurse P. Lloyd, Bryn, Holyhead (Tel., Holyhead 290).
	Nurse P. M. Murphy, Ty Ceiliog, Beaumaris (Tel., Beaumaris 96).
	Nurse E. Parry, Haulfre, Bethesda St., Amlwch (Tel., Amlwch 396).
	Nurse G. Price, 31, Tara St., Holyhead (Tel., Holyhead 300).
	Nurse E. Helsby Pritchard, Trem Ceidio, Llanerchymedd (Tel., Llanerchymedd 323).

Nurse W. M. Roberts, Nurse's Cottage, Bodorgan (Tel., Bodorgan 62).

Nurse S. Strong, 22, Llanfawr Rd., Holyhead (Tel., Holyhead 490).

Nurse E. Vidler, Bryn Mona, Rhosybol (Tel., Amlwch 338).

Nurse D. Williams, 7, Pennant, Llangefni (Tel., Llangefni 3208).

Nurse E. Williams, 4, London Rd., Bodedern (Tel., Valley 246).

Nurse L. Williams, 4, High Street, Menai Bridge (Tel., Menai Bridge 100).

OTHER STAFF

Matrons—Homes for the Aged :	
Llys-y-Gwynt	Miss Sarah E. Williams.
Park Mount	Miss Ellen Jones, S.R.N., S.C.M.
Home Teacher for the Blind.	Miss Dilys Jones.

APPENDIX "C."

PRESENT ARRANGEMENTS AT ANTE-NATAL CLINICS

Clinic.	*Time*	*Place where held*	*Days when held in month*
AMLWCH	2 p.m.	Glanrafon	2nd and 4th Thursday
HOLYHEAD	2 p.m.	St. David's Priory	Every Wednesday
LLANGEFNI	2 p.m.	Frondirion Clinic	1st and 3rd Thursday

PRESENT ARRANGEMENTS AT INFANT WELFARE CENTRES

Name of Centre.	*Place where held.*	*Days when held in month*
AMLWCH	Court Room	1st and 3rd Tuesday
BODORGAN	Bethel Schoolroom	1st and 3rd Tuesday
BEAUMARIS	The Old Gaol	1st and 3rd Thursday
CEMAES BAY	Village Hall	1st and 3rd Friday
GWALCHMAI	Village Hall	2nd and 4th Thursday
HOLYHEAD	St. David's Priory	1st and 3rd Thursday
LLANGEFNI	Frondirion Clinic	2nd and 4th Wednesday
LLANFAETHLU	Coffee House	2nd and 4th Friday
LLANFAIRPWLL ..	Presbyterian Church	2nd and 4th Friday
MARIANGLAS	Old British School	1st and 3rd Monday
MENAI BRIDGE	4, High Street	2nd and 4th Tuesday
NEWBOROUGH	Memorial Hall	1st and 3rd Wednesday
VALLEY	Court Room	2nd and 4th Monday

APPENDIX "D"

AREA, POPULATION, BIRTHS, DEATHS FOR 1954

	Area in Acres	Population			Live Births	Deaths
		Census 1931	Census 1951	Mid-year 1954		
Amlwch	4,494	2,562	2,700	3,020	54	33
Beaumaris	3,135	1,710	2,128	2,250	18	23
Holyhead	730	10,700	10,569	10,340	187	142
Llangefni	2,510	1,782	2,225	2,370	53	19
Menai Bridge	824	1,675	1,855	1,980	31	21
Urban	11,693	18,429	19,477	19,960	343	238
Aethwy	52,352	10,765	10,434	10,690	152	157
Twrcelyn	53,865	8,644	8,569	8,530	117	131
Valley	58,784	11,191	12,157	12,100	202	205
Rural	165,001	30,600	31,160	31,320	471	493
Anglesey	176,694	49,029	50,637	51,280	814	731

ANNUAL RATES PER 1,000 ESTIMATED POPULATION

District.	Birth Rate	Death Rate for All Causes	Phthisis	Respiratory	Cancer	Heart Disease
Amlwch	17.9	10.9	0.3	0.7	1.3	2.3
Beaumaris	8.0	10.2	0.0	1.8	1.3	2.2
Holyhead	18.1	13.7	0.2	1.6	2.8	4.7
Llangefni	22.4	8.0	0.8	0.4	0.8	2.9
Menai Bridge	15.7	10.6	1.0	1.0	0.0	4.5
Urban	17.2	11.9	0.3	1.3	1.9	3.9
Aethwy	14.2	14.7	0.3	1.1	2.5	4.6
Twrcelyn	13.7	15.4	0.0	1.9	3.6	3.3
Valley	16.7	16.9	0.3	1.3	2.9	4.5
Rural	15.0	15.7	0.2	1.4	3.0	4.2
Anglesey	15.9	14.2	0.3	1.4	2.5	4.1

INFANT DEATHS—STILLBIRTHS—MATERNAL DEATHS

District	Infant Deaths No.	Infant Deaths Rate*	Stillbirths No.	Stillbirths Rate**	Maternal Deaths No.	Maternal Deaths Rate**
Amlwch	2	37.0	2	35.7	—	—
Beaumaris	1	55.5	1	52.6	—	—
Holyhead	7	37.4	4	20.9	—	—
Llangefni	—	0.0	—	0.0	—	—
Menai Bridge	—	0.0	—	0.0	—	—
Urban	10	29.1	7	20.0	—	—
Aethwy	7	46.0	3	19.3	—	—
Twrcelyn	4	34.2	6	48.8	—	—
Valley	2	9.9	5	24.1	1	4.8
Rural	13	27.6	14	28.9	1	2.1
Anglesey	23	28.2	21	25.1	1	1.2

* per 1,000 live birth. ** per 1,000 births (live and still).

APPENDIX "E."

REPORT ON THE 1951 CENSUS

I. INTRODUCTION

The publication of the results of a census is always a landmark for those interested in vital statistics. For the year of the census, not only have we detailed information about our local population, which well repays study, but it is also possible, using the census data, to make accurate comparisons between areas and the country generally. Other data may be related to the census figures enabling us to compute rates of occurrence (births, deaths, etc.) that allow for differences, for example, in the age-structure of the populations in question.

Early in 1955 the Anglesey section of the report on the 1951 census was published. An attempt is made in this appendix to describe and analyse this report. Comparisons are drawn between the state of affairs in Anglesey in 1951 and in the country generally in that year. Some comparisons are also drawn between the position in Anglesey in recent years and the position as revealed in previous census reports. The first section deals with population, and here the comparison is taken back to the Anglesey of 50 years ago. This is followed by a section dealing with fertility—that is to say, the number of live births related to the number of women of child-bearing age. The next three sections are concerned with mortality—with Anglesey to-day as compared with, on the one hand, the Anglesey of 20 years ago and, on the other, with England and Wales in recent years. Next comes a section dealing with mortality from a single cause—cancer—and comparing county districts within Anglesey. This is a method of comparison that might be applied, of course, to other causes of death. We might wish to compare, for instance, mortality from tuberculosis in the separate districts. Cancer was chosen as an illustrative example because there were grounds for suspecting that differences do in fact exist between the mortality in different districts, and also

because some of the necessary data were readily available having been collected in connection with another investigation.

The census data relating to the housing of the population is given a separate section and, finally, a number of items are collected together into a miscellaneous section. Some of these items are not directly related to the public health, but have been included for the sake of completeness.

Ordinarily the word *significant* means important, material, of grave moment. In connection with statistics, however, the word has a special technical meaning, and from time to time, in what follows, it is necessary to use the word in this restricted sense. For the benefit of those unfamiliar with its usage, the meaning of the term *statistical significance* needs to be explained. Supposing we found that the death-rate from tuberculosis in a certain area was 50 per cent. above that of England and Wales. What conclusion should we draw from this? Should this immediately spur us to action to find out why the difference occurs and try to put the matter right? To accept this view would be to pre-suppose of course that there were sound cogent reasons why the difference should arise. But a difference between two rates—even a difference of 50 per cent.—may well be the result of what we would call in everyday affairs pure chance and if that were so we should be chasing a will-o-the-wisp in trying "to put the matter right." On the one hand, tuberculosis mortality might be high in a certain area because there were more cases of the disease (and therefore more deaths) than elsewhere, or because cases came to light at a later stage in the disease so that treatment was of less avail or because there were fewer hospital beds to treat cases when discovered. In other words, there might be cogent reasons—in terms of prevalence, diagnosis, treatment—which we could hope to discover and perhaps rectify. On the other hand, if we knew more about the rates which we are comparing we might suspect that no such cogent reasons need to be invoked. There are some parishes in Anglesey with fewer than 200 inhabitants. One solitary death from tuberculosis in a decade in one such parish would give an average annual death rate from the disease for that parish perhaps three times the national average. Even such a large difference observed over a long period in such a small population is, we feel instinctively, quite irrelevant to the general tuberculosis situation. The whole threefold difference would disappear if one particular death had occurred in another parish. We would argue that there are, no doubt, sufficient reasons if we knew the whole story why this particular death occurred in that particular parish and not in the next one, but those reasons whatever they may be probably have nothing to do with the tuberculosis problem. We do not feel

there is any need to seek a reason for the increased death rate in terms of prevalence, diagnosis, treatment or any other relevant factors. But if one swallow does not make a summer, how many swallows are necessary? Supposing that instead of one death in this parish there had been two, or three, or six, or ten? At what point should we begin to wonder whether some relevant factors are operating to produce this increased mortality? At what point do we suspect, in fact, that a fluke is no longer a fluke? It is in this difficulty that tests of statistical significance may help us. Such tests will not give us a categorical answer to the question—is this difference "real" or is it due to chance? What they will do is tell us what are the odds against the difference being due to chance. The tests actually measure the likelihood (or as the statisticians say, the probability) that a given result is due to the operation of chance factors. We can adopt any level we wish of likelihood (or unlikelihood). But we must bear in mind the twin dangers—on the one hand of setting our level so low that we chase too many wills-o-the-wisp, and, on the other hand, of setting our level so high that we dismiss as being due to chance findings that "really" have a cogent basis. By a longstanding convention odds of approximately 20 to 1 against have been generally adopted in statistical work as the level at which we cease to regard a result as likely to be due to chance, and we start looking for "real" causes. If the 50 per cent. difference we took as an example is statistically significant, this means that the odds are at least 20 to 1 against the difference being due to chance. Where necessary in what follows, tests of significance have been applied and a result is noted as being statistically significant only if this level of "unlikelihood" is attained. It only remains to note that a result may be statistically significant and, at the same time, unimportant. The importance to be attached to a finding is not a matter of statistics, although its significance (in the technical sense) is. For example, we might find that the average weight of babies delivered by Nurse X on the district was ½ ounce heavier than those delivered by Nurse Y, and, having applied the appropriate tests, we might find further that the difference was statistically significant, that is to say, there was likely to be a "real" reason to account for the difference. It might be, for instance, that the balance used by Nurse X is slightly less accurate than that used by Nurse Y. Whether a difference of ½ ounce in this context however "real" it may be, is important enough for anyone to worry about it is another matter.

II. POPULATION.

The population of the county on the census night in 1951 was enumerated as 50,660, and this number was distributed between the county districts as shown in Table 1. This table also gives

the figures for the census held 50 years previously in 1901. The population of the county has hardly changed in number in the last half century—the alteration is only one tenth of one per cent. The population of England and Wales, on the other hand, increased by 34 per cent. during the same period.

There have been relatively large changes in the individual county districts as may be seen from the table. Llangefni's population has increased by 27 percent., and Valley's by 16 per cent. Amlwch, Aethwy and Twrcelyn have each suffered a decline of some 10 or 11 per cent.

Table 1. ANGLESEY — CENSUS POPULATION.

	1901	1951	*Change as of* 1901 %
Amlwch	2,994	2,700	— 10
Beaumaris	2,326	2,134	— 8
Holyhead	10,079	10,563	+ 5
Llangefni	1,751	2,225	+ 27
Menai Bridge	1,700	1,864	+ 10
Total: Borough and Urban.	18,850	19,486	+ 3
Aethwy	11,772	10,451	— 11
Twrcelyn	9,512	8,562	— 10
Valley	10,472	12,161	+ 16
Total: Rural	31,756	31,174	— 2
Whole County	50,606	50,660	
England and Wales			+ 34

The ratio of males to females in the Anglesey population is the same in 1951 as it was in 1901, and in both years corresponds fairly closely to the England and Wales figure—which is 48 per cent. males and 52 per cent. females.

Age Structure.

In Table 2 is set out the age structure of the Anglesey population by decennial age groups for each sex; the table gives the Anglesey data for both 1901 and 1951 and, for the latter year, the England and Wales data for comparison. The table indicates how every 1,000 of the population is made up of males and females at various ages.

The comparison between Anglesey in 1901 and 1951 is also shown graphically in Fig. 1.

Fig. 1.

• AGE STRUCTURE OF THE POPULATION •

ANGLESEY • 1901 & 1951

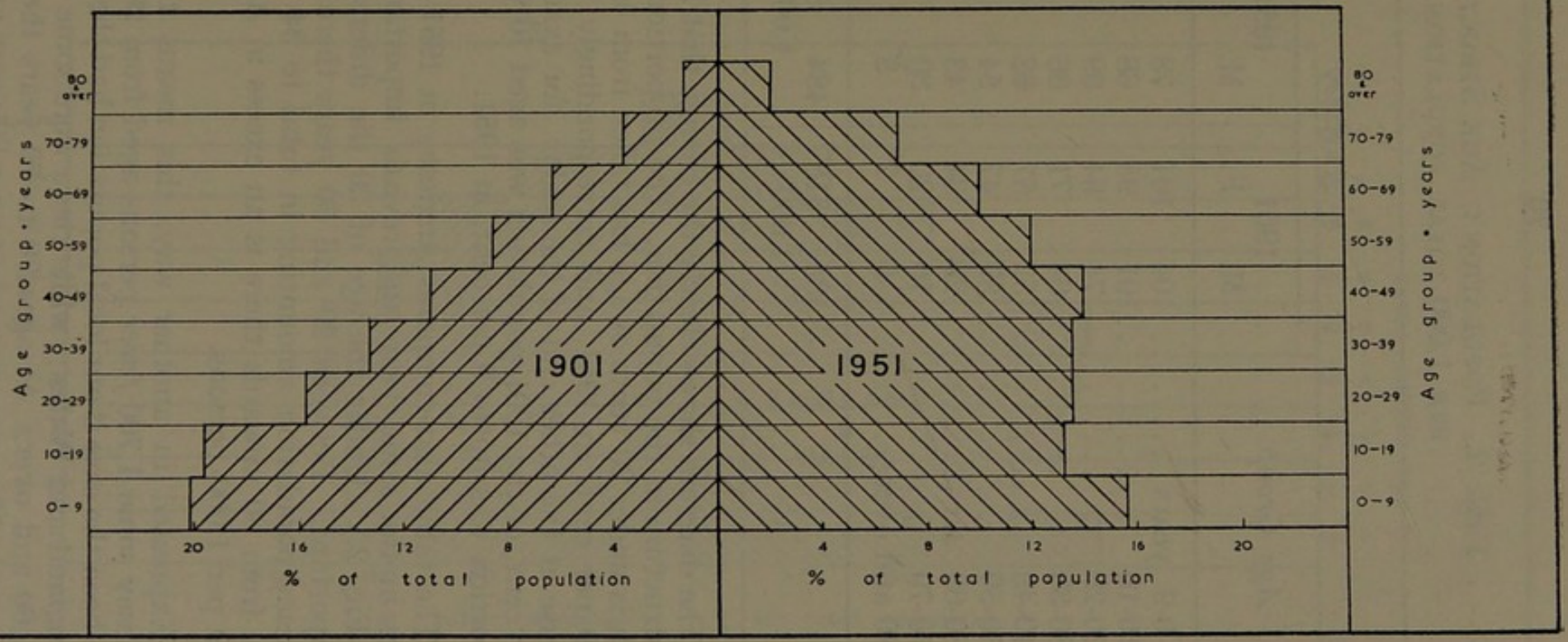


Table 2. POPULATION : AGE STRUCTURE, PER 1,000 TOTAL POPULATION.

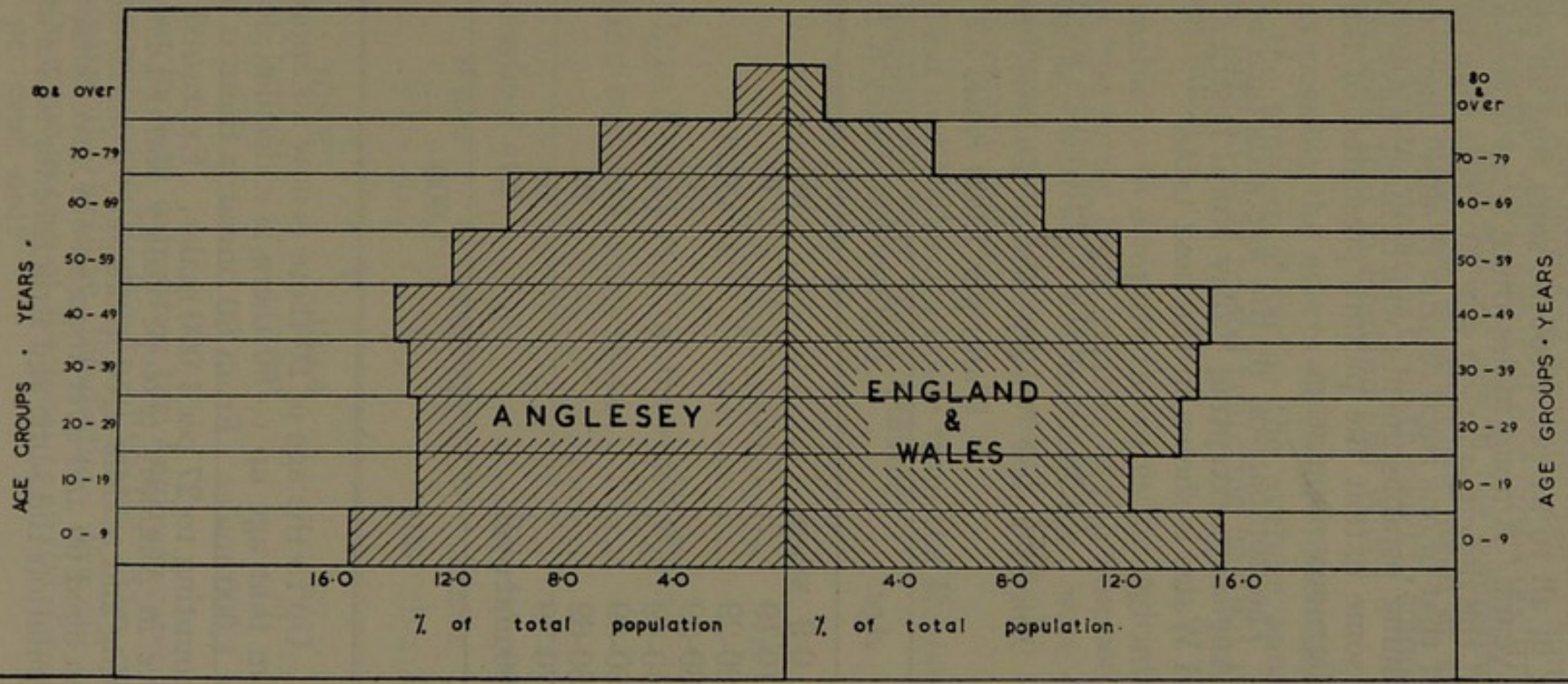
Age Group.	*Anglesey*				*England and Wales*	
	1901		1951		1951	
	M.	F.	M.	F.	M.	F.
0-9 years	104	101	78	79	80	77
10-19 ,, ...	101	95	68	64	63	64
20-29 ,, ...	74	84	69	64	69	72
30-39 ,, ...	64	71	66	68	72	75
40-49 ,, ...	52	57	68	70	74	76
50-59 ,, ...	39	47	54	65	55	65
60-69 ,, ...	29	34	43	56	39	51
70-79 ,, ...	16	20	30	38	22	32
80 and over	5	7	8	12	5	9
	484	516	484	516	479	521
	1,000		1,000		1,000	

The diagram shows clearly the change that has occurred in the age structure of the population. The proportion of the population which is under 20 years of age has fallen from 40 per cent. in 1901 to 29 per cent. in 1951, and correspondingly there has been an increase at the other end of the scale : for example, whereas only 5 per cent. of the 1901 population was aged 70 years and over, the proportion was up to 9 per cent. in 1951.

The table also compares Anglesey in 1951 with England and Wales in the same year and reveals important differences (see also Fig. 2.). Under the age of 20 the differences are relatively unimportant. Between 20 and 60 years there is a deficit in the Anglesey population amounting in total to 34 per 1,000 persons, while from 60 upwards there is an excess in Anglesey amounting to 29 per 1,000 persons.

Expressed in another way, this means that there were in Anglesey some 1,700 *fewer* persons aged from 20 to 60 than would have been the case if our local population had the same age structure as England and Wales ; while there were some 1,450 *more* persons aged 60 and over. At ages 70 to 79 years the relative excess in Anglesey is 26 per cent., and at ages 80 years and over it is 43 per cent.

Fig. 2. Age Structure of population · ANGLESEY & ENGLAND & WALES 1951



When we come to consider the sexes separately we find that for females there is a deficit from ages 20 to 50 in Anglesey amounting in all to 21 per 1,000 persons, and an excess above the age of 60 years. Among males there is an excess at ages from 10 to 20, and the deficit starts at age 30. This may be accounted for by the fact that in one rural district (Valley) there are two national service training establishments which must have the effect of distorting to some extent the picture presented of the age structure of the indigenous population.

The comparison of the age structure of the male population of Anglesey, excepting Valley Rural District, with that of England and Wales is shown in the next table.

Table. 3 MALE POPULATION BY AGES—1951

Anglesey less Valley Rural District, and England and Wales per 1,000 *males all ages.*

Age.	*Anglesey less Valley R.D.*	*England and Wales*
0-9 years	165	168
10-19 ,, ...	130	131
20-29 ,, ...	132	144
30-39 ,, ...	138	150
40-49 ,, ...	145	153
50-59 ,, ...	114	115
60-69 ,, ...	93	82
70-79 ,, ...	65	46
80 and over	18	11
	1,000	1,000

Up to the age of 20 there is now no appreciable difference, but from that age up to 50 there is a decided deficit amounting to 32 per 1,000 males. From 60 onwards there is an excess in Anglesey amounting to 27 per 1,000 males. Expressed in another way, there were in Anglesey (except Valley Rural District) nearly 600 *fewer* young and middle-aged males aged from 20-50, and nearly 500 *more* men aged 60 and over than would have been the case had the local population the same age structure for males as England and Wales.

III. FERTILITY.

There are several ways of measuring fertility, but a simple and convenient way is to relate the number of live births occurring to the number of females of child bearing age in the community. For this purpose the child-bearing age is arbitrariiy fixed at ages 15 to 44 years. The census data enable us to do this and to compare the position in Anglesey with that in England and Wales.

To avoid as far as possible the effects of chance fluctuations from year to year in the number of births the average annual number for the 5 years 1949/53—the period centering on 1951, the census year—have been taken.

The census data enable us to compute the rates for legitimate and illegitimate births, the latter being related to the number of women of child-bearing age who were not married (i.e., were enumerated as single, widowed and divorced women), and also the rates for the individual county districts.

The data for England and Wales are taken from the Registrar General's Statistical Review for 1951, Text Volume.

The results are set out in Table 4.

Table 4.

FERTILITY : LIVE BIRTHS PER ANNUM PER 1,000 RELATED FEMALES AGED 15-44.

	England and Wales (a)	*Anglesey* (b)	*Percentage excess* 100 (b-a)/a
Legitimate	105.2	133.4	27
Illegitimate	9.8	13.8	41

It will be seen that in both categories the Anglesey rates are substantially higher than those for England and Wales. The *crude* birth rate under-estimates the fertility differential. For the five years in question the average excess of the local over the national crude birth rate is 7 per cent. only.

Table 5.

FERTILITY—COUNTY DISTRICTS.

Live Births per annum per 1,000 *related females aged* 15-44 *based on* 1949/53 *births.*

	Legitimate.	*Illegitimate*
Amlwch	131	20
Beaumaris	134	9
Holyhead	127	10
Llangefni	135	15
Menai Bridge	142	5
Aethwy	133	15
Twrcelyn	126	11
Valley	144	18
England and Wales	105	10

All county districts show a higher legitimate fertility rate than England and Wales. Valley Rural District has the highest rate and Twrcelyn Rural District the lowest. The illegitimate rates are based on comparatively small numbers, and so need to be interpreted with caution.

Comparison with 1931.

The data enable us to compute a fertility rate for the 1931 Anglesey population by taking the average number of annual births in the five years centred on 1931 (i.e., 1929--1933) and relating this average number to the female population as enumerated in the 1931 census.

Table 6.

FERTILITY : ANGLESEY, 1931 and 1951.

Live Births per annum per 1,000 *related females aged* 15-44

	1931	1951
Legitimate	137.7	133.4
Illegitimate	14.0	13.8

It will be seen that there has been no appreciable change in either legitimate or illegitimate fertility, measured in this way.

When Anglesey rates are compared with those for England and Wales, we find for each group an excess in both years. The amount of the excess of the Anglesey rate expressed as a percentage of the corresponding national rate is found to be :

Table 7.

	1931	1951
Legitimate	14	27
Illegitimate	146	41

In the interim therefore there has been relatively an increase in the legitimate fertility rate in Anglesey ; it was 27 per cent. above the England and Wales rate in 1951 compared with 14 per cent. in 1931.

In the same period there has been a very marked decline in the ratio of the illegitimate fertility of Anglesey to that of England and Wales. In 1931 the Anglesey rate was more than double that of the country as a whole, while in 1951 it is 41 per cent. above the national average.

IV. MORTALITY TRENDS 1931--1951.

In this section it is intended to compare the present day mortality in Anglesey with that at the time of the last census in 1931.

That mortality is a function of age is a commonplace familiar to all. We do not expect a group of young people to suffer as many deaths in a period of a year, say, as a group of the same size, but consisting of old people. That the mortality of the sexes is different is equally true, and the effect of this differential is becoming increasingly evident in the structure of our population. At birth, boys are slightly more numerous than girls, but the numerical superiority of the male sex soon gives place to a preponderance of females so that from the age of about 30 onwards there is always an excess of females over males at any given age. This excess tends to increase with increasing age so that there were, for instance, nearly twice as many women as men aged 85 and over in Anglesey in 1951. As was shown in the previous section, the composition of the population of the county has been changing over the years—there are now relatively more elderly people and relatively fewer young people than was the case twenty and more years ago. It

follows therefore that any comparison between mortality in 1931 and in 1951 must take due account of any changes of this kind. Mortality rates must be "adjusted" or "standarized" to allow for changes in the age-sex structure of the population before the rates can be regarded as truly comparable, and the necessary adjustments can only be made with any degree of precision on the basis of census enumerations.

Mortality from all causes.

The death rates for several age-sex groups in the Anglesey population in 1931 and 1951 are given below. These rates are based on the age-sex structure of the population as shown by the census of that year and on the mean annual number of deaths in each age-sex group for the 5 years centred on the census year, i.e., 1929--33 and 1949--53. Taking the average annual deaths over a five year period helps to eliminate the chance fluctuations that one would expect to occur in a single year when dealing with a relatively small population.

Table 8.

ANNUAL MORTALITY RATES (ALL CAUSES) PER 1,000 AT AGES—ANGLESEY 1931 AND 1951.

	Males		*Females*	
Age Group.	1931	1951	1931	1951
0-4 years.....	22.5	10.8	18.6	8.5
5-14 ,, ...	1.5	0.5	1.5	0.3
15-24 ,, ...	3.9	1.8	4.2	1.0
25-44 ,, ...	4.0	3.2	5.1	2.0
45-64 ,, ...	15.9	14.8	13.6	8.2
65-74 ,, ...	59.1	51.3	41.7	36.1
75 and over	147.4	132.8	135.9	125.6

In the next table the 1951 rate is expressed as a percentage of the 1931 rate :

Table 9.

Age Group.	*Males*	*Females*
0-4 years.....	48	46
5-14 ,, ...	33	18
15-24 ,, ...	46	23
25-44 ,, ...	80	38
45-64 ,, ...	93	60
65-74 ,, ...	87	87
75 and over	90	92

It is immediately obvious that every age-sex group shows a reduction in the mortality it experienced in 1951 as compared with 1931. That is to say, the average Anglesey resident of 1951, whether he or she was an infant or a person of advanced age, was less likely to die in the ensuing twelve months (or, conversely, was likely to live longer) than his or her counterpart a bare twenty years previously. It is obvious, too, that the amount by which "expectation of life" was improved varied according to the person's age and sex. The most remarkable decline is in the age group 5 to 14 years, where the mortality among boys is only one-third of what it was in 1931 and among girls only one-fifth of the 1931 figure. The male sex shows less improvement in its chances of continuing to live than the female members of the population. The great reductions effected among women aged 15-24 and 25-44 are also noteworthy.

If we apply the 1931 rates to the 1951 population we can calculate what would have been happening now if the changes in mortality had not occurred. The result shows that *at the* 1931 *rates there would now be* 200 *more deaths per annum in the county.* Whatever the factors may be that have contributed to these remarkable changes, at present there are in Anglesey each year 200 people who, had it not been for these factors, would be dead and buried. It is of interest to note how this 200 is composed. To the

nearest whole number it consists of :—

47 babies and pre-school children.
8 children of school age.
8 young men and
10 young women up to 25 years of age.
5 men aged 25-44 years and
22 women in the same age range.
6 men aged 45 to 64 years and
36 women in this age group.
29 persons aged 65 to 74 years and
29 persons aged 75 years and over.

Set out in this way, the advantage of the female over the male is plainly seen. Thus, in the age range 15 to 64 years, there are more than twice as many female lives "saved" as there are males. About one quarter of all "avoided" deaths are babies and very young children, and another quarter consists of people at the other end of life's span—aged 65 years and over. More than half the remainder are women aged 25 to 64 years.

Causes of Death—1931 and 1951.

To what are we to ascribe these remarkable reductions in mortality ? Are there causes of death that were operating in 1931 which have disappeared or declined in importance ?

To answer these questions the analysis has been taken a stage further to include separate causes of death as indicated on the death certificate. Once again we must pool the experience of a number of years (five years have been taken) to eliminate the effects of chance fluctuations. Unfortunately the data available do not allow us to compare 1929-33 with 1949-53 because in 1949 the Registrar General published for each area figures of mortality using a different age grouping from that employed in 1929-33. From 1950 onwards the age-grouping used is the same as for the period 20 years previously. We are thus obliged to compare 1929-33 with 1950-54. The comparison is made between the "expected" number of deaths and the number actually observed as having occurred. The "expected" number is the number of deaths that would have occurred during the five years 1950-54 had the age-sex mortality rates experienced in Anglesey in 1929-33 operated on the 1951 Anglesey population and the "observed" number are those which actually occurred during 1950-54. On occasion in commenting on these tables we have divided the difference between "observed" and "expected" by five to give an average annual "saving" of life in the period 1950-54.

The Acute Infectious Diseases.

This group includes, *inter alia*, measles, whooping cough, scarlet fever, diphtheria and poliomyelitis.

Table 10.

Age Group	*Males*		*Females*	
	Observed	*Expected*	*Observed*	*Expected*
0-4 years	5	15.5	4	15.7
5-14 years	1	0.8	0	7.0
15-24 years	2	0.9	1	1.9
25 and over	5	2.0	5	3.6

There is a distinct difference in the age group 0-4 for both sexes, there being 9 actual deaths as opposed to 31.2 expected deaths. There is also a significant deficit at ages 5-14 years. Above this age the differences tend the other way. This is partly to be explained by the emergence of poliomyelitis as a cause of death and the inclusion during the later period, of certain of the rarer infections which either did not occur earlier or were not certified as such. (One such example is infectious hepatitis).

Tuberculosis.

Respiratory and other forms are distinguished.

(a) *Respiratory.*

Table 11.

Age Group.	*Males*		*Females*	
	Observed.	*Expected.*	*Observed.*	*Expected.*
0-14 years	0	7.7	0	5.3
15-24 years	0	29.2	2	35.8
25-44 years	10	52.9	8	52.7
45-64 years	21	39.2	7	19.7
65 and over	13	6.6	7	11.6

The table shows very clearly the saving of life which has occurred due to advances in the prevention and treatment of tuberculosis in recent years—a saving of 38 lives per annum on the average in a population the size of Anglesey. Furthermore, the

differences are concentrated in the younger age groups. An average of 15 lives per annum are saved in the age group up to 25 years, and a further 17 or so in the age group 25 to 44 years. On the other hand there appears to have been an increased mortality among elderly men, but not among elderly women.

b) *Other Forms.*

Table 12.

Age Group.	*Males.*		*Females.*	
	Observed.	*Expected.*	*Observed.*	*Expected.*
0-4 years	1	4.8	3	6.0
5-14 ,, ...	2	4.9	1	2.6
15-24 ,, ...	1	9.1	3	4.7
25-44 ,, ...	2	10.1	1	4.0
45 and over	1	2.2	1	5.9

In each age-sex group there has been a reduction in mortality, amounting in total to about 8 fewer deaths on the average per annum.

Cancer.

The data for 1929-33 do not enable us to distinguish between cancer of different body sites. The comparison therefore is for cancer of all types.

Table 13.

Age Group.	*Males*		*Females*	
	Observed	*Expected*	*Observed*	*Expected*
25-44 years	15	9.0	21	11.9
45-64 ,, ...	101	93.8	82	125.6
65-74 ,, ...	96	104.0	104	110.3
75 and over	76	64.8	76	100.2

There is a slight increase in the total male mortality (288 deaths against 271.6 expected, an increase of 6 per cent.), and a very decided *decrease* in female deaths (283 as against 348 expected deaths—a decrease of 19 per cent.).

Males show an increased mortality up to the age of 65 (although this is not conventionally significant in the statistical sense), while above this age the mortality observed conforms within the limits

of sampling error with expectation. Females show a significant increase up to 45, and a decrease in each age group thereafter.

Bearing in mind that there has been in the interim substantial improvement in the means of diagnosis, these figures do not suggest that cancer of all body sites is becoming more mortal in this area, although the differences between the age groups suggests that there have been changes in the incidence of different kinds of cancer. For example, the increase in cancer of the lung, affecting as it does predominantly males in the age range up to 65, and the decrease in skin cancer (affecting males aged 65 and over for the most part) would lead to the kind of differences we have noted in the Anglesey data.

Detailed comment on the female data is precluded by the lack of figures of cancer related to different body sites.

Diabetes.

Table 14.

Age Group.	*Both Sexes.*	
	Observed	*Expected*
25-44 years.....	1	2.1
45-64 ,, ...	5	14.8
65-74 ,, ...	6	21.3
75 and over	14	10.8

The interest in these figures lies in the great improvement that is to be noted at ages under 75 years as compared with the deterioration (albeit slight) after that age. It appears probable that improved control of this disease in people under 75 years of age is resulting in an average saving of some 5 lives each year.

Ulcer of Stomach and Duodenum.

Table 15.

Age Group.	*Males*		*Females*	
	Observed	*Expected*	*Observed*	*Expected*
15-24 years.....	0	0.9	0	0.9
25-44 ,, ...	3	3.4	1	1.0
45-64 ,, ...	6	7.2	4	3.3
65-74 ,, ...	4	3.7	2	0.0
75 and over	1	1.4	4	1.3

Among males the observed and expected figures coincide fairly closely. Mortality among men locally has therefore changed very little in the last 20 years. The same is true of females up to the age of 65, but thereafter there appears to have been in recent years a significant increase in female mortality from this cause.

Deaths associated with pregnancy.

Table 16.

Age Group.	*Observed*	*Expected*
15-24 years.....	0	1.9
25-44 ,, ...	3	20.9

The great advances in the care of the expectant mother and in the management of labour and its complications is reflected in these figures. Compared with twenty years ago the death of 4 mothers is being avoided on the average each year. Because the birth rate in 1950-54 was higher than in 1929-33, the above figures underestimate to a slight degree the extent of the improvement. Taking the total number of births in the two periods as a basis the expected deaths in 1950-54 are found to be 23.6 as against 22.8, the figure obtained using population as a basis.

Suicide.

There have been noteworthy changes in this group in the last twenty years.

Table 17.

Age Group	*Males*		*Females*	
	Observed	*Expected*	*Observed*	*Expected*
25-44 years	1	9.0	1	3.0
45-64 ,, ...	6	5.2	0	5.5
65 and over.....	5	5.1	1	2.6

Male deaths are clearly differentiated into those under 45, where there has been a big improvement, and over that age where the observed mortality conforms closely to expectation. Only two female deaths were recorded against 11.1 expected.

Early resort to treatment for mental disorders had undoubtedly become commoner in the interim and probably contributes to the differences observed. It is also likely that improved prosperity has played a part, because the suicide rate is related to such indices of prosperity (or its lack) as unemployment, business failures, etc.

Other Violent Deaths.

This group includes road traffic accidents which cannot, however, be distinguished in the data for 1929-33.

Table 18.

Age Group	*Males*		*Females*	
	Observed	*Expected*	*Observed*	*Expected*
0-4 years	4	14.3	7	8.5
5-14 ,, ...	5	4.9	0	1.8
15-24 ,, ...	16	10.0	1	3.8
25-44 ,, ...	17	13.5	1	2.0
45-64 ,, ...	14	14.4	3	3.3
65-74 ,, ...	4	1.2	6	3.8
75 and over	9	5.8	40	21.1

The features of this table are the decrease in deaths under the age of 5 years and, for females only, the decrease at ages 5 to 44 years. Males at these ages show a slight increase, possibly due to an enhanced risk of road traffic accidents.

The oldest age group shows an increase in both sexes and this is very marked among females.

Bronchitis, Pneumonia and other respiratory diseases:

Table 19.

Age Group	*Males*		*Females*	
	Observed	*Expected*	*Observed*	*Expected*
0-4 years	16	50.1	10	30.2
5-14 ,, ...	0	1.6	1	0.0
15-24 ,, ...	1	3.6	2	0.0
25-44 ,, ...	4	9.0	2	7.0
45-64 ,, ...	37	30.9	15	19.7
65-74 ,, ...	54	29.4	40	18.0
75 and over	36	62.0	121	59.3

The pattern in this group is not easy to discern. Under school age both sexes show a marked reduction in mortality. In the next two age groups the observed numbers, taking the sexes together, conform to expectation. In the middle age group (25-44 years) both sexes show an improvement which in total is significant. Between 45 and 74 there is a marked excess of male deaths and, between 65 and 74, of female deaths. Above this age, male deaths are well below and female deaths are well above expectation.

Heart Disease, etc. ("Composite Group").

The comparison between 1929-33 and 1950-54 is difficult in the extreme because of changes that have occurred in the presentation of the statistics for a large and inter-related group of causes. For example, one might be interested to examine the way in which *coronary thrombosis* has come to prominence as a cause of death. From 1950 onwards the Registrar General in his published figures for individual areas reserves a separate category for this condition, but in 1929-33 coronary thrombosis would be only a part of the larger category—"heart disease." Another numerically important cause of death is *cerebral haemorrhage*. In 1929-33 a proportion of these deaths would have been shown not as "cerebral haemorrhage" but as "arteriosclerosis" or "other circulatory diseases." Hypertensive heart disease (popularly known as high blood pressure) was not separately distinguished in the earlier period, while given a separate category from 1950 onwards.

Even categories which are similarly named in the two periods do not necessarily consist entirely of the same clinical disease conditions. Consider, for example, the following table based on the group called in 1929-33 "acute and chronic nephritis," and in 1950-54 "nephritis and nephrosis."

Table 20.

Age Group.	*Males deaths: Anglesey* 1950-54	
	Observed	*Expected*
0-4 years	0	2.4
5-14 ,,	1	0.0
15-24 ,,	0	1.8
25-44 ,,	0	4.5
45-64 ,,	5	24.7
65-74 ,,	11	41.6
75 and over	19	40.3

The first three age groups, with their small numbers, may be ignored, but at every age from 25 years upwards there is a significant reduction in mortality amounting in all to a deficit of 76 deaths in the five year period.

What interpretation is to be placed on these figures ? Is it that nephritis has declined so remarkably in its incidence or in its fatality ? Or might it be that certain clinical entities which in 1929-33 were called "nephritis" are now called something else ? Consideration of the age groups involved in the decline suggests that the latter may be the correct conclusion. General recognition of hypertensive disease as a separate entity has grown in the interim and probably resulted in the transfer of many deaths out of the "nephritis" category, and these deaths might well be found now in the group "hypertension with heart disease."

An attempt to unravel this skein of inter-related causes of death is unlikely to succeed while we are limited to the published data. We cannot with certainty examine what has been happening locally during the last twenty years as regards, separately, such common conditions as coronary thrombosis, cerebral haemorrhage, hypertension and nephritis. At best we can form a composite group which we are reasonably certain was the same in content in 1929-33 as in 1950-54. This group will consist of the following cause categories shown by the Registrar General separately for each administrative area since 1950 :

Vascular lesions of the central nervous system.
Hypertension with heart disease.
Other diseases of the heart.
Other diseases of the circulatory system.
Nephritis and Nephrosis.

This has been done in the next table :

Table 21. COMPOSITE GROUP.

Age Group	*Males*		*Females*	
	Observed	*Expected*	*Observed*	*Expected*
0-4 years	0	3.6	1	1.2
5-14 ,, ...	1	0.8	1	3.5
15-24 ,, ...	3	1.8	2	4.7
25-44 ,, ...	18	15.8	13	21.9
45-64 ,, ...	175	151.6	124	182.5
65-74 ,, ...	273	293.8	264	259.0
75 and over	449	392.0	572	383.6

At ages under 25 the numbers in the separate age-sex groups are small, but the total expected deaths (15.6) exceeds the observed (8) to a significant degree. Between the ages of 25 and 65 the experience of the sexes differs—male deaths exceed and female deaths fall short of the expected number, and for each sex the departure from expectation is highly significant (in the statistical sense of the word). In the next range (65 to 74) the differences are insignificant, while, from 75 onwards, both sexes show a marked excess.

All other causes.

Table 22.

Age Group	*Males*		*Females*	
	Observed	*Expected*	*Observed*	*Expected*
0-4 years	85	150.3	56	135.6
5-14 ,, ...	2	9.2	1	7.1
15-24 ,, ...	5	12.9	2	20.7
25-44 ,, ...	24	13.6	12	50.7
45-64 ,, ...	44	87.6	37	80.7
65-74 ,, ...	67	138.3	33	103.8
75 and over	96	210.4	48	279.6

The interpretation of this residual group is not easy. Under the age of 5 years the reduction shown by both sexes is largely a reflection of the decline in infant mortality because some of the commonest certified causes of death in infancy are not included in any of the cause groups dealt with in previous sections.

There is a very decided decline to be noted in the next two following age groups (up to 25 years), and this decline is shown by both sexes. These figures probably indicate in part a general improvement in the health of these age groups. In the age group 25 to 44 years the experience of the sexes diverges and no ready explanation can be offered why this should be so. From the age of 45 onwards both sexes show a decrease in the number of deaths ascribable to this residual group of causes, but why this should be the case is not immediately obvious. On the one hand there may well have been an improvement in health due to the decline or even the elimination of certain diseases which were mortal in 1929-33. On the other hand, improvement in the treatment of conditions which remain equally prevalent now as then may have resulted in a decline in mortality. Although standardized mortality comparisons cannot be made with respect to them, we can compare from

the available data the total mortality at all ages in the county during the two five year periods from certain conditions which are well defined, although perhaps numerically unimportant as causes of death. Three such conditions are listed below :

Table 23.

DEATHS—ALL AGES—ANGLESEY.

	1929-33	1950-54
Appendicitis	17	5
Cirrhosis	12	4
Cholecystitis	12	15

In the case of appendicitis the reduction in the number of deaths must be ascribed to improved treatment, because we have no evidence to suggest that the disease has become less common. Cirrhosis, on the other hand, is not generally amenable to treatment, and we might therefore ascribe the decline in the number of deaths to a decreased incidence. Mortality due to cholecystitis has increased slightly and this may well be due to an increased incidence prevailing over any improvements in treatment which may have been affected in the interim. The increased incidence may, in turn, be one of the consequences of the changing age-structure of the population because it is well recognized that this is a disease affecting the elderly rather than the young.

We may now summarize the results of this analysis as follows :—

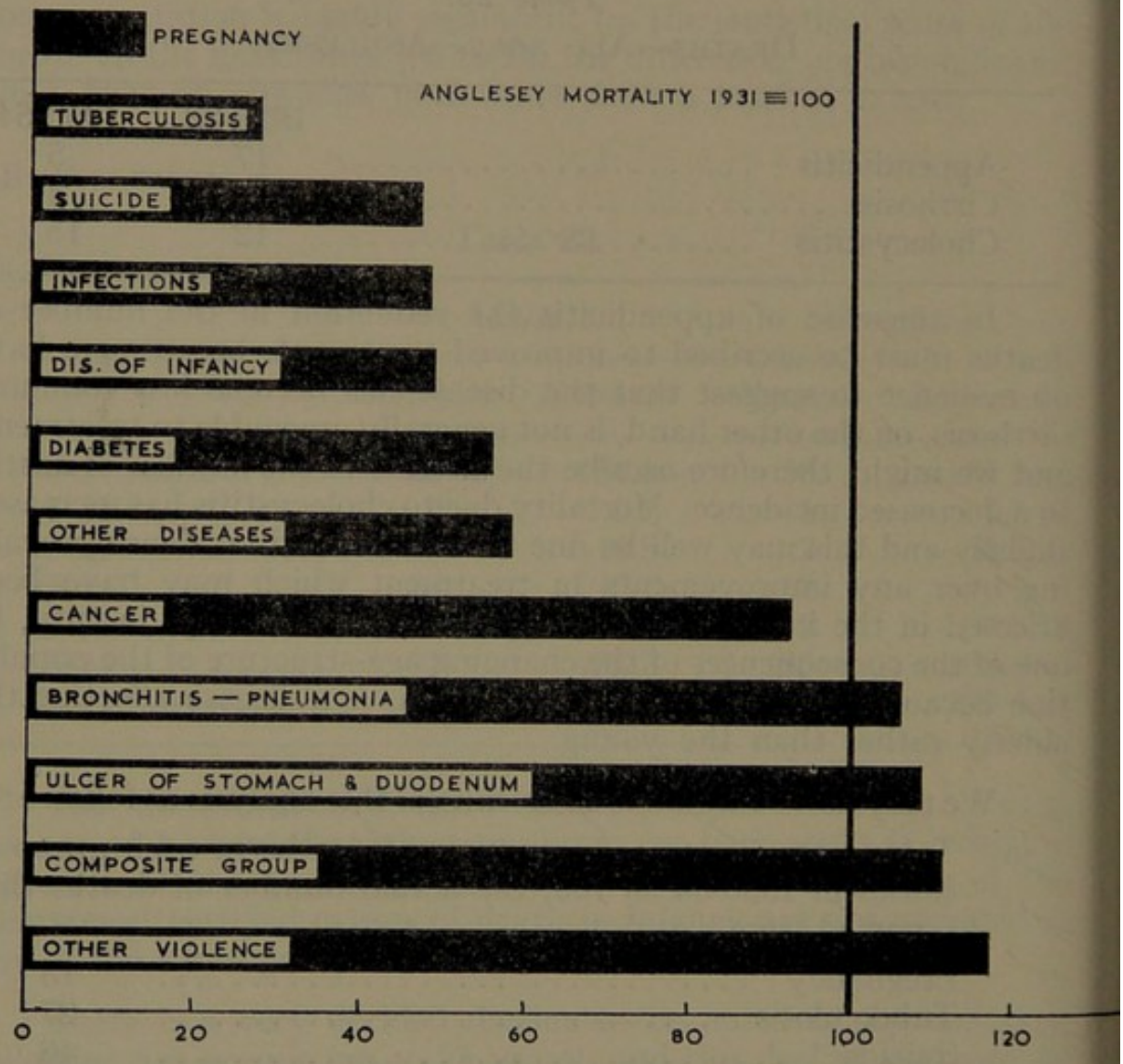
(a) Taking the "expected" number of deaths in each group of causes in 1950-54 as 100, the actual number of deaths that occurred were :

Pregnancy	13
Tuberculosis	27
Suicide	46
Acute infections	49
Diseases of infancy	49
Diabetes	57
Other diseases	58
Cancer	92
Bronchitis/Pneumonia	106
Ulcer of Stomach, etc.	108
Composite Group	111
Other Violence	117

From this table we can see what conditions were less mortal and what conditions were more mortal in the recent period as compared with twenty years ago. (See also Fig. 3.)

Fig. 3. • DEATH RATE •

ANGLESEY : 1951 compared with 1931



(b) Although there has been for example a remarkable fall in deaths due to pregnancy—now only 13 per cent. of what they were in 1929-33—this would not, of course, account for any great change in the total mortality, because pregnancy deaths were, even in the earlier period, only a small proportion of all deaths.

The changes that have occurred may therefore be set out in another way to show the relative contribution made to the total decline by the various categories of causes of death.

Increase :		*Decrease* :	
		Residual causes : ages 5 upwards	69
		Tuberculosis	25
		Diseases of infancy, etc.	15
		Cancer	5
Composite Group	19	Acute infections	3
Other violence	2	Diabetes	2
Bronchitis, etc.	2	Pregnancy	2
Ulcer of Stomach, etc.	0	Suicide	2
	23		123

Net change—a decrease of 100

Set out in this way, the "balance sheet" shows how the net reduction expressed as a 100 is composed.

V. RECENT MORTALITY IN ANGLESEY AND ENGLAND AND WALES.

In the previous section we have compared the mortality experience of the Anglesey population in recent years with that of the county twenty years previously. In this section we wish to compare the position in Anglesey in the period round about 1951 with that of England and Wales at the same date.

This can be done by comparing the number of deaths that actually occurred in Anglesey with the number we would have expected to occur if the mortality rates operating in the country as a whole were also operating in the county. Once again we must allow for the differences between the age-sex composition of the local population and that of the country generally. In order to do so we must apply to each age-sex group in the local population the mortality rate experienced by that group in the general population of the country. We must again guard against the chance fluctuations which are bound to occur when considering what happens in a

relatively small population, and we minimize these fluctuations by pooling the experience of a number of years. The period we have chosen is 1950-53. This period is not, of course, symmetrical around the census year 1951, but we cannot from the published figures incorporate the data for 1949 because of changes of classification which were brought into use in 1950. We cannot add the year 1954 because at the time of writing the necessary mortality data for England and Wales for that year have not been published. We take the 1 per cent. Census Tables as our definition of the England and Wales population in 1951.

Mortality from all causes.

Taking then the four years 1950--1953 as our basis of comparison we find, for the whole county that deaths are about 7 per cent. above the England and Wales level (and this result is statistically highly significant) and, furthermore, that both sexes show this increase to about the same extent.

Table 24.

DEATHS—ALL CAUSES.

	Actual	*Expected*	*Per cent. increase*
Males	1,488	1,380.4	8
Females.....	1,403	1,326.7	6
Both sexes	2,891	2,706.2	7

The position in the different age groups in the county shows that the age groups that contribute to the increase are :– Under 5 years and from 15 to 64 years

Table 25.

DEATHS—ALL CAUSES.

Age group.	*Actual*	*Expected*	*% increase or decrease*
0-4 years.....	165	91.3	+ 81
5-14 ,,.....	11	13.3	— 27
15-24 ,,.....	37	24.8	+ 49
25-44 ,,.....	142	107.0	+ 33
45-64 ,,.....	545	427.9	+ 27
65-74 ,,.....	770	797.2	— 3
75 & over	1,221	1,244.7	— 2

The largest departure from expectation is for the age group 0-4 years, and this group calls for special consideration because it will include the deaths of infants under the age of 1 year ("infant mortality").

When the age group 0-4 years is subdivided we find :

Table 26.

DEATHS—ALL CAUSES.

	Actual	*Expected*	*Per cent. increase*
Infant deaths	145	74.4	95
Deaths 1-4 years	20	16.9	18

Whereas infant deaths are very significantly above the England and Wales level, the deaths of children from 1 to 5 years are only slightly higher than in England and Wales.

Excluding for the moment deaths under the age of 1 year we find that from the age of 1 upwards the position for the county is :—

Deaths—all causes—both sexes.

Observed	*Expected*	*Increase*
2,756	2,681.3	3%

The difference is not significant and, taken with the previous tables, means that the excesses at ages 15 to 64 are counterbalanced by the deficits at other ages, all but 3 per cent.

Turning now to the experience of the separate county districts and eliminating again the effect of infant mortality we find :

Table 27.

DEATHS—ALL CAUSES. BOTH SEXES—AGED 1 AND UPWARDS

	Observed	*Expected*	*% change*
Amlwch.....	159	154.6	+ 3
Beaumaris	128	116.6	+ 10
Holyhead	557	512.3	+ 9
Llangefni	107	100.1	+ 7
Menai Bridge	111	107.0	+ 4
Aethwy	570	608.5	— 6
Twrcelyn	443	489.3	— 9
Valley	671	592.9	+ 13

With the exception of Holyhead, Twrcelyn and Valley the departures from expectation, bearing in mind the numbers involved are not large enough to be statistically significant.

The excess mortality in Valley R.D. to some extent is due to deaths of long stay patients in Valley Hospital having been shown as from 1st January, 1953, against the Rural District even though the patients may have entered hospital from another area. Hospitals such as the one in Valley differ from acute hospitals in the "allocation" of deaths. To some extent, too, the presence of two service training establishments may result in a rather higher mortality, as any deaths including accidental deaths among servicemen from these establishments would be shown against the rural district.

The position in the other two districts is as follows:

Table 28.

DEATHS AT AGES 1 YEAR AND UPWARDS

	Males		*Females*	
	Observed	*Expected*	*Observed*	*Expected*
Holyhead	280	255.9	277	256.4
Twrcelyn	232	258.0	211	231.3

Both sexes show in Holyhead an excess, and in Twrcelyn a deficit on the expected mortality.

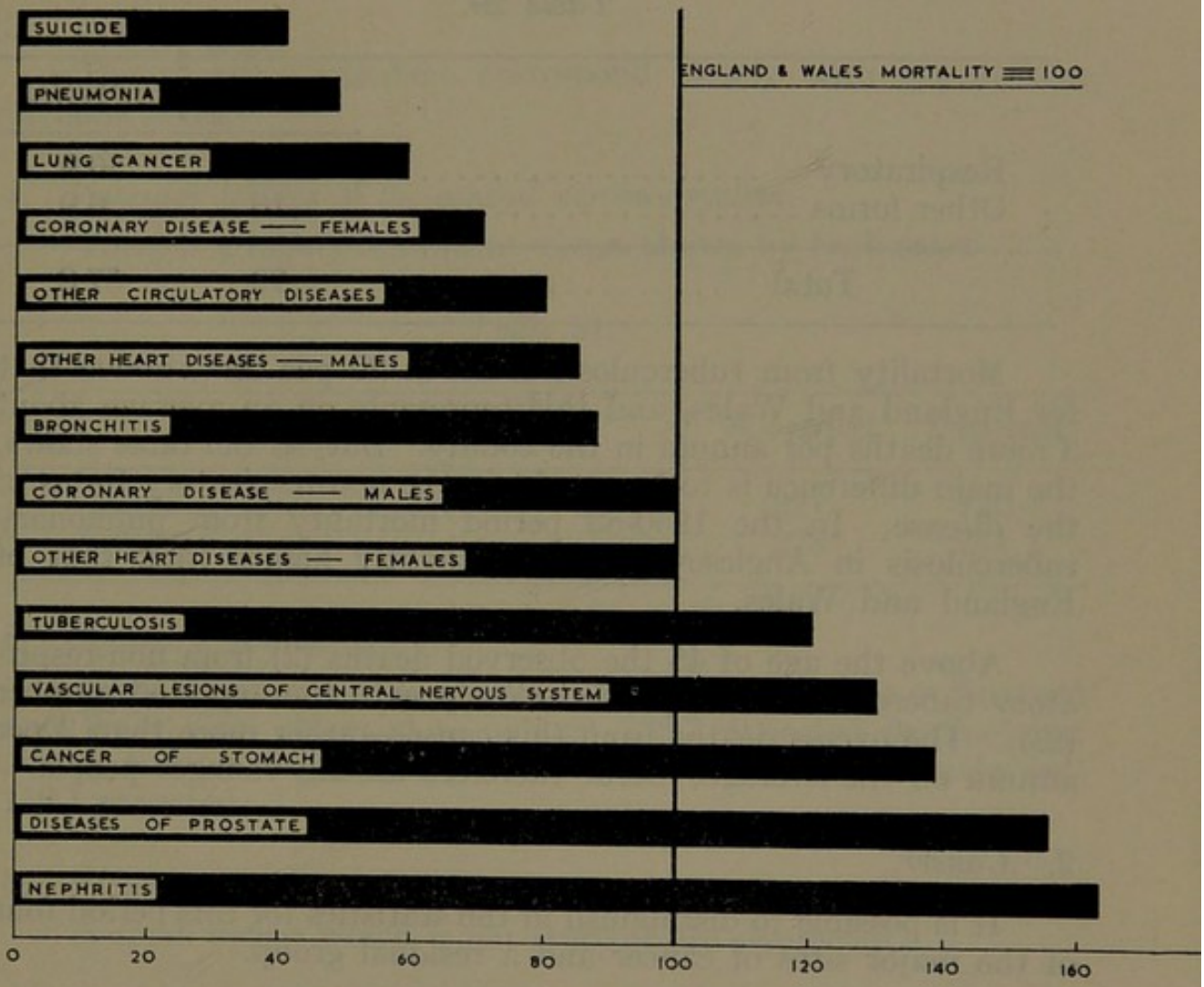
Causes of Death—Anglesey compared with England and Wales.

The age-sex cause specific rates for England and Wales have been applied to the separate components of the Anglesey 1951 population. Summation over the age groups gives for each sex the number of deaths that would have occurred in Anglesey in the four year period from the cause in question if the mortality were precisely the same in the county as in the country as a whole. This "expected" number of deaths is then compared with the number of deaths that in fact occurred during 1950-53.

The results are set out in detail in Table 34 and shown graphically in Fig. 4. The following comments are offered on these figures.

Fig. 4. • DEATH RATE 1951 •

ANGLESEY compared with ENGLAND & WALES



1. *Tuberculosis.*

Two types are distinguished—respiratory and other forms :

Table 29.

	Observed	*Expected*
Respiratory	54	50.9
Other forms	16	6.9
Total	70	57.8

Mortality from tuberculosis is about 20 per cent. above that for England and Wales, and this represents on an average about 3 more deaths per annum in the county. But, as the table shows, the main difference is to be sought in the non-respiratory forms of the disease. In the 1950-53 period mortality from pulmonary tuberculosis in Anglesey was only slightly higher than that of England and Wales.

Above the age of 45 the observed deaths (2) from non-respiratory tuberculosis corresponded closely with the expected number (2.4). The excess deaths from this cause—rather more than 2 per annum on the average—occur therefore among younger people.

2. *Cancer.*

It is possible to distinguish in the statistics for this period four of the major sites of cancer and a residual group.

Table 30.

Body Site.	*Observed*	*Expected*
Stomach	108	77.8
Lung, Bronchus	41	69.4
Breast	32	40.4
Uterus	23	20.1
All other sites	147	140.3

There is a significant excess of deaths from cancer of the stomach and a significant deficit from cancer of the lung, bronchus, etc. Cancer of the stomach shows consistently an excess mortality in each age-sex group, and cancer of the lung and bronchus shows

an equally consistent deficit in each group. The other differences (for breast, uterus and all other sites) are not large enough to be statistically significant.

3. *Diabetes.*

The observed numbers correspond closely with expectation in both sexes.

4. *Vascular lesions of the central nervous system.*

There is a highly significant excess shown by both sexes :

Table 31.

	Observed	*Expected*
Males	221	170.4
Females.....	275	211.7

5. *Coronary disease.*

Mortality among males corresponded closely to that in England and Wales (206 observed as against 208.7 expected deaths), but among females there is a significant deficit—81 actual deaths and 116.1 expected.

6. *Hypertensive heart disease.*

A small deficit which is not statistically significant.

7. *Other heart disease.*

Female mortality corresponds closely to expectation (296 and 295.8), but in males there is a deficit (206 and 243.5).

8. *Other circulatory disease.*

There is a significant deficit (95 and 119.4).

9. *Pneumonia.*

Under the age of 5 there is an excess of deaths—20 actual and 12.9 expected. Between 5 and 45 years the number occurring corresponds closely with expectation (4 against 4.1), while from 45 years upwards there is a marked deficit.

Table 32

	Observed	*Expected*
45-64	4	15.7
65-74	17	26.1
75 upwards	10	49.9

10. *Bronchitis.*

Female mortality corresponds closely to expectation, but males, particularly over the age of 45, show a smaller mortality than would be expected.

11. *Ulcer of the Stomach and Duodenum.*

Rather fewer deaths occurred than would be expected, but the difference is not statistically significant.

12. *Diseases of the prostate.*

An increase, which is highly significant, of 56 per cent. on the expected mortality.

13. *Nephritis and Nephrosis.*

There is a significant excess of deaths shown by both sexes.

Table 33.

	Observed	*Expected*
Males	31	20.7
Females.....	28	15.5

14. *Motor Vehicle Accidents.*

19 deaths occurred and 21.1 were expected.

15. *All other accidents.*

A significant excess shown by both sexes. Two age groups contribute to a significant degree to this excess :

Males, aged 15 to 24 (10 against 2.9) and

Females, aged 75 and over (21 against 13.4).

16. *Suicide.*

A significant deficit : 9 deaths occurred as against 22.0 expected. Both sexes show this deficit, but it is most marked for females.

We may summarize this section, which compares, after making due allowance for the influence of age and sex, recent mortality in Anglesey with that in England and Wales, by stating :—

(a) There is an excess mortality from all causes in Anglesey, amounting to about 7 per cent., shown by both sexes.

(b) If infant deaths are left out of account, Anglesey mortality from all causes approximates closely to that in the country as a whole.

(c) Of the county districts, Holyhead Urban and Valley Rural have a significantly increased mortality from all causes, while Twrcelyn Rural has a significantly decreased mortality compared with England and Wales.

(d) Mortality from the following conditions is higher in Anglesey than in England and Wales :
Tuberculosis, particularly non-respiratory forms.
Cancer of the stomach.
Vascular lesions of the C.N.S.
Diseases of the prostate.
Nephritis and Nephrosis.
Accidents (other than motor vehicle accidents).

(e) Mortality from the following conditions is lower in Anglesey :
Cancer of the lung, bronchus, etc.
Coronary disease among females.
Other heart disease among males.
Other circulatory diseases.
Pneumonia.
Bronchitis among males.
Suicide.

(f) Mortality locally from the following conditions is, within the limits of sampling error, the same as that in England and Wales :

Cancer of the Breast.
Cancer of the Uterus.
Cancer of all other sites.
Diabetes.
Coronary disease among males.
Hypertensive heart disease.
Other heart disease among females.
Bronchitis among females.
Ulcer of stomach and duodenum.
Motor vehicle accidents.

Table 34.

MORTALITY IN ANGLESEY—1950-53

NUMBER OF DEATHS BY CAUSE.

Cause of Death	*Males*		*Females*	
	Observed	*Expected†*	*Observed*	*Expected†*
Tuberculosis, Respiratory.	37	34.4	17	16.5
Tuberculosis, other forms.	7	3.7	9	3.2*
Cancer of Stomach	63	44.3*	45	33.5*
Cancer of Lung, etc.	34	58.7*	7	10.7
Cancer of Breast	—	—	32	40.4
Cancer of Uterus	—	—	23	20.1
Cancer all other sites	137	136.0	110	104.3
Diabetes	7	6.6	14	12.2
Vascular lesions of central nervous system	221	170.4*	275	211.7*
Coronary disease	206	208.7	81	116.1*
Hypertension with heart disease	35	37.7	33	39.3
Other heart disease	206	243.5*	296	295.8
Other circulatory disease..	44	60.7*	51	58.7
Pneumonia	27	57.8*	28	50.8*
Bronchitis	85	110.7*	67	61.8
Ulcer of stomach and duodenum	13	21.4	11	6.8
Diseases of the prostate ..	44	28.2*	—	—
Nephritis and Nephrosis..	31	20.7*	28	15.5*
Motor Vehicle Accidents..	17	16.0	2	5.1
All other accidents	38	29.5	30	23.2
Suicide	8	14.3*	1	7.7*

† For meaning of "expected number" see text.

* difference is significant at least at 0.05 level.

VI. CANCER IN COUNTY DISTRICTS.

The census data enable us to compare the incidence of cancer in the separate districts having made due allowance for the variable age composition of the population in each area. The need to "adjust" for the age composition of the population may be illustrated by taking as an example cancer of the breast in females. The risk of dying from cancer of this site is more than ten times as high at ages 85 and over as it is at the ages 35-44 (the actual rates in England and Wales in 1951 were 2,402 and 222 respectively per million living at the ages in question). Although Llangefni, according to the census, had a slightly larger female population (all ages) than Beaumaris—1,181 against 1,153—there were twice as many females aged 85 and over in Beaumaris—15 as against 7. Accordingly we should *expect* more deaths in Beaumaris from cancer of the breast than in Llangefni.

There are several methods available whereby we can make the necessary adjustments to enable us to eliminate the disturbing effect of local variations in the age and sex composition of the populations in which we are interested. In examining the figures about cancer we have taken the death rate observed in England and Wales in 1951 for each age-sex group as published by the Registrar General (Statistical Review 1951 Text Volume) and applied these rates to the corresponding age-sex groups in the population of each county district as enumerated in the 1951 census. This will give an "expected" number of deaths per annum in each age-sex group and summation over all such groups in any one district will give the "expected" number in the district. The "expected" number is thus the number that would have occurred if the mortality rates known to have been operative among the separate age-sex components of the population in England and Wales had also operated on these components of the district's population. "Expected" numbers therefore provide us with a yardstick to compare not only district with district but also the separate districts with the experience of the country generally.

To illustrate the procedure let us take the example previously referred to, i.e., cancer of the breast in females. The death rate per million in England and Wales in 1951 is given as 222 at ages 35-44, and 2,402 at ages 85 and over. According to the census there were 3,527 females in Anglesey aged 35-44 and 208 females aged 85 and over. We should thus *expect* to find per annum :

$$\frac{222 \times 3{,}527}{1{,}000{,}000} \quad \text{and} \quad \frac{2{,}402 \times 208}{1{,}000{,}000}$$

deaths respectively in these age groups from this cause. The fractions work out at 0.78 and 0.50. We now work out the corresponding fractions for the age groups between 45 and 84 years and add to give us the total, in this case it comes to 9.90. The population under the age of 35 is not taken into account in this particular example because the mortality from this cause under the age of 35 years is negligible. There were for instance in 1951 only 101 deaths in the whole of England and Wales from cancer of the breast in females under the age of 35 years.

Our calculation tells us that we should have expected 9.9 deaths from this cause in Anglesey in one particular year, 1951. In any one county district therefore the "expected" number is bound to be small in any single year. For this reason we must pool the experience of several years in order to obtain information of any value. In what follows the experience of the seven years 1948 to 1954 is examined. The "observed" deaths in Anglesey are derived from the Registrar General's figures for the years 1950-54 and, for the years 1948-49, from data collected for an anlysis of local cancer mortality which was published in the British Journal of Cancer. The "expected" numbers have been calculated as described from the mortality rates in England and Wales in the central year, 1951, as applied to the census populations in Anglesey in that year, and multiplied by seven to give an "expected" number during the seven year period. There are certain obvious sources of error in this procedure. In the first place the population of Anglesey in the age-sex groups employed was not, of course, exactly the same in 1948 or in 1954 as in 1951. Whatever the error may be from this source it is unavoidable because we do not know the exact age-sex composition of the population in any of the seven years except 1951. Another objection might be that the mortality in England and Wales varied between 1948 and 1954. This may be true (mortality rates by age-sex groups have not yet been published for 1952 onwards, so that the point cannot be proved), but the error—again unavoidable—arising from taking the rates for the central year is not likely to be serious. A check on the "expected" number of cancer of the breast deaths in females in Anglesey has been done by taking the deaths recorded in England and Wales during 1948-53 (the last year hitherto for which the figures have been published) and applying them to the England and Wales census population to obtain age specific rates which were then applied to the Anglesey census population. The resulting figure (10.1) differs by only 2 per cent. from that (9.9) obtained in the way described previously.

The results of our calculations are set out in Table 36.

In Anglesey there were 5 per cent. more deaths than expected and the separate districts fared as follows :

Table 35.

More deaths than expected.	*Per cent. above.*
Amlwch	11
Holyhead	11
Twrcelyn	7
Valley	15

Fewer deaths than expected.	*Per cent. below*
Beaumaris	17
Llangefni	13
Menai Bridge	14
Aethwy	3

There are striking differences to be noted between cancer of different sites. Only 4 sites have been chosen for detailed analysis, but these sites (stomach, lung and bronchus, breast, and uterus) account for nearly half the total cancer mortality of the county and indeed of England and Wales.

Cancer of the Stomach.

Mortality is 44 per cent. above expectation. In Beaumaris and Menai Bridge the actual numbers observed agree closely with those expected, but in all other districts mortality is higher. The largest relative differences occur in Amlwch, Twrcelyn and Valley.

Cancer of the Lung and Bronchus.

Mortality from this cause is 42 per cent. below the expected level. Beaumaris and Menai Bridge conform to expectation, but in all other districts there were fewer deaths than expected. The differences observed are statistically significant for Holyhead and the three rural districts. In each case the actual mortality is only about half that expected.

Cancer of the Breast.

Mortality is 18 per cent. below expectation. The numbers in each district are small so that Twrcelyn and Valley excepted, there are no statistically significant departures from the expected level. In these two rural districts, however, there appears to be a significant deficit and they seem to differ in this respect from the other rural district, Aethwy.

Table 36.

CANCER IN COUNTY DISTRICTS

Observed and Expected deaths during 7 *years*—1948-54 *by sites of Cancer.*

Site		*Amlwch*	*Beaumaris*	*Holyhead*	*Llangefni*	*Menai Bridge*	*Aethwy*	*Twrcelyn*	*Valley*	*Total County*
Stomach	Obs.	14	6	34	9	5	39	38	52	197
	Exp.	7.9	5.7	26.5	5.1	5.4	31.0	25.2	30.2	137.0
Lung and	Obs.	5	5	13	2	4	16	7	16	68
Bronchus	Exp.	6.3	4.5	23.1	4.4	4.3	25.8	21.5	26.8	116.7
Breast ..	Obs.	5	3	13	1	4	15	9	7	57
	Exp.	4.2	3.2	14.0	2.6	2.9	15.1	12.4	14.9	69.3
Uterus ..	Obs.	1	2	12	—	1	9	10	9	44
	Exp.	2.5	1.8	8.1	1.5	1.4	7.5	6.2	7.5	36.5
All other	Obs.	26	11	96	13	12	89	89	115	451
cancers ..	Exp.	23.8	17.5	79.8	15.1	16.1	94.2	77.2	92.9	416.6
Totals	Obs.	51	27	168	25	26	168	153	199	817
	Exp.	44.7	32.7	151.5	28.7	30.1	173.6	142.5	172.3	776.1

Cancer of the Uterus.

There is an excess mortality of 21 per cent. The number in each district is small so that comment must be guarded. The four largest districts (Holyhead and the three rural districts) each show an excess.

Cancer of all other Sites.

This residual group shows a slight (8 per cent.) excess mortality. Holyhead, Twrcelyn and Valley are above expectation, but Amlwch, Llangefni and Aethwy are fairly close to the expected number. Beaumaris and Menai Bridge are below expectation and, taken together, significantly so.

Summarizing the experience of the districts one may say :

Amlwch. The noteworthy feature is the marked excess (77 per cent.) in mortality from stomach cancer.

Beaumaris. Conforms closely to the national average except that the mortality from "cancer, all other sites," is below expectation.

Holyhead. There is a marked deficit in lung cancer, but otherwise there seems to be rather more cancer of the stomach, of the uterus, and of all other sites than one would have expected.

Llangefni. Mortality from all forms is below expectation except for cancer of the stomach.

Menai Bridge. Appears to resemble Beaumaris closely in its cancer experience.

Aethwy. Cancer of the stomach is slightly higher than expected, while cancer of the lung shows the opposite result. The other groups do not show any noteworthy feature.

Twrcelyn. A marked excess of stomach cancer and an equally marked deficit of lung cancer. Uterus and breast, on a smaller scale, show respectively an increased and a decreased mortality. There is an excess of cancer of all other sites.

Valley. The features shown by Twrcelyn are seen also in the Valley figures.

VII. HOUSING.

Size of Household.

For the purposes of the census a "household" means either a person living alone or a group of people living together as a family.

The total number of households in the county increased by 13 per cent. between 1931 and 1951 when the number was 14,926. Since the total population enumerated in private households only increased by 1 per cent., there has been a corresponding reduction in the average size of households.

The changes that have occurred may be seen by reference to the Table 37 which shows the distribution of Anglesey households by size in 1931 and 1951.

Table 37.

SIZE OF HOUSEHOLDS—ANGLESEY.

PERCENTAGE OF HOUSEHOLDS BY SIZE.

	1931	1951
1 person	10.2	12.7
2 persons	22.1	26.7
3 persons	22.5	23.9
4 persons	17.9	17.4
5 persons	12.2	10.1
6 persons	7.1	5.2
7 persons	4.2	2.5
8 persons	2.0	0.9
9 persons	1.0	0.4
10 and more persons	0.8	0.2
	100.0	100.0

Compared with 1931 there were relatively more households comprising 1, 2 and 3 persons in 1951 and relatively fewer households of sizes from 5 persons upwards. Large households—and this may for practical purposes be read as large families—are scarcer than they used to be. Households of 7 and more persons accounted for 8 per cent. of all households in 1931 compared with 4 per cent. in 1951.

When the Anglesey figures for 1951 are compared with those for England and Wales we find that there is a local excess of households comprising 1 person and 5 to 8 persons, and a deficit relatively of households of 2 to 4 persons. Households numbering 9 and more persons are practically equally uncommon in Anglesey as in England and Wales as a whole.

Households comprising a single individual are deserving of note as these are for the most part old people living alone. The number of such households had increased from 1348 in 1931 to

1890 in 1951, an increase of 40 per cent. The numbers in the separate county districts were as follows :—

Table 38.

HOUSEHOLDS OF ONE PERSON—1951.

	Number.	*% of total population enumerated in households*
Amlwch	148	5.6
Beaumaris	99	4.6
Holyhead	348	3.5
Llangefni	70	3.3
Menai Bridge	89	5.0
Aethwy	435	4.2
Twrcelyn	310	3.7
Valley	391	3.7
Anglesey	1,890	3.9
England and Wales	—	3.4

Housing Density.

What is referred to popularly as "over-crowding" should be amendable to measurement, but any adequate index should need to take account, not only of the number of persons comprising the household, but also of their age, sex and relationship, and these factors would need to be related to the number as well as the separate sizes of the rooms in the house. In the Housing Act of 1936 Parliament laid down two standards—the first relating to existing houses and defining "the permitted number of persons" in any dwelling house (based on either age and sex or size of rooms) and the second relating to rehousing standards which housing authorities were required to observe in their schemes.

The first standard was even in 1936 regarded by many as being too low, and the second standard was a very much higher one : it represented a state of affairs to which the population might eventually attain.

The first standard cannot be applied to the census data—the data do not indicate the extent of "statutory overcrowding" within the meaning of the 1936 Act. The second standard—the ideal to be aimed at—can with some amplification be set against the census data. We can in fact see to what extent we fall short in

1951 of this "rehousing standard" laid down fifteen years previously. The standard in question, to be found in Section 136 of the Act, is as follows :—

A two bedroomed house is suitable for 4 persons.

A three bedroomed house is suitable for 5 persons.

A four bedroomed house is suitable for 7 persons.

In order to apply these criteria we must amplify the standard somewhat—for example, the census records the total *rooms* in the house, whereas the standard specified the bedrooms.

An "ideal" housing standard based on the one in Section 136 of the Housing Act 1936 might then be as follows :

Every dwelling shall have 2 rooms (kitchen and living room) in addition to the bedrooms, and dwellings shall be deemed suitable for differing size of households according to the number of rooms, as follows :—

3 rooms suitable for 1 or 2 persons.
4 rooms suitable for 3 or 4 persons.
5 rooms suitable for 5 or 6 persons.
6 rooms suitable for 7, 8 or 9 persons.
7 rooms suitable for 10 or more persons.

We can now apply this standard to the data in the census reports, and we can compare the position in 1951 with that shown by the census of 1931—twenty years previously, and this has been done in Table 39.

Table 39.

PERCENTAGE OF ALL HOUSEHOLDS THAT WERE INADEQUATELY HOUSED JUDGING BY THE "IDEAL" STANDARD.

	1931	1951	*Difference* 1931—1951
Amlwch	22.4	18.0	4.4
Beaumaris	19.2	17.8	1.4
Holyhead	16.2	15.1	1.1
Llangefni	29.7	11.5	18.2
Menai Bridge	15.1	12.5	2.6
Aethwy	32.1	22.0	10.1
Twrcelyn	27.7	17.6	10.1
Valley	26.9	21.3	5.6
County	25.1	18.4	6.7

It will be seen that in all districts the position had improved in the twenty year interval.

By this standard it is estimated that 11,462 persons or 22.6 per cent. of the Anglesey 1951 population was inadequately housed. (In England and Wales in 1951 the corresponding figure was 26.3 per cent.). The corresponding figure in Anglesey for 1931 was 17,201, or 35.1 per cent. of the 1931 population.

The analysis can be carried a stage further to show how households of differing sizes stood in 1951 relative to this standard.

Table 40.

ANGLESEY, 1951.

No. of persons in household	*No. of households inadequately housed.*	*Households inadequately housed as % of all households of comparable size.*
1	348	18.4
2	265	6.7
3	612	17.2
4	401	15.5
5	509	34.2
6	229	30.1
7	230	61.0
8	81	58.7
9	39	61.9
10 and more	56	71.8

The improvement since 1931 has affected families of all sizes—that is to say, at all sizes of family from 1 to 10 and more there were fewer inadequately housed in 1951 than twenty years previously. But the improvement has affected families of different sizes in an uneven way as may be seen when we compare the percentage

of families of different sizes that were inadequately housed at the two census years (Table 41).

Table 41.

INADEQUATE HOUSING—ANGLESEY 1931 AND 1951.

"Ideal" size of house (rooms)	*No. in family (persons)*	*% of families of this size inadequately housed in* 1931	1951
3	1 or 2	15.5	10.4
4	3 or 4	22.2	16.5
5	5 or 6	58.3	32.8
6	7, 8 or 9	53.7	61.2
7	10 or more	53.8	71.8

Relatively the largest improvement occurs with those families which ideally need 5 roomed (or 3 bedroomed) houses, and there can be little doubt that this is the direct result of the activity of the housing authorities, most of whose newly built houses would have been of this size.

Improvement in the position of smaller families, requiring 3 or 4 roomed houses, can also be recorded. By contrast the larger families needing ideally 6 or 7 roomed houses are worse off than their counterparts 20 years ago. It is true there were, among families of this size (i.e., 7 or more persons) 158 fewer in 1951 than in 1931, that could be regarded as inadequately housed, but the number of all families of this size has fallen in the interim so that relatively more of them were badly housed in 1951 than in 1931.

Shared Dwellings.

The percentage of all households in Anglesey in 1951 who were in shared dwellings was 2.7 per cent., compared with 1.5 per cent. for England and Wales, and 2.3 per cent. of the local population were in such households compared with the national figure of 1.2 per cent.

It should be noted that boarders would generally be enumerated as part of the household, i.e., "individuals voluntarily living together under a single menage in the sense of sharing the same living room or eating at the same table," but a single person or

group of lodgers having separate accommodation to themselves would constitute a separate "household" for census purposes, and if the house were not divided into flats such an arrangement would come to be enumerated as a shared dwelling. "Shared dwellings" indeed may be identified in a general way as sub-tenancies of a private house. In Anglesey in 1951 there were 413 households comprising 1,122 persons in shared dwellings. There was considerable variation between the separate districts as may be seen from Table 42.

Table 42.

SHARED DWELLINGS—1951.

	No. of households in shared dwellings	*% of all households*	*% of total population*
Amlwch	8	1.0	0.9
Beaumaris	42	6.5	4.8
Holyhead	135	4.4	3.8
Llangefni	8	1.3	0.7
Menai Bridge	57	1.0	0.7
Aethwy	68	2.1	2.0
Twrcelyn	28	1.1	0.9
Valley	67	2.1	1.8

The social implications of shared dwellings will vary with the size of the household involved. Whereas it might be socially desirable for, say, a single old lady to occupy one or two rooms in a house sharing the dwelling with a family it might be quite undesirable for a young family to do the same. It is pertinent therefore to note that nearly 3 per cent. of all families of sizes 2 to 5 persons in the county in 1951 were occupying shared dwellings.

Household Arrangements.

The 1951 census, for the first time, included data about certain household arrangements. These were:-

Piped water supply (not necessarily a public mains supply), within the house.
Cooking Stove—whether gas, electric or solid fuel.
Kitchen sink.
Water closet, whether emptying into a mains sewer or not.
Fixed bath.

Households were classified according to whether they enjoyed the exclusive or the shared use of these arrangements or were entirely without.

The *percentage* of households entirely without these domestic arrangements are indicated for each county district in the following table. (See also Fig. 5).

Table 43 (*Percentages*).

	Water	*Stove*	*Sink*	*W.C.*	*Fixed Bath*
Amlwch	54	14	49	78	77
Beaumaris	10	3	14	8	41
Holyhead	9	3	20	8	58
Llangefni	20	6	18	18	38
Menai Bridge	16	3	18	10	37
Aethwy	76	22	65	83	83
Twrcelyn	72	25	63	81	83
Valley	67	24	62	74	77
County	51	16	48	56	70
England and Wales	6	2	6	8	37

The census tables indicate the number of households who enjoyed the exclusive use of all 5 of these domestic arrangements—these households are, in fact, the only ones that can be said to be aedquately provided for in all these respects.

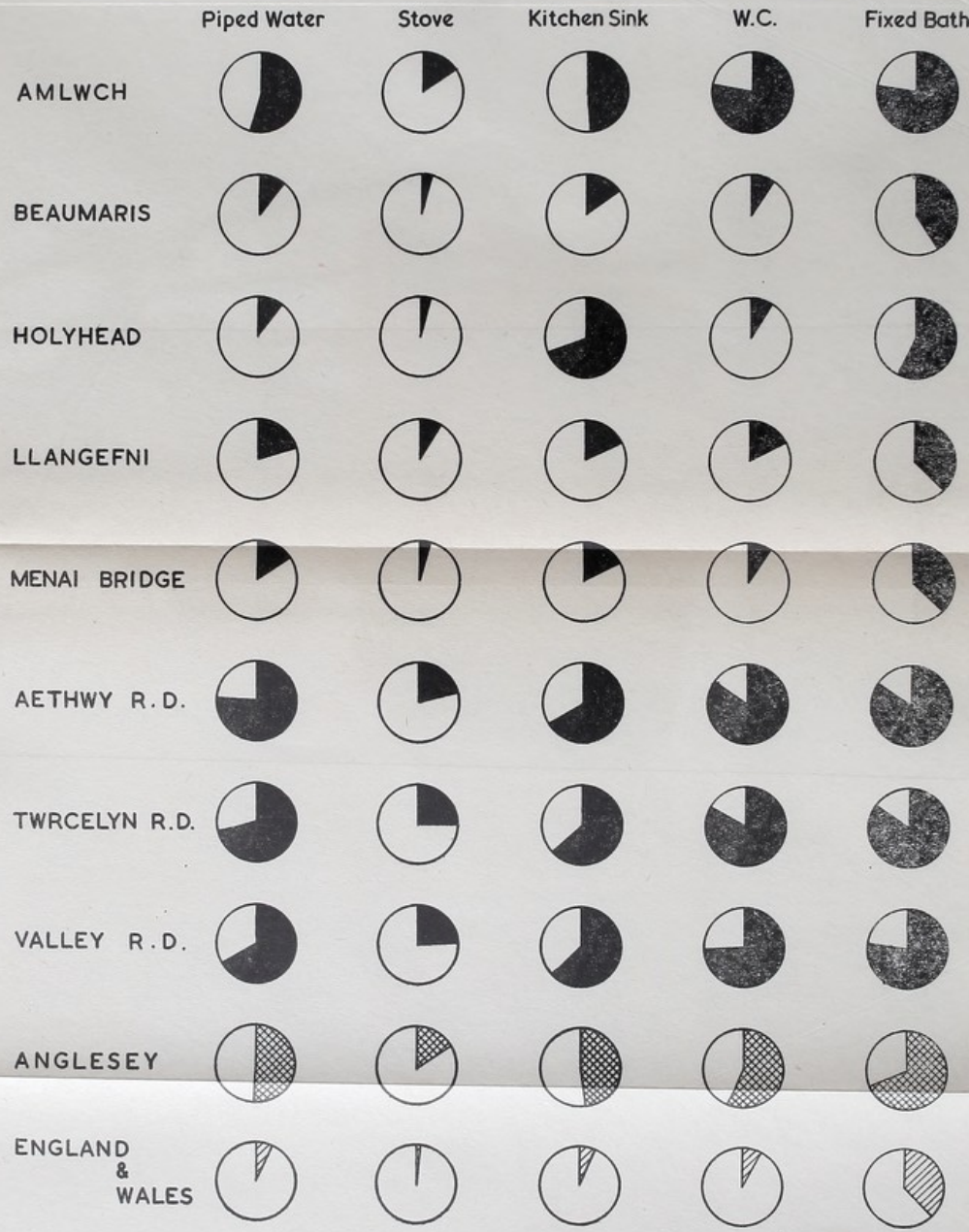
Table 44.

Households with exclusive use of all 5 arrangements as percentage of all households.	*Do. except fixed bath.*
Amlwch	16	19
Beaumaris	53	75
Holyhead	37	68
Llangefni	57	70
Menai Bridge	53	68
Aethwy	13	14
Twrcelyn	16	17
Valley	19	22
County	25	35
England and Wales	53	73

Fig.5.

• HOUSEHOLD AMENITIES •

The shaded portion of each circle represents the proportion of all households that are entirely without the use (even the shared use) of the amenity.



VIII. MISCELLANEOUS.

Social Class.

The Registrar General has defined five social classes according to occupation, as follows :—

Class I. Professional, etc., occupations.

Class III. Skilled occupations.

Class V. Unskilled occupations.

Class II is intermediate between I and III and comprises, *inter alia*, farmers, while Class IV, intermediate between III and V, contains, for instance, farm labourers.

The distribution of the male population of the county between the separate classes is given in table 45.

Table 45.

SOCIAL CLASS—PER 1,000 OCCUPIED AND RETIRED MALES.

	I.	II.	III.	IV.	V.
Anglesey	34	236	402	201	127
Anglesey : Borough and Urban	39	175	471	142	173
Anglesey : Rural ..	31	271	362	235	101
England and Wales..	33	150	527	162	128

At the extreme of the scale the proportions in Anglesey correspond closely with those in England and Wales. There is, however, a distinct excess in Classes II and IV, and a corresponding deficit in Class III. As would be expected, because the farming community fall into classes II and IV, these differences are more marked in the rural areas.

These distributions are of interest because the vital statistics of the several social classes show important variations. Infant mortality, for example, particularly in the post neonatal period (i.e., deaths of infants aged between 4 weeks and 1 year) shows a steep gradient from Class I up to Class V. Similar gradients are shown by certain major causes of death, for example, cancer of the stomach has a higher incidence in the lower classes (IV and V). Mortality from coronary heart disease on the other hand shows the opposite trend, being highest in Classes I and II.

Birthplace and Nationality.

The census records the birthplace and nationality of the Anglesey population in 1951 and the results are set out below :

Percentage of total Anglesey population who were born in :

Anglesey	67.9
Caernarvonshire	9.2
Other counties of Wales	4.4
Lancashire	5.8
Cheshire	2.0
London and S.E. England	2.0
Other counties of : England	5.2
Ireland	1.3
Scotland	0.7
Overseas	1.5

The Report on the 1 per cent. census sample enables us to see where Anglesey-born persons were residing when the census was taken. Of all Anglesey-born persons enumerated in the census 78 per cent. are resident in Wales, 9 per cent. are resident in Lancashire and Cheshire, 5 per cent. in Greater London, and 3 per cent. in the English Midlands.

Education.

The census reports contain data relating to education, and although these are not perhaps directly relevant to the public health, they have been included here because of their intrinsic interest, particularly as comparisons can be made between Anglesey and the country as a whole.

In the matter of attendance, for example, at full time educational establishments there are interesting differences as may be seen from the following table where the actual number of Anglesey residents in attendance is compared with what would be expected if the proportions observed in England and Wales were applied to the local population.

Table 46.

ATTENDANCE AT FULL TIME EDUCATIONAL ESTABLISHMENTS.

Age group in years	*Males*		*Females*	
	Actual	*Expected*	*Actual*	*Expected*
15-19	326	257	417	234
20-24	79	61	54	27
25 and over	33	24	1	1
Total all ages	438	342	472	262

For all ages there is an excess of 28 per cent. among males and as much as 80 per cent. among females. The table shows that in Anglesey there is a tendency for more boys to stay on at school and to proceed to higher education than is the case in England and Wales generally. These tendencies are even more marked among the girls.

The effect of this tendency is reflected in differences in the ages at which formal education terminated. The distribution of these terminal educational ages for 1,000 occupied males aged 25 and over is shown below :

Table 47.

TERMINAL EDUCATIONAL AGES PER 1,000 OCCUPIED MALES AGED 25 AND OVER.

Education terminated at :	*Anglesey*	*England & Wales*
Under 15 years	718	805
15 years	75	61
16 years	91	66
17-19 years	74	41
20 years or over	42	27
	1,000	1,000

IX. SUMMARY.

The *population* of the county has remained static in number during the present century—a period which has seen an increase of one third in the national population.

The *age structure* of the Anglesey population of 1951 differs markedly from that of England and Wales—there being a local deficit in the middle age-ranges and a local excess at older ages.

The *fertility rate* in Anglesey is at present above that of England and Wales for both legitimate and illegitimate live births, and this was true also of 1931.

The *mortality* in the county from a group of causes has been analysed in detail and the position in 1951 compared with that in 1931. Certain trends can be discerned clearly, particularly the decline in *tuberculosis* and *maternal* and *infant mortality*. The changes that have occurred result in an annual saving of some 200 lives, more than half of them persons under the age of 45 years.

Compared with England and Wales mortality in Anglesey is about 7 per cent. higher in the years around 1951. This excess is almost entirely due to a higher infant mortality in this county.

Analysing the separate causes of death we find that *cancer of the stomach* and *tuberculosis* are two notable instances of an excess mortality in Anglesey, while *cancer of the lung, pneumonia* and *bronchitis, suicide,* are not as frequent causes of death in this area as in the country generally.

One cause of death—cancer—has been analysed in greater detail and the excess mortality from cancer of the stomach is seen to affect particularly the northern half of the county.

Housing statistics show that rather fewer than one family in five was not adequately housed judging by an "ideal" standard based on the number of rooms. The data indicate clearly the improvement in this respect since 1931. Compared with England and Wales, rather more families lived in shared dwellings in Anglesey in 1951, but the differences are not large.

The tables showing the *amenities* available to households reveal a disturbing state of affairs, and in the provision of water supply, water-borne sanitation, not to mention a fixed bath, a cooking stove and a kitchen sink, there is (or at least there was in 1951) a long way to go before the position locally approximates to that in England and Wales generally.

I am grateful to the County Planning Officer (Mr. N. Sq. Johnson) for preparing the figures.