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STAFFORDSHIRE COUNTY COUNCIL

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*Annual Report*

OF THE

MEDICAL OFFICER *of* HEALTH

W. D. CARRUTHERS, M.B., D.P.H.

*For the Year 1931.*

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STAFFORD :

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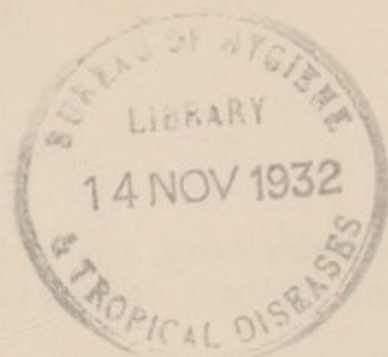
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## Annual Report of the Medical Officer of Health.

### PRELIMINARY NOTE.

The Annual Report for 1931 has been prepared in accordance with the recommendations of the Ministry of Health under a scheme whereby a Survey Report is made every five years, and in the intervening years various details required in the Survey are omitted. The Report for 1930 was a modified Survey Report, whereas this year it is a Report of an ordinary year, and, therefore, much information relating to hospitals, poor law administration, and many other matters, will not be found, and the reader is referred to last year's Report for such details.

From a public health point of view, the year 1931 has been a satisfactory one. The vital statistics compare favourably with those of England and Wales as a whole, and the incidence of infectious disease has been remarkably low. Whilst it has not been possible to record a great advance in public health measures in this year's report, careful surveys have taken place with a view to formulating schemes of re-organisation of the Poor Law Institutions, and a start has been made towards providing adequate isolation hospital accommodation throughout the area, so that when the time is more opportune we shall be ready to proceed with these important matters.

In the Report details will be found of the measures taken to reduce the loss of life from childbirth, but unfortunately they have not, as yet, had their full effect, and even although we can claim that the maternal mortality in this county is lower than in very many areas, we obviously cannot be satisfied with conditions as they are, but I am afraid that we must be content to look forward to the slow process of education to alter matters,

for although facilities exist, it is, unhappily, only too true to state that the mothers do not take full advantage of them.

An interesting and valuable section of the Report deals with the work of the County Bacteriological Laboratory, and the reader is referred to this for details of its activity. Its value to the community continues to grow year by year, and the work undertaken has proved of the utmost value.

An account will also be found in the Report of the varied activities of the County Chemical Laboratory, from which it will be seen that the work undertaken is not confined to the routine examination of samples under the Food and Drugs Act and other Acts.

Finally, I should like to refer to the large amount of work undertaken by Local Authorities on water and sewage disposal schemes, and I am sure that all interested in public health will hope that financial conditions will not have the effect of curtailing these most necessary primary functions of Sanitary Authorities.

# STAFFORDSHIRE COUNTY COUNCIL

## Annual Report of the Medical Officer of Health.

### Summary of Statistics.

#### 1.—GENERAL STATISTICS.

Area of Administrative County ... .. (acres)	686,901
Population (for Death Rate) ... .. (1931)	708,690
Population (for Birth Rate) ... .. (1931)	710,150
Rateable Value at 1st April, 1931 ... ..	£2,497,138
Estimated net product of a penny rate 1931-32	£9,619

#### 2.—EXTRACTS FROM VITAL STATISTICS OF THE YEAR.

	Total	M.	F.	
Live (Legitimate) ...	12,371	6,321	6,050	} Birth-rate ... 17.9
Births (Illegitimate) ...	381	179	202	
Stillbirths ... ..	586	321	265	Rate per 1,000 total births 43.9
Deaths ... ..	8,309	4,376	3,933	Death-rate 11.7
Deaths from diseases and accidents of pregnancy and childbirth ...				{ from sepsis ... .. 11 } from other causes... 29
Death rate of infants under one year of age:—				
All infants per 1,000 live births ... ..				70
Legitimate infants per 1,000 legitimate live births ... ..				69
Illegitimate infants per 1,000 illegitimate live births ... ..				121
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## AREA AND POPULATION.

I have again to record an alteration both in area and population of the administrative county. Under the Sutton Coldfield, Walsall, West Bromwich and Wednesbury Corporation Acts, 1930, the following changes took effect on 1st April, 1931:—

Taken from administrative county and	Area in acres. (approx.)	Population. (approx.)
added to <b>Sutton Coldfield Municipal Borough:—</b>		
Portion of Great Barr Parish (Walsall Rural District) ... ..	23	150
Portion of Shenstone Parish (Lichfield Rural District) ... ..	17	200
" " <b>Walsall County Borough:—</b>		
Portions of Bentley, Great Barr and Rushall Parishes (Walsall Rural District) ... ..	985	617
Portion of The Delves, Wednesbury Municipal Borough	297	112
" " <b>West Bromwich County Borough:—</b>		
Portion of The Delves, Wednesbury Municipal Borough	333	28
Portion of Great Barr Parish (Walsall Rural District) ... ..	722	134
Totals taken from County ... ..	<u>2,377</u>	<u>1,241</u>
Added to Administrative county—to <b>Wednesbury Municipal Borough:—</b>		
Portion of West Bromwich County Borough ... ..	371	107

From the above it will be seen that the area of the administrative county has been reduced by approximately 2,006 acres, and that the approximate decrease in population is 1,134.

With the exception of one district, viz., Lichfield Rural where there is a large Barracks, a single population is shown and this is applicable to both births and deaths.

The Registrar General supplies a "standardising factor" for correcting death rates in districts with a population of over 10,000. The rates produced by this method are strictly comparable, the factor being based on the age and sex of the population as indicated at the last census. The standardised death rates in those areas in which this method can be applied are shown in the Tables at the end of the Report.

In the following table the preliminary census population of the administrative county for 1931, and the estimated population to the middle of 1931, are set forth:—

	Census, 1931 (Preliminary figures).	Estimated Population as at middle of 1931.
Urban ..	490,597	495,800
Rural.. ..	212,547	† 214,060
Total ..	703,144	709,860

†This figure includes the estimated populations of two districts as constituted at 31st December, 1931, changes in boundaries having taken effect during the year, and as the numbers of births and deaths include, so far as relates to the portion of the year prior to the changes, those occurring in the old area, the Registrar General has supplied the following figures for the calculation of the annual birth and death rates:— Birth rate 214,350; Death rate 212,890.

As the 1931 Census was taken during April, it is assumed that the preliminary populations are in respect of the areas as constituted after the changes in boundary which took effect on the 1st April.

#### BIRTHS.

The live births registered in the Administrative County numbered 12,752, compared with 13,243 the previous year, the number in the urban districts being 9,187 and in the rural districts 3,565 compared with 9,534 and 3,709 respectively.

*Stillbirths.* There were 586 stillbirths registered during the year of which 429 were in urban and 157 in rural districts. The stillbirth rate per thousand of the population for both urban and rural districts is 0.82. During the same period the rate for England and Wales was 0.67 and for the large towns in England 0.67.

The mean birth-rates in the whole Administrative County and in the urban and rural districts respectively for eight quinquennial periods and for the past three years are shown in the following table, in which corresponding rates in England and Wales are included.

DISTRICTS.		LIVE BIRTH-RATE PER 1,000 OF POPULATION.										
		5 yrs. 1889- 1893.	5 yrs. 1894- 1898.	5 yrs. 1899- 1903.	5 yrs. 1904- 1908.	5 yrs. 1909- 1913.	5 yrs. 1914- 1918.	5 yrs. 1919- 1923.	5 yrs. 1924- 1928.	1929.	1930.	1931
Staffordshire	Combined Urban and Rural ..	33.6	33.2	32.5	30.3	27.8	24.0	24.1	20.2	18.4	18.6	17.9
	Urban .. .. .	35.5	34.7	33.6	31.5	29.2	25.0	25.0	20.7	18.9	19.2	18.5
	Rural .. .. .	30.2	30.5	30.2	27.0	24.4	21.6	22.0	19.0	17.4	17.3	16.6
England and Wales ..		30.8	29.7	28.7	26.9	24.5	20.4	21.3	17.8	16.3	16.3	15.8
Large Towns in England		31.5	30.7	29.7	27.8	25.2	*20.9	22.0	18.2	16.6	16.6	16.0

\* 4 years.

#### DEATHS.

The number of deaths in the Administrative County amounted to 8,309, the number in the urban districts being 5,871 and in the rural districts 2,438.

In the following table comparative rates for eight quinquennial periods and for the past three years are given, together with corresponding figures for the country as a whole, and for large and small towns throughout England:—

DISTRICTS.		DEATH-RATE PER 1,000 OF POPULATION.										
		5 yrs. 1889- 1893.	5 yrs. 1894- 1898.	5 yrs. 1899- 1903.	5 yrs. 1904- 1908.	5 yrs. 1909- 1913.	5 yrs. 1914- 1918.	5 yrs. 1919- 1923.	5 yrs. 1924- 1928.	1929.	1930.	1931.
Staffordshire	Combined Urban and Rural	18.1	16.9	16.1	14.6	14.1	15.0	12.3	11.4	12.8	10.9	11.7
	Urban .. .. .	18.9	17.5	16.6	15.1	14.7	15.5	12.6	11.5	13.1	11.0	11.8
	Rural .. .. .	16.8	15.7	15.1	13.4	12.7	13.8	11.6	11.2	12.1	10.7	11.4
England and Wales		19.1	17.4	16.9	15.3	13.9	15.2	12.5	12.0	13.4	11.4	12.3
Large Towns .. ..		21.0	19.0	18.2	15.8	14.3	15.5	12.6	12.0	13.7	11.5	12.3
Smaller Towns .. .		17.6	15.9	15.7	14.9	13.6	14.1	11.5	11.0	12.3	10.5	11.3

The death rate per thousand of the population for this year is 11.7, whilst for England and Wales it is 12.3. On referring to the table which shows the death-rates of 43 years it will be observed that although the death rate is slightly higher than that for last year it still remains small compared with previous years, and, as was noted in last year's report lower than that for England and Wales as a whole, except in the quinquennial period 1909-1913.

In the following Table I have shown the chief causes of death for the last nine years, the number given for 1931 being approximately 68.0 per cent. of the total deaths:—

TABLE SHOWING CHIEF CAUSES OF DEATH.

	1923	1924	1925	1926	1927	1928	1929	1930	1931
*Zymotic Diseases ...	540	271	604	337	386	242	376	301	281
Influenza ...	166	427	325	185	532	116	570	131	311
Tuberculosis of Respiratory System	497	497	530	497	465	423	492	476	497
Tuberculosis, other forms ...	172	154	143	139	156	99	100	104	112
Cancer, Malignant Disease ...	716	639	790	785	803	851	899	912	897
Cerebral Hæmorrhage ...	485	487	542	464	465	430	462	431	477
Heart Disease ...	900	968	1053	1054	1047	1239	1448	1366	1500
Bronchitis ...	644	687	648	544	650	395	622	352	485
Pneumonia ...	706	788	809	660	865	563	933	588	630
Congenital Debility, &c. ...	482	551	521	496	453	428	420	409	459

\*Typhoid and Paratyphoid Fevers, Measles, Small-pox, Scarlet Fever, Whooping Cough, Diphtheria and Diarrhoea.

The chief cause of death in 1931, as in previous years, recorded in the table, is heart disease, and on reference to this it will be observed that during the last nine years there has been a progressive increase in the number of deaths from heart disease, and whilst in 1923 there were 900, in 1931, 1,500 deaths were certified from this cause.

The following table has been prepared covering the last 12 years in which the percentage of deaths under 45 years of age is worked out in relation to the total deaths at all ages, and in the table the sexes are divided. It will be observed that as the years go on, the tendency is for the percentage of deaths under 45 to be reduced in both sexes, though this is more marked in females.

The figures shown in this table for this county confirm the statement often made that the expectation of life is being gradually extended.

Deaths under 45 years of age—Male and Female—  
shewing percentage of total deaths (all ages).

YEAR	MALE			FEMALE		
	Deaths all ages	Deaths under 45	% of Total	Deaths all ages	Deaths under 45	% of Total
1920	4626	2295	49.61	4084	1935	47.38
1921	4545	2120	46.64	3985	1759	44.14
1922	4534	1943	42.85	4191	1793	42.78
1923	4197	1816	43.27	3788	1556	41.08
1924	4332	1795	41.43	3906	1520	38.91
1925	4556	1919	42.12	4161	1724	41.43
1926	4148	1658	39.97	3808	1441	37.84
1927	4458	1766	39.61	4082	1564	38.31
1928	3965	1449	36.54	3563	1180	33.12
1929	4813	1827	37.96	4293	1453	33.84
1930	4100	1473	35.92	3672	1211	32.98
1931	4376	1472	33.64	3933	1272	32.34

After the age of 45, heart disease becomes increasingly, year by year, the most important cause of death, and next to it is cancer. Bronchitis and pneumonia, as the statistics show, are also more fatal, but on the other hand tuberculosis declines each year in importance as a cause of death. With this in mind, and the information disclosed in the table, which shows that there is a tendency for the percentage of deaths under 45 to be smaller each year, it is obvious how important all measures are which will tend to reduce mortality from these diseases. In this we must rely on general hygienic rules, such as the prevention of overcrowding, the adequate ventilation and warming of houses and of the places where the population live, either by day or by night, in addition to the provision of good food and a pure water supply. Such in the past have allowed us to attain the satisfactory position now recorded, but more can be expected of them when used to the full. The important thing to remember is that there is no short cut to the retention of health and vigour.

The need of acquiring early habits of life that comply with the laws of hygiene cannot be too much stressed. Consider for a moment the following list of conditions that predispose to pneumonia by reducing vitality:—

- Dissipation.
- Loss of sleep.
- Overwork.
- Worry.
- Poor or insufficient food.
- Lack of exercise.
- Alcohol.
- Colds.
- Excesses of all kinds.
- Living in over-heated rooms.
- Sleeping in ill-ventilated rooms.

Whilst it may be not possible for any individual to avoid all such debilitating influences in the ordinary circumstances of life, yet when they are generally recognised by the community, means will be found to avoid them. In this connection, the Handbook of Suggestions on Health Education that the Board of Education have issued to teachers is of great importance, and, if adopted throughout the country, cannot fail to exert great influence in the formation of habits in the coming generation that will stand them in good stead during the strain and stress of adult life, and materially assist them in attaining a healthy old age.

In addition to this instruction during school days, sooner or later the periodical medical examination of everyone so often advocated will be adopted. It is surely needless to stress its advantages in causing disease to be recognised much earlier than is often possible under present circumstances, and all interested in Preventive Medicine hope for the time when such an examination will be regarded as an economic necessity. Those now opposed to periodical medical examination sometimes say that it will make us into a race of valetudinarians, yet as educated people they quite approve of the prudent habit of visiting the dentist every six months whether they have toothache or not, and surely the same principles ought to apply to one's general health.

GENERAL PROVISION OF HEALTH SERVICES  
IN THE AREA.*Local Government Act, 1929.*

At the time this Act came into force there were 12 small mixed Poor Law Institutions within the administrative county, some of which served an area outside the county, whilst the Institutions in five County Boroughs served a part of the administrative county for Poor Law purposes. A special survey of our Institutions has been made on the instructions of the Public Assistance Committee by Mr. A. H. Ward, and the two reports he has presented on this matter came before the County Council at their meeting in January, 1932. In them it is proposed to convert Newcastle and Wordsley Institutions into hospitals of 400 beds each. The Cheadle and Seisdon General Institutions will not be included in the scheme of re-organization. The other Institutions have been classified to receive certain types of case as follows:—

Nursing mothers and children will go to the sick wards at Cheadle and Stafford.

The aged and infirm to Leek, Uttoxeter, Cannock, Stone, Tamworth and Sedgley Institutions.

Mental cases certified under the lunacy Acts, and not so certified, to Sedgley and Stafford Institutions.

Children will be received at the Homes at Cheadle, Stafford, Cannock, Lichfield, Sedgley and Coseley, and it is proposed to have additional Homes at Leek and Sedgley.

Under this re-arrangement the sick will only be dealt with at the Newcastle and Wordsley Institutions in the county.

Before finally deciding on the number of beds required at the two hospitals, conferences took place with the Voluntary Hospitals Committee representing the voluntary hospitals of the county, to see if provision should be made at the two hospitals for other than the Poor Law cases. The result of the several meetings that have been held has been that we were asked to provide a limited number of beds at the Newcastle Institution

only, the voluntary hospitals in the other parts of the county being of opinion that this was not necessary at the Wordsley Hospital.

POOR LAW MEDICAL OUT RELIEF.

There has been no change in this service, full details of which were given in the Annual Report for last year.

NURSING IN THE HOME.

(a) *General Nursing.*

During the year two new local Nursing Associations have been formed for Leek and for Kidsgrove and Newchapel: otherwise there has been no change in the arrangements detailed in last year's report. There are now 79 local Nursing Associations affiliated to the County Nursing Association, and 13 who work independently. 72 of these Associations undertake midwifery in addition to general nursing.

(b) *Infectious Diseases.*

In the County Health Visiting Area arrangements were made several years ago whereby local Medical Officers of Health, in the event of epidemics of measles or diarrhoea, could obtain the services of trained nurses to look after the cases in their own homes. Speaking generally, little advantage has been taken of this arrangement, and during 1931 no application was received from any of the District Medical Officers of Health.

MIDWIVES.

The work undertaken under the Midwives Acts, 1902, 1918, and 1926, relates to the whole of the administrative county, with an estimated population at the middle of the year of 709,860, whilst the health visiting work is limited to the special health visiting area of the county which now has a population of 305,106, as estimated by the Registrar General.

277 midwives notified their intention to practise during the year. Of these, 268 were trained and 9 were bona-fide midwives. The only change since last year is a reduction in the number of trained midwives by one. In addition to these, 85 midwives residing in County Boroughs and adjoining counties, have also notified their



intention to practise within the administrative county, compared with 96 last year, but only 65 of these actually practised.

The ages of midwives who were practising in the administrative county in the 11 years, 1921-1931, are indicated in groups in the following table, from which it will be observed that the majority are under 45 years of age:—

YEAR.	21 to 44			45 to 64			65 and upwards			Totals.		
	North	Central	South	North	Central	South	North	Central	South	North	Central	South
1921 ...	58	52	60	28	22	23	21	21	16	107	95	99
1922 ...	51	64	68	21	21	21	14	16	14	86	101	103
1923 ...	55	59	66	21	27	18	14	16	11	90	102	95
1924 ...	50	56	62	22	26	19	14	11	12	86	93	93
1925 ...	54	64	63	27	24	23	13	8	10	94	96	96
1926 ...	50	63	74	26	26	15	13	9	9	89	98	98
1927 ...	55	57	72	26	30	15	6	5	8	87	92	95
1928 ...	58	60	79	24	29	13	3	5	5	85	94	97
1929 ...	50	59	79	28	27	17	4	6	5	82	92	101
1930 ...	54	63	65	26	23	20	4	5	5	84	91	90
1931 ...	56	59	78	27	26	20	4	4	3	87	89	101

The number of cases attended by midwives during 1931 in the three areas of the County are as follows:—

	No. of Midwives.	Births attended	Total Births. (Live and Stillborn)	Percentage attended by Midwives.	Mean number of cases attended per Midwife.
North ...	87	2110	3029	69.7	24.3
Central ...	89	2651	3648	72.7	29.8
South ...	101	5026	6661	75.5	49.8

These do not include cases taken by midwives in their capacity as maternity nurses.

The total number of cases attended by midwives only in the administrative county during 1931, was 9,787, the number of live births registered being 12,752 and stillbirths 586. The percentage taken by midwives in the county is, therefore, 73.4 compared with 76.4 in the

previous year. The midwives also attended 1,533 cases as maternity nurses, of which 521 were in the northern area, 439 in the central, and 573 in the south of the county. The proportion of the maternity cases to the total cases taken by midwives in their capacity either as midwives or maternity nurses in the three areas of the county is 19.8 per cent. in the northern, 14.2 per cent. in the central, and 10.2 per cent. in the southern area. The number of births that were not attended by midwives in their capacity as midwives or maternity nurses in the administrative county is 2,018, of which 398 are in the northern area, 558 in the central, and 1,062 in the south of the county.

In compliance with the rules of the Central Midwives Board, 4,119 notifications have been received from certified midwives in 1931 under the four headings set forth in the following table, which includes figures for comparison with the past 11 years, together with the number of births attended by midwives:—

	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931.
Number of Births attended by Midwives	12800	13033	11637	11382	11780	12201	10282	10523	10154	10115	9787
Sending for medical help ... ..	1948	1992	1894	2083	2219	2523	2564	2764	3154	3505	3741
Still Births ... ..	244	245	230	211	190	208	212	208	233	225	221
Death of Mother ... ..	4	1	5	4	11	20	6	13	17	10	17
Death of Child ... ..	39	29	20	61	60	70	115	117	127	142	140

During the year investigation has been made with a view to seeing to what extent midwives have had occasion to call in medical assistance at confinements over a period of 17 years. The results are shown in the accompanying table, from which it will be observed that there has been a large increase in this period of the requests for medical help, which can be ascribed to the better trained type of midwife that is now practising. This is also reflected in the increase in the fees paid by the County Council to medical practitioners, as shown in a subsequent table.

Number of Practising Midwives, Confinements  
taken by Midwives and Doctor's Calls  
before, at and after Confinement.  
1915—1931.

Year.	No of Practising Midwives	Trained.	Not Train.ed.	No. of Confine- ments taken by Midwives as Midwives.	Doctor's Calls (Mother or child)	% of Medical Calls.
1915	320	129	191	11,325	1,209	10.7
1916	307	137	170	10,632	1,291	12.1
1917	301	145	156	10,377	1,202	11.6
1918	288	152	136	10,174	1,165	11.4
1919	284	179	105	10,616	1,809	17.0
1920	286	181	105	13,770	1,769	12.8
1921	301	207	94	12,800	1,948	15.2
1922	290	224	66	13,033	1,992	15.3
1923	287	230	57	11,637	1,894	16.2
1924	272	225	47	11,382	2,083	18.3
1925	286	247	39	11,780	2,219	18.8
1926	285	250	35	12,201	2,523	20.7
1927	274	252	22	10,282	2,564	24.9
1928	276	263	13	10,523	2,764	26.2
1929	275	262	13	10,154	3,154	31.0
1930	265	255	10	10,115	3,505	34.6
1931	277	268	9	9,787	3,741	38.2

The following figures show the causes which occasioned the sending for medical help:—

Causes of sending for Medical aid.	Northern District.	Central District.	Southern District.	Total.
<b>PREGNANCY :</b>				
Threatened abortion ... ..	19	25	18	62
Puffiness of face and hands ...	2	—	6	8
Premature birth ... ..	2	3	4	9
Fainting ... ..	5	15	11	31
Varicose veins ... ..	12	12	17	41
Fits ... ..	2	5	5	12
Vaginal discharge ... ..	11	2	7	20
Unsatisfactory condition and general health ... ..	28	63	154	245
Excessive sickness ... ..	15	20	29	64
Loss of blood ... ..	7	25	34	66
History of previous still-births and abortions ... ..	6	7	14	27
Ædema of legs ... ..	4	19	9	32
Albuminuria ... ..	15	39	61	115
Sore of genitals ... ..	2	—	3	5
Contracted pelvis ... ..	20	17	28	65
	150	252	400	802
<b>LABOUR :</b>				
Abnormal presentation ... ..	51	40	121	212
Delayed or difficult ... ..	175	257	382	814
Placenta prævia ... ..	7	3	—	10
Hæmorrhage ante ... ..	19	32	18	69
Ditto post ... ..	13	31	38	82
Eclampsia ... ..	2	1	2	5
Prolapse of cord ... ..	4	7	2	13
Lacerated perinæum ... ..	132	148	297	577
Retained placenta and membranes ... ..	14	18	49	81
Unsatisfactory condition ...	13	6	14	33
Inertia ... ..	24	49	25	98
Abortion ... ..	28	47	23	98
Purulent discharge ... ..	1	1	3	5
Cough ... ..	4	1	—	5
Albuminuria ... ..	1	—	—	1
	488	641	974	2103

Causes of sending for medical aid.	Northern District.	Central District.	Southern District.	Total.
<b>LYING-IN :</b>				
High temperature ... ..	29	24	73	126
Inflamed and painful leg ...	11	12	11	34
Convulsions ... ..	2	2	31	5
Unsatisfactory condition ...	24	28	3	85
Offensive lochia ... ..	4	1	8	13
Unusual swelling of breasts ..	4	2	6	12
Abdominal swelling and tenderness ... ..	5	2	5	12
Secondary Post Partum Hæ- morrhage ... ..	—	2	—	2
	79	73	137	289
<b>CHILD :</b>				
Deformities ... ..	15	11	18	44
Convulsions ... ..	6	1	7	14
Inflamed & discharging eyes	46	41	104	191
Feebleness and prematurity ..	41	52	108	201
Unsatisfactory condition ...	7	12	16	35
Rash ... ..	3	2	10	15
Pemphigus ... ..	1	1	5	7
Spina Bifida ... ..	5	4	5	14
Hare lip and cleft palate ...	1	1	8	10
Club foot ... ..	1	—	5	6
Injuries at Birth ... ..	—	4	—	4
Jaundice ... ..	2	2	—	4
Triplets ... ..	—	—	2	2
	128	131	288	547
Grand Total ... ..	845	1097	1799	3741

Midwives.

In the following Table, in which the County is divided into three districts, the numbers of Midwives practising, with the notifications received from them, together with the visits, interviews and inquiries of the Inspectors of Midwives, are shown :—

VISITS OF INSPECTORS, NOTIFICATIONS, INQUIRIES, &C., DURING THE YEAR 1931.

District.	No. of Midwives on List at 31/12/31	Trained.	Untrained.	Equip-ment.		Visits.	Interviews.	Notifications.												Enquiries.																
				Full	Partial.			Ante-natal.	Labour	High Temperature	Other Conditions	Inflamed Eyes.	Other Child.	Still Births.	Mother.	Child.	Puerperal Fever.	Puerperal Pyrexia	Contact with infection.	Laying out the dead.	Artificial Feeding.	Ante-natal.	Labour,	High Temperature	Other Conditions	Inflamed Eyes.	Other Child.	Still Births.	Mother	Child.	Puerperal Fever.	Puerperal Pyrexia	Contact with infection.	Laying out the dead.	Artificial Feeding.	
North ..	87	85	2	85	2	372	297	150	488	29	50	46	82	57	5	43	6	31	26	7	45	—	—	29	4	66	11	3	5	1	4	24	28	3	—	—
Central ..	80	86	3	87	2	378	330	252	641	24	49	41	90	63	5	44	10	18	36	9	46	4	1	24	3	53	5	1	4	2	7	18	35	1	—	—
South ..	101	97	4	97	4	345	321	400	974	73	64	104	184	101	7	53	18	49	48	16	36	1	7	71	2	135	12	9	7	3	14	38	48	2	4	4
Totals ..	277	268	9	269	8	1095	948	802	2108	126	163	191	356	221	17	140	34	98	110	32	127	5	8	124	9	254	28	13	16	6	25	80	111	6	4	4

On comparing these tables with similar ones in previous reports it is found that medical aid is called in during pregnancy to a much greater extent than formerly, and this would be expected owing to the attention now paid to ante-natal care both by the midwives under the rules of the Central Midwives Board and by the ante-natal work of the Maternity and Child Welfare Scheme.

In addition to the routine enquiries conducted by the Midwives Inspectors, six irregularities were specially investigated. As a result, four midwives received letters of caution from me; two were interviewed by me and cautioned verbally.

Since the Act came into operation, the names of 113 midwives have been removed from the Roll in consequence of action taken by the Local Supervising Authority.

During the year only one death of a practising midwife was reported.

In 1931, 6 District Nursing Associations who undertake midwifery were subsidised to the extent of £216. At the end of the year there were 5 midwives in private practice receiving subsidies, and another midwife is provided with a telephone by the Local Supervising Authority in order that the area of her practice can be enlarged to include two somewhat isolated villages. On December 31st, 1931, there were 65 local Nursing Associations affiliated to the County Nursing Association, and 7 non-affiliated local Nursing Associations undertaking midwifery. The latter are Alrewas, Essington, Penn, Stafford, Stone and Tutbury Nursing Associations, and the Wolstanton Nursing Association have agreed to take emergency cases only.

Under Section 2 (1) of the Midwives and Maternity Homes Act, a total of £2 15s. 0d. was allowed by the County Council to various midwives as compensation for loss of practice on suspension after being in contact with a septic case, the midwife in each instance not being in default.

The Post-Certificate Course of Training at the Tipton Training Home for practising midwives, which started in November, 1925, has been continued. Five midwives from local Nursing Associations have attended the Course which is of a fortnight's duration. Under the scheme, each practising midwife will be given an opportunity of attending the course every four years.

Under the Rules of the Central Midwives' Board, a midwife has to send for medical help if any abnormality occurs, and in the Midwives' Act, 1918, provision is made for the payment of the doctor called in in this way, the fees allowed being according to a scale issued by the Ministry of Health.

During the financial year ending March, 1932, 3,775 notifications of sending for medical help were received, and out of this number medical practitioners claimed their fees from the County Council in 2,176 cases, that is 57 per cent. of the possible claims.

The fees paid by the County Council are as follows:—

**FEES PAID TO MEDICAL PRACTITIONERS UNDER  
MIDWIVES ACT, 1918.**

Financial Year.	No. of Notifications of sending for Medical Aid.	No. of Claims received.	Percentage of Claims received to Notifications.	Total amount paid to Doctors during year.			Amounts recovered from Patients during year.		
				£	s	d.	£	s	d.
1925—26	2228	780	35	1100	15	0	366	9	9
1926—27	2641	1147	43	1702	19	3	408	4	6
1927—28	2556	1136	44	1598	5	9	503	1	0
1928—29	2874	1419	49	2053	0	6	599	12	3
1929—30	3319	1810	55	2352	17	6	723	6	9
1930—31	3506	1950	56	2631	2	0	616	15	3
1931—32	3775	2176	57	3223	12	6	602	3	9



The cost of collection is £200 per year. It will be observed that each year there has been an increase in the percentage of claims of fees from doctors in proportion to the number of requests for medical assistance.

No alteration has taken place in the income scale, which was drawn up for the guidance of the Collector when making application for the recovery of the fees, which is as follows:—

- (i.) Where the net weekly income of the family after deducting 3s. 6d. for each child under 14 years of age does not exceed 30s., the County Council shall not claim repayment of the medical practitioner's fee.
- (ii.) Where the net weekly income of the family, calculated as above, is over 30s. but does not exceed 45s., the County Council shall claim repayment of one-half of such fee.
- (iii.) Where the net weekly income of the family calculated as above, exceeds 45s., the repayment of the whole of such fee shall be claimed.

Owing to the varying charges made for mileage by the medical practitioners, an arrangement has been made with the Local Branch of the British Medical Association for a uniform mileage fee of 1s. 6d. per mile one way only after two miles from the doctor's residence.

In January, 1930, arrangements were made for the issue of maternity outfits at the various Clinics and in the rural areas where no Clinic exists the Health Visitors were given charge of these. Expectant mothers apply either to the Centres or the Health Visitors for the outfits, two types of which are issued, one costing 6s. 2d. and the other 3s. During the year 62 of the larger outfits were sold and 9 of the smaller, and although these numbers are not large they will doubtless increase when it becomes generally known by the mothers that they are available.

## STILLBIRTHS.

It has already been noted that 586 stillbirths were registered during the year. Of these 221 were reported by midwives under their rules and on comparing this figure with those for the past 10 years I find that there is little variation in this number. The result of the investigations made by the Midwives Inspectors into the cause of these stillbirths is as follows:—

Albuminuria ... ..	3
Ante-Partum Hæmorrhage ...	2
Cord prolapse ... ..	7
Cord round neck ... ..	18
Deformities ... ..	18
Difficult Labour ... ..	16
Fall and Shock ... ..	10
Ill-Nourished ... ..	2
Maceration ... ..	74
Malpresentation ... ..	14
Placenta Prævia ... ..	3
Premature ... ..	35
Spina Bifida ... ..	6
Unsatisfactory Condition of Mother	7
Injury during Birth ... ..	3
History of previous still-births and abortions ... ..	3

## County Bacteriological Laboratory.

Dr. J. Menton, the County Bacteriologist reports that during 1931, 39,163 investigations were conducted, being an increase of 6,542 on the previous year. Of these, 28,100 were of a general bacteriological nature and 11,063 were for the diagnosis of and tests for cure for venereal diseases. The general bacteriological work was for the most part from the administrative County, but 641 milk examinations were undertaken for the City of Stoke-on-Trent, 81 for the County Borough of Dudley, and 9 for the County Borough of Derby. Of the tests for venereal diseases, 3,787 were from patients resident in Staffordshire, 5,755 from patients resident in the City of Stoke-on-Trent, 720 from patients resident in the County Borough of Dudley, and 801 from patients resident in other areas outside the administrative County, with which special arrangements have been made.

The steady increase in this work from year to year can be attributed to several circumstances, the most important of which are:—The ever increasing tendency of medical practitioners to use the diagnostic facilities available; the advent of new tests; the additional demands made on the laboratory by the various Acts and Orders regulating the milk supply, and the consequent extensions of the work into the domains of veterinary and dairy bacteriology; the undertaking of work for the County coroners; the growing interest of the various Sanitary Authorities in the bacteriological purity of water supplies; and the gradually increasing number of specimens received from outside Authorities. In addition, the arrangements for doing the bacteriological and pathological work for the Poor Law Institutions in the administrative County are now complete, and the negotiations between the Staffordshire General Infirmary and the Public Health Committee having reached a satisfactory conclusion, it is hoped to undertake the pathological work for this Institution early in the new year.

The details of the general bacteriological investigations are as follows:—

GENERAL BACTERIOLOGY.

	Water examinations	Milk examinations	Diphtheria	Tuberculosis	Cerebrospinal fever	Ringworm	Malaria	Typhoid and Paratyphoid fever	Brucella infections	Dysentery (all types)	Food poisoning	Pathological work	Other examinations	Total
Quarter 1st January, 1931 to 31st Mar., 1931	26	1884	3443	761	29	111	1	95	19	117	58	6	236	6786
Quarter 1st April, 1931 to 30th June, 1931	61	1911	2336	825	—	86	1	260	66	307	144	10	320	6327
Quarter 1st July, 1931 to 30th Sept., 1931	68	2132	3100	707	4	71	1	250	53	321	296	3	260	7266
Quarter 1st Oct., 1931 to 31st Dec., 1931	78	1987	4284	721	—	75	2	85	18	93	96	6	276	7721
Total ...	233	7914	13163	3014	33	343	5	690	156	838	594	25	1092	28100

The 3,014 examinations under "Tuberculosis" included 2,560 sputa; 34 pus; 32 cerebro-spinal fluids; 40 other fluids; 204 urines; 17 faeces; 109 biological tests; and 18 others.

The 156 investigations under the heading of "Brucella Infections" consisted of 35 examinations of blood specimens from cattle and 121 specimens from human beings. This organism causes contagious abortion in cattle and a type of undulant fever in human beings. 10 bloods from cattle were positive and 1 human being infected by this organism gave a positive reaction up to 1 in 50,000. This patient recovered.

The majority of the serological tests for food-poisoning were done for exclusion purposes and fortunately proved negative, but there was one interesting case in the Borough of Stafford which was due to infection by *Suipestifer* "G." The source of this infection was not definitely traced, but it was attributed to ice cream.

In connection with the dysentery investigations, there were three cases of infection due to Flexner's bacillus, two of which occurred in an Institution, and three illnesses due to Sonne's bacillus, one of which occurred in an institution and two occurred in their homes.

An outstanding feature in connection with the Medico-Legal work was a case of cocaine poisoning. This death was the subject of a Coroner's enquiry and a pathological investigation was conducted in conjunction with the chemical examination by the County Analyst.

The 1,092 "other examinations" included 167 bacteriological and cytological examinations of various body fluids and exudates; 22 blood cultures; 6 specimens for anthrax; 55 medico-legal examinations; 12 examinations for Vincent's Angina, and various other miscellaneous investigations.

In connection with the milk examinations, the reasons for these and the sources of the samples are shown in the accompanying tables. It will be noticed that 29 samples of "Grade A" milk gave positive biological reactions for tuberculosis and that 1 "Grade A. Tuberculin Tested" milk gave a similar result.

		Bacteriological Count and Coliform Content.			Biological Tests.			Grand Total
		Satisfactory	Unsatisfactory	Total	Negative	Positive	Total	
For Grade A. Standard and Grade A. Licence.	First Quarter	234	15	249	73	6	79	328
	Second	226	21	247	88	7	95	342
	Third	231	29	260	70	5	75	335
	Fourth	218	18	236	75	11	86	322
For Grade A.T.T. Standard and Grade A.T.T. Licence.	First	34	—	34	7	—	7	41
	Second	30	5	35	5	1	6	41
	Third	31	6	37	3	—	3	40
	Fourth	40	8	48	7	—	7	55
For Certified Standard.	First	11	1	12	3	—	3	15
	Second	13	1	14	1	—	1	15
	Third	13	4	17	1	—	1	18
	Fourth	10	4	14	5	—	5	19
For Grade A. Pasteurised Standard.	First	—	1	1	—	—	—	1
	Second	4	—	4	1	—	1	5
	Third	3	—	3	1	—	1	4
	Fourth	—	—	—	—	—	—	—
For Pasteurised Standard.	First	15	1	16	14	—	14	30
	Second	15	—	15	12	—	12	27
	Third	12	5	17	7	—	7	24
	Fourth	16	1	17	13	—	13	30
Submitted by farmers, retailers, and others for their own information.	First	10	3	13	5	3	8	21
	Second	4	31	35	9	1	10	45
	Third	51	119	170	12	2	14	184
	Fourth	7	4	11	—	—	—	11
Milk & Dairies (Consolidation) Act, 1915.	First	382	119	501	732	92	824	1325
	Second	337	197	534	697	77	774	1308
	Third	219	275	494	502	63	565	1059
	Fourth	249	255	504	655	115	770	1274
Tuberculosis Order, 1925.	First	—	—	—	3	—	3	3
	Second	—	—	—	3	—	3	3
	Third	—	—	—	3	—	3	3
	Fourth	—	—	—	4	—	4	4
Special investigation (Sheffield complaint).	First	—	—	—	—	—	—	—
	Second	—	—	—	221	30	251	251
	Third	—	—	—	79	10	89	89
	Fourth	—	—	—	—	—	—	—
		2415	1123	3538	3311	423	3734	7272

	Bacteriological Count and Coliform Content.	Biological Test.	Direct Film for Acid-fast Bacilli.	Examination for Cause of Taint.	Bottles for Sterility.
<i>From the Official Sampler to the County.</i>					
(a) Special Designations Order, 1923 ... ..	1104	391	—	—	—
(b) Milk & Dairies (Consolida- tion) Act, 1915 ... ..	1569	1463	—	—	—
<i>From Veterinary Surgeons.</i>					
(a) Tuberculosis Order, 1925 ...	—	12	12	—	—
(b) Milk & Dairies (Consolida- tion) Act, 1915 ... ..	—	1344	600	—	—
<i>From Staffordshire Farm Institute, Producers and Retailers.</i>					
For Grade A. Licence ... ..	29	3	—	—	—
Experimental for Grade A. ...	15	2	—	—	—
For Grade A. Standard ... ..	8	—	—	—	—
For Certified Licence and Standard ... ..	2	—	—	—	—
For Grade A.T.T. Licence and Standard ... ..	4	2	—	—	—
For information ... ..	227	32	—	3	8
<i>From Local Authorities in the Administrative County (other than those from Official Sampler). Special Designations Order, 1923</i>	4	—	—	—	—
Milk & Dairies (Consolidation) Act, 1915 ... ..	161	169	—	—	—
<i>From Authorities outside the Administrative County.</i>					
Special Designations Order, 1923	111	18	—	—	—
Milk & Dairies (Consolidation) Act, 1915 ... ..	304	297	18	—	—
Tuberculosis Order, 1925 ... ..	—	1	1	—	—
	3538	3734	631	3	8

Close co-operation has been maintained with the private medical practitioners; the local Medical Officers of Health; the Veterinary Inspectors; the School Medical Service; and the Staffordshire Farm Institute

The details of the Venereal Diseases tests are shown in the following table.

EXAMINATIONS OF PATHOLOGICAL SPECIMENS  
CONDUCTED UNDER THE VENEREAL  
DISEASES SCHEME DURING THE YEAR 1931.

	For Detection of		For Wassermann Reaction.	Sigma, Kahn & Meinicke Reactions.	Other Examinations.	Total.
	Spirochetes	Gonococci				
1st Quarter .	...	135	1176	1217	125	2653
2nd Quarter	...	177	1273	1283	109	2842
3rd Quarter	...	182	1334	1178	114	2808
4th Quarter	3	215	1261	1178	103	2760
<b>TOTAL . .</b>	<b>3</b>	<b>709</b>	<b>5044</b>	<b>4856</b>	<b>451</b>	<b>11063</b>

The 451 "other examinations" included under the Venereal Diseases Scheme were:—53 cerebrospinal fluids for cell count, globulin and colloidal gold test; 370 complement fixation tests for gonorrhoea; the examination of 9 urines for gonococci; and the making of 19 cultures for gonococci. In addition 7 bottles of toxin-free gonococcal vaccine were prepared.

As a result of the special investigation as to the comparative values of the various serological tests for syphilis, one of the tests, the Meinické reaction, has been discontinued, as it has not proved as good as the Sigma, Kahn, or Wassermann reactions.

### Chemical Laboratory.

Mr. E. V. Jones, the County Analyst, reports that during 1931, by far the largest number of samples analysed is under the Food and Drugs (Adulteration) Act, 1928. Under this Act he has received the following samples, as tabulated:—



SAMPLES.	Number Examined			Number Adulterated or below Standard		
	Total	Formal	Informal	Total	Formal	Informal
Apple Rings ... ..	1	1	...	...	...	...
Arrowroot ... ..	4	3	1	...	...	...
Baking Powder ... ..	3	1	2	...	...	...
Barley, Pearl ... ..	4	3	1	...	...	...
Beef, Pressed ... ..	2	1	1	...	...	...
Beef and Tongue Spiced ...	1	...	1	...	...	...
Beeswax ... ..	2	...	2	...	...	...
Bicarbonate of Soda ... ..	5	2	3	...	...	...
Brawn ... ..	1	...	1	...	...	...
Bread ... ..	1	...	1	...	...	...
Brimstone and Treacle ...	1	...	1	...	...	...
Butter ... ..	49	44	5	...	...	...
Cakeoma ... ..	3	3	...	...	...	...
Camphor ... ..	2	...	2	...	...	...
Candied Peel ... ..	1	...	1	...	...	...
Cayenne Pepper ... ..	1	...	1	...	...	...
Cheese ... ..	4	...	4	...	...	...
Cheese, Cheddar ... ..	3	...	3	...	...	...
"  Chedlet ... ..	1	...	1	...	...	...
"  Gorgonzola ... ..	2	1	1	...	...	...
"  Gruyere ... ..	1	...	1	...	...	...
Chocolate, Milk ... ..	1	...	1	...	...	...
Cinnamon, Ground ... ..	1	1	...	...	...	...
Cloves, Ground ... ..	1	1	...	...	...	...
Cocoa ... ..	1	1	...	...	...	...
Coconut ... ..	1	1	...	...	...	...
Coconut, Desiccated ... ..	1	1	...	...	...	...
Coffee ... ..	6	6	...	...	...	...
Coffee and Chicory Essence	1	...	1	...	...	...
Cornflour ... ..	2	2	...	...	...	...
Cream ... ..	19	...	19	...	...	...
Cream of Tartar ... ..	7	4	3	...	...	...
Currants ... ..	2	1	1	...	...	...
Custard Powder ... ..	2	1	1	...	...	...
Dripping, Beef ... ..	2	...	2	...	...	...
"Egbata" ... ..	1	1	...	...	...	...
Egg Substitute Powder ...	1	...	1	...	...	...
Flour ... ..	4	3	1	...	...	...
"  Sandwich Cake ... ..	1	...	1	...	...	...
"  Self-raising ... ..	19	15	4	...	...	...
Ginger ... ..	6	6	...	1	1	...
"  Ground ... ..	17	16	1	...	...	...
Glauber's Salt ... ..	4	1	3	...	...	...
Glycerine ... ..	5	...	5	...	...	...
Golden Syrup ... ..	1	...	1	...	...	...
Gregory's Powder ... ..	2	1	1	2	1	1
Honey ... ..	9	...	9	...	...	...

SAMPLES.	Number Examined			Number Adulterated or below Standard		
	Total	Formal	Informal	Total	Formal	Informal
Jam, Black Currant ... ..	2	...	2	...	...	...
„ Plum ... ..	1	...	1	...	...	...
„ Raspberry ... ..	2	...	2	...	...	...
„ Strawberry ... ..	4	...	4	...	...	...
Jelly, Table ... ..	1	...	1	...	...	...
Lard ... ..	31	29	2	...	...	...
Lemocreme ... ..	1	...	1	...	...	...
Lemon Cheese ... ..	3	...	3	...	...	...
Lemon Curd ... ..	1	...	1	...	...	...
Lime Water ... ..	1	...	1	...	...	...
Liquorice Powder, Compound ... ..	4	...	4	...	...	...
Mace, Ground ... ..	1	1	...	...	...	...
Margarine ... ..	14	10	4	...	...	...
Marmalade ... ..	3	...	3	...	...	...
Milk ... ..	1153	1114	39	89	88	1
„ Appeal to Cow ... ..	44	44	...	21	21	...
„ Certified ... ..	1	...	1	...	...	...
„ “Grade A” ... ..	23	17	6	...	...	...
„ “Grade A,” Pasteurised	1	1	...	...	...	...
„ “Grade A,” T.T. ... ..	1	...	1	...	...	...
„ Pasteurised ... ..	30	27	3	1	1	...
„ Skimmed ... ..	4	4	...	...	...	...
„ Sterilised ... ..	17	11	6	1	...	1
„ Condensed Full Cream Sweetened	2	...	2	...	...	...
„ Condensed Machine Skimmed Sweetened	6	...	6	...	...	...
„ Dried ... ..	1	...	1	...	...	...
Mustard ... ..	2	...	2	...	...	...
„ ready mixed ... ..	1	...	1	...	...	...
Nutmeg, ground ... ..	1	1	...	...	...	...
Oatmeal ... ..	4	4	...	...	...	...
Oats, Quaker ... ..	1	1	...	...	...	...
Oil, Camphorated ... ..	3	...	3	...	...	...
„ Castor ... ..	3	...	3	...	...	...
„ Cod Liver ... ..	3	...	3	...	...	...
„ Mustard ... ..	1	...	1	...	...	...
„ Olive ... ..	8	...	8	...	...	...
Ointment, Iodine (stainless)	1	...	1	...	...	...
„ Zinc ... ..	3	...	3	...	...	...
Paraffin, Liquid ... ..	5	...	5	...	...	...
Paste, Crab ... ..	1	...	1	...	...	...
„ Salmon and Anchovy	1	...	1	...	...	...
Peas (tinned) ... ..	1	...	1	...	...	...
Pepper ... ..	26	24	2	...	...	...
Peppermint ... ..	1	...	1	...	...	...

SAMPLES.	Number Examined			Number Adulterated or below Standard		
	Total	Formal	Informal	Total	Formal	Informal
Pork Pie ... ..	1	..	1	..	..	..
Potassium Bromide ... ..	1	..	1	..	..	..
Raisins, Stoned ... ..	1	..	1	..	..	..
Rice ... ..	9	6	3	..	..	..
" Ground ... ..	3	3	..	..	..	..
Rochelle Salt ... ..	1	..	1	..	..	..
" Santona " ... ..	1	..	1	..	..	..
Sardines ... ..	1	..	1	..	..	..
Sausage ... ..	2	..	2	..	..	..
" Pork ... ..	4	2	2	3	2	1
" Preserved ... ..	2	..	2	..	..	..
Semolina ... ..	3	3	..	..	..	..
" Shortex " ... ..	1	1	..	..	..	..
Spice, Mixed ... ..	1	1	..	..	..	..
" Pickling ... ..	1	1	..	..	..	..
Spirits, Rum ... ..	4	1	3	2	1	1
" Whisky ... ..	4	..	4	..	..	..
Suet, Shredded Beef ... ..	2	..	2	..	..	..
Sugar ... ..	6	2	4	..	..	..
" Demerara ... ..	2	2	..	..	..	..
Sulphur, Flowers of ... ..	5	1	4	..	..	..
Sweets ... ..	8	..	8	..	..	..
Tablets, Aspirin ... ..	4	..	4	..	..	..
" Bismuthated Magnesia ... ..	1	..	1	..	..	..
" Calcium Lactate ... ..	1	..	1	..	..	..
" Sulphur ... ..	1	..	1	..	..	..
Tartaric Acid ... ..	2	1	1	..	..	..
Tea ... ..	9	6	3	..	..	..
Tincture, Iodine of ... ..	3	..	3	..	..	..
" Quinine of ... ..	3	1	2	2	1	1
Tongue ... ..	1	..	1	..	..	..
Treacle ... ..	1	..	1	..	..	..
Vinegar, Garlic ... ..	1	..	1	..	..	..
" Malt ... ..	2	1	1	1	..	1
" Vita Wheat " ... ..	1	..	1	..	..	..
Zinc Oxide ... ..	1	..	1	1	..	1
	1721	1441	280	124	116	8

The following samples were also submitted under the Fertilizers and Feeding Stuffs Act, 1926:—

<i>Feeding Stuffs.</i>	<i>Fertilizers.</i>
Meat and Bone Meal	Ground Agricultural Lime
Plate Indian Meal	Organic Allotment Fertilizer
Beet Pulp	Pure Raw Bone Meal
Dried Grains	Special Potato Manure
Bran	Special Turnip Manure
Thirds	Calcined Bone Meal

all of which were of satisfactory quality and up to their respective guarantees.

Four samples were also submitted under the Rag Flock Act, viz.:—

Rag Flock  
Mill Puff  
White Wool  
Rag Flock

The Mill Puff contained 236 parts per 100,000 of Soluble Chlorine against 30 parts allowed by Regulations. The other three were of satisfactory quality.

In addition to the above he has received from different Authorities:—

- (1) 212 samples of *Drinking Water* of which 118 were condemned, 14 were certified of doubtful quality and 80 were passed as satisfactory, chemically.
- (2) 108 samples of *River Water*, 60 of which were for full analysis and 48 for dissolved Oxygen content under the biannual River Survey Scheme.
- (3) 12 *Sewage Effluents* were fully analysed.
- (4) One sample of Sweets was sent to be tested for Arsenic but none was found.
- (5) One sample of Faeces was examined for Arsenic with negative result.
- (6) Four samples of Urine were submitted to be examined for the presence of Lead. Two of the samples were from girls working in the same factory, one sample contained 24.8 grains per gallon of Lead, the other gave negative results. The other two samples gave no evidence of Lead.

Three samples of Milk, one of Poultry Food, one Wall Preparation, three of Bricks and one of Sand were also analysed.

#### CORONER AND POLICE SAMPLES.

*Case I.* The Stomach and contents of man whose death was suspected to be due to cyanide poisoning. The Stomach and contents contained 0.42 and 0.15 grain respectively of Hydrocyanic Acid.

*Case II.* The Stomach and contents and Bowel and contents of man found dead without any apparent cause of death being shown by Post-mortem examination. The County Pathologist advised search being made for alkaloidal poisons. The contents of the Stomach contained the equivalent of 10.36 grains of Cocaine and from the Stomach itself the equivalent of 16.55 grains was recovered.

From the Bowel and contents the amount of Cocaine recovered was equivalent to 0.69 and 0.22 grain respectively. Therefore, the amount of Cocaine present in the organs and contents received was 27.8 grains.

In connection with this case he also received from the Police one bottle of drinking water taken from mug in room, two apparently empty whisky bottles and a green poison bottle, the contents of which consisted of mashed leaves. None of these samples gave evidence of Cocaine.

He also received a packet of white powder which was found in deceased's wallet and which upon analysis proved to be Sulphate of Quinine.

### Hospitals.

In last year's report full details were given of the hospital services, which included the voluntary hospitals as well as Public Assistance Institutions and Isolation Hospitals, and there has been no change in these during the year. As already mentioned in a previous section of the report, the Public Assistance Committee propose to convert the Newcastle and Wordsley Institutions into general hospitals and at the request of the Voluntary Hospitals Committee a limited number of beds will be provided at the Newcastle Hospital for cases other than the poorer class. By this arrangement, provision will be made for the treatment of children suffering from

enlarged tonsils and adenoids, and ear discharges; for maternity cases, and for such acute medical and surgical cases that the large voluntary hospital in the neighbourhood desire to send to the new Hospital when the pressure on their own accommodation is such that they cannot treat these cases.

### **Maternity and Nursing Homes.**

At the end of the year the number of premises registered under the Nursing Homes Registration Act, 1927, was 25: three exemptions from registration previously allowed were continued. Seven applications for registration were received in 1931, of which six were granted and one withdrawn. The 25 homes registered, with the exception of 6, are for one or two beds only. The County Council have not delegated any of their powers under the Nursing Homes Registration Act, 1927, to District Councils nor have any applications been received for such delegation.

No Maternity Homes have been established by the County Council as yet, but they have arrangements with the Mrs. Legge Memorial Home, Wolverhampton, where prospective unmarried mothers can be sent to or received at the Home for their confinement and remain there for six months. The County Council contribute 40/- per patient per week for six weeks, the cost of the remainder of the period being defrayed from philanthropic sources. In 1931 ten cases were dealt with at this Home.

In addition, arrangements have been made for mid-wifery cases to be sent from the Health Visiting Area to the following Maternity Homes:—

Ashbourne (Derbyshire).

Newport (Salop.)

Bath Road Maternity Home, Wolverhampton.

Tipton.

North Staffordshire Royal Infirmary.

Crewe.

Longton Cottage Hospital.

The cases so sent are limited to those who live in unsatisfactory home conditions or have some complication in connection with their pregnancy which makes it unsafe for them to remain at home. During the year five patients who complied with these conditions and who were necessitous, were sent by the County Council who were financially responsible for their treatment, with the exception of one patient who paid half fees.

Besides the Maternity Homes already mentioned cases are received at the Wordsley Public Assistance Institution in a private ward of 8 beds for patients who can pay either the whole cost or a portion of the cost of treatment. At the Sedgley Institution there is a special block known as the Rosemary Ednam Maternity Home, built by the late Board of Guardians, in which there are 9 beds for paying patients under similar conditions to those that exist at the Wordsley Institution.

### **Maternal Mortality.**

In the accompanying table the maternal mortality rate for the administrative County showing the deaths per thousand births in the last 10 years is given. It will be observed that there is very little difference in this death rate from year to year and that the deaths from puerperal sepsis remain almost constant whilst on the other hand such variations as exist appear under the other heading given in the table as "Other diseases and accidents of parturition," which also include those due to general diseases apart from pregnancy. The mean death rate for the last 10 years is 3.7, which is lower than in many other areas, but unfortunately we cannot congratulate ourselves on this for although this is the actual death rate it gives no idea of the many cases that exist of injury, often of a permanent nature, from what should be a physiological process.

Year.	Live Births.	Deaths from		Maternal Mortality per 1,000 live births.
		Puerperal Sepsis.	Other Diseases and Accidents of Parturition.	
1922	16,394	21	42	3.8
1923	15,342	20	40	3.9
1924	15,546	15	28	2.7
1925	15,241	15	32	3.1
1926	14,535	19	45	4.4
1927	13,856	25	27	3.7
1928	13,742	21	29	3.6
1929	13,125	17	42	4.5
1930	13,243	22	23	3.4
1931	12,752	11	29	3.1
Mean for 10 years	14,378	19	34	3.7

It is now the duty of a midwife to notify all deaths that occur in her practice whether as a midwife or as a maternity nurse. This rule only relates to the period in which she is actually in attendance and consequently if the patient is removed to Hospital, or not being attended at the time of death by the midwife, the death is not reported by her. During the year 17 deaths were so reported out of a total of 40 maternal deaths registered.

The causes of death were as follows:—

Cardiac failure	...	...	...	...	1
Cardiac failure and Bronchitis	...	...	...	...	2
Cardiac failure and post-partum hæmorrhage	...	...	...	...	2
Cerebral Embolism and post-partum hæmorrhage	...	...	...	...	1
Eclampsia	...	...	...	...	2
Lymphatic Leucocythæmia	...	...	...	...	1
Pneumonia and Puerperal Fever	...	...	...	...	1
Post-partum Hæmorrhage	...	...	...	...	1
Pulmonary congestion and influenza	...	...	...	...	1
Pulmonary Embolism	...	...	...	...	2
Pulmonary Thrombosis	...	...	...	...	1
Shock and Prolonged Labour	...	...	...	...	1
Syncope due to pleurisy whilst in labour	...	...	...	...	1



In previous reports full details were given of the scheme approved by the County Council for providing the services of obstetric consultants in such cases where the family doctor desires his assistance at any time during pregnancy, during labour, or during the puerperium. Under the same scheme ante-natal clinics have been established in connection with various Infant Welfare Centres and midwives are encouraged to take their patients there for examination by the Medical Officer. At these Centres no treatment is given but if such is found necessary the midwives are advised to send the patients to their own doctors. Although this is the third year that the scheme which allows the family doctors to call in consultants has been in operation, it has been found that little advantage has been taken of this provision and during the year consultants were only called in in 13 instances, but as it is possible that the general practitioners have sent their cases directly to the Women's Hospitals without reference to the County Council Scheme, and as I have no information on this point, it cannot be assumed that the 13 cases in which consultants were called out is a true index of the consultations between family doctors and the specialists in 1931.

With regard to the 13 cases in which Consultants were called out, 10 were for ante-natal conditions and 3 were complications of labour.

(a) INVESTIGATION OF MATERNAL DEATHS.

An investigation is made of every maternal death notified and special arrangements have been made with the Registrars of Deaths to forward to the office copies of the entries in their Registers of deaths of all women between 15 and 45 years of age so that it can be decided which should be classified as maternal deaths. By an arrangement made with the whole-time Medical Officers of Health in the County, the investigation of these deaths is undertaken by them, and in the County Health Visiting Area the investigating officer is one of the Assistant Medical Officers of the County Council. In areas outside the County Health Visiting Area, if the Medical Officer of Health is not a whole-time officer, the investigation is made by one of the Assistant Medical Officers of the County Council. These officers are empowered to obtain the advice of a consultant if any difficulty arises in the investigation in determining the cause of death.

Reports on each maternal death are forwarded to the Ministry of Health when completed, for the information of the special committee set up by that department to deal with this matter.

(b) WORK UNDER THE PUERPERAL FEVER AND  
PUERPERAL PYREXIA REGULATIONS.

In previous Annual Reports the scheme adopted by the County Council for carrying out the duties imposed by these Regulations was set forth. The following is the number of notifications during 1931:—

PUERPERAL PYREXIA NOTIFICATIONS, 1931.

	<i>In Health</i>	<i>Not in Health</i>		
	<i>Visiting Area.</i>	<i>Visiting Area.</i>	<i>Total</i>	
Urban Districts ...	27	... 46	...	73
Rural Districts ...	20	... 5	...	25
				—
				98
				—

Puerperal Pyrexia is defined as any febrile condition occurring in women within 21 days after childbirth or miscarriage, in which a temperature of 100.4 or more has been sustained during a period of 24 hours or has recurred during that period. Cases of puerperal fever are included in this definition, and as the latter condition can still be notified the following are the notifications:—

PUERPERAL FEVER NOTIFICATIONS, 1931.

	<i>In Health</i>	<i>Not in Health</i>		
	<i>Visiting Area.</i>	<i>Visiting Area.</i>	<i>Total</i>	
Urban Districts ...	9	... 10	...	19
Rural Districts ...	11	... 4	...	15
				—
				34
				—

During 1931 the case rate per thousand of the population for the county was:—

(a) For puerperal pyrexia ...	...	...	0.14
For England and Wales	...	...	0.14

When calculated on the basis per thousand total births (live and stillbirths) the rate for Staffordshire is 7.35 and for England and Wales 8.71.

(b)	For puerperal fever	...	...	...	0.05
	For England and Wales	...	...	...	0.06

When calculated on the basis per thousand total births (live and stillbirths) the rate for Staffordshire is 2.55 and for England and Wales 3.55.

The midwives under their rules have also to notify to the Local Supervising Authority any rise of temperature in their practice and these, which number 126, were specially investigated by the Midwives' Inspectors, who reported that the conditions to which this was due were as follows:—

Abortion	...	...	...	...	2
Albumenuria	...	...	...	...	3
Inflamed and painful breasts	...	...	...	...	16
Mammary Abscess	...	...	...	...	3
Nephritis	...	...	...	...	1
Offensive Lochia	...	...	...	...	4
Pain and swelling of leg	...	...	...	...	4
Pelvic cellulitis	...	...	...	...	1
Phlegmasia alba dolens	...	...	...	...	2
Post-partum Hæmorrhage	...	...	...	...	2
Excessive vomiting	...	...	...	...	1
Puerperal Mania	...	...	...	...	1
Purulent discharge	...	...	...	...	1
Pyelitis	...	...	...	...	4
Retained Placenta and Membranes	...	...	...	...	4
Salpingitis	...	...	...	...	1
Sapræmia	...	...	...	...	8
Septicæmia	...	...	...	...	8
Septic lacerations	...	...	...	...	6
Sub-involution	...	...	...	...	1
Tympanites	...	...	...	...	1
Unsatisfactory condition	...	...	...	...	1
Condition undiagnosed	...	...	...	...	4
Alcohol	...	...	...	...	1
Bronchitis	...	...	...	...	3
Constipation (severe)	...	...	...	...	2
Cough	...	...	...	...	3

Food poisoning	...	...	...	2
Gonorrhoea	...	...	...	2
Headache (severe)	...	...	...	1
Indigestion (severe)	...	...	...	1
Influenza	...	...	...	22
Pleurisy	...	...	...	1
Pneumonia	...	...	...	4
Previous disease	...	...	...	1
Septic Teeth	...	...	...	1
Septic Thumb	...	...	...	1
Starvation	...	...	...	1
Tuberculosis	...	...	...	1

It will be observed that in several instances the rise of temperature could not be definitely associated with the puerperal state, and, although these special investigations have taken up much time of the Midwives' Inspectors, there is little doubt that they were worth while and have resulted in no case of septic condition of the genital tract being overlooked. In each case the midwife, according to her rules, had to call in a medical practitioner, so that appropriate treatment could be given. Such cases as comply with the definition given would then be notified by the medical practitioner under the Puerperal Pyrexia Regulations, and during the year under the Health Visiting Committee's Scheme a second opinion was obtained in 6 cases, and 17 cases sent to hospitals. In 3 instances the patients remained at home and special nursing was provided.

In addition to the 17 cases referred to above, it was ascertained that 19 patients from the Health Visiting area were sent to hospital through other agencies.

### Infantile Mortality.

The infant mortality rate for 1931 was 70 per 1,000 live births as against 64 last year. The rate in urban districts was 74 compared with 64, and in the rural districts 60 as against 64 in the previous year. In England and Wales in 1931 the infant mortality rate was 66 compared with 60 last year. It has been often noted in examining the causes of death of children under one year that in recent years there has been no reduction in the deaths from prematurity, malnutrition, and such like causes, and this year I find is no exception, the numbers remaining substantially the same as in former years.

#### 44 *Infantile Mortality—Clinics and Treatment Centres.*

Under the rules of the Central Midwives' Board deaths of infants within the first 10 days of life are notified by midwives and 140 deaths were so reported, the causes of death being as follows:—

Asphyxiated	...	...	...	...	8
Congenital Heart	...	...	...	...	19
Convulsions	...	...	...	...	16
Deformities	...	...	...	...	12
Feebleness and Prematurity	...	...	...	...	72
Injury at birth	...	...	...	...	1
Inattention at birth	...	...	...	...	2
Melæna	...	...	...	...	2
Meningitis	...	...	...	...	1
Over-laying	...	...	...	...	2
Pneumonia	...	...	...	...	1
Septic jaundice	...	...	...	...	1
Septicæmia	...	...	...	...	1
Serious skin eruption	...	...	...	...	2

#### CLINICS & TREATMENT CENTRES.

The number and situation of the Clinics and Treatment Centres were set out in detail in last year's report. The only change since then has been the opening of an Infant Welfare Centre at Barton-under-Needwood and one at Longnor, both in rural areas where there had previously been no Centre. Owing to the growth of the Biddulph Centre an additional session was started in the autumn. The temporary premises used for the Combined Clinic at Cheadle having been required for other purposes the Centre is now held at the Carlos Memorial Institute. The County Council have now established 32 Combined School Clinics and Infant Welfare Centres and 9 Infant Welfare Centres. These Centres serve the more populous portions of the County Health Visiting Area and, with the exception of the very smallest Centres, special arrangements have been made for ante-natal work. In addition to these Centres, 2 voluntary Centres at Mayfield and Tutbury have been in operation, apart from the County Council scheme.

WORK OF THE CENTRES AND OF THE HEALTH  
VISITING SCHEME.

As already mentioned, the County Health Visiting Area serves a population of 305,106, which includes 13 urban and 14 rural districts as well as two parishes forming part of one of the rural districts in Shropshire.

In the table at the end of the report will be found details of the work at the Centres.

In 1931, 771 attendances were made by expectant mothers compared with 633 in the previous year.

23,921 children under one year as against 23,407 in 1930 and 26,879 as against 25,358 children between one and five years attended the Centres.

It will be seen that the attendances of expectant mothers are gradually growing and, as already noted under the section on midwives, medical advice has been sought much more than formerly during pregnancy. In view of the great importance now attached to ante-natal care, it is all to the good and is a great step forward showing that the measures we are taking to reduce maternal mortality are being appreciated. There has also been an increase in attendances of children under one year and between one and five years of age at the Centres. The increase in the latter is especially gratifying because during recent years great efforts have been made to induce the mothers to bring children during the toddler age for examination and it has been found that here, as in other parts of the country, mothers, while fully appreciating the necessity of bringing their children to the Centres during the first year of life, often find it difficult to understand why they should attend during the next few years before they start attending school, especially those who are apparently in good health.

The work of the Centres is chiefly educational; cases requiring treatment being sent to their family doctor, except crippling conditions and those who must be seen by an ophthalmic surgeon. 135 cases as against 82 last year were sent to orthopædic hospitals for out-patient treatment in the first instance, 9 being admitted as in-patients. In addition 10 more patients were recommended for in-patient treatment than in the previous year, making a total of 19 patients admitted to hospital.

The following is a list of diseases treated:—

Arthritis	...	...	...	...	4
Birth palsy	...	...	...	...	1
Bow legs	...	...	...	...	25
Calcaneum valgus	...	...	...	...	1
Cerebral diplegia (spastic)	...	...	...	...	3
Congenital deformities	...	...	...	...	6
Congenital dislocation of hips	...	...	...	...	1
Congenital shortening of left leg	...	...	...	...	1
Deformities due to Poliomyelitis	...	...	...	...	2
Epiphysitis	...	...	...	...	1
Flat feet	...	...	...	...	8
Fracture of humerus	...	...	...	...	2
Hip disease	...	...	...	...	1
Infantile Paralysis	...	...	...	...	4
Injury to left elbow	...	...	...	...	1
Knock knee	...	...	...	...	21
Knock knee and flat feet	...	...	...	...	21
Long dorsal kyphos and flat feet	...	...	...	...	1
Metatarsus varus	...	...	...	...	5
Rickets	...	...	...	...	20
Thumbs flexed and abducted	...	...	...	...	1
Torticollis	...	...	...	...	4
Valgoid ankle (L) and Hammer toe (R)	...	...	...	...	1

The eye cases in children under 5 seen by the County Ophthalmic Surgeon included 60 new cases, for whom glasses were necessary in 35 instances. 104 other cases seen previously were re-examined. In 6 cases the Committee provided the glasses prescribed, and in 2 instances half the cost was contributed.

At the end of the year there were 38 whole-time Health Visitors who serve a population of approximately 226,788, two of whom are lecturers on mothercraft. Under the scheme approved by the Committee three lecturers were to be appointed, but it was not found possible to fill one of the vacancies. There are 46 part-time Health Visitors serving a population of approximately 78,318, mainly in the Rural Districts. These are District Nurses appointed by District Nursing Associations who, before they took up their duties, received special instruction at Sedgley under the direction of the whole-time Health Visitors there. On reference to the table at the end of the Report the districts and populations served by both whole-time and part-time Health Visitors are set forth.

The usual lectures given to Health Visitors at Stafford during the winter months were suspended owing to financial stringency, but it is hoped that they will start again as soon as possible, as the attendance at these lectures has proved of great value to the staff, for they are the means of stimulating interest and arousing enthusiasm in their work, particularly in the part-time staff, who otherwise would have but little opportunity of conferring with others about the numerous difficulties they meet in their district.

The visits paid by the Health Visitors during the year are as follows:—

To expectant mothers.			
(1) First visits	...	...	1,617
(2) Total visits	...	...	5,127
To infants under 1 year.			
(1) First visits	...	...	5,195
(2) Total visits	...	...	43,797
To children, 1—5 years.			
Total visits	...	...	81,216

Lectures on mothercraft which began two years ago have been continued at the Infant Welfare Centres, but owing to the difficulty in completing the number of lecturers authorised, it has not been possible to have lectures at all the Centres as yet. At the beginning of the year we had only one lecturer and it was not possible to appoint another until June, but during the year a total of 235 lectures were given at 18 Centres in various parts of the health visiting area, at which there were 3,966 attendances of mothers.

The County Council have not established any Orthopædic Clinics, but have arrangements with voluntary bodies who have established Orthopædic Clinics, at Leek, Stourbridge, Hartshill, Stafford, Lichfield, Tamworth and Dudley, where cases are received on payment.

The Tuberculosis Dispensaries in the County are under the control of the Joint Committee for Tuberculosis. There are twelve dispensaries of which four are main dispensaries and have been built specially for the purpose.



### Venereal Diseases.

Under the County Council scheme for the treatment of venereal diseases agreements have been made with voluntary hospitals at Stoke-on-Trent, Lichfield, Wolverhampton, Walsall, Dudley and Stourbridge for the establishment of special clinics, and arrangements have been made at the County Bacteriological Laboratory for the examination of specimens received from these Treatment Centres and from medical practitioners in the administrative County.

The following table shows the number treated during the year, including cases from the County who attended clinics outside the area:—

STAFFORDSHIRE CASES TREATED FOR VENEREAL DISEASES DURING THE YEAR 1931.

Clinic	Syphilis	Soft Chancre	Gonorrhoea	Non-Venereal	Total	Attendances
Birmingham General Hospital	12	—	24	27	63	2271
Burton-on-Trent General Infirmary ... ..	3	—	3	—	6	90
Derby Royal Infirmary ... ..	4	—	5	5	14	289
Dudley Guest Hospital ... ..	23	1	31	35	90	3780
Lichfield ... ..	8	—	19	7	34	1070
Stoke-on-Trent (N.S.R.I.) ... ..	55	—	36	23	114	10336
"          (Shelton) ... ..	31	—	67	36	134	3984
Stourbridge Corbett Hospital	9	—	18	15	42	2505
Walsall ... ..	11	1	14	21	47	1169
Wolverhampton Royal Hospital ... ..	71	—	108	97	276	6022
<b>TOTALS .. ..</b>	<b>227</b>	<b>2</b>	<b>325</b>	<b>266</b>	<b>820</b>	<b>31516</b>

In comparing the total number of cases treated at the clinics with those for last year, it has been found that 820 patients were treated as against 860. It is gratifying that the attendances in proportion to the new cases still maintain a high ratio. These figures show that the patients are anxious to get the best out of the treatment.

Systematic intermediate treatment has been well utilised at the clinic at the North Staffordshire Royal Infirmary, Stoke-on-Trent. Negotiations are in progress with a view to the total reorganisation of this centre.

A full-time Medical Officer is now in charge of the clinic at the Guest Hospital, Dudley.

At the end of 1931 there were 37 medical practitioners authorised to receive free supplies of Salvarsan or its substitutes for the cases of syphilis in their practice; 14 doctors on the list availed themselves of this provision during the year.

### Water Supplies.

In the following paragraphs extracts are given from the reports of the District Medical Officers of Health of improvements in the water supply in their area that have taken place during the year, and of unsatisfactory conditions now existing for which remedial measures are being undertaken or will have to be.

AUDLEY U.D.—“ During the year an extension of the main supply was carried half a mile to a group of 18 houses in the Newcastle-under-Lyme Rural District, just outside the boundary of this district.”

BIDDULPH U.D.—“ The provision of additional storage reservoirs has become a matter of extreme urgency, and unless some provision is made it will be impossible to guarantee a constant supply to the district during the summer months. The Council are giving this matter their serious consideration.

“ The Kidsgrove U.D.C. have taken during the year an average of 20,000 gallons per day.

“ A section of the adjoining district of Horton Parish of Leek R.D.C. continues to be supplied, and the Leek R.D.C. have an application before the Ministry for an extension to this supply.”

BROWNHILLS U.D.—“Two samples were taken from wells supplying five houses in Brook Lane, Walsall Wood, and in each case the water was found to be polluted and unfit for drinking purposes. The S.S.W. W.C. were approached with a view to extending their existing main and thereby making it possible for the owners of the houses mentioned to provide a constant public supply of water to each house. A satisfactory agreement was reached and the supply will be laid on.

“The other sample was taken from a well supplying 29, Boatman’s Lane. The water was found to be polluted, and a constant supply of water has now been laid on.”

CANNOCK U.D.—“The mains of the South Staffordshire Waterworks Co. are generally available throughout the district, and where this is so, internal supply to houses is practically universal, standpipes where these existed having been done away with.

“Extension of mains at Cannock Wood which took place at the end of the year will permit of 11 more houses there to be connected, leaving about 10 houses in this out-lying hamlet dependent on wells.

“The Council have also just entered into an agreement with the Water Co. for the supply of 6 houses at Leacroft. There remain about 14 houses in this area dependent on a Conduit Trust standpipe or wells.”

DARLASTON U.D.—“In most of the common yards one stand pipe supplies the needs of the tenants, thus giving rise to much inconvenience. Taps should be provided over each sink and in each separate wash-house. This is being gradually done as houses are being dealt with under the Housing Act. A considerable number has been fixed during the year.”

KIDSGROVE U.D.—“The area has two sources of Water supply. The Kidsgrove Ward is supplied by the Staffordshire Potteries Water Board. The Water is of good quality and the supply is fully maintained throughout the year,

“The Newchapel Ward.—The Water supply here has been augmented by connecting up to the mains of the Biddulph U.D.C. and obtaining water in bulk from that Authority. The water from this source supplies Long Lane, Stadmoreslow, Newchapel and Whitehill. The remaining parts of the Ward are supplied from the Council's own Water Works at Mow Cop. This water is obtained from wells 100 feet deep and is pumped into an open service reservoir high up on Mow Cop. The water supply in this Ward is now entirely satisfactory, a constant supply being maintained.

“An agreement has been entered into with the Congleton Rural District Council to take a supply of water from their reservoir when the proposed scheme is in operation. This will augment the supplies available.”

LEEK U.D.—“The Leek Water Supply is satisfactory in quality, the new reservoir at Kniveden, Mount Pleasant, has been completed, and steps are being taken to increase the supply.”

QUARRY BANK U.D.—“The long delayed extension of the public water main to supply the 17 isolated houses in Mears Coppice has at last been carried out, and with the exception of a few houses, all the properties have been connected to it.

“There are practically no houses in the district where main water is not now available.”

ROWLEY REGIS U.D.—“A sufficient and pure supply is obtained through the South Staffordshire Waterworks Company. The Oakham area which is situated at a high level is supplied by gravitation from an elevated tank, the water being pumped therein by the Waterworks Company. Only seven houses exist (at the bottom of Gipsy Lane) without a proper separate supply, two of which are supplied by a ‘well formation.’ Some difficulty exists at this spot and negotiations are pending with the Waterworks Company.

“Five other wells only exist in the rest of the district area.”

RUGELEY U.D.—“The District is supplied by the Council who purchase the water in bulk from the South Staffordshire Water Works Co. Thirty houses at the top of Springhill Terrace, the altitude of which is great, were supplied from a source at the Brereton Collieries. One sample of this supply was submitted to the County Analyst, who reported that the same was of good quality; and two samples were submitted to the County Bacteriologist, who reported that both samples contained sewage pollution. These thirty houses are now supplied by the Council's mains, the pressure having been increased.

Only four wells remain in the district.”

STAFFORD M.B.—“During the year samples of water were taken for the purpose of chemical and bacteriological examination from the pumps of the five remaining houses at Doxey which had not got the town water supply laid on. One sample was found to be unfit for use as drinking water, and steps were taken which resulted in the town supply being laid on to the house.”

UTTOXETER U.D.—“The Water Scheme from Quixhill provides the town with an abundant supply of excellent water. Twenty-five thousand gallons a day has been purchased by Uttoxeter Rural Council for supplying the Village of Rocester. Negotiations are being made for further supply of seven thousand and six thousand gallons per day to Stramshall and Bramshall respectively.

“The other sources of supply are Bramshall and Somersal which are still used in conjunction with Quixhill and give a minimum supply of 100,000 gallons a day. The water from the bore-hole is not now required and is left for manufacturing purposes.

“The village of Doveridge in the Sudbury Rural District is now taking a supply from the Urban District Council's main at Doveridge by Meter which conveys the bulk supply from the Springs at Somersall.”

WILLENHALL U.D.—“Most of the houses have the water supply laid on in the dwelling house but a small proportion in the older houses have the water from a stand pipe in the yard or in the wash-house outside.”

WOLSTANTON UNITED U.D.—“The whole of the district, with the exception of the hamlets of Blackbank and High Lane, and about 26 isolated houses scattered throughout the area, obtains its water from the Staffordshire Potteries Water Board, of which the Wolstanton United Urban District Council is a constituent authority. The water for Blackbank and High Lane is obtained from the Audley Urban District Council. A few of the 26 houses already alluded to, which are isolated in rural parts of the district and which come principally within the category of farm houses and small isolated cottages, derive their water supplies from wells. In the case of the others, water for drinking purposes has to be carried for a considerable distance.”

CANNOCK R.D.—“The houses at Acton Trussell and Hatherton are supplied from wells.

“During the year the Wolverhampton Corporation made an important extension of their Water Mains from Brewood to Horsebrook, Stretton, Lapley, and Wheaton Aston.

“In connection with the water supply to Wheaton Aston, 18 samples were submitted to the County Analyst and the Bacteriologist for their analysis and examination. The majority of the waters showed evidence of pollution.

“Up to the end of the year, water had been laid on from the Mains to 76 premises, and the work is proceeding.

“A sample of tap water was taken from the Girl's School at Penkridge, and one from a house at Boscomoor owing to a suspected case of dysentery.

“These were submitted to the County Bacteriologist, who reported favourably upon them.

“Owing to a complaint of tainted water a sample was taken from a tap at a house at Calf Heath and submitted to the Bacteriologist, who certified that it showed no evidence of recent sewage pollution.

“The piped supplies provided by the various Public Water Companies in the District were satisfactory in quantity.

“Altogether 33 samples of drinking water were submitted to the County Analyst and the Bacteriologist.

There are 3,582 houses in the area supplied with tap water and 1,379 supplied from wells.”

CHEADLE R.D.—“ No progress has been made towards improving the water supply to Hollington, Freehay or Boundary. The Local Authority has frequently had under consideration schemes for supplying these villages with wholesome water, but in each instance the cost has been found to be prohibitive.

“ *Caverswall Common.*—A scheme for the provision of an adequate water supply to Caverswall Common was prepared and submitted to the Ministry of Health for approval. The scheme was approved and a Grant towards the cost of same was obtained from the Un-employment Grants Committee.

The total length of water mains laid was approx. 3 miles and serves a very scattered populated district.

“ *Ostlers Lane, Cheddleton.*—Approx. 100 yards of 3” water main has been laid to serve the Highfields Building Estate, situate off Ostlers Lane.

“ *New Road, Nr. Cheddleton Vicarage.*—A water main has been constructed to serve a small building estate which is situate near the vicarage.

“ *Spicer Stone Estate, Leekbrook.*—This Estate is supplied by the Cheddleton Water Works, approx. 100 yards of new water main has been laid during the past year.

“ *Alton.*—An extension of approx. 200 yards of 3” main has been laid along Lime Kiln Lane, Alton. This main improves the supply to Tythe Barn, and supplies the new houses constructed along the above mentioned Road.

“ *Cheadle and Checkley.*—An extension of approx. 200 yards of 3” water main was constructed to supply existing houses, and houses recently built at Huntley.

“ *Dilhorne.*—A new head-gear has been constructed to the Boundary well.”

#### GNOSALL R.D.

“ *Forton Area.*—During the year a bore was sunk for water at the new housing site near Forton. The water was tested on more than one occasion and was found to be polluted and unfit for drinking purposes.

“The cause of this pollution was not evident from an examination of the surrounding area, and it was decided by the Council to abandon the site.

“The water from Forton Village and from the Bridge Cottages pump was examined and found to be pure and fit for drinking.”

LICHFIELD R.D.—“The parishes of Armitage and Longdon now have a public service supply, the water being furnished by the South Staffordshire Waterworks Co. at the request of your Council. The water supplied by this Company is satisfactory, both as regards quality and quantity, and no instance of contamination has been brought to my notice.”

MAYFIELD R.D.—“The principal sources of supply throughout the District are wells and stored rainwater.

“The only available supply at Calton is stored rainwater.

“The water supplies within the district have been constantly supervised during the year, and where necessary the wells have been periodically cleansed.

“Four new connections have been made to the Council’s mains during the year.

“Two samples of water have been submitted for analysis during the year, and both have been passed as suitable for drinking purposes.”

NEWCASTLE R.D.—“With regard to the supply to the Parish of Betley, the Nantwich Rural District Council have now obtained the necessary sanction for the carrying out of their important scheme of water-supply, and work has been commenced. It is hoped that the promised supply for Betley from this source will before very long be available.

“During the year a two inch main was taken half-a-mile to supply eighteen houses at Crackley, where the house-holders have had previously to carry their water a considerable distance. The source of supply is the main of the adjoining district of Audley.



“A two inch main is being carried about a mile from Whitmore Station (where there is a railway reservoir and pumping station) to Baldwin’s Gate and to a portion of the Parish of Chorlton, to supply about 25 houses. The cost is being borne by the Trustees of an Estate in the district.”

SEISDON R.D.—“Pattingham is still in want of a public supply. This matter has long been brought before your notice, but no scheme has been carried through yet. If there were one it would hasten building operations immensely.”

STAFFORD R.D.—“For the past twelve months the drinking water to these five cottages (Mill Cottages, Great Haywood) has been grossly polluted with sewage contamination, and three cases of infectious diseases have occurred in separate cottages, viz., one case of scarlet fever, and two cases of diphtheria. This pump has now been closed as being dangerous for drinking.

“In November a well was discovered in the cellar of one of these cottages, which was said to be spring water. A sample of this water was taken and submitted to the County Bacteriologist and the County Analyst, and showed recent sewage pollution. The well was cleansed, and further samples gave similar results. A further cleansing and analysis is to take place. It is hoped that a supply of pure drinking water may be accorded to these cottages, more especially as a pure supply passes through the village in pipes from the Stafford Borough water works.

“There are some 1,575 wells within the area. Some 20 samples of well water were taken, and generally found satisfactory. However, as a result of the analysis of the well water at the Lock Farm, Tixall, the owner laid on tap water, half a mile extension from the main.”

STONE R.D.—The Medical Officer of Health reports that the water supply of Eccleshall still remains unsatisfactory.

TAMWORTH R.D.—“A good supply was maintained throughout the district, with the exception of Mile Oak, which is at the extremity of a large area fed by a small main, and consequently, at periods when there is a big draw, pressure is reduced.”

TUTBURY R.D.—“In quantity the supply is deficient in dry weather in parts of the parish of Hanbury.”

UTTOXETER R.D.—“The village of Abbots Bromley obtains its water from shallow wells, covered in. The supply is good, but liable to surface pollution.

“The water supply of Rocester is satisfactory, having a maximum supply of 25,000 gallons per day from the Uttoxeter Urban District Council. The scheme is complete and will be beneficial to the inhabitants.

“Arrangements have been made for a supply of water to Stramshall and Bramshall from the Uttoxeter Urban District Council.”

### **Rivers Pollution Prevention.**

A Hydrographical Survey of the River Trent was instituted by the Standing Committee on River Pollution of the Ministry of Agriculture and Fisheries in 1923, and has been continued yearly since that date.

In the accompanying Table the percentage of oxygen saturation in the streams at certain fixed points is shown. The extent of the pollution can be judged when it is remembered that a percentage saturation of oxygen below 65 means that the stream is too polluted to support fish life. On reference to the Table it will be noticed that the heavy pollution of the streams that is now taking place in the industrial areas is observed for a considerable distance down stream. Unfortunately, as the streams in the industrial areas are so small, the degree of purification of effluents before discharge into them has to be much greater than if they found their way into a large river and, consequently, the expense is correspondingly greater. In last year's Report a summary of the work undertaken by the various Sanitary Authorities during the year was given, and this year similar details are included in the succeeding paragraphs.

## RIVER TRENT.

LOCATION.	PERCENTAGE OF OXYGEN SATURATION.																	
	1923	1924				1925		1926		1927		1928		1929		1930		1931
	July	May.	June.	July.	Sept.	July.	Sept.	July.	Sept.	July.	Sept.	July.	Sept.	July.	Sept.	July.	Sept.	July.
River Trent at Strongford Bridge ... ..	38	28	33	29	47	25	35	41	45	53.5	40.5	6.5	30.0	16.5	6.0	19.0	26.0	50.0
River Trent at Darlaston above Stone	48	52	50	29	49	29	30	21	29	41	34.5	17.0	14.0	26.0	19.0	28.5	37.0	39.5
River Trent at Aston, below Stone ... ..	31	47	50	34	43	37	30	24	29	44.5	43	29.5	50.5	16.5	25.0	13.5	34.0	36.5
River Trent at Great Haywood Mill, before receiving River Sow ... ..	43	52	42	37	47	38	12	21	40	33.5	50	14.0	41.5	13.5	31.5	33.5	39.0	50.5
River Trent at Great Haywood Mill, below Weir ... ..	...	65	57	60	61	48	33	40	43	48	60	46.5	51.0	49.5	56.5	60.0	62.0	57.5
River Sow at G.N. Railway Bridge ... ..	44	80	73	58	71	66	71	40	57	52	68.5	63.0	59.5	79	62	69.5	53.5	64.0
River Sow at Brick Bridge ... ..	63	107	93	59	73	102	89	33	75	36	67.5	88.5	67.5	66	52	54.5	59.5	58.0
River Penk at Radford ... ..	49	78	65	60	66	115	86	56	82	26.5	34.5	66.5	64.0	91	73	81.0	59.5	74.0
River Sow at St. Thomas' ... ..	44	88	74	53	69	69	56	22	65	40	52.5	57.5	32.5	44	42	49.5	42.5	66.5
River Trent at Weetman's Bridge, near Little Haywood ...	49	68	53	43	50	38	44	27	34	27.5	51	35.0	48.0	38.5	29.5	51.5	49.0	51.0
River Trent at High Bridge below Rugeley Sewage Works	64	74	69	61	52	53	46	31	48	35.5	51	45.5	42.0	36.5	29.0	57.5	53.0	57.5
River Trent at Wychnor Bridge above confluence with River Tame ... ..	60	89	71	81	85	99	81	70	76	62	78.5	80.5	80.5	62	59.0	79.0	75.5	67.0
River Tame at Walsall Road Bridge, Perry Barr before entering Birmingham ...	28	44	48	32	37	13	11	21	39	37	31.5	19.0	26.0	25.5	42.5	50.5	30.0	5.0
River Tame at Chetwynd Bridge above confluence with River Trent	50	64	70	60	45	44	49	37	46	45	53	39.0	47.5	39	36.5	50.0	51.5	61.0
River Trent at Walton Bridge below junction with River Tame	...	65	72	74	56	42	39	45	53	56.5	67	56.5	57.5	47	45.5	61.0	53.5	57.0
River Trent at Burton Bridge (North Boundary of Burton-on-Trent)	58	70	67	73	65	77	57	54	62	46.5	71.5	66.5	56.5	48	52.5	63.5	54.0	58.0
River Dove at Monks' Bridge above confluence with River Trent ... ..	69	106	99	103	84	100	103	83	100	87.5	88.5	104	105	84	78.5	104.0	77.5	87.0
River Trent at Willington Bridge below confluence with River Dove ... ..	...	93	74	82	77	82	72	58	63	62	78.5	88.5	73.5	76	62	84.0	65.0	67.5

## RIVER MERSEY WATERSHED.

AUDLEY U.D.—“As a result of the carrying out of part of the Council's scheme for sewerage and sewage disposal, pollution of streams was checked at several points. The outfalls mentioned below were connected to sewers, and the sewage taken thereby to the site of the disposal works to be installed at Alsager Road.

1. At Wall Farm (West of Audley Village).
2. Below Chapel Street, Bignall End.
3. Below Albert Street, Bignall End.
4. Below Hope Street, Bignall End.
5. Below Diglake Street, Bignall End.
6. Below Brook Cottages, Alsager Road.

“Pollution still takes place at point 1 from houses at Wereton, and at point 6 from the three houses on the north side of the brook. Conditions at the remaining sixteen outfalls on this side of the district are unchanged.

“In connection with the sewerage scheme mentioned in the preceding section, four miles of new sewers (partly on the combined and partly on the separate system) were laid in the Audley village and Bignall End areas. This system deals with the six outfalls specified above. In these areas approximately 314 conversions to the water carriage system were effected.

“During the year six acres of land were acquired at Alsager Road, and the work of excavation and levelling this site for the installation of a disposal works was started.

“Sewage conveyed to this site by the new sewers was dealt with at first by broad irrigation, and later by the additional installation of a settling tank.

“There is no change to record in the methods of disposal on the Talke and Butt Lane side of the district.”

BIDDULPH U.D.—“The County Inspector has investigated certain complaints of pollution of the Biddulph Brook from the Orthopædic Hospital belonging to the County Council of Lancashire, the result of which is that the Lancashire County Council are preparing a scheme to obviate further pollution.

“The condition of the sewage works at Marsh Green is satisfactory. The new bacteria bed has now had 12 months work and has considerably relieved the overburden on the original beds and the effluent is good.”

NEWCASTLE R.D.—“The question of the pollution of the brook at Onneley (referred to in previous Reports), has again engaged a good deal of attention during the year. The cause of complaint arises in premises within Drayton Rural District (Salop), adjoining the boundary of this district. The Drayton Council received reports from their Inspector during the year and made suggestions to the owner of the premises concerned, but, so far as is known, did not serve Statutory Notice.

“The Newcastle Rural District Council have been in consultation with the Staffordshire County Council, and it was suggested by the latter that all suspicion of pollution from within this area should be removed. To this end each of the farms concerned within Newcastle Rural District has recently had a cesspool installed, and it can now be said with certainty that no pollution is reaching the brook from premises within this district. The position having been so far cleared, it is understood that the County Council have taken the matter up with the Salop County Council.”

#### RIVER TRENT WATERSHED.

LEEK U.D.—“The comprehensive scheme prepared by the Surveyor for sewerage and sewage disposal capable of dealing with the whole of the present area and certain adjoining areas (mentioned in last year's report) received the sanction of the Ministry of Health, and is now in course of construction.”

CHEADLE R.D.—“The Sanitary Authority has not undertaken the construction of any large new sewage works or sewerage systems during the year, but continue their policy of making additions to sewerage systems in such manner that they will ultimately form part of complete schemes. The Blythe Bridge and the Ashbank sewage disposal works were completed during the year and are working satisfactorily.

“The following details of extensions to sewerage systems have been supplied by your sanitary surveyor.

“*Ipstones.*—A small extension of approx. 150 yards of 9 inch and 12 inch sewer with manholes has been laid at Back Lane.

*Cheadle.*—A small extension of approx. 25 yards 9 inch sewer has been laid at Springbank. An extension of 150 yards 9 inch sewer with manholes has been laid at Ashbourne Road. An extension of 9 inch sewer has been laid from Mill Road to the Isolation Hospital, approx. 870 yards.

*Kingsley.*—Several extensions to the sewers in this parish have been made, and a total length of 120 yards of new sewers with manholes have been laid.

*Forsbrook and Blythe Bridge.*—The sewage scheme for this area has been completed. A further extension of 9 inch sewer, approx. 130 yards, with manholes, has been laid in New Road, off Stallington Lane.

*Ashbank, Werrington.*—The drainage of the lower section of Ashbank is dealt with at the new disposal works. All the houses along Ashbank have been connected to the new outfall sewer, so abating what had become a serious nuisance.

*Tean.*—Approximately 60 yards of 9 inch stoneware sewer has been laid along Old Road. The small sewage disposal works, serving the Council's Housing Estate has been overhauled and is now working satisfactorily."

NEWCASTLE M.B.—I regret to report that the streams passing through this district remain grossly polluted and although this matter has been under consideration for many years the difficulties encountered have not yet been solved. The issue, however, has been narrowed and two schemes are being considered, the first is to take all the sewage down to the Strongford Works of Stoke Corporation and treat it, and the second is for the sewage of the district to be dealt with at the Newcastle Works which will require reconstruction. The report of the independent engineer who was called in to advise on which of these schemes should be adopted was in favour of the sewage being dealt with at Strongford and it was hoped that this advice would be accepted, but apparently it is the desire of the Newcastle Corporation to review these two schemes themselves, with the aid of their own adviser, before coming to a decision, and so it would appear that there is little prospect in the immediate future of seeing any substantial improvement in the condition of the Lyme Brook.

LEEK R.D.—During the year a Ministry of Health Inquiry was held as the result of a representation by an outside body under the Local Government Act of 1929 with regard to drainage of Baddeley Green, in the Parish of Norton-in-the-Moors.

A firm of engineers are preparing a comprehensive scheme for this area, which, however, is likely to prove expensive, the estimated cost being about £28,000.

CITY OF STOKE-ON-TRENT.—Good progress is being made with the construction of the works at Strongford in substitution of those existing at Stoke and Fenton.

The construction of the Eastern Valley Trunk Sewer is nearing completion.

STONE R.D.

“*Barlaston.*—A sewage scheme for this village is urgently needed.”

GNOSALL R.D.—“The Doley Brook at Gnosall has not been kept as well cleaned out as it should have been in the meadows below Gnosall, and as a result a considerable amount of flooding took place and some of the flood water found its way into the Sewerage system, thus throwing extra work on the pumps at the Sewage Works.

“The matter was referred to the County Council and they have taken the necessary action to have the matter put right.

“At Norbury some trouble has arisen owing to the tank not having been cleaned out so regularly as before. As a result raw sewage is being distributed on the field below the tank.

“This matter is now being gone into by the Council and the Landowner concerned. A septic tank and a filter bed is required.

“There have been a few cases where ditches have been polluted by waste water—notably at Islington. In every case the matter was taken up and those responsible asked to have it put right.

“At Islington, however, although the ditch was cleared out, something further requires to be done to prevent a recurrence of the pollution. At present the waste water from a row of cottages and sewage matter from two other houses enter a ditch which is, for part of its course, open. A septic tank and filter bed should be installed to prevent further pollution of the ditch and stream.”

STAFFORD M.B.—“The watercourses in the Borough have been kept under observation during the year, and the improvement with regard to pollution by oily substances noticed last year appears to be continued. A certain amount of pollution is unavoidable owing to the surface washings of the streets and other places finding their way into the streams.

“As in previous years analyses of water from the Sowe and Penk were made for the Standing Committee on Rivers Pollution in July and September.

“During the latter part of the year a survey of the connections between the drains and the sewers was commenced; the Borough Engineer being of opinion that some relief to the foul sewers could be obtained owing to a number of premises having their surface water drains wrongly connected.

“There being very little fall along the course of most of the main sewers, there is a tendency for them to get silted up in course of time, necessitating considerable expense in cleansing.”

UTTOXETER U.D.—“The present system of sewage disposal is being used to its utmost capacity; privies and ash pits are still in existence, which urgently require converting into W.C's.

“The sewage from the new houses erected and the conversion of privies to W.C's has increased the volume of sewage beyond the capacity of the present sewage works, but owing to the demand for economy the contemplated scheme of extension has not progressed.”

“A scheme for new sewage plant is still under consideration.”



## UTTOXETER R.D.

"*Rocester.*—The village of Rocester has a good system of sewerage but the disposal works are inadequate."

WOLVERHAMPTON COUNTY BOROUGH.—The construction of the new works mentioned in my Annual Report for 1929 is making satisfactory progress.

CANNOCK U.D.—Satisfactory progress is being made with the extension of the main outfall works, also the new works for Heath Hayes.

CANNOCK R.D.—"The work in connection with the scheme of sewerage and Sewage Disposal Works for the village of Penkridge was completed by the end of the year.

"This Scheme is on the "Separate" system and has two pumping stations, with Sedimentation Tanks and Bacterial Filter Beds.

"The work of re-draining premises and coupling up to the new sewers was commenced.

"The work of re-constructing and improving the Brewood Sewage Works and the Joint Sewage Works at Littlewood for the parishes of Cheslyn Hay and Great Wyrley was completed.

"The effluent from these works has now greatly improved."

LICHFIELD R.D.—The Surveyor states in the Medical Officer's Annual Report as follows:—

"*Streethay.*—These works still produce a fairly satisfactory effluent, but it has been necessary to renew the jets on the distributor arms owing to their corroding and becoming useless. These jets are on fixed arms, and this is the second time within five years that these jets have had to be renewed, which rather points to a defect in the system. The outfall sewer at these works has again been broken in in a fresh place by carting over it, and of course, has been repaired.

"*Watling Street.*—The tanks at these works produce a reasonably good tank effluent, but considerable trouble has been experienced in the past year with the filters, and the trouble has been due to the distributors and the dosing syphon. In the first place the distributor arms

became badly corroded—such that the holes in them were much too large—and the supporting bearings on the centre column became badly worn so that the distributor failed to revolve periodically. New arms were fitted and new bearings have also been fitted, but owing to the old pattern of these distributors considerable delay was experienced in obtaining the necessary bearings, and as a result the effluent from the works has been very poor for some months. Repairs have also been effected on the dosing syphon, and it is hoped that the filters will now soon regain a proper condition for producing a satisfactory effluent. At these works a sample taken in January gave bad results, and in view of the repairs to the filters no samples were taken in April but will be taken in the next few weeks.

*“Armitage.*—The sewage disposal works at the north outfall are working satisfactorily but trouble has been experienced with the dosing syphon of the distributors. These defects have been remedied, and the Analyst’s report at the last sampling in April gives an oxygen absorbed figure of .93 parts per 100,000.

“At the south outfall there is no change from last year, but preliminary investigations are being made for a new sewerage and sewage disposal scheme for Armitage and Handsacre, and it is anticipated that a scheme will be presented to the Council within a few months’ time.

*“Brereton.*—The Hazel Slade works are working as efficiently as can be expected when it is realised that they are overloaded above their capacity by nearly 50%. The Analyst’s report on these works gives a very high oxygen absorbed figure of 5.46 parts per 100,000 which, of course, indicates that sufficient treatment is not being given to this sewage. This matter was reported to your Health Committee some months ago when it was decided to defer consideration of an extension until the alteration of boundaries has been settled with the County Council. There is no doubt as to the overloading at these works as careful gaugings with the Lea Recorder were taken to obtain the flow of sewage to the works, which records are, of course, available.

“ At Brindley Village considerable trouble has been experienced with the sewage distributors on the filters, and the distributor on the first filter is now completely useless, but as the flow of sewage to the works is so very small compared with the capacity of the works the second filter has been doing the work of purification during the past year quite satisfactorily, apart from periodical defects in the distributor. Both the distributors are very badly corroded, but here again, it was not thought desirable to enter into large expenses in repairing the works until the boundaries question is settled.

“ No further progress has been made with the sewage disposal of Brereton Village as the scheme submitted to the Ministry of Health has been deferred, apparently for reasons of economy, by the Ministry themselves, although the conditions at the existing outfall are still as bad as they were when the scheme was commenced, which has been submitted to the Ministry. I am of the opinion that this scheme should have been proceeded with as the conditions at present existing are liable at any time to cause a serious nuisance.

“ *Colton, Kings Bromley and Hamstall Ridware.*—There is no change to report in the conditions existing at these three villages. At Kings Bromley the main sewer is not altogether satisfactory as during times of storm considerable flooding back occurs in parts of the village, but in view of the call for economy, and also taking into consideration that any scheme for sewage disposal there would be necessarily very expensive and would entail pumping, the matter has been deferred for the time being.

“ *Yoxall.*—The two outfalls at Yoxall have continued to give satisfactory results.

“ *Alrewas.*—A start has been made on the laying of new sewers and the construction of pumping stations and sewage disposal works for Alrewas, and it is hoped that these will be completed by the end of 1932.

“ *Shenstone.*—There is nothing to report concerning Shenstone sewage disposal works except that the outfall sewer has on two or three occasions given trouble due to flooding back and causing an outfall of sewage at the

house called "Fairview." The sewer itself has been carefully examined and brushed out, and there is no stoppage in the sewer itself to cause this flooding back, so that I am of the opinion that the greater part of the trouble is due to the flat gradient of the sewer and the larger proportion of surface water entering it during storm times than was the case when the sewer was laid.

*"Little Aston, Streetly & Shenstone Wood End.*—The whole of the works for sewerage the remaining parts of Streetly, Little Aston and Shenstone Wood End have been completed in the past year and all are working satisfactorily. The pumping station at Shenstone Wood End has been put in operation, and connections to the sewers at this point are being made at the present time. The pumps work very satisfactorily, and the sewage disposal works at Forge Lane are producing an exceptionally good effluent which is no doubt helped by the fact that larger quantities of water are used in this district by the residents, and the district is a really high-class residential district. The oxygen absorbed figure as given by the County Analyst for these works is .53 parts per 100,000.

*"Stonnall and Lynn.*—The new works at Lynn, which deal with the sewage from Upper Stonnall and Lynn, are now working satisfactorily, although there are still a few houses to be connected to the new sewer. The Analyst's report on the last Quarter gives an oxygen absorbed figure of 2.09 parts per 100,000, which is reasonable considering that the works are brand new and have not settled down to their work properly."

TUTBURY R.D.—"A sewerage scheme is being carried out at Barton-under-Needwood at a cost of £9,420."

#### RIVER TAME.

OLDBURY U.D. (Worcestershire).—An Engineer has been engaged to prepare a scheme for a new works, but the matter is held in abeyance temporarily owing to the present financial stringency.

BROWNHILLS U.D.—“During the year Mr. Robert Green, M.I.C.E., was retained by the Council to prepare a Scheme for Sewerage and Sewage Disposal for Norton Canes. The preparation for the Scheme was well advanced when the National Economy Campaign was inaugurated. The Council considered the matter, and owing to the large charge to the rates, the Scheme was postponed.

“It is to be hoped that the matter will be placed in the forefront of sanitary matters to be dealt with at the earliest possible date. Improvement in this part of the district awaits the completion of the sewerage scheme. Until then conditions will continue unsatisfactory and unwholesome.

“At the Sewage Farm the new bacteria beds have been completed, and one Distributor fixed. The other Distributor is on order.”

WALSALL R.D.—“Reconstruction of Aldridge Disposal Works and provision of new hydraulic main commenced August, 1931.

“Anchor Road, Aldridge.—Sewer extended for 30 yards.”

SEDGLEY U.D.—The Surveyor states in the Medical Officer's Annual Report as follows:—

“Considerable work has been done during the year by way of connecting properties to the sewerage system and the number of houses connected is 240.

“With regard to new sewers no actual new sewers have been carried out departmentally during the year, but a sewer is proposed in Bath Street for the unsewered portion of the Sedgley area, and a portion of this will be drained into Coseley after arrangements can be reached with the neighbouring Authority.

“The three sets of works under the maintenance of the Public Works Department are still continuing to give every satisfaction, the effluent being of a very high standard according to the reports of the Rivers Boards Analysts. The sludge difficulty is practically non-existent owing to the farmers taking nearly all the sludge made.”

Other comments will be found in the River Severn Watershed section, which follows.

DUDLEY C.B. (Worcestershire).—The new works mentioned in my last year's report for the Priory Estate are completed and house connections are being made. In the design of these works special provision was made for dealing with the drainage of the Dudley Guest Hospital to abate the gross pollution of the Adden Brook, and it is to be regretted that the hospital drainage system has still not yet been connected with the works. The following comment with reference to this matter is made by the Surveyor in the Annual Report of the Medical Officer of Health of Tipton Urban District:—

“Again this year I am compelled to refer to the foul condition of Adden Brook, which is still acting as a sewer for the Dudley Guest Hospital, although the new disposal works built by Dudley Corporation have been completed and put in operation for 12 months. The effects of this pollution are very apparent in the open portions of the brook course where it passes through the district and in my opinion, pressure should be brought to bear upon the Dudley Corporation to put an end to this menace to the public Health of Tipton. During the year Dudley have piped in their portion of this brook-course and so hidden any evidence within their own district of this gross pollution.”

SHORT HEATH U.D.—“Up to the present time the carrying capacity of the sewers has been sufficient to meet the requirements of the district, except perhaps in times of severe storms. It is important, however, for the Council to look to the future and to consider whether all the sewers and sewer tanks are of sufficient capacity to carry the additional load that is likely to be thrown upon them.”

BILSTON U.D.—“The greater part of the district is sewered, the only exception being the outlying portions of Bradley and Ettingshall and a small area in the High Town ward. These areas consist chiefly of waste land and contain works and a small number of dwellings. The provision of sewers for these areas could only be carried out at an enormous cost.

" An agreement has been entered into with the Urban District Council of Coseley providing for the purification at the Lunt Works of the drainage from the Northern area of Coseley comprising some 2,500 houses and the necessary extensions of the Sewage Disposal Works has been completed.

" During 1930 sewerage extensions were carried out at the Great Bridge Road and Cross Street areas and at the lower portion of Bunkers Hill. The provision of drainage to the houses in these areas was completed during the year under review.

" In all cases where access to a sewer is possible houses are properly drained.

" The sewage disposal works situated at the Lunt, Bilston, were first constructed in 1905 to deal with a daily dry weather flow of 517,000 gallons. The works were extended and improved to treat a daily dry weather flow of 900,000 in 1924, when detritus tanks and two storm water tanks were provided.

" Two additional precipitation tanks, four circular percolating filters and two humus tanks have recently been added and the works are now capable of dealing with a daily dry weather flow of 1,379,000 gallons.

" The system of disposal is chemical precipitation followed by continuous filtration. The sludge from all the tanks is gravitated to a pump well from whence it is pumped to lagoons.

" New sewers, storm overflows and duplication of old sewers have also been provided.

" Five sewage pumping stations have been provided to deal with the drainage from low lying areas in the District.

" The Council is a constituent member of the Tame Basin Joint Committee.

" The Council also undertake the purification of the drainage from certain areas of the Darlaston and Willenhall Urban Districts and Wolverhampton.

“The works continue to be maintained in an excellent manner and to produce effluent of good quality discharged into the Bilston Brook, a tributary of the River Tame.”

COSELEY U.D.—At the Ettingshall Road Works certain replacements were made on representation from the County Council to enable these works to better deal with the sewage until such time as they are abolished and connected to the sewer discharging at the Bilston Sewage Works.

DARLASTON U.D.—The capacity of the filters is being overtaxed owing to the D.W.F. having exceeded the maximum quantity allowed for. Provision will have to be made in the near future to deal with this increased flow, and so avoid improperly treated sewage causing contaminations of the brook.”

TIPTON U.D.—The Surveyor states in the Medical Officer's Annual Report:—

“The scheme for the utilisation of the old storm water filters for the distribution of sewage has been completed and three new circular distributors and beds have been constructed and so relieved the over-loading that was taking place on the existing beds. The whole of this work has been carried out by direct labour under the supervision of the Manager and a direct benefit has already been apparent in the percentage of purification obtained.

“The works are now capable of dealing with the anticipated development of the remaining vacant ground in the Urban District, and no further expenditure should be required at these works for many years to come.

“The removal of dry sludge has been maintained at the same rate as the previous year, but is even now not sufficient to prevent the accumulation of surplus sludge at the works, and experiments are being carried out for the digestion of the sludge in order to reduce the volume. Further details of the work will be given in the next report.



WEDNESFIELD U.D.—The new works mentioned in my annual report for last year as being under construction have now been completed and are working satisfactorily, and as a result there is a very marked improvement in the condition of the Waddens Brook.

WEST BROMWICH C.B.—The Borough Surveyor reports as follows in the Report of the Medical Officer of Health:—

“The Council has decided to construct the necessary sewers in the Perry Barr portion of the Borough at an estimated cost of £37,000. This work will take about two years to carry out.

“They have also agreed to increase the efficiency of the outfall works at Friar Park and construct outfall works at Ray Hall to deal with the excess sewerage at an estimated cost £112,000. These works will be commenced in two or three months' time and will occupy about three years in construction. When they are completed it is hoped that the sewerage of the Borough will be satisfactorily treated for some considerable period.”

ROWLEY REGIS U.D.—“The Oakham and Portway areas have now been sewered and 1932 will see the elimination of practically all the privies.”

#### RIVER SEVERN WATERSHED.

SEISDON R.D.—“*Codsall and Wrottesley (part of) Sewerage.*—During the past year work on the above Sewerage Scheme has been progressing satisfactorily, and it is thought that the Scheme will be completed during the coming year.

“*Wombourn Sewerage.*—In the year under review a Scheme for the sewerage of the Village of Wombourn was prepared and submitted to the Ministry of Health whose Inspector held a Local Inquiry thereon. Owing, however, to the economic condition of the Country, and the very material curtailment of the anticipated Unemployment Grant in aid of the Scheme further progress with it has been postponed for the present.

“The following sewer extensions have been carried out during the past year at:—

White Hill, Kinver; Hyde Lane, Kinver; Stone Lane, Upper Penn; Near Stag Inn, Penn Common.

“Upper Penn; Muchall Road, Upper Penn; Spring Hill, Lower Penn.

The following drainage has been carried out:—

Perton Council Houses—Alteration to drainage system. Lower Penn Sewerage and Sewerage Disposal Scheme was completed.”

SEDGLEY U.D.—“The works of drainage and sewerage embrace the commencement of the scheme for Gospel End and Gibbon’s Hill, this estimated to cost about £35,000. At present the work is about one quarter finished and is proceeding very rapidly. This will sewer a large proportion of the area which is at present served by cesspits, and should effect considerable annual saving in maintenance. A set of works on the latest system is proposed as part of this scheme on a field on the south side of the Penn Brook.”

QUARRY BANK U.D.—“Two small sewer extensions have been made during the year, one in Evers Street, and one in Merry Hill.

“In a proposed new Road off Thorns Road, a number of new houses have been erected which only have cess-pools. The Council are endeavouring to come to some arrangement with the various owners to contribute to the cost of laying a sewer, and it is hoped this will be laid at an early date.

“There are however still some 70 houses in your district where no foul water sewer is available, the principal areas being Park Walk, Dunn’s Bank, Mears Coppice, Birch Coppice and parts of Maughan Street, Park Road and Bower Lane.

“I think the Council should give this matter very serious consideration at an early date.

“As stated in my last Report pollution of the Black Brook still takes place from the Birch Coppice houses, there being—as mentioned above, no deep sewer to serve this part of your district.

“Pollution of the River Stour before it reaches your district appears to be somewhat less than in previous years.”

## MINISTRY OF HEALTH INQUIRIES.

The following Inquiries were held by the Ministry of Health during the year 1931:—

District.	Date of Inquiry.	Amount of Loan.	Purpose.
Tutbury R.D. ... ..	6.1.31. ...	£9,750	For works of sewerage and sewage disposal for the contributory place of Barton-under-Needwood.
Tutbury R.D. ... ..	7.1.31. ...	£19,080	For works of sewerage and sewage disposal for the contributory place of Branston.
Cannock U.D. ... ..	10.2.31. ...	£108,500	For works of sewerage and sewage disposal
Walsall R.D. ... ..	10.4.31. ...	£14,000	For works of sewerage and sewage disposal for the contributory place of Aldridge.
Leek U.D. ... ..	11.8.31. ...	£86,000	For works of sewerage and sewage disposal.
Sedgley U.D. ... ..	28.8.31. ...		Compulsory acquisition of land for the purpose of sewage disposal.
Seisdon R.D. ... ..	22.9.31. ...	£31,204	For works of sewerage and sewage disposal for the contributory place of Wombourne.
Lichfield R.D. ... ..	8.10.31. ...	£900	For the purchase of land for purposes of sewerage and sewage disposal for the contributory place of Armitage.
Cannock U.D. ... ..	8.10.31. ...	£280	For the purchase of land adjoining Green Heath Road, Pye Green, Hednesford, for the purpose of refuse disposal.
Cannock U.D. ... ..	25.11.31. ...	£18,635	For works of sewerage and sewage disposal.
Leek R.D. ... ..	1.12.31. ...		L.G.A. 1929 Sec. 57 (3). Complaint to the Ministry of Health that the Rural District Council of Leek had made default in providing part of the contributory place of Norton-in-the-Moors in the Leek Rural District of Leek, viz., Baddeley Green, with a sewer.
Darlaston U.D. ... ..	31.12.31. ...	£5,550	For works of surface water drainage.

## CONTRIBUTIONS TO DISTRICT COUNCILS FOR WATER AND SEWAGE DISPOSAL SCHEMES.

In last year's report the principles governing contributions towards these schemes were set out in full. During the year applications in respect of twenty schemes have been under consideration, and in ten cases it was agreed to make a contribution. The applications in respect of eight schemes were refused, and in two cases consideration was deferred. In each instance the conditions require that a similar contribution should be given by the District Council in order that the full cost should not fall upon the Parish concerned, and at the end of the financial year the question should be re-considered.

The schemes for which contributions were granted were all for sewerage and sewage disposal, as follows:—

### **Sanitary District and Scheme.**

Audley U.D.  
Lichfield R.D.—Alrewas  
                            Burntwood  
                            Hammerwich  
                            Stonnall and Little Aston & Lynn  
Seisdon R.D.—Codsall  
                            Lower Penn  
Tutbury R.D.—Barton-under-Needwood  
                            Branstone  
Walsall R.D.—Aldridge

### **Housing.**

The Ministry of Health do not desire details of the new houses erected within the county or the results of inspections by Local Authorities to be included in my Report, as full details are given in those of the District Medical Officers of Health, but require only such information as relates to the housing activities of the County Council, i.e. the work under the Housing (Rural Workers) Act, 1926, the Housing Act, 1930, and the Housing (Rural Authorities) Act, 1931.

*Housing (Rural Workers) Act, 1926.*—Under this Act contributions can be given by the County Council for the re-conditioning of old houses in rural areas, and for the conversion into dwellings of buildings not previously used for that purpose. During the year grants were given in six instances, affecting seven houses, and three applications for assistance were refused. The Rural Districts and Parishes concerned will be found in the following table:—

Rural District.	Parish.	No. of Houses.	Amount of Grant.
Seisdon ... ..	Wombourne ... ..	2 ... ..	£140
Stafford ... ..	Ranton ... ..	2 ... ..	£200
	Colwich ... ..	2 ... ..	£150
Stone ... ..	Eccleshall ... ..	1 ... ..	£100

*Housing Act, 1930.*—In last year's Report reference was made to the duties thrown upon County Councils with respect to houses in Rural Areas under the Housing Act, 1930. All the Rural District Councils have now furnished the County Council with information as to their housing needs for the next five years, and representatives from those bodies have attended a conference convened by the Public Health Committee in Stafford, when the replies to the questionnaire were considered. Owing to a certain lack of uniformity in the information given, it was decided to communicate further with those concerned, and then decide as to the need for a further conference with the Rural District Councils.

*Housing (Rural Authorities) Act, 1931.*—This Act which was only in force for a few months, provides a fund from which grants can be given to Rural District Councils for houses for rural workers. Applications for such assistance were sent to the County Council for consideration, who forwarded them to the Ministry of Health. I append a statement showing from which bodies applications were received, together with the decisions of the Ministry of Health.

*Housing.*

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Rural District Council	Parish.	No. of Applications.	No. granted by Ministry.
Seisdon ...	Bobbington ...	6	20
	Enville ...	6	
	Lower Penn ...	6	
	Swindon ...	15	
	Trysull & Seisdon ...	6	
	Wrottesley ...	6	
		— 45	
Stafford ...	Haughton ...	4	8
	Ingestre ...	2	
	Ranton ...	2	
	Salt and Enson ...	2	
	Seighford ...	6	
	Stowe ...	6	
		— 22	
Tamworth...	Clifton Campville ...	6	8
	Croxall & Edingale	12	
	Harlaston ...	6	
		— 24	
Tutbury ...	Anslow ...	6	8
	Branstone ...	6	
	Hanbury ...	6	
	Rolleston ...	6	
	Tatenhill ...	2	
	Tutbury ...	16	
		— 42	
Uttoxeter ...	Abbots Bromley ...	6	12
	Leigh ...	10	
	Marchington Woodlands ...	2	
	Newborough ...	4	
	Uttoxeter ...	10	
		— 32	

A complaint was received from the Cotton Parish Council alleging that the Cheadle Rural District Council had failed to exercise its powers under the Housing Acts. As a result, an inspection of the parish was made by the County Sanitary Inspector from which it appeared that at least two houses were required. The facts disclosed by the report were then sent to the Rural District Council for consideration, and they resolved that, in view of the financial crisis, the question of building further houses should be deferred for six months. This the County Council have agreed to, and the matter will be brought forward again.

## Inspection and Supervision of Food.

### (a) MILK SUPPLY.

#### (1) Chemical Examination.

During the year 1,197 samples of ordinary milk were chemically examined; 110 of these were not satisfactory: prosecutions were instituted in 21 (27 samples) cases, 17 were sustained and 3 cases were withdrawn on payment of costs, 1 dismissed. In 49 instances cautions were issued in respect of 59 unsatisfactory samples.

56 samples of specially designated milk were chemically examined and were all satisfactory, except one sample of pasteurised milk which was proved to be deficient in fat. The producer was cautioned.

The following samples were examined:—17 sterilised milk, 8 condensed milk, 3 skimmed milk, 1 separated and 1 dried milk. On chemical examination these were all found to be satisfactory except the sample of sterilised milk which was deficient in fat. The producer was cautioned.

#### (2) Tuberculosis.

Investigations were carried out in 106 cases where tubercle bacilli were found in samples taken from ordinary milk as it was being delivered to the consumer in the county. Under Section 4 of the Milk and Dairies Act, 1915, a veterinary inspection was made of the cows on the farms where the milk was produced; 58 cows were slaughtered under the Tuberculosis Order. Veterinary surgeons reported that in 36 instances the disease was advanced and in 22 not advanced. In two cases the cows died before the result was known and in 10 instances the animals were disposed of by the farmers for slaughter. In addition, 16 samples were received of ordinary milk from sanitary inspectors in the county and in ten instances they were found to be tuberculous. A veterinary inspection under the Milk and Dairies Act showed that 4 cows were tuberculous and they were slaughtered under the Tuberculosis Order: 3 of them were in an advanced stage of the disease.

From the examination of the samples of specially designated milk obtained by the Foods and Drugs Inspectors when taking monthly samples, it was found that 19 were tuberculous. The usual veterinary inspection followed, in 9 cases with negative results. In the remainder 8 cows were slaughtered under the Tuberculosis Order, of which 2 were in an advanced stage of the disease. Four cows were slaughtered by the owner following the bacteriological investigation. In addition, as a result of the quarterly veterinary inspection of the Grade "A" herds, 2 bulk samples of milk were found to contain tubercle bacilli and the animals were slaughtered by the owner.

Medical Officers of Health of areas outside the county where milk produced in this county was sold, made 108 representations under Section 4 of the Milk and Dairies Act, 1915.

As a result of the veterinary inspections made, 81 animals were slaughtered under the Tuberculosis Order and 13 were disposed of by the owners for slaughter. 2 tuberculous animals died before the diagnosis was confirmed by the biological test. It was found that 56 cows were in an advanced stage of the disease.

During the year a complaint was made by the Medical Officer of Sheffield that tubercle was found in the milk supplied in bulk from a large milk depot in this county. This depot obtained the milk from 193 farms and as the farms were in the county the Medical Officer of Health of Sheffield could not make a formal complaint under Section 4 of the 1915 Act as he did not know which of the farms was to blame, and could not take the samples himself owing to the farms being outside his area. In view of these circumstances the Public Health Committee authorised a special veterinary examination of the herds at the 193 farms. 3,553 cows were examined, 20 proved to be tuberculous on clinical examination and 17, as a result of biological examination of the milk samples. 31 cows were in an advanced stage of tuberculosis. The diseased animals were at 31 out of the 193 farms that supplied the milk depot. These facts record a most unsatisfactory state of affairs for the milk from the 31 farms concerned is mixed with that from 162 farms which was free from disease and actually 31 out of the 37 diseased



animals were in an advanced stage of the disease, and obviously ought to have been cleared out of the herds long before. Under the regulations that apply to a specially designated milk, a quarterly veterinary inspection of the herds is compulsory, and if it is deemed to be required for Grade "A," or other graded milk, surely it must be still more necessary in the case of the ordinary milk supply.

9 representations under Section 4 of the Milk and Dairies Act were made to outside authorities of milk sent in to this county for sale, from which samples were taken by the County Council's Inspectors. All these cases were investigated by the authorities concerned, in 5 instances with negative results. In the remaining 4 tuberculosis was found and 8 animals were slaughtered.

During the year as a result of the examination of milk produced in the county, 151 cows were found to be tuberculous, 97 of which were in an advanced stage, that is, 64.2% of the total.

In the accompanying table the number of samples taken of the ordinary milk supply in the various sanitary districts is shown and it will be observed that in 119 of these the milk was found to be tuberculous, that is, 7.6% of the total samples taken.

ORDINARY MILK SAMPLES.  
1ST JANUARY TO 31ST DECEMBER, 1931.

SANITARY AUTHORITY.	No. of Samples Submitted.	Result of Examination.		T.B. Found
		Cleanliness.		
		Satisfactory.	Unsatisf'ory	
URBAN.				
Amblecote ...	16	15	1	1
Audley ...	31	24	7	4
Biddulph ...	39	31	8	2
Bilston ...	17	13	4	4
Brierley Hill ...	26	14	12	1
Brownhills ...	24	18	6	3
Cannock ...	38	30	8	3
Coseley ...	8	8	...	...
Darlaston ...	12	4	8	2
Kidsgrove ...	29	27	2	1
Leek ...	46	44	2	2
Lichfield ...	38	29	9	4
Quarry Bank ...	4	2	2	...
Rowley Regis...	60	44	16	2
Rugeley ...	18	15	3	3
Sedgley ...	35	34	1	4
Short Heath ...	17	15	2	3
Stafford ...	122	87	35	9
Stone ...	19	17	2	1
Tamworth ...	17	11	6	1
Tettenhall ...	15	11	4	1
Tipton ...	16	13	3	3
Uttoxeter ...	20	12	8	...
Wednesbury ...	5	3	2	...
Wednesfield ...	13	13	...	1
Willenhall ...	16	10	6	3
Wolstanton ...	43	34	9	2
RURAL.				
Blore Heath ...	23	22	1	2
Cannock ...	66	48	18	3
Cheadle ...	51	42	9	4
Gnosall ...	8	6	2	...
Kingswinford ...	28	17	11	...
Leek ...	88	75	13	5
Lichfield ...	130	94	36	13
Mayfield ...	26	17	9	3
Newcastle ...	27	21	6	2
Seisdon ...	59	45	14	3
Shifnal ...	8	7	1	...
Stafford ...	91	74	17	7
Stone ...	55	40	15	6
Tamworth ...	28	27	1	2
Tutbury ...	69	59	10	4
Uttoxeter ...	28	18	10	1
Walsall ...	34	21	13	4
Totals ...	1,563	1,211	352	119

### (3) Cleanliness.

1,563 samples of ordinary milk were bacteriologically examined, of which 1,211 were reported as satisfactory from a cleanliness standpoint and 352 were unsatisfactory. Of the unsatisfactory samples 315 were produced in the county and 37 outside. 77.5% of the samples were reported as clean compared with 83.6% last year.

The names of producers of milk not found to be satisfactory, as in former years, are reported to the County Farm Institute, who then communicate with them and offer them every assistance.

If no improvement in the cleanliness of the milk results the District Council in whose area the producer resides is communicated with, so that the necessary steps can be taken under the Milk and Dairies Order.

### (4) Specially Designated Milk.

At the end of 1930 licenses had been granted for the production of the following graded milks:—5 for Grade A. (T.T.) and 69 for Grade A. milk. On the 31st December, 1931 there were 4 Grade A. (T.T.) licenses and 80 Grade A. certificates in force in the county. With regard to Grade A. licenses, 17 new ones were issued during the year, 2 were not renewed, 3 relinquished.

Owing to the effect of the West Bromwich Extension Act, one license was taken over by that authority.

Samples are taken monthly of all graded milks for bacteriological investigation to see if the standard of cleanliness laid down in the regulations is maintained and they are examined specially for tuberculosis quarterly. The results obtained are shown in the accompanying table.

As regards the unsatisfactory samples; of those due to count 54 were produced in the county and 23 outside. Tubercle bacilli were found in 28 produced in the county and 2 in milk produced outside.

It is satisfactory to find that the popularity of these graded milks has been maintained and in fact this has resulted in an increase in the number of license holders who, as already noted, now number 80 for Grade A. milk. I find that this number is larger than in most areas of similar size.

## SPECIALLY DESIGNATED MILK.

1st January to 31st December, 1931.

	Total	Satisfactory	Unsatisfactory			
			Due to Coliform Bacillus.	Due to Count.	Due to Col. Bac. & Count.	Due to T.B.
" Certified " ...	21	18	1	1	1	—
Grade " A " (T.T.)	111	100	6	2	2	1
Grade " A " ... ..	926	837	37	12	12	29*
Grade " A " " Pasteurised " ...	7	6	1	—	—	—
" Pasteurised " ...	48	46	—	2	—	—
	1113	1007	45	17	15	30*

\*One sample also included under " Due to Count."

Chemical and bacteriological examinations of food are done in the laboratories established by the County Council at Stafford and the nature of the work undertaken will be found in the reports of the laboratories on a previous page.

(b) Samples analysed under the Food and Drugs Act are shown in the report of the County Analyst already referred to, from which it will be observed that 1,721 samples were submitted, 1,597 of which were found to be genuine and 124 adulterated.

The action taken is as follows:—

57 retailers were cautioned and 22 proceedings were instituted. All the proceedings were sustained with one exception—a small deficiency in fat. Fines amounting to £40 8s. 0d. with costs—£74 9s. 6d. were imposed. 21 proceedings were in respect of milk and one of rum. Of the 21 milk cases 15 were for added water and 6 for deficiency in fat.

## Prevention of, and Control over, Infectious Disease.

SMALLPOX.—No cases of smallpox were notified in 1931, and we have to go back to the year 1925 for a similar experience. At the same time, I must emphasise that, compared with many other areas, there have been few cases of smallpox in this county, and all have been of a very mild type which is usually so difficult to control, and therefore it is most satisfactory to note that, since the war, we have never had the severe epidemics that others have experienced.

SCARLET FEVER.—The incidence of this disease in the county is very similar to that in the previous three years. There were 1,008 notifications as against 1,265 last year, 620 in urban districts and 388 in rural districts. Two deaths occurred in urban and 3 in rural districts. The case rate per thousand of the population is 1.42 compared with 2.05 for England and Wales as a whole. The death rate in urban and rural districts is 0.00 and 0.01 respectively. The prevailing type of the disease was mild.

DIPHTHERIA.—Fewer cases were notified in 1931 than in the previous year, the numbers being 722 as against 1,120. The decrease was in the urban districts where there were 484 cases compared with 801 in 1930. 238 cases were notified in rural districts as against 319 in the previous year. The case rate was 1.02 compared with 1.27 for England and Wales. Twenty-six deaths occurred in urban districts with a death rate of 0.05 per thousand of the population. Eight died in rural districts, which yields a death rate of 0.04. On reference to the tables at the end of the report the numbers and death rates for each Sanitary District will be found.

It is gratifying to note the comparatively small number of cases that have occurred this year, and, as would be expected, the reduction is chiefly found in the urban districts. The prevailing form of diphtheria, although more severe than scarlet fever, was mild. Cases were notified in all but six of the forty-five Sanitary Districts, but in none can it be said to have attained epidemic form.

By arrangement with the District Medical Officers of Health, the Assistant Medical Officers carried out Schick testing and immunisation in children attending schools in the Brierley Hill, Rugeley and Tettenhall Urban Districts, and the Cannock and Walsall Rural Districts. The work undertaken was a continuation of that started in previous years, except in Tettenhall.

Full advantage has been taken of the facilities afforded at the County Laboratory for bacteriological investigations and 13,163 specimens were sent by medical practitioners compared with 11,629 in the previous year. This included 69 virulence tests undertaken in special cases.

ENTERIC FEVER.—Eight notifications of typhoid fever in urban and 4 in rural districts were received during the year, compared with the total of 32 in 1930. Two deaths occurred in urban and 1 in rural districts. The case rate was 0.01 compared with 0.06 for England and Wales. On reference to the tables at the end of the report, the areas in which these cases occurred will be seen.

ENCEPHALITIS LETHARGICA.—During the year 10 cases were notified, 9 of which were in urban districts. Fifteen deaths were reported, and the districts in which they occurred will be found in the tables at the end of the report.

DYSENTERY.—During the year 55 cases of dysentery were notified. Thirty-seven of these were at the Cheddleton Mental Hospital, and 6 cases were notified from the Babies' Hospital at Canwell Hall in the Tamworth Rural District. Four cases occurred in the Biddulph Urban District in children belonging to one family, and three in the Cannock Urban District also in children of the same family.

CEREBRO-SPINAL FEVER.—During the year 10 cases were notified, 7 in urban and 3 in rural districts: 4 of these recovered. The cases occurred singly. The number of deaths from cerebro-spinal fever registered during the year is 10, so that 4 of the fatal cases were not notified.

Thirty-three specimens of cerebro-spinal fluid were examined in the County Bacteriological Laboratory. Special arrangements have been made so that the cerebro-spinal fluid can be sent to the laboratory in a portable incubator, because these organisms do not survive if sent through the post in the ordinary way.

With reference to non-notifiable infectious diseases, the deaths from measles, whooping cough, diarrhoea and enteritis are as follows:—

MEASLES.—There were 65 deaths in urban districts with a death rate of 0.13, and 11 deaths in rural districts with a death rate of 0.05. As the disease is not notifiable the number of cases is unknown, but from the returns sent by the Head Teachers of elementary schools I find that a total of 3,250 cases of measles and 308 cases of German measles occurred in children of school age.

At the same time, it must be pointed out that the cases so reported relate only to the County Elementary Education Area, having an estimated population of 452,350 out of 708,690 for the Administrative County, and consequently there must have been many more cases, but as the disease is not notifiable, it is impossible to state accurately what number occurred.

WHOOPIING COUGH.—In 1931 there were 48 deaths in urban districts with a death rate of 0.09 and 12 deaths in rural districts with a death rate of 0.05. The deaths in urban districts occurred in 19 out of the 28 districts.

Only 7 of the 17 rural districts were affected. The school teachers in the County Elementary Education Area reported 1,228 cases in children of school age, but the disease specially attacks children during infancy, and is more fatal at that period of life. As the disease is not notifiable we have no accurate knowledge of its incidence.

DIARRHOEA AND ENTERITIS.—67 deaths occurred in urban districts with a death rate of 7.3 per thousand live births, and 16 in rural districts with a death rate of 4.5 per thousand births in children under 2 years of age, which is substantially the same incidence of this disease as in the previous year. The cases occurred in 18 out of the 28 urban districts and in 8 of the 17 rural districts.

INFLUENZA.—In 1931 there were 231 deaths in urban and 80 in rural districts, a very noticeable increase from the previous year when there were 96 deaths in urban and 35 in rural districts.

The number of cases of Notifiable Infectious Diseases with the deaths, in the Administrative County during 1931, are as follows:—

Diseases.	Notifications.		Deaths.		† Cases admitted to Hospital
	Urban.	Rural.	Urban.	Rural.	
Small-pox ... ..	...	...	...	...	...
Scarlet Fever ... ..	620	388	2	3	643
Diphtheria ... ..	484	233	26	8	555
Enteric Fever ... ..	8	4	2	1	7
Puerperal Fever ...	19	15	9	2	24
„ Pyrexia ... ..	73	25			35
Erysipelas ... ..	162	77	*	*	6
Cerebro-Spinal Fever	7	3	7	3	2
Poliomyelitis ... ..	5	3	1	...	2
Pneumonia ... ..	1,021	332	482	148	28
Encephalitis Lethargica	9	1	12	3	2
Dysentery ... ..	8	47	*	*	37

\*Not classified in Registrar General's Return.

†Information obtained from District Reports.

OPHTHALMIA NEONATORUM.—The accompanying Table shows the cases for the last 8 years. One hundred and fifty-nine out of the total of 191 were not severe, and, as will be noted from the table, 186 were completely cured. In one case the vision was impaired by a corneal ulcer which necessitated operation. Only 20 cases were in-patients in hospital, 2 were treated in the out-patient department and the others received treatment at home.



	CASES.			Vision un-impaired	Vision impaired	Total Blindness.	Deaths.
	Notified	Treated.					
		At Home	In Hospital				
1924	109	89	20	107	1	...	1
1925	138	96	*42	135	1	...	1
1926	166	149	†17	162	3	...	1
1927	166	135	‡31	162	3	...	1
1928	145	129	§16	143	...	...	2
1929	193	170	23	190	...	...	3
1930	148	130	**18	145	1	...	2
1931	191	169	¶22	186	1	...	4

\* One case removed from district; result not known.

† 12 In-Patients, 5 Out-Patients.

‡ 13       "       18       "

§ 7       "       9       "

|| 14       "       9       "

\*\* 17       "       1       "

¶ 20       "       2       "

### Tuberculosis.

At the end of the year there were 6,549 cases of all forms of tuberculosis on the registers of the district Medical Officers of Health, made up as follows:—

TOTAL CASES.	PULMONARY.			NON-PULMONARY.		
	M.	F.	Total.	M.	F.	Total.
6549	2436	2184	4620	1020	909	1929

This indicates that there is one case of tuberculosis in every 108 persons, or just 9.2 per 1,000 of the population, and on reference to the mortality Tables which follow it will be found that approximately one death occurs amongst eleven cases in the year.

During the year, 497 persons died from pulmonary tuberculosis, giving a death-rate of 0.70 per thousand of the population, whilst 112 deaths occurred from other forms of tuberculosis with a death-rate of 0.16. The ages at death divided into sexes are shown in the following table:—

Table showing primary cases of tuberculosis and deaths from the disease classified according to ages and sex:—

AGE PERIODS	NEW CASES.				DEATHS.			
	Pulmonary.		Non-Pulmonary.		Pulmonary.		Non-Pulmonary.	
	M.	F.	M.	F.	M.	F.	M.	F.
0.....	1	—	4	6	—	—	4	5
1.....	7	5	45	30	2	1	23	24
5.....	33	26	44	33	6	7	8	9
10.....	27	25	18	22				
15.....	42	61	15	15	42	75	8	4
20.....	52	67	9	12				
25.....	97	102	11	10	68	58	10	4
35.....	63	66	10	6	47	49	1	3
45.....	57	32	1	7	55	28	—	1
55.....	33	18	5	1	28	14	2	2
65 & upwards	5	6	—	—	9	8	—	4
Totals .....	417	408	162	142	257	240	56	56

In the General Tables at the end of the Report, the death rates for each sanitary district during 1931 will be found.

On reference to the tables it will be seen that, as regards the pulmonary form of the disease, the incidence is not so great in females, although there is not a very marked difference. In this area it appears to be more fatal in young women, but after the age of 35 there are more deaths in the male sex from pulmonary tuberculosis. The non-pulmonary forms of the disease occur mainly before adult life is reached, and are particularly fatal during the first year of life. In the succeeding years, the disease is more chronic, and, whilst resulting in much disability and ill-health, does not often cause death. The non-pulmonary forms arise from infection through tuberculous milk and from open cases of pulmonary tuberculosis.

The following show the number of primary notifications received since 1913:—

1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924
1722	1399	1233	1048	873	856	699	642	929	971	1029	974

1925	1926	1927	1928	1929	1930	1931
1232	1400	1106	1194	1017	1021	1129

With regard to notifications, speaking generally this duty is satisfactorily performed in the county. As already noted, the ratio of deaths to notifications is approximately one to eleven, and this corresponds with the dictum of experts that for every death there are at least ten persons suffering from the disease. The District Medical Officers of Health reported 78 cases as against 110 last year that had come to their knowledge in various ways not having been previously notified. It was found that 64 had died without being formally notified under the Regulations, 36 were taken from the death returns of the local Registrars, and 22 were transferable deaths sent by the Registrar General, that is to say, that the death occurred outside the district where the person usually resided. Six cases were notified to the Medical Officer of Health actually after the death had occurred.

The ratio of non-notified tuberculosis deaths to the total tuberculosis deaths is 1 in 9.51; roughly 8 out of 9 deaths were notified under the regulations before death.

With regard to the unreported cases, I am afraid we cannot expect to always receive the notifications before death especially where the disease is extremely acute, and some cases are bound to occur in which the practitioner was under the impression that the disease had been notified previously, or it may have been that sometimes in chronic forms of tuberculosis the condition for which medical aid was sought was some other trouble and the practitioner's attention was concentrated on that so that he did not notify the case.

An account of the treatment afforded for tuberculosis will be found in the annual report of the Joint Committee of the Staffordshire County Council and the Wolverhampton and Dudley County Boroughs. This body is only responsible for treatment and not for measures of prevention, which duty falls upon the District Councils, and their contribution towards the measures for dealing with this complex subject relates to the environmental conditions of the patient, amongst these being adequate housing in each district, which is of paramount importance. An investigation of the environmental conditions of each patient is made as soon as the disease is notified by the Health Visitors and although every effort is made to arrange the accommodation in the house so that the patient can have a room to himself, this has only been found possible in 31.4% of the cases reviewed in the Joint Committee's area in 1931. In every case in which overcrowding occurred the District Medical Officer's attention was specially drawn to the matter, but for some years now it has been found very difficult to take adequate measures.

At the same time I desire to emphasise the necessity of District Councils utilising to the full all the powers they possess under the Housing Acts, for it is one of the primary duties of a Sanitary Authority to provide adequate housing accommodation for the population in their area.

During the year no action was found to be necessary under the Public Health (Prevention of Tuberculosis) Regulations, 1925, which prohibit persons suffering from tuberculosis engaging in milking operations.

In July the Audley Urban District Council obtained a Magistrate's Order for the removal of a girl, aged 19, to a sanatorium under Section 62 of the Public Health Act, 1925, where she remained for three months. It was not found necessary to renew the Order as it was found possible to arrange for the girl to have a bedroom to herself at her own home, and so she returned there to continue her treatment under the scheme of the Joint Committee for Tuberculosis.

The accompanying table shows the death rates in the urban and rural districts of the county since 1914, from which it will be observed that since the war years there has been a gradual fall in both urban and rural districts, and in view of the large number of unemployed during these difficult years this is most satisfactory.

Year.	Death Rate per 1,000 of the Population.			
	Phthisis.		Other forms of Tuberculosis.	
	Urban.	Rural.	Urban.	Rural.
1914	0.89	0.54	0.31	0.20
1915	0.94	0.67	0.34	0.29
1916	1.01	0.80	0.40	0.29
1917	1.01	0.74	0.34	0.31
1918	1.03	0.88	0.31	0.28
1919	0.83	0.61	0.22	0.30
1920	0.75	0.56	0.30	0.21
1921	0.80	0.53	0.23	0.21
1922	0.80	0.55	0.24	0.17
1923	0.75	0.58	0.25	0.22
1924	0.73	0.58	0.22	0.20
1925	0.83	0.49	0.22	0.14
1926	0.74	0.50	0.22	0.11
1927	0.73	0.44	0.21	0.22
1928	0.64	0.48	0.14	0.13
1929	0.76	0.54	0.15	0.12
1930	0.72	0.54	0.15	0.13
1931	0.78	0.52	0.17	0.13

W. D. CARRUTHERS,

County Medical Officer of Health.

*September, 1932.*

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TABLES.

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Deaths occurring during the year 1931, classified according to Diseases and Localities, together with Births occurring during the year.

**URBAN.**

District.	Live Births	Still-Births	Deaths from all causes	Deaths under 1 year	Smallpox	Typhoid and Paratyphoid Fevers	Measles	Scarlet Fever	Whooping Cough	Diphtheria	Influenza	Encephalitis Lethargica	Cerebro-Spinal Fever	Tuberculosis of Respiratory System	Other Tuberculous Diseases	Syphilis	General Paralysis of the Insane, Tabes Dorsalis	Cancer, Malignant Disease	Diabetes	Cerebral Hemorrhage, &c.	Heart Disease	Aneurysm	Other Circulatory Diseases	Bronchitis	Pneumonia (all forms)	Other Respiratory Diseases	Peptic Ulcer	Diarrhoea, &c. (under 2 years)	Appendicitis	Cirrhosis of Liver	Other Diseases of Liver, &c.	Other Digestive Diseases	Acute and Chronic Nephritis	Puerperal Sepsis	Other Puerperal Causes	Congenital Debility, Premature Birth, Malformations, &c.	Senility	Suicide	Other Violence	Other Defined Diseases	Causes ill-Defined or unknown	
Ambicote ...	47	...	34	1	...	...	...	...	...	...	...	...	...	3	...	...	...	4	3	13	...	...	...	1	1	1	...	...	...	...	...	1	2	...	...	...	1	...	1	4	...	
Audley .....	209	17	161	8	...	...	...	...	2	7	...	...	...	10	2	1	...	8	2	6	38	...	...	4	5	7	2	1	...	1	...	1	5	4	...	1	5	18	3	5	20	2
Biddulph ...	167	7	104	17	...	...	...	...	1	10	...	...	...	2	1	...	...	12	1	4	21	...	...	5	2	9	2	1	...	...	...	1	2	...	1	14	2	1	3	8	...	
Bilston .....	735	32	408	52	...	...	...	...	4	3	19	1	...	39	5	2	3	33	6	24	66	3	8	32	44	3	1	12	1	...	11	8	1	1	17	14	4	13	28	...		
Brierley Hill	283	12	189	21	...	...	...	...	3	2	6	...	...	17	2	...	...	24	3	14	19	...	...	1	15	16	3	1	...	...	4	5	...	...	...	13	11	...	10	18	1	
Brownhills ...	341	16	175	20	...	...	...	...	1	1	9	...	...	9	2	...	1	17	1	7	29	...	...	13	12	...	2	4	1	...	3	6	...	1	8	7	3	6	13	...		
Cannock .....	673	32	432	81	...	...	...	...	2	25	...	...	1	15	13	...	...	43	3	17	57	1	21	21	37	5	5	6	...	2	13	9	...	2	29	34	6	16	26	...		
Coseley .....	503	22	290	29	...	...	...	...	2	1	6	...	2	23	5	1	...	25	5	22	44	1	127	27	4	1	5	2	...	7	4	1	2	14	23	5	13	16	...			
Darlaston ...	418	18	233	34	...	...	...	...	5	3	2	1	...	16	7	...	...	25	4	11	32	...	6	22	22	1	1	2	...	5	6	...	2	18	9	2	9	19	...			
Kidsgrove ...	177	12	128	13	...	...	...	...	1	3	1	...	...	8	1	...	1	12	1	1	31	...	6	9	6	2	1	...	1	...	4	4	...	2	9	8	1	4	7	1		
Leek .....	277	16	248	27	...	...	...	...	2	1	5	...	1	10	2	2	...	30	...	8	64	...	20	4	12	4	2	3	1	...	2	10	2	2	19	5	2	9	26	...		
Lichfield ...	126	8	108	9	...	...	...	...	...	...	2	...	...	4	3	...	...	18	1	3	22	...	10	5	11	2	...	...	...	6	2	...	1	5	2	...	3	7	...			
Newcastle ...	444	30	330	37	...	...	...	...	4	4	8	...	...	26	6	1	1	25	3	19	64	...	20	6	35	4	...	4	3	3	...	13	10	1	1	16	9	3	11	22	...	
Quarry Bank	139	4	106	12	...	...	...	...	1	1	11	...	...	7	2	...	...	14	1	6	20	...	5	9	5	...	1	1	...	2	2	...	2	2	...	2	2	1	2	8	1	





URBAN—continued

DISTRICT.	Live Births	Still-Births	Deaths from all causes	Deaths under 1 year	Smallpox	Typhoid and Paratyphoid Fevers	Measles	Scarlet Fever	Whooping Cough	Diphtheria	Influenza	Enecephalitis Lethargica	Cerebro-Spinal Fever	Tuberculosis of Respiratory System	Other Tuberculous Diseases	Syphilis	General Paralysis of the Insane, Tabes Dorsalis	Cancer, Malignant Disease	Diabetes	Cerebral Hemorrhage, &c.	Heart Disease	Aneurysm	Other Circulatory Diseases	Bronchitis	Pneumonia (all forms)	Other Respiratory Diseases	Peptic Ulcer	Diarrhea, &c. (under 2 years)	Appendicitis	Cirrhosis of Liver	Other Diseases of Liver, &c.	Other Digestive Diseases	Acute and Chronic Nephritis	Puerperal Sepsis	Other Puerperal Causes	Congenital Debility, Premature Birth, Malformation, &c.	Senility	Suicide	Other Violence	Other Defined Diseases	Causes ill-Defined or unknown		
Rowley Regis	705	26	475	49	..	..	3	3	3	38	6	1	38	1	38	10	..	1	45	..	38	62	1	16	36	50	4	4	4	3	1	1	2	6	13	..	..	23	15	6	19	29	3
Rugeley	111	6	77	15	..	..	2	4	..	9	..	..	1	2	..	..	..	8	1	5	16	1	2	2	4	..	1	1	..	..	..	..	1	1	1	..	6	1	..	3	6	..	
Sedgley	336	19	192	19	..	..	5	..	1	9	..	..	..	14	2	..	..	14	1	20	37	..	10	16	12	1	1	1	5	2	..	1	3	3	..	1	10	8	..	7	9	..	
Short Heath	100	2	44	3	..	..	..	..	..	2	..	..	..	4	1	..	..	5	..	3	9	..	4	1	3	..	..	..	..	..	..	..	..	..	1	4	3	..	3	..	..		
Stafford	348	18	340	22	..	1	..	6	2	12	..	..	..	18	3	1	1	1	35	4	31	61	..	15	25	12	6	4	..	2	5	2	9	11	..	2	12	19	9	12	20	..	
Stone	96	1	72	5	..	..	..	..	..	2	..	..	..	4	3	1	..	12	1	5	12	..	1	6	1	1	1	..	..	..	..	..	..	..	..	3	6	..	5	8	..		
Tamworth	152	6	97	9	..	..	..	..	..	8	..	..	..	5	1	..	1	12	3	9	19	2	4	3	3	1	1	..	1	..	..	1	5	1	..	6	1	1	1	9	..		
Tettenhall	76	3	79	2	..	..	..	..	1	2	..	..	1	4	..	1	1	14	1	3	18	..	2	1	1	1	1	1	1	1	..	..	3	5	..	2	2	1	3	6	..		
Tipton	833	32	432	58	..	..	1	1	3	12	..	..	..	35	6	..	1	36	5	23	67	..	5	24	64	5	6	8	4	2	3	10	5	..	..	25	44	2	10	25	..		
Uttoxeter	105	2	66	9	..	..	..	..	..	1	..	..	..	4	..	..	..	10	1	8	11	..	4	2	10	1	1	..	1	..	..	..	1	2	..	2	2	..	1	4	..		
Wednesbury	627	30	391	55	..	..	6	2	1	11	2	..	..	32	4	..	..	47	1	19	71	2	14	23	33	4	3	3	1	4	2	9	9	..	2	34	18	2	8	24	..		
Wednesfield	195	6	73	6	..	..	..	..	1	..	1	..	..	8	1	..	..	9	1	1	15	..	4	3	3	1	3	2	..	..	..	1	2	2	..	2	5	..	1	7	..		
Willenhall	457	16	238	38	..	..	..	..	2	..	5	1	..	23	..	1	..	35	..	8	27	..	13	11	18	..	..	1	1	2	..	..	3	7	1	..	23	24	7	6	18	1	
Wolstanton	507	41	349	50	..	..	1	1	..	..	6	..	..	11	1	2	2	34	4	23	78	..	21	22	22	4	1	5	4	..	2	6	8	2	1	22	7	2	14	41	2		
Totals	9187	429	5871	681	..	2	65	2	48	26	231	12	7	386	83	13	13	606	54	341	1023	11	235	346	482	60	42	67	27	19	19	135	143	9	22	341	300	64	195	431	11		







**URBAN—continued.**

DISTRICT.	Estimated Population in the middle of 1931	Small-pox.		Scarlet Fever.		Diphtheria.		Enteric Fever.		Puerperal Fever.		Erysipelas.		Continued Fever Cases.	Cerebro-spinal Fever Cases.	Polio-myelitis Cases.	Encephalitis Lethargica Cases.	Puerperal pyrexia Cases.
		Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate					
Rowley Regis	41,820	..	..	71	1.70	33	0.79	..	..	..	..	13	0.31	..	..	..	3	6
Rugeley .....	5,295	..	..	16	3.02	21	3.96	..	..	1	0.19	2	0.38	..	..	..	..	..
Sedgley .....	19,480	..	..	18	0.92	18	0.92	..	..	3	0.15	7	0.36	..	..	..	..	2
Short Heath ..	5,138	..	..	14	2.72	1	0.19	..	..	1	0.19	1	0.19	..	..	..	..	1
Stafford .....	29,430	..	..	28	0.95	19	0.64	3	0.10	..	..	6	0.20	..	1	1	..	7
Stone .....	5,988	..	..	7	1.17	4	0.67	1	0.17	..	..	2	0.33	..	..	..	..	..
Tamworth ..	7,667	..	..	25	3.30	1	0.13	..	..	..	..	1	0.13	..	..	..	1	..
Tettenhall ..	5,765	..	..	2	0.34	30	5.20	..	..	..	..	7	1.21	..	1	..	..	..
Tipton .....	36,260	..	..	120	3.31	32	0.88	..	..	1	0.03	20	0.55	..	..	..	..	8
Uttoxeter ..	5,912	..	..	3	0.51	..	..	..	..	..	..	1	0.17	..	..	..	..	..
Wednesbury..	31,950	..	..	45	1.41	11	0.34	..	..	3	0.09	15	0.47	..	1	..	1	4
Wednesfield..	9,450	..	..	16	1.69	2	0.21	..	..	..	..	2	0.21	..	..	..	..	4
Willenhall ..	21,460	..	..	39	1.82	20	0.93	..	..	1	0.04	12	0.56	..	..	..	..	6
Wolstanton ..	30,800	..	..	14	0.45	14	0.45	..	..	2	0.06	8	0.26	..	..	..	..	1

## RURAL.

DISTRICT.	Estimated Population in the middle of 1931.	Small-pox.		Scarlet Fever.		Diphtheria.		Enteric Fever.		Puerperal Fever.		Erysipelas.		Continued Fever Cases.	Cerebro-spinal Fever Cases.	Poliomyelitis Cases.	Encephalitis Lethargica Cases.	Puerperal Pyrexia Cases.
		Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate					
Blore Heath . . . . .	2,622	..	..	2	0.76	..	..	..	..	..	..	..	..	..	..	..	..	..
Cannock . . . . .	20,970	..	..	21	1.00	27	1.29	..	..	3	0.14	9	0.43	..	..	..	..	1
Cheadle . . . . .	27,830	..	..	157	5.64	18	0.64	..	..	3	0.11	19	0.68	..	..	1	1	6
Gnosall . . . . .	4,714	..	..	5	1.06	..	..	..	..	..	..	..	..	..	..	..	..	..
Kingswinford . . . . .	22,970	..	..	26	1.13	53	2.31	..	..	2	0.09	9	0.39	..	..	..	..	2
Leek . . . . .	15,110	..	..	16	1.06	6	0.40	1	0.06	..	..	2	0.13	..	..	..	..	2
Lichfield . . . . .	*28,430	..	..	26	0.91	53	1.86	2	0.07	1	0.03	12	0.42	..	2	1	..	4
Mayfield . . . . .	3,709	..	..	1	0.27	2	0.54	..	..	..	..	..	..	..	..	..	..	1
Newcastle . . . . .	6,140	..	..	1	0.16	..	..	..	..	..	..	2	0.32	..	..	..	..	2
Seisdon . . . . .	17,840	..	..	14	0.78	15	0.84	..	..	3	0.17	7	0.39	..	..	..	..	1
Shifnal . . . . .	657	..	..	1	1.52	..	..	..	..	..	..	..	..	..	..	..	..	..
(Staffs. par.)		..	..	27	2.79	21	2.17	..	..	..	..	1	0.10	..	..	..	..	2
Stafford . . . . .	9,664	..	..	13	1.04	1	0.08	..	..	..	..	5	0.40	..	..	1	..	2
Stone . . . . .	12,490	..	..	29	3.94	12	1.63	..	..	1	0.13	2	0.27	..	..	..	..	1
Tamworth . . . . .	7,361	..	..	8	0.86	3	0.32	1	0.11	1	0.11	2	0.21	..	..	..	..	..
(Staffs. par.)		..	..	17	2.18	6	0.77	..	..	..	..	1	0.13	..	1	..	..	..
Tutbury . . . . .	9,289	..	..	24	1.57	21	1.37	..	..	1	0.06	6	0.39	..	..	..	..	..
Uttoxeter . . . . .	7,794	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Walsall . . . . .	†15,300	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1

\* Adjusted population for death rate





