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REPORT

OF THE

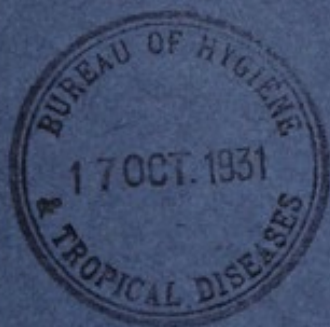
MEDICAL OFFICER OF HEALTH

FOR THE YEAR

1930.


WILLIAM G. SAVAGE,

B.Sc., M.D. (Lond.), D.P.H.,
County Medical Officer of Health.



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**To the Chairman and Members of the Public Health and Housing Committee,
Somerset County Council.**

GENTLEMEN,

I beg to submit my twenty-second Annual Report upon the Health and Sanitary Administration of the County. The Ministry of Health has arranged to supply the mortality statistics to each Medical Officer to save separate compilation, and these figures have been adopted in the Tables.

The vital statistics for the year are particularly satisfactory, the standardized death rate being only 9.3, the second lowest recorded in the County, the tuberculosis death rate 0.623, the lowest on record, and the infantile mortality rate 45.82, which is practically identical with that for 1928 (45.20), the lowest recorded.

The effects of the Local Government Act, 1929, are gradually making themselves apparent in Public Health work, and some of the changes are recorded in the present Report. No extensive changes, however, resulted during the year under review as regards the treatment and provision for treatment of the sick poor.

The present Report contains a detailed review of the water supply of every parish in the County, a prolonged piece of work, but one which should be valuable when a comprehensive survey of water supply problems in the County is under consideration.

A large part of my Report is now taken up with details of the Health work undertaken by the County Health Department, but a brief survey is also given of the general sanitary conditions in the County.

Weston-super-Mare,
August, 1931.

Your obedient servant,

W. G. SAVAGE.



STATISTICS AND SOCIAL CONDITIONS OF THE AREA.

Area (in acres) :—1,031,745.

Population (1930) :—404,870.

Births :—Total 5,805 ; Legitimate, 5,556 ; Illegitimate, 249. Stillbirths, 274.

Deaths :—Total, 4,733 ; Urban, 1,986 ; Rural, 2,747.

Deaths of children under 1 year of age :—266.

Rateable Value :—£2,181,227 (1930).

Sum represented by a penny rate :—£10,359: 12s. 7d. (1929/30) ; £8,472 4s. 11d. (1930/31);
£8,648 11s. 5d. (1931-32).

Birth rate :—14.34.

Death rate :—11.70.

Rate of infantile mortality :—45.82.

Percentage of births which were illegitimate :—4.29.

The birth rate is again very low, but slightly above the rate (14.0) for the previous year.

The death returns are corrected as regards the distribution of deaths to the districts to which they properly belong. To correct for differences of age and sex distribution a standardizing factor has to be used. Factors have been obtained, based upon the last available census figures. So corrected the following figures are obtained :—

	<i>Net Death-rate.</i>	<i>Standardizing Factor.</i>	<i>Standardized Death-rate.</i>
Rural Districts	11.84	0.772	9.14
Urban Districts	11.50	0.827	9.51
Administrative County	11.70	0.795	9.30
England and Wales	11.4	—	11.4

The death rate is exceedingly low and the standardized death rate, which is the only fair rate for comparison, is only 9.30, the second lowest recorded in the County, the actual lowest being 9.21 in 1926.

The causes of death are set out in Tables A. and B. at the end of the Report. Table B. shows that heart diseases are responsible for the largest number of deaths from one single group of causes (982 deaths), cancer and other forms of malignant disease the next largest (652 deaths), bronchitis and pneumonia caused 372 deaths, while tuberculosis caused 253 deaths.

In Somerset there are many old persons and the importance of correcting for this is shown very markedly in the statistics. The standardizing factor mentioned above corrects this and makes the death rate comparable with England and Wales.

As pointed out in previous years, we cannot hope to lower the death rate further to any great extent but must aim at a postponement of the period of death. Table 1 shows that this is taking place.

TABLE I.
Proportion of the deaths in each year divided amongst the different age groups.

	Under 1 year.	1—45.	45—65.	65 and over.
1911	12.9	21.0	20.8	45.3
1912	10.6	21.0	23.0	45.4
1913	10.8	23.3	21.0	44.9
1914	9.2	22.0	22.3	46.5
1920	9.7	19.1	22.3	48.9
1921	9.3	18.0	23.1	49.6
1922	6.6	17.3	22.2	53.9
1923	7.0	18.7	23.1	51.2
1924	7.1	17.5	21.8	53.6
1925	6.5	17.0	22.2	54.3
1926	6.9	16.0	22.3	54.8
1927	5.3	15.3	23.5	55.9
1928	5.6	16.6	23.2	54.6
1929	5.2	14.8	22.3	57.7
1930	5.6	15.5	23.4	55.5

TABLE II.
Rural Districts.

YEAR.	Population estimated to middle of each Year.	BIRTHS.		DEATHS UNDER ONE YEAR OF AGE.		DEATHS AT ALL AGES. TOTAL.	
		Number.	Rate.	Number.	Rate per 1,000 Births registered.	Number	Rate.
1920	215,192	4,943	22.97	271	54.82	2,669*	12.40
1921	225,074	4,451	19.78	252	56.62	2,594	11.53
1922	225,651	4,198	18.60	197	46.93	3,008	13.33
1923	227,600	4,170	18.32	195	46.76	2,602	11.43
1924	231,200	3,907	16.89	201	51.45	2,820	12.20
1925	231,100	3,735	16.16	183	49.0	2,802	12.12
1926	231,700	3,654	15.77	180	49.26	2,728	11.77
1927	233,000	3,507	15.05	165	47.04	2,891	12.41
1928	235,440	3,615	15.35	155	42.88	2,754	11.70
1929	235,500	3,459	14.69	166	47.99	3,012	12.37
Averages for years 1920—1929	229,146	3,964	17.3	197	49.7	2,788	12.2
1930	231,170	3,465	14.99	162	46.76	27,47	11.88

Urban Districts.

1920	157,301	3,320	21.07	178	53.61	1,960	12.46
1921	162,025	3,055	18.86	168	54.99	1,906	11.76
1922	163,495	2,740	16.76	137	50.00	2,078	12.71
1923	164,700	2,651	16.10	118	44.51	1,852	11.24
1924	167,100	2,597	15.54	149	57.37	2,066	12.32
1925	166,900	2,436	14.60	133	54.60	2,045	12.25
1926	167,800	2,423	14.44	137	56.54	1,902	11.33
1927	168,500	2,262	13.42	100	44.21	2,110	12.52
1928	169,810	2,336	13.76	114	48.80	2,058	12.12
1929	171,060	2,233	13.05	108	48.37	2,240	13.11
Averages for years 1920—1929	165,869	2,605	15.7	134	51.4	2,022	12.2
1930	173,530	2,340	13.48	104	44.44	1,986	11.46

GENERAL PROVISION OF HEALTH SERVICES IN THE AREA.

A. Public Health Officers of the Authority.

(a) *Medical.* The whole-time Officers of the Health Department consist of :

- 1 County Medical Officer of Health and County School Medical Officer.
- 1 Assistant Medical Officer and Deputy School Medical Officer.
- 1 Chief Tuberculosis Officer.
- 3 Assistant Tuberculosis Officers.
- 1 Medical Superintendent of Quantock Sanatorium.
- 4 School Medical Inspectors.
- 1 County School Oculist.
- 1 Assistant Medical Officer for Child Welfare (woman).

The Venereal Disease Clinics are staffed by the School Medical Inspectors and the Deputy School Medical Officer.

Other whole-time medical staff, but not attached to the County Health Department consists of the two Medical Superintendents of the two County Asylums, with a number of whole-time assistants and a Medical Superintendent of Sandhill Park Institution.

The County Medical Officer of Health is Medical Advisor to the Public Assistance Committee.

Part-time. There are no definite appointments of part-time Medical Officers directly attached to the Health Department apart from those holding appointments as Public Vaccinators and one Orthopaedic Surgeon. All the posts of Medical Superintendents of Public Assistance Institutions or of Isolation Hospitals are held by men in general medical practice with one or two exceptions, these being Medical Officers of Health debarred from general practice. The Mental Deficiency Committee also employs part-time medical assistance in the staffing of some of their institutions. Most of the Voluntary Infant Welfare Clinics are staffed by medical men or women paid by fee.

(b) *Others.* The whole-time officers of the Health Department consist of three School Dentists ; one Health Propaganda Officer ; one Public Analyst and Bacteriological Chemist with two technical qualified assistants, and one Inspector of Midwives. There are sixteen whole-time Health Visitors ; one sunlight Sister, and one Orthopaedic Sister.

The County Veterinary Surgeon is available to the Health Department for any work needing his services. There are no Sanitary Inspectors on the staff of the Health Department.

Under part-time Officers may be included the nurse-midwives who act as infant visitors and carry out other duties for the County Council, and thirty-three Vaccination Officers, all of whom are also relieving officers.

B. Nursing in the Home. This is carried out by the various nurses under local associations, nearly all of whom are affiliated to the County Nursing Association. Practically the whole County is covered in this way. The County Council pays a large annual grant to the County Association for distribution to the local Associations and there is close co-operation between the two bodies. Measles and whooping cough cases are followed up and direct advice given as to nursing and control by the Health Visitors.

C. Institutional provision for the sick and defective in the Administrative County.

1.—*Provision for Acute Infectious Diseases.* At the present time, there are 17 hospitals for ordinary cases and one for Small Pox. Under the Scheme approved by the County Council and by the Ministry of Health, there will be nine Hospitals to serve the needs of the whole area, or eight if arrangements can be made to receive the cases from three districts into the Bristol Isolation Hospital. This is exclusive of the County Small Pox Hospital of twenty beds. At present, considerable areas are without any isolation hospital provision.

Under the Scheme the Hospital areas will be as follows:—

- No. 1.** Williton R., Minehead and Watchet.—Existing Hospital near Minehead.
- No. 2.** Taunton, Wellington, Wiveliscombe, Taunton R., Wellington R., Dulverton R., Bridgwater R. (part).—Existing Hospital at Taunton to be enlarged.
- No. 3.** Axbridge R., Highbridge, Burnham, Bridgwater, Bridgwater R. (part).—Existing Hospital at Cross to be enlarged.
- No. 4.** Weston-super-Mare.—Existing Hospital at Weston-super-Mare to be enlarged.
- No. 5.** Long Ashton R., Clevedon, Portishead.—Cases to be received by Bristol Fever Hospital, but if suitable agreement not possible a separate Hospital to be provided.
- No. 6.** Clutton R., Keynsham R., Midsomer Norton, Radstock, a few parishes in Bath R.—Existing Hospital at Paulton to be enlarged.
- No. 7.** Shepton Mallet R., Wells R., Frome R., Shepton Mallet, Wells, Street, Glastonbury, Frome.—Existing Hospital at Shepton Mallet to be enlarged.
- No. 8.** Wincanton R.—Existing Hospital at Wincanton.
- No. 9.** Yeovil R., Chard R., Langport R., Yeovil, Ilminster, Crewkerne, Chard.—A new Hospital to be erected on a site convenient for the area.

During the year the small pox hospital which has to serve the whole County, was enlarged from eight to twenty beds, while additional administrative accommodation was provided. The total accommodation is still very low but is now adequate to deal with small sudden outbreaks and give time for additional measures to be put in hand should the disease threaten to be widespread.

Apart from small pox, the total minimum accommodation proposed for infectious diseases is only 306 for the County. This is undoubtedly on the low side, and was intentionally so kept. It is hoped, by a system of linking-up the hospitals to manage with considerably fewer beds than would otherwise be considered to be necessary.

2. *Tuberculosis.* This is shown in the following Table:—

<i>Institution.</i>	<i>Classes of Cases Admitted.</i>	<i>Beds.</i>	<i>Authority Responsible.</i>
Quantock Sanatorium ...	Adults: Early Pulmonary ...	68	County Council.
Compton Bishop Home ...	Children: Notified very early pulmonary ...	33	County Council.
Taunton Sanatorium ...	Adults: Advanced Pulmonary ...	20	Taunton Isolation Hospital Committee.
Wincanton Sanatorium ...	do. ...	20	Wincanton do.
Bath Orthopaedic Hospital...	Children: Bones and Joints ...	*	The Hospital Committee.
Alton ...	do. ...	11†	—

* 30 beds in all retained, but only a few used for tuberculosis cases.

† 11 beds maintained at any one time.

3. Maternity and Child Welfare Work.

<i>Institution.</i>	<i>Classes of Cases Admitted.</i>	<i>No. of Beds.</i>	<i>Authority Providing.</i>
Baby Ward, Bridgwater ...	Babies up to 2 years ...	6	County Nursing Association.
Bath Orthopaedic Hospital...	Under 5 : Cripples ...	Up to 30	The Hospital Committee.
South Petherton Home ...	Unmarried mothers for confinement	20	Somerset Association for Welfare Women and Girls.
Maternity Homes ...	Special Maternity Cases ...	—	Owners of the Homes (payment by fee)

Various Hospitals provide, on payment, for Puerperal Sepsis and Ophthalmia Neonatorum cases. There are also Maternity Wards in all the Poor Law Institutions.

4. Mental Defects.

<i>Institution.</i>	<i>Cases Admitted.</i>	<i>Accommodation.</i>	<i>Authority Providing.</i>
Sandhill Park ...	Feeble Minded ...	50 Boys : 50 Girls 101 Women : 60 Men	County Council.
Yatton Hall ...	Low Grade M.D. ...	33 Male : 43 Female	do.
Cambridge House ...	All Grades : Male and Female ...	66 Male : 30 Female	do.
West End House ...	All grades : Female ...	91 Females	do.
Cotford Mental Hospital ...	Nearly all certified cases ...	358 Male : 409 Female	do.
Wells Mental Hospital ...	do.	363 Male : 493 Female	do.

5. *Provision under the Public Assistance Committee.* Several of the old Poor Law Institutions have been given up and the position on April 1st, 1931, was as follows :—

<i>Institution.</i>	<i>Infirmary Accommodation.</i>		
	<i>Male.</i>	<i>Female.</i>	<i>Children.</i>
Axbridge ...	32	34	2
Bridgwater ...	38	42	0
Chard ...	18	23	0
Clutton ...	21	35	0
Frome ...	30	33	0
Keynsham ...	20	20	0
Taunton ...	33	47	0
Wellington ...	28	37	0
Wells ...	34	39	0
Williton ...	24	20	0
Wincanton ...	36	30	0
Yeovil ...	20	26	0

While most of the accommodation is not unsuitable for the infirm and chronic cases which occupy nearly all the beds, the accommodation for the few acute cases is inadequate in all but two or three infirmaries and in none is it up to ordinary Voluntary Hospital standard. The new Infirmary at Chard was opened in May, 1931, and provides 50 beds. The Institution is built on modern lines, with excellent accommodation.

No convalescent homes are provided by the Public Assistance Committee.

6. *General Accommodation for the sick in Voluntary Hospitals.* On the whole, Somerset is well supplied with general hospitals, for in addition to those in the County, the well-equipped hospitals at Bristol and Bath serve many parts of Somerset. The voluntary hospitals in the County are shown in the following Table:—

<i>Hospital.</i>	<i>No. of Beds.</i>	<i>If Out-patient Department.</i>	<i>Specialist Provision.</i>
Bridgwater ...	62	Yes	X-Ray, Massage, Electricity, Dental, Ear, Nose and Throat and Skin.
Burnham	11	No	No specialist department.
Butleigh	10	No	None.
Chard	12	No	None.
Crewkerne	18	Yes	None.
Clevedon	17	Yes	Massage.
Frome Victoria ...	18	Yes	X-Ray.
Minehead and District	56	No	X-Ray.
Paulton	27	No	X-Ray.
Shepton Mallet ...	22	Yes	X-Ray.
Taunton and Somerset	104	Yes	X-Ray, Electro-therapeutic and Massage, Eye, V.D., Dental, Pathological.
Templecombe	13	No.	None.
Wellington ...	10	No	None.
	(16 later)	(some treated)	
Wells	20	Yes	X-Ray.
	(30 later)		
Weston-super-Mare...	104	Yes	X-Ray, Ear and Throat, Massage.
Wincanton	9	No	No specialist departments.
Yeovil	50	Yes	X-Ray, V.D.

No consultations between the County Council and the Committees of Voluntary Hospitals have as yet been held. Under existing conditions, most of the acute cases needing hospital treatment obtain it in the Voluntary Hospitals and very few are dealt with in Public Assistance Institutions. On the other hand, a few cases, when they become chronic, are transferred from the Voluntary to Public Assistance Hospitals.

It will be necessary to consider with some precision, the extent to which the existing hospital accommodation in the County—Voluntary, under the Poor Law and under the County Council Specialised Services (Tuberculosis, Orthopaedic and Maternity, etc.) is adequate for present day and for future needs. In some areas I hear of waiting lists, but not in others. With the co-operation of the Voluntary Hospitals it should be possible to ascertain, with fair reliability, the institutional needs of the County as a whole. This would include the possibility of more co-operation so as to give relief for areas with waiting lists. I consider it very desirable that such an inquiry should be instituted as soon as practicable, for it should precede considerations of piecemeal additions to institutional accommodation. The conditions under which medical out-relief are granted and the factors governing admittance to hospital form a necessary side issue and are part of such an inquiry.

Changes affecting Health Services under the Local Government Act.

The transfer of the work of Boards of Guardians to the County Council involved such an enormous amount of work that it was not to be anticipated that any extensive alterations of principle could be effected during the year of transfer. Two institutions were appropriated for

Mental Deficiency and two were closed except for casuals. Steps are under consideration as regards classification of different types such as tuberculosis and maternity and for improving the conditions under which children are maintained under the Poor Law.

The alterations of boundaries are being considered by a Special Committee and health factors given due weight. Other alterations, such as those affecting Isolation Hospitals are described in different parts of the Report.

PREVALENCE AND CONTROL OVER INFECTIOUS AND OTHER DISEASES.

Acute Infectious Diseases.

The notifications are shown in Table III. As County Medical Officer, I know very little about their incidence. The notifications are made to the District Medical Officers of Health who are responsible for all steps to prevent their spread. All the County M.O.H. knows is the number of notifications each week—not even the names or addresses. I have never regarded existing arrangements as the best possible. Infectious diseases are best controlled over a wide area and it would be much more satisfactory if this was a function of the County Council in all the rural and quite small urban areas. The County Council is now a partner to a considerable extent in isolation hospital provision and provides laboratory facilities for diagnosis. As the Maternity and Child Welfare authority over most of the County it is concerned with the prevention and reduction of deaths and damage to health from measles and whooping cough and its Health Visitors spend much time on this work. Especially as Education Authority is the County Council concerned with infectious disease amongst school children. This dual control is unsatisfactory in actual working, and, in my opinion, it would have been more economical and satisfactory if the control over infectious disease had been transferred to the County Council.

INFECTIOUS DISEASES.

TABLE III.

	Small Pox.	Scarlet Fever.	Diphtheria.	Enteric and Paratyphoid Fevers.	Puerperal Fever.	Ophthalmia Neonatorum.	Cerebro-spinal Meningitis.	Dysentery.	Malaria.	Pneumonia.	Acute Poliomyelitis.	Encephalitis Lethargica.
URBAN												
Bridgwater	0	39	17	1	0	3	0	0	0	18	0	0
Burnham	0	3	1	0	0	0	0	0	0	3	0	0
Chard	0	0	10	0	0	0	0	0	0	2	0	0
Clevedon	0	0	9	1	0	0	0	0	0	5	0	0
Crewkerne	0	3	30	0	0	0	0	0	0	3	0	0
Frome	4	18	20	1	0	1	0	0	0	6	0	0
Glastonbury	0	3	50	0	1	0	0	0	0	2	0	0
Highbridge	0	20	0	0	0	0	0	0	0	0	0	0
Ilminster	0	3	0	0	0	0	0	0	0	2	0	0
Midsomer Norton	0	49	46	3	2	0	0	0	0	19	0	0
Minehead	0	2	1	0	0	1	0	0	0	0	0	0
Portishead	0	5	1	0	0	0	0	0	0	10	0	0
Radstock	0	4	6	0	0	0	0	0	0	4	0	0
Shepton Mallet	0	4	2	0	0	0	0	0	0	9	0	1
Street	0	3	66	0	0	0	0	0	0	4	0	0
Taunton	0	30	12	2	1	2	0	0	0	7	2	0
Watchet	0	1	1	0	0	0	0	0	0	1	0	0
Wellington	0	1	5	0	1	0	0	0	0	2	0	0
Wells	0	4	14	0	0	0	0	0	0	11	0	1
Weston-super-Mare	0	32	52	3	1	2	0	0	0	38	2	1
Wiveliscombe	0	2	0	0	0	0	0	0	0	2	0	0
Yeovil	0	31	116	0	1	2	0	0	0	12	0	0
RURAL												
Axbridge	0	20	99	6	1	2	0	0	0	49	0	1
Bath	0	17	4	0	0	0	0	0	0	9	0	1
Bridgwater	0	34	6	0	0	0	0	0	1	9	1	1
Chard	0	8	22	1	1	1	0	0	0	9	2	0
Clutton	0	33	39	1	1	0	0	0	0	14	0	1
Dulverton	0	10	0	0	1	0	0	0	0	7	0	1
Frome	0	29	16	2	0	1	0	0	0	9	0	1
Keynsham	0	30	14	1	0	0	0	0	0	18	0	2
Langport	0	24	11	0	0	1	2	0	0	6	0	0
Long Ashton	0	39	27	7	1	1	0	0	0	18	0	0
Shepton Mallet	0	33	2	0	0	0	0	0	0	10	0	1
Taunton	0	39	5	1	1	2	0	0	0	9	0	1
Wellington	0	6	2	0	0	0	0	0	0	2	0	0
Wells	0	23	27	2	0	0	0	0	0	23	0	0
Williton	0	35	5	0	0	0	0	0	0	1	0	0
Wincanton	0	81	18	1	1	1	0	0	0	19	0	0
Yeovil	0	37	34	0	1	1	0	0	0	9	1	1
Urban Districts	4	257	459	11	7	11	0	0	0	160	4	3
Rural Districts	0	498	331	22	8	10	2	0	1	221	4	11
Administrative County	4	755	790	33	15	21	2	0	1	381	8	14

Small Pox. During the year there were four cases of small-pox, in February, all in one family at Frome. The source of infection was not traced. Fortunately the prompt measures taken were adequate and there was no further spread.

The 1930 vaccination figures are not yet available, but early in 1931 those for 1929 were reported. Of 5,553 births only 1,653 were returned as successfully vaccinated. This gives only 30 per cent. vaccinated, the percentage varying from six in Bridgwater to sixty in the Evercreech-Castle Cary registration sub-district.

With so much unvaccinated material, Somerset has been very fortunate in having so few importations of small-pox, while we have been highly successful in limiting any spread.

Diphtheria. 790 cases were notified with 28 deaths, a case mortality of 3.5 per cent. This shows a considerably higher prevalence than the average for the County but a much lower case mortality. The distribution of the cases is shown in Table III.

Scarlet Fever. This disease was fairly prevalent and 755 cases were notified, being 78 less cases than in the previous year. There were 4 deaths, giving a case mortality of 0.5 per cent.

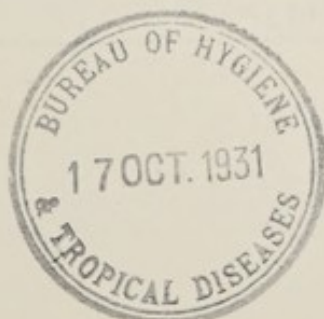
Enteric and Paratyphoid Fevers. 33 cases were notified, with no deaths.

Encephalitis Lethargica. Table III. shows that 14 cases were notified, and that these were distributed through the County and with no epidemic. There were, however, 10 deaths, a case mortality of 71 per cent.

Only 2 cases of Cerebro-spinal Meningitis and 8 cases of acute Poliomyelitis were notified.

Measles. I do not know the number of cases as the disease is not generally notifiable, but there were only 3 deaths, 2 being in children under 5 years of age. This is an extremely low figure.

Whooping Cough. There were 14 deaths during the year, 8 being under twelve months old, 4 between one and two years, 1 between two and five years, and 1 between twenty-five and forty-five years.



VENEREAL DISEASES.

The attendances of Somerset cases at the different clinics for the year 1930 were as follows :—

Clinic.	New cases 1930	Attendances 1930	NEW CASES.				ATTENDANCES.		
			1927.	1928.	1929.	Increase or decrease during 1930.	1928.	1929.	Increase or decrease during 1930.
Bath Hospital	19	495	11	14	14	+ 5	664	565	- 70
Bristol Hospital	59	520	53	63	71	- 12	666	569	- 49
Taunton Hospital	86	1,476	81	80	77	+ 9	1,554	1,381	+ 95
Yeovil Hospital	52	1,028	65	69	77	- 25	711	856	+ 172
Bridgwater	25	328	37	36	34	- 9	678	514	- 186
Frome	21	341	19	12	8	+ 13	254	195	+ 146
Glastonbury	3	138	3	9	18	- 15	47	175	- 37
Minehead	14	234	11	14	22	- 8	116	169	+ 65
Radstock	7	10	2	10	3	+ 4	48	50	- 40
Weston-super-Mare	52	623	56	68	65	- 13	1,169	1,271	- 648
All Clinics	338	5,193	338	375	389	- 51	5,907	5,745	- 552

The figures show some decrease from the previous year. 77 per cent. of the new cases and 80 per cent. of the total attendances were at County Council clinics.

Medical Practitioners in the County qualified to receive supplies of arsenobenzol compounds can obtain them free of charge on request to the County Medical Officer. Only 20 Medical Practitioners are on this free list.

Bacteriological work in connection with venereal diseases is arranged for either in connection with Bristol University Laboratory or at the County Health Laboratory.

During the year the following samples were examined :—

Samples.	For Medical Officers of Clinics	For Medical Practitioners.	Total.
Wasserman	334	152	486
Gonococcus	615	80	695
Spirochetes	6	0	6
Fixation Tests	57	0	57
	1,012	232	1,244

TUBERCULOSIS.

No developments of any importance took place during the year, but the question of the provision of additional accommodation for non-pulmonary and advanced pulmonary tuberculosis cases was under consideration.

TABLE IV.

Year.	Phthisis Death rates.			Other Tuberculous Diseases			Tuberculosis Death-rate.	Deaths in a population of 390,000.	
	Rural.	Urban.	County.	Rural.	Urban.	County.	County.	Phthisis.	All Tuberculosis
1901	0.88	0.84	0.871	0.18	0.23	0.202	1.073	340	418
1902	0.86	0.89	0.877	0.20	0.19	0.201	1.078	342	420
1903	0.94	0.76	0.879	0.19	0.34	0.251	1.130	343	441
1904	0.99	0.97	0.989	0.20	0.34	0.255	1.244	386	485
1905	0.90	0.91	0.905	0.14	0.18	0.162	1.067	353	416
1906	0.90	0.86	0.890	0.13	0.37	0.221	1.111	347	433
1907	0.83	0.85	0.842	0.24	0.26	0.253	1.095	328	427
1908	0.91	0.93	0.922	0.24	0.31	0.274	1.196	360	466
1909	0.82	0.85	0.833	0.24	0.27	0.255	1.088	325	424
1910	0.98	0.78	0.912	0.16	0.24	0.197	1.109	356	433
1911	0.83	0.76	0.804	0.15	0.39	0.240	1.044	314	407
1912	0.69	0.90	0.778	0.17	0.20	0.191	0.970	303	378
1913	0.74	0.67	0.721	0.15	0.30	0.239	0.960	281	374
1914	0.86	0.79	0.833	0.21	0.26	0.232	1.065	325	415
1915	0.84	1.13	0.960	0.18	0.23	0.201	1.160	374	452
1916	0.75	0.97	0.838	0.16	0.25	0.194	1.032	327	402
1917	0.90	1.05	0.962	0.18	0.21	0.191	1.153	375	450
1918	1.09	1.30	1.180	0.21	0.24	0.225	1.403	460	547
1919	0.85	0.90	0.871	0.21	0.22	0.212	1.083	341	422
1920	0.65	0.93	0.765	0.14	0.27	0.196	0.961	298	375
1921	0.63	0.76	0.685	0.16	0.30	0.220	0.904	267	353
1922	0.75	0.78	0.761	0.18	0.18	0.180	0.941	297	367
1923	0.65	0.76	0.696	0.19	0.22	0.206	0.902	271	352
1924	0.60	0.74	0.656	0.15	0.13	0.140	0.797	256	311
1925	0.61	0.73	0.659	0.12	0.14	0.126	0.784	257	306
1926	0.53	0.54	0.533	0.13	0.14	0.138	0.671	208	262
1927	0.55	0.64	0.586	0.13	0.13	0.130	0.716	228	279
1928	0.59	0.71	0.639	0.08	0.16	0.113	0.753	249	294
1929	0.55	0.65	0.593	0.11	0.14	0.121	0.714	231	278
1930	0.54	0.52	0.532	0.09	0.09	0.091	0.623	207	243

There is a further and marked decline in the tuberculosis death rate and the 1930 rate is the lowest on record.

Compared with twenty-five years ago, the decline has been 44 per cent. for all tuberculosis, the reduction being 40 per cent. for pulmonary and 59 per cent. for non-pulmonary tuberculosis.

The following figures show the deaths, notifications and number of cases under supervision since 1913 :—

TABLE V.

Year.	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930
Deaths.	377	422	428	467	393	480	388	358	350	366	354	317	312	268	287	305	290	253
*Notifi- cations.	958	984	933	872	1036	949	922	860	882	732	707	701	769	729	703	713	605	640

*These are primary cases only and do not include institutional cases.
Of the 253 deaths from tuberculosis, 29 were not notified.

TABLE VI.

New cases of tuberculosis and of deaths from the disease in the County during 1930.

Age Periods.	New cases.				Deaths.			
	Pulmonary.		Non-Pulmonary.		Pulmonary.		Non-Pulmonary.	
	M	F.	M.	F.	M.	F.	M.	F.
0—1	1	0	2	4	0	0	2	4
1—5	1	2	13	6	0	2	2	3
5—10	21	10	15	13	3	2	1	4
10—15	11	10	15	14	17	23	3	1
15—20	26	31	6	11				
20—25	36	47	3	11	49	46	5	5
25—35	52	71	9	7				
35—45	42	40	2	4	32	27	2	4
45—55	32	28	0	5				
55—65	10	13	1	1	6	9	0	1
65 and upwards	7	6	1	0				
Totals	239	258	67	76	107	109	15	22

TABLE VII.
Tuberculosis Notifications and Deaths.

URBAN DISTRICTS.	Number of primary cases notified.		Number of primary notifications per * 1,000 population.	Number of Deaths during the year from Pulmonary Tuberculosis.	Number of Deaths during the year from other varieties of Tuberculosis.	RURAL DISTRICTS.	Number of primary cases notified.		Number of primary notifications per * 1,000 population.	Number of Deaths during the year from Pulmonary Tuberculosis.	Number of Deaths during the year from other varieties of Tuberculosis.
	Pulm.	Non-Pulm.					Pulm.	Non-Pulm.			
Bridgwater	29	10	2.28	14	2	Axbridge	30	7	1.47	19	0
Burnham	12	1	2.54	3	0	Bath	27	4	2.21	0	0
Chard	2	1	0.74	3	0	Bridgwater	17	5	1.28	14	0
Clevedon	10	3	1.85	6	1	Chard	16	3	1.58	6	2
Crewkerne	3	0	0.85	2	0	Clutton	5	7	0.77	7	1
Frome	12	4	1.49	4	1	Dulverton	2	0	0.41	2	0
Glastonbury	4	1	1.11	1	1	Frome	8	3	1.05	4	1
Highbridge	6	2	3.10	4	1	Keynsham	20	10	2.41	8	4
Ilminster	3	0	1.34	2	0	Langport	10	5	1.20	6	1
Midsomer Norton	7	2	1.20	0	0	Long Ashton	24	8	1.57	16	1
Minehead	11	3	2.22	3	0	Shepton Mallet	10	2	1.30	2	0
Portishead	4	3	1.79	1	0	Taunton	24	6	1.75	14	1
Radstock	4	2	1.66	0	0	Wellington	3	1	0.69	2	0
Shepton Mallet Street	4	2	1.46	1	0	Wells	9	2	1.10	4	0
Taunton	50	10	2.38	18	2	Williton	21	6	2.17	6	0
Watchet	4	0	2.66	1	0	Wincanton	18	11	1.82	9	6
Wellington	14	1	2.10	4	0	Yeovil	13	6	1.16	6	4
Wells	2	1	0.62	1	1						
Weston-s-Mare	34	6	1.40	13	3						
Wiveliscombe	0	0	0.00	0	0						
Yeovil	21	4	1.31	9	2						
Totals	240	57	1.70	91	16	Totals	257	86	1.48	125	21

*Calculated upon the 1931 Census Returns.

Summary of Treatment given during 1930.

Sanatorium	206
Sanatorium with Dispensary (3 with shelter)	38
„ Domiciliary (without shelter)	18
„ „ (with shelter)	5
„ Dispensary and Domiciliary	2
Dispensary and Domiciliary	4
Dispensary (1 with shelter)	74
Shelter provided at home	17

In addition, milk, for a period of six or eight weeks, was provided for 69 cases ; Dental treatment for 3 cases ; X-ray examinations for 26 cases, (33 examinations).

Unused buildings at Quantock Sanatorium were again utilized during 1930 as a Summer Camp. Children were selected who were predisposed to tuberculosis on account of general debility or undernourishment, with special attention to those from homes in which there was as active case of tuberculosis. Of such children, 40 girls for three weeks and 40 boys for four weeks were given treatment under open-air conditions and on the lines of a holiday camp. The increase in weight and marked improvement in general health which resulted was again satisfactory. This work must be regarded as an important piece of tuberculosis preventive work. The Staff utilised was almost entirely voluntary.

Dr. Short, County Tuberculosis Officer, has drawn up the following remarks dealing with the treatment given under the County Council scheme and the results obtained.

Tuberculosis Officer's Clinical Report for 1930.

The year under review has been one of progress as regards the steady fight against Tuberculosis, and Somerset again occupies a high position amongst the large County areas of England, very few of which have been able to show a lower death rate in the last few years.

More patients were examined as "suspected T.B.", but fewer than in 1929 and 1928 were found definite cases, while the number in whom the sputum actually contained the bacillus has dropped from 175 in 1929 to 141 in 1930. This is gratifying because it seems to show that cases are coming under expert care and treatment before the infectious stage has been reached, with the result that in many instances this stage is avoided altogether and much potential danger to others thereby averted.

The number of "stage 3 cases" is definitely on the decrease, the figures being 33 as against 57 in 1929.

The medical men in the County have again co-operated very cordially with the Tuberculosis scheme and the County staff are being used more and more as expert consultants in difficult cases of chest disease.

The new cases seen numbered 1,484, and they were classified as follows:—

PULMONARY TUBERCULOSIS.					
T.B. Negative	...	...	265		
T.B. Positive Stage 1	...	...	9		
T.B. Positive Stage 2	...	...	99		
T.B. Positive Stage 3	...	...	33		
					406
NON-PULMONARY TUBERCULOSIS.					
Bones and Joints	...	...	16		
Abdominal	...	...	10		
Peripheral Glands	...	...	43		
Other Organs	...	...	11		
					80
Not Tuberculous	...	...	...	...	973
Diagnosis not completed on 31st December, 1930	...	...	...	...	25
					1,484

The County Sanatoria have again proved their worth and it has been possible to commence "Artificial Pneumothorax" treatment in the County by sending patients to Quantock Sanatorium for the primary induction, continuing the "refills" at the nearest Tuberculosis Dispensary, with X-ray guidance.

The voluntary Care Committees have done wonderfully good and useful work again, and they have given unstintingly of their time and money to help the poorer sufferers in the County.

L. J. SHORT.

TABLE VIII.

Condition of all cases discharged from Quantock Sanatorium, from the opening until 31st December, 1930.

	<i>Cases.</i>	<i>Percentage.</i>
Cured	5	0.7
Arrested and Working	201	29.0
Arrested but <i>not</i> Working	13	1.9
Not Arrested but Working	166	24.0
Not Arrested and <i>not</i> Working	123	17.8
Lost sight of	86	12.4
Dead	98	14.2
	<hr/> 692 <hr/>	

Note. Some of the cases are not admitted as curative cases but as advanced cases sent in to prevent home infection. This accounts for almost all the "dead" group.

The expression "arrested" has a technical meaning, and is only applied to cases free from any symptoms for at least two years. Many in the "non-arrested" group are apparently quite well, but the two years' period has not elapsed.

TABLE IX.

All cases under treatment. Complete results as regards working capacity.

All years, (1912-1930).		Cured.	Working.	Not Working.	Dead.	Lost sight of or Removed.	Total cases.
Men	Cases	787	438	302	1171	498	3,196
	Percentage	25	14	9	37	15	
Women	Cases	739	619	349	1,003	515	3,225
	Percentage	23	19	11	31	16	
Children	Cases	1,317	622	152	154	362	2,607
	Percentage	50	24	6	6	14	
Un- Classified	Cases	0	0	0	124	229	353
	Percentage	0	0	0	35	65	
Total	Cases	2,843	1,679	803	2,452	1,604	9,381
	Percentage	30	18	9	26	17	

TABLE X.
Admissions to Sanatorium during 1930.

Sanatorium.	Men.		Women.	Children.	Total.
	Civilian.	Ex-Service.			
Quantock	58	1	67	—	126
Taunton	14	—	17	—	31
Wincanton	20	1	13	—	34
Compton Bishop	—	—	—	38	38
Alton Hospital	—	—	—	8	8
Bath Ortho. Hospital	—	—	—	7	7
Papworth Hall	1	—	—	—	1
	93	2	97	53	245

TABLE XI.
Cases treated through the County Dispensaries.

Dispensary.	Persons treated at Dispensaries during 1930.		Under treatment at Dispensaries Dec. 31st, 1930.		Total Dispensary Attendances 1930.	Total Persons examined 1930.
	Insured.	Uninsured.	Insured.	Uninsured.		
Bath (City)	2	128	2	30	1,608	550
Bath (County)	0	30	0	9	342	129
Bridgwater	50	125	17	90	741	348
Bristol	3	71	4	25	590	226
Chard	3	22	3	7	184	74
Clevedon	12	29	5	26	300	108
Frome	7	40	0	17	248	106
Glastonbury	9	28	1	7	255	130
Langport	18	24	12	13	234	76
Minehead	9	120	8	115	685	377
Radstock	9	43	1	28	326	111
Shepton Mallet	6	25	1	10	246	90
Taunton	4	174	0	105	853	409
Wellington	14	37	10	26	291	117
Weston-super-Mare	13	77	8	45	667	334
Wincanton	5	31	0	14	259	104
Yeovil	45	60	26	16	598	280
	209	1,064	98	583	8,427	3,569
	1,273		681			

TABLE XII.

Table showing the work of the Dispensaries during the Year 1930.

DIAGNOSIS.	PULMONARY.				NON-PULMONARY.				TOTAL.				Totals.	
	Adults.		Children.		Adults.		Children.		Adults.		Children.			
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.		
A. NEW CASES examined during the year (excluding contacts) :—														
(a) Definitely tuberculous	171	163	28	12	9	21	22	23	180	184	50	35	449	
(b) Doubtfully tuberculous	—	—	—	—	—	—	—	—	11	10	9	16	46	
(c) Non-tuberculous	—	—	—	—	—	—	—	—	118	177	132	116	543	
B. CONTACTS examined during the year—														
(a) Definitely tuberculous	1	15	1	4	—	—	5	—	1	15	6	4	26	
(b) Doubtfully tuberculous	—	—	—	—	—	—	—	—	1	—	8	6	15	
(c) Non-tuberculous	—	—	—	—	—	—	—	—	45	90	128	138	401	
C. CASES written off the Dispensary Register as														
(a) Cured	18	29	21	11	5	5	10	12	23	34	31	23	111	
(b) Diagnosis not confirmed or non-tuberculous (including cancellation of cases notified in error)	—	—	—	—	—	—	—	—	173	284	274	270	1,001	
D. NUMBER OF PERSONS on Dispensary Register on December 31st :—														
(a) Diagnosis completed	696	886	259	247	45	82	137	130	741	968	396	377	2,482	
(b) Diagnosis not completed	—	—	—	—	—	—	—	—	8	2	6	9	25	
Number of persons on Dispensary Register on January 1st, 1929	2,323			Number of consultations with medical practitioners :—										
Number of patients transferred from other areas and of "lost sight of" cases returned	32			(a) At Homes of Applicants										424
Number of patients transferred to other areas and cases "lost sight of"	96			(b) Otherwise										1,636
Died during the year	120			Number of other visits by Tuberculosis Officers to Homes										156
Number of observation cases under A (b) and B (b) above in which period of observation exceeded 2 months	25			Number of visits by Nurses or Health Visitors to Homes for Dispensary purposes										15,159
Number of attendances at the Dispensary (including Contacts)	8,427			Number of (a) Specimens of sputum, etc., examined										628
Number of attendances of non-pulmonary cases at Orthopaedic Out-stations for treatment or supervision	149			(b) X-ray examinations made in connection with Dispensary work										33
Number of attendances, at General Hospitals or other Institutions approved for the purpose, of patients for (a) "Light " treatment	48			Number of Insured Persons on Dispensary Register on the 31st December										1,065
(b) Other special forms of treatment	—			Number of Insured Persons under Domiciliary Treatment on the 31st December										133
Number of patients to whom Dental Treatment was given, at, or in connection with the Dispensary	3			Number of reports received during the year in respect of Insured Persons :—										
				(a) Form G.P. 17										28
				(b) Form G.P. 36										48

Classification on admission to the Institution	Condition at time of discharge.	Duration of Residential Treatment in the Institution.												TOTAL.
		Under 3 months.			3-6 months.			6-12 months.			More than 12 months.			
		M.	F.	Ch.	M.	F.	Ch.	M.	F.	Ch.	M.	F.	Ch.		233
PULMONARY TUBERCULOSIS.	Quiescent	9	8	-	16	14	2	13	20	14	-	1	19	116
	Improved	4	1	-	-	-	-	1	-	-	-	-	-	6
	No material improvement	1	-	1	-	-	-	-	-	-	-	-	-	2
	Died in Institution	-	-	-	-	-	-	-	-	-	-	-	-	-
	Quiescent	-	1	-	-	-	-	2	-	-	-	-	-	3
	Improved	-	-	-	-	-	-	-	-	-	-	-	-	-
	No material improvement	-	-	-	-	-	-	-	-	-	-	-	-	-
	Died in Institution	-	-	-	-	-	-	-	-	-	-	-	-	-
	Quiescent	1	2	-	2	-	-	13	2	-	-	2	-	22
	Improved	2	3	-	4	3	-	6	9	-	-	-	-	27
	No material improvement	-	-	-	-	1	-	-	-	-	-	-	-	1
	Died in Institution	-	-	-	-	-	-	1	-	-	-	-	-	1
	Quiescent	-	-	-	-	-	-	-	-	-	-	-	-	-
	Improved	-	1	-	2	3	-	-	4	-	1	-	-	11
	No material improvement	1	2	-	4	1	-	2	7	-	3	1	-	21
	Died in Institution	1	2	-	1	-	-	3	-	-	2	1	-	10
NON-PULMONARY TUBERCULOSIS.	Quiescent or Arrested	-	-	3	-	-	3	-	-	1	-	-	3	10
	Improved	-	-	1	-	-	-	-	-	-	-	-	-	1
	No material improvement	-	-	-	-	-	-	-	-	-	1	-	-	1
	Died in Institution	-	-	-	-	-	-	-	-	-	-	-	-	-
	Quiescent or Arrested	-	-	-	-	-	-	-	-	-	-	-	-	-
	Improved	-	-	-	-	-	-	-	-	-	-	-	-	-
	No material improvement	-	-	-	-	-	-	-	-	-	-	-	-	-
	Died in Institution	-	-	-	-	-	-	-	-	-	-	-	-	-
NON-PULMONARY TUBERCULOSIS.	Quiescent or Arrested	-	-	-	-	-	-	-	-	-	-	-	-	-
	Improved	-	-	-	-	-	-	-	-	-	-	-	-	-
	No material improvement	-	-	-	-	-	-	-	-	-	-	-	-	-
	Died in Institution	-	-	-	-	-	-	-	-	-	-	-	-	-
	Quiescent or Arrested	-	-	-	-	-	-	-	-	-	-	-	-	-
	Improved	-	-	-	-	-	-	-	-	1	-	-	-	1
	No material improvement	-	-	-	-	-	-	-	-	-	-	-	-	-
	Died in Institution	-	-	-	-	-	-	-	-	-	-	-	-	-
Observation for purpose of diagnosis	Tuberculous	2	-	-	-	-	-	-	1	-	4	2	2	11
	Non-tuberculous	-	-	-	-	-	-	-	1	1	-	2	5	9
	Doubtful	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total	2	1	1	2	4	4	1	2	1	1	3	7	17

Quantock Sanatorium. The Medical Superintendent, Dr. V. C. Martyn, has furnished the following Report :—

The Sanatorium has been open for the reception of 68 cases—33 males and 35 females—throughout the year 1930. During this period 126 cases have been admitted, of whom 59 were males and 67 females. 123 patients were discharged, 60 males and 63 females. There were no deaths during the year. The average stay for female patients was 185 days and for male patients 182 days. This is an average stay of about 26 weeks for each patient. Two patients left the Sanatorium before the completion of the required treatment.

Treatment in the Sanatorium was carried out in the same way as last year, i.e., by rest, graduated exercise and work with good plain food under open air conditions. As each patient has to be seen at least once every day while doing graduated exercise and work, this treatment can only really be done safely at a Sanatorium.

Patients are only treated here by artificial pneumothorax method when the ordinary treatment has failed or thought not likely to be successful. Up to the present, 17 cases have received this treatment with most encouraging results, 15 are doing well, 1 had to be abandoned owing to adhesions, and 1 died. In the last case artificial pneumothorax was only carried out on admission here as a last resource and was really hopeless.

X-ray work has enormously increased owing to the necessity for constant observation on the screen whilst artificial pneumothorax treatment is being carried on.

The social side has not been neglected as it is most important that the patients should be happy and as cheerful as possible. We are very grateful to those ladies and gentlemen who so kindly come out to entertain the patients and staff. Whist drives, billiard matches, etc., are also frequently arranged. During the summer, croquet, clock golf, bowls, etc., are much enjoyed.

The Chapel was dedicated on the 4th August by the Venerable Archdeacon Farrer. The cost of the alterations and equipment was borne by generous contributions from the Sanatorium Committee, patients, staff and other friends. The services now being held in the Chapel are much appreciated by patients and staff, as shown by largely increased congregations.

I should like to thank the Matron and Nursing Staff, the engineering staff and gardeners for their loyal co-operation and devoted work for the patients. Although the work of the Sister and Nurses has greatly increased on account of special treatment and no extra nurses have been obtained, they have shown great willingness and devotion to duty.

WEIGHTS.

Increase in weights in Kilos.

	1—6	6—12	12—18	Total.
Males	35	20	0	55
Females	27	25	4	56
The average gain in weight of all patients (116) weighed on discharge				= 5.28 kilos
" " " of 57 male patients				= 4.76 "
" " " of 59 female patients				= 5.79 "
The average loss in weight of 5 patients weighed on discharge				= 1.6 "

Seven patients were not weighed on discharge, being on absolute rest.

The average gain in weight of 133 patients weighed on discharge during 1929 was 5.24 kilos. In 1930 the average gain in weight of 116 patients was 5.28 kilos, showing an increase over the previous year of 0.04 kilos.

Duration of Treatment and Condition on discharge.

		Under 3 months.			3—6 months.			6—12 months.			Over 12 months.			Total
		M.	F.	Ch.	M.	F.	Ch.	M.	F.	Ch.	M.	F.	Ch.	120
Class TB Minus.	Quiescent	8	6	0	16	12	0	13	21	1	0	0	0	77
	Improved	4	1	0	0	0	0	1	0	0	0	0	0	6
	No material improvement	0	0	0	0	0	0	0	0	0	0	0	0	0
	Died	0	0	0	0	0	0	0	0	0	0	0	0	0
Class TB + Group 1.	Quiescent	0	1	0	0	0	0	2	0	0	0	0	0	3
	Improved	0	0	0	0	0	0	0	0	0	0	0	0	0
	No material improvement	0	0	0	0	0	0	0	0	0	0	0	0	0
	Died	0	0	0	0	0	0	0	0	0	0	0	0	0
Class TB + Group 2.	Quiescent	1	1	0	1	0	0	9	2	0	0	1	0	15
	Improved	1	0	0	2	1	0	1	5	0	0	0	0	10
	No material improvement	0	0	0	0	0	0	0	0	0	0	0	0	0
	Died	0	0	0	0	0	0	0	0	0	0	0	0	0
Class TB + Group 3.	Quiescent	0	0	0	0	0	0	0	0	0	0	0	0	0
	Improved	0	0	0	0	3	0	0	0	0	0	0	0	3
	No material improvement	0	2	0	0	1	0	1	2	0	0	0	0	6
	Died	0	0	0	0	0	0	0	0	0	0	0	0	0

In 50 out of 60 men discharged the disease was quiescent = 83.33 per cent. In 44 out of 59 women discharged the disease was quiescent = 74.58 per cent. The 1 child discharged was quiescent. The percentage of cases quiescent on discharge shows an increase over the 1929 results. 12 cases were admitted for observation; 9 were found to be tuberculous and are included in the above figures. The remaining 3 were discharged as non-tuberculous.

Working capacity of patients on admission and discharge.

	<i>Full Working Capacity.</i>		<i>Fit for light work.</i>		<i>Unfit for work.</i>	
	Admission.	Discharge.	Admission.	Discharge.	Admission.	Discharge.
Males	0	46 = 76.7 %	0	9 = 15.0 %	60	5 = 8.3 %
Females	0	40 = 63.5 %	0	9 = 14.3 %	63	14 = 22.2 %

On admission 100 per cent. were unfit for any work. On discharge 69.9 per cent. of all patients were fit for full work ; 14.6 per cent. for light work ; and 15.4 per cent. were unfit for work. These results are better than last year.

Classification on admission of cases discharged during 1930.

Tubercle Bacilli.

<i>Classification.</i>	No.	%	M.	F.	Positive.		Negative.	
					M.	F.	M.	F.
Early	27	21.95	9	18	1	0	9	22
Intermediate	84	68.29	47	37	18	18	32	22
Advanced	0	0.	0	0	0	0	0	0
Doubtfully tuberculous	12	9.76	4	8	0	0	0	0

Tubercular complications presented by the patients were :—Bronchitis, Knee, Larynx, Lupus, Nose, Pleura, Pleurisy and Spine.

TREATMENT WITH ARTIFICIAL LIGHT.

This work is being carried out under Tuberculosis, Education and Maternity and Child Welfare Schemes. Four light treatment centres were in use during 1930 and 375 clinics were held. The new cases seen were 133, while the total attendances were 4,471. Of the cases, 59 were tuberculosis. The details are given in my Report for 1930 as School Medical Officer.

MATERNITY AND INFANT WELFARE.

Rate of Infantile Mortality. This is the number of deaths under one year of age per 1,000 births. For 1930 it was 45.82. This is practically identical with the figure for 1928 (45.20) which was the lowest on record for the County and therefore is a highly satisfactory figure. The rate in the rural areas was 46.76, and in the urban areas 44.44.

The Urban and Rural Rates are shown in Table II. and the causes of the 266 deaths in Table A (at end of the Report).

Table XIV. shows the months of death. These figures do not exactly correspond with those in Table A, as the latter is taken from the Registrar-General's figures, and this Table is from figures given by the District Medical Officers of Health, obtained from the local Registrars.

This Table shows that 167 of the 260 deaths under one year of age took place before the child was a month old. This is 64 per cent., and of these, 75 per cent. took place before the infant was a week old. In other words, a large proportion of the deaths are pre-natal in origin and illustrates the importance of pre-natal work. The very low infantile mortality rate is realized when it is stated that of the babies which survive the first month, all but one in 50 live at least beyond their first birthday.

The Midwifery Service. The number of certified midwives who gave notice of their intention to practise during 1930 was 332, consisting of 326 trained and 6 "bona fide" midwives.

The percentage of 1930 births in the County attended by trained midwives as midwives was 58.3, by bona fide 0.4, the remaining 41.3 per cent. being, for the most part, attended by medical men, a small but uncertain proportion being attended by uncertified women.

During the year 1,006 visits of inspection were made to trained midwives and 22 visits to bona fide midwives, representing an average of 4 visits to each trained and 5 visits to each bona fide midwife.

Summary for all Midwives during the year.

	<i>Trained.</i>	<i>Bonafide.</i>	<i>Total.</i>
Cases attended as Midwife ...	3,382	24	3,406
Cases attended as Monthly Nurse ...	1,328	14	1,342
Doctor sent for for Mother ...	922	8	930
Doctor sent for for Child ...	150	0	150
Stillbirths ...	76	0	76
Death of Mother ...	9	0	9
Death of Child ...	26	0	26

A doctor was called in under Section 14 of the Midwives' Act in 31.7 per cent. of their cases by the trained and in 33.3 per cent. of cases by the bona fide midwives. For both classes of cases this was 31.7 per cent.

During the year 812 doctors' accounts were paid under the contributory scheme, at a cost of £1,325 : 10 : 9d., while the contributory fees were £719, the deficit payable by the County Council being £606 : 10 : 9d. The average doctor's fee per case was £1 : 12 : 8d. Fees amounting to £63 : 19 : 0d. were paid in 51 cases not coming under the scheme, and of this £32 : 10 : 6d. was recovered. Apart from the Central Office Expenses, the cost of working this section of the Midwives' Act for 1930 was, therefore, £637 : 19 : 3d. This is £137 : 16 : 3d. more than last year.

Maternal Mortality. This is included in two groups in the Registrar-General's returns and is so included in Tables A. and B. The two groups are "Puerperal Sepsis" and "Other Accidents and Diseases of Pregnancy and Parturition."

The deaths from these causes for each of the last 20 years are shown in the following Table :—

	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930
Puerperal Sepsis	8	9	8	1	5	7	4	8	6	9	5	2	4	5	10	6	12	14	8	12
Other Accidents and Diseases of Pregnancy and Parturition.....	13	17	20	21	18	24	17	20	9	21	22	15	13	19	16	15	11	12	13	13
Total	21	26	28	22	23	31	21	28	15	30	27	17	17	24	26	21	23	26	21	25
Rate per 1,000 Births	2.53	3.48	3.72	3.13	3.41	4.65	3.90	5.14	2.64	3.63	3.60	2.45	2.49	3.69	4.21	3.46	3.83	4.36	3.69	4.31

While considerable fluctuations occur, there is no decided fall in this rate and it must be considered unsatisfactory. The rate in Somerset is rather below that for the country generally and the reduction of these maternal deaths is a national problem which is receiving much attention.

During the year 15 cases of Puerperal Fever and 68 cases of Puerperal Pyrexia were notified. Arrangements have been made with different Hospitals to take in County cases and facilities are offered. During 1930 five cases were so admitted. The Hospitals with which arrangements have been made are the following :—

Bath Royal United Hospital, Bridgwater Hospital, Bristol Royal Infirmary,
Chard Hospital, Minehead Isolation Hospital, Wells Hospital, Yeovil Hospital.

Ophthalmia Neonatorum. During the year only 21 cases were notified. The distribution of the cases is shown in Table III. Under the Public Health (Ophthalmia Neonatorum) Regulations 1926, three cases were sent to Hospital under the County Council Scheme and in one case a special nurse was supplied.

All the cases are followed up for long periods, to ascertain if there is any impairment of vision. All but one cleared up completely. In one case there was left some scarring and slight impairment of vision.

Nursing and Maternity Homes. At the end of the year the number of homes on the Register was 38. They are all visited from time to time by Dr. Halliday, Miss Gane or myself to see that the premises are in order and the requirements of the County Council are complied with as regards management.

Milk Grants. Throughout the year milk was granted to necessitous cases under the Milk (Mothers and Children) Orders of the Ministry of Health. Grants were made to 1,998 cases, at an estimated cost of £640. Last year £558 was spent.

The grants were carefully made and supervised, and given as allowances for specific public health purposes. Of the grants made, about 23 per cent. were to expectant mothers, 51 per cent. to nursing mothers, and 26 per cent. to children under five years of age. Great care is taken to prevent abuse and to see that the milk is taken only by the person for whom it is intended.

Ante-Natal Work. This important work is being steadily extended. One valuable development is by utilising every opportunity to improve the knowledge of the midwives. Amongst other methods, small courses of instruction have been given. It is very difficult to get large numbers of nurse midwives together at one centre, and a series of local meetings at different centres in the County have been arranged. Each course consists of eight meetings, once each week. Three of the meetings are taken by Dr. Halliday, two by Miss Gane, and three by Miss Lamb. During the year forty-eight such lectures have been given at the following centres: Bath, Glastonbury, Frome, Martock, Bridgwater and Chew Magna.

Arrangements have also been made with six maternity homes in the county to take in cases at the cost of the County Council, when sent for certain special conditions such as abnormality of the mother or suspected difficult confinement or unsuitable or very inaccessible home. During the year twelve cases were admitted under this scheme. All the mothers did well with satisfactory results except that one baby died and one suffered from ophthalmia. The maternity homes at which arrangements have been made for County Council cases are the following :—Bridgwater, Taunton, Minehead, Wellington, Bath and Yeovil.

A good many of the Infant Welfare Centres have now started ante-natal clinics. Those at work in the areas under the County Council scheme are Bridgwater and Clevedon, run directly by the County Council, and Crewkerne, East Harptree, Frome, Shepton Mallet and Street, managed by Voluntary Associations.

Work of Infant Visitors. The work has been on the same lines as in previous years. The births during 1930 were referred for visits as follows :—

		Rural.	Urban.	Total.
Whole-time County Staff	...	187	378	565
District Nurses	... ..	3,304	1,102	4,406
		<u>3,491</u>	<u>1,480</u>	<u>4,971</u>

Special supervision is given to illegitimate children, while all the Infant Visitors are instructed to give their chief attention to the cases which, from their earlier visits, they find need special attention. Some cases, for example, are visited only every three to four months, others perhaps twice a month. Supervision is continued for all children to the end of their second year and for those found to require it, up to school age.

Part I., Children Act, 1908. Since April, 1930, the supervision of children under seven maintained for reward, apart from their parents, has been transferred to the County Council and is administered by the Public Health Committee. All the Health Visitors have been appointed as Infant Life Protection Visitors, and this work has been organised in the County Health Department.

The children on our Register, at the end of 1930, number 258, and as regards methods of payment, may be grouped as follows :—

Weekly payments in	...	...	...	...	...	228
Single lump sum payment	...	...	...	...	...	6
Otherwise paid for (mostly monthly or irregularly)	...	...	...	...	...	24
						<u>258</u>

Those for whom a lump sum has been paid require and receive special supervision.

The number of foster mothers with one child only = 128 ; with two children = 18 ; with three children = 6 ; with four children = 3 ; with over four children = 4.

The foster mothers who run a regular baby home are therefore few and those with over four infants are one at Taunton with 41 at the end of 1930 but now only authorised for 35 ; one at Bridgwater with 10 (authorised for 12) ; one at Portishead with 8 (authorised for 13), and one at Easton-in-Gordano with 5 infants.

Although it has been necessary in certain cases to reduce the number of infants allowed per house, only one individual has had to be removed from our list of foster mothers. In several instances I have had to refuse applications to act as foster-mother, the person or home being unsuitable.

TABLE XIV.
DEATHS UNDER 1 YEAR OLD.

URBAN.	Under 1 week.	1-4 weeks (inclusive).	Total under 1 month.	1-6 months.	6-12 months.	Total Deaths under 1 year.	RURAL.	Under 1 week.	1-4 weeks (inclusive).	Total under 1 month.	1-6 months.	6-12 months.	Total Deaths under 1 year.
Bridgwater	4	1	5	5	3	13	Axbridge	8	3	11	2	1	14
Burnham	1	0	1	0	0	1	Bath	1	0	1	1	1	3
Chard	0	0	0	0	0	0	Bridgwater	3	3	6	5	0	11
Clevedon	4	1	5	0	0	5	Chard	6	0	6	2	0	8
Crewkerne	2	0	2	1	0	3	Clutton	4	3	7	3	2	12
Frome	4	1	5	1	0	6	Dulverton	3	0	3	1	0	4
Glastonbury	1	0	1	1	0	2	Frome	4	0	4	1	2	7
Highbridge	3	0	3	0	0	3	Keynsham	2	3	5	0	3	8
Ilminster	0	0	0	1	0	1	Langport	4	0	4	3	0	7
Midsomer Norton	1	0	1	3	1	5	Long Ashton	9	5	14	0	0	14
Minehead	0	0	0	1	0	1	Shepton Mallet	6	2	8	0	1	9
Portishead	2	1	3	0	0	3	Taunton	11	0	11	2	2	15
Radstock	1	0	1	1	1	3	Wellington	0	0	0	0	0	0
Shepton Mallet	0	0	0	1	0	1	Wells	7	1	8	3	2	13
Street	0	1	1	0	0	1	Williton	3	0	3	2	1	6
Taunton	5	2	7	6	3	16	Wincanton	9	2	11	0	6	17
Watchet	0	0	0	0	0	0	Yeovil	3	5	8	2	1	11
Wellington	0	1	1	0	0	1							
Wells	3	1	4	3	2	9							
Weston-super-Mare	5	4	9	4	2	15							
Wiveliscombe	0	0	0	0	1	1							
Yeovil	7	1	8	3	0	11							
Totals	43	14	57	31	13	101	Totals	83	27	110	27	22	159

Infant Welfare Centres. At the end of 1930 the Centres in the County, exclusive of those at Yeovil, Taunton and Weston-super-Mare which are outside the County Scheme, so far as I am aware, were :—

Centre.	Day of week opened.	Frequency of Meetings.
Bridgwater	Friday	Every week.
Bruton	Tuesday	Alternate weeks.
Chard	Friday	1st and 3rd Friday in every month. Doctor 1st Friday.
Clevedon	Thursday	Every Thursday except 1st in month. Doctor last Thursday each month.
Crewkerne	Tuesday	Alternate weeks.
Curry Rivell	Thursday	1st and third (Doctor 1st Thursday).
Frome	Tuesday	Every week.
Harptree	Tuesday	Alternate weeks.
Long Ashton	Monday	Alternate weeks.
Pill	Wednesday	1st and 3rd Wednesday in every month.
Portishead	Friday	Alternate weeks.
Shepton Mallet	Friday	Alternate weeks.
Street	Wednesday	Every week. Doctor twice a month.
Wellington	Thursday	Every week. Doctor twice a month.
Wells	Tuesday	2nd and 4th Tuesday in every month.
Wraxall	Friday	1st and 3rd Friday in every month Doctor once a month (1st Friday).

The Centre at Bridgwater is the only one for which the County Council is directly responsible, but grants are paid to nearly all the others by the County Council and all these are visited during the year, while, so far as possible, a close connection is maintained between their work and the home visits paid by the infant visitors.

Bridgwater Infant Welfare Work. The following gives some particulars of the work.

Births. During 1930 the number of births notified was 357; of these 222 were attended by midwives. A doctor was called in to help the midwife in 88 cases. 13 babies died during the year, a rate of 46.9 deaths per 1,000 births.

<i>Home Visiting.</i>	No. of children on visiting list	...	...	...	...	602
	Total visits paid to infants	...	...	...	...	3649
	Ante-natal visits paid	...	...	...	...	151
	Total visits paid during 1930	...	...	...	...	3800

Milk Grants. 39 grants were made, at an estimated cost of £99. As far as possible it is made a condition that cases receiving milk attend at the Centre so that the benefit of the grants can be estimated. Were it not for the milk grants a very considerable number of mothers would be unable to breast feed who now do so.

<i>Centre.</i>	Number of individual children who attended the centre	...	231
	Number of individual mothers who attended the centre	...	188
	Average weekly attendance of children	...	38
	Average weekly attendance of mothers	...	28
	Total number of attendances (children, 1,803; mothers, 1,326)	...	3,129
	Total number of medical consultations for infants	...	808
	Total number of medical consultations for women (excluding ante-natal)	...	57

The medical work was carried out by Dr. Halliday.

Lectures and talks have been given by Miss Lamb, Miss Kennedy, the health visitors, (Miss Plummer and Mrs. Vaughan) and others, and have been of great value.

The Mothercraft Scheme, started in 1929, has been continued, whereby garments of a hygienic type can be made or purchased at minimum cost. This department, which is under the voluntary committee, is growing, and appreciation is shown by the increasing demand for help in the production of suitable articles of this kind.

Ante-Natal Work. This was carried on throughout the year both by home visits and by inviting attendance at the Ante-Natal Centre once a month. The total attendances were 80, with 33 women attending. Maternity bags are loaned in suitable cases.

There is a very helpful Voluntary Committee which provides voluntary workers for the Centre. Virol, Dried Milk, and Feeding Bottles are supplied at the Centre at cost price; suitable cases are helped out of local funds.

Baby Hospital, Bridgwater. This hospital has continued to be very useful. During the latter months of the year the baby ward was re-decorated, while the front was altered to give light from above, and this was fitted with "Vita" glass, much improving the ward.

At the beginning of 1930 there were 5 babies in the ward and during the year 25 were admitted. Four of these 30 cases died, two being within twenty-four hours of admission. The causes of death were:—prematurity (1); inanition due to respiratory obstruction (1); gastro-enteritis (1); deficient vitality (1). Six cases were in the ward at the end of the year. Of the remaining 20 cases, 2 had congenital defects and have since died, the other 18 were all much improved and have continued to do well, except one which relapsed on account of neglect by the parents.

The nature of the defects for which the babies were admitted were :—Prematurity 5 ; Mal-nutrition 5 ; Mismanagement or neglect 7 ; Digestive disorders 6 ; Definite defects (congenital heart, enlarged glands, broncho-pneumonia, deformities, etc.) 7 ;—total 30.

In the majority of cases simple hygienic care and careful feeding was all the treatment required. It is for these classes of cases that this little hospital is so valuable. Many of the babies would have died outside from lack of this specialised care, while now the probability is that they will grow up as strong as the normal child. In no degree is this work lending itself to the perpetration of the unfit ; the unfit are made fit not patched up to be a drag on the community.

Rickets. To deal with rickets properly in rural areas is a much more difficult administrative problem than in crowded urban areas. The procedure adopted has been described in detail in previous Reports. As modified in 1929, all children under five years showing abnormalities, including rickets, have to be reported to me by the Infant Visitors. The rickets cases are dealt with as a separate group but there is no exact line of demarcation. A good many cases of mal-nutrition and catarrhal conditions which originally were reported as possible rickets are now dealt with under the abnormal group other than rickets.

The fresh cases, or suspected cases, dealt with during 1930 were 172. Of the 1929 cases, 50 whose treatment was commenced after September 1st, 1929, have to be included to study the results of the treatment given. This makes 222 cases under consideration.

These are classified as follows :—

- A. Definite well marked clinical rickets.
- B. Less definite but apparently true rickets.
- C. Mal-nourished children with doubtful evidence of rickets.

The results of treatment to the end of 1930, judged from the facts recorded on the register forms, were as follows :—

TABLE XV.

RESULTS OF TREATMENT.	A.	B.	C.	TOTAL.
Cured	1	6	18	25
No further treatment required and only kept under supervision	5	10	9	24
Greatly improved but still under treatment	0	18	9	27
Improved—still under treatment	7	11	21	39
No visible improvement	2	6	9	17
Recent cases still under treatment	4	26	27	57
Died	0	2	0	2
Left the County	1	2	3	6
Definite deformity the main defect and transferred to Orthopaedic Scheme	21	3	1	25
Totals	41	84	97	222

The "recent cases still under treatment" includes all cases the treatment of which was commenced within four months of the end of the year, i.e., all cases reported after September 1st, 1930.

These results may be considered satisfactory. Excluding the recent cases, the 2 deaths and the 6 who left the County, the figures show 16 per cent. cured, 16 per cent. practically cured, 41 per cent. improved but still under treatment and 27 per cent. either with no visible improvement or with definite deformity necessitating transfer to the Orthopaedic Clinic.

The table given in last year's Report left 118 children still under treatment at the end of 1929. All these cases have been on our Rickets register and under treatment. The results as regards these 118 cases are shown in Table XVI.

TABLE XVI.

Cases still under Treatment at the end of 1929.

Results of Treatment.	Reported at end of 1929 as:—			
	Greatly improved still under treatment.	Improved still under treatment.	No visible improvement	Total.
Cured	18	27	1	46
No further treatment required, and only kept under supervision	4	14	1	19
Improved ; still under treatment	6	23	5	34
No improvement	1	1	2	4
Died	0	0	0	0
Left the County	1	2	0	3
Transferred to Orthopaedic Scheme	0	3	*6	9
Of School age, and referred for special attention of School Medical Inspector	0	3	0	3
	30	73	15	118

* No active Rickets.

Distribution of the Cases. The distribution of the cases accepted for treatment, with a few which were rejected after further supervision, is shown in the following Table :—

TABLE XVII.

<i>Urban District.</i>	<i>Cases Reported.</i>	<i>Rural District.</i>	<i>Cases Reported.</i>
Bridgwater	6	Axbridge	9
Burnham	0	Bath	16
Chard	0	Bridgwater	12
Clevedon	3	Chard	8
Crewkerne	1	Clutton	3
Frome	6	Dulverton	3
Glastonbury	5	Frome	7
Highbridge	0	Keynsham	7
Ilminster	0	Langport	6
Midsomer Norton	0	Long Ashton	3
Minehead	0	Shepton Mallet	5
Portishead	0	Taunton	16
Radstock	0	Wellington	4
Shepton Mallet	0	Wells	13
Street	4	Williton	3
Taunton	—*	Wincanton	11
Watchet	4	Yeovil	13
Wellington	1		
Wells	2		
Weston-super-Mare	—*		
Wiveliscombe	1		
Yeovil	—*		
Total	33	Total	139

* Separate Maternity and Child Welfare Authorities.

While this Table is interesting, it cannot be accepted as an accurate representation of the distribution of rickets throughout the County. The disease is an indefinite one in the earlier stages and therefore the degree of notification will in fact turn to some extent upon the alertness of the Infant Visitors and the special attention they give to this condition.

Abnormal Children other than Rickets. All abnormal children have now to be reported by the Infant Visitors. These children are dealt with in various ways. Many are seen by Dr. Halliday and the appropriate treatment advised, some are seen by other members of the staff, a few are referred to Infant Welfare Centres. A certain number have been seen by the County Oculist as squint cases and the appropriate treatment given. It is not contemplated to give treatment out of County funds, but the aim is that all children not progressing properly should come under review at the Health Department with the object that adequate treatment, if treatment is necessary, should be advised.

360 notifications of conditions were received, including a few from doctors or through the Orthopaedic centres. The actual number of children reported was rather fewer as in some cases there was more than one defect.

Excluding the cases reported as definite or suspected rickets which are tabulated above, the following table includes the cases which have been reported under other headings.

TABLE XVIII.

CONDITION.	No. Reported.	ACTION TAKEN.						RESULT.				
		Treat- ment by County (a) (b) (c) (d) (e)	Extra Nourish- ment— Milk, Ostelin or Oil and Malt.	Special Observ- ation by Infant Visitor and Report.	Special Reports from County Medical Officers.	Referred to local Infant Welfare Centre.	No action : Under own Doctor or in hospital.	Im- proved.	Still under Observ- ation or Treat- ment.	No Im- prove- ment.	Recent (Since Sept. 1930)	Moved from County or Died.
Malnutrition ...	104	—	89	9	35	4	7	14	56	5	27	2
Catarrhal ...	31	—	29	—	12	1	2	5	22	1	3	—
Debility ...	51	2 (e)	44	3	12	—	5	15	24	3	7	2
Backward ...	17	1 (a) 1 (c)	5	4	10	1	2	1	10	3	—	3
Minor Postural Defects ...	40	4 (c)	17	14	16	—	5	10	20	3	6	1
Orthopaedic Defects ...	25	20 (c)	—	—	—	—	5	—	25	—	—	—
Eye Defects ...	36	31 (b)	—	—	—	—	5	—	34	—	—	2
Congenital Defects ...	18	1 (d)	—	3	1	1	13	—	6	9	—	3
Mental Defects ...	9	8 (d)	—	1	—	—	—	—	—	8	—	1
Other Defects ...	29	3 (e)	6	9	2	—	16	12	12	—	5	—
	360	71	190	43	88	7	60	57	209	32	48	14

(a) Mary Stanley Home.

(b) County Oculist.

(c) Orthopaedic.

(d) Examined for Mental Deficiency.

(e) Referred to Tuberculosis Clinics.

To enable these abnormal children to be seen, and to encourage the infant visitors in their work, a system of special occasional clinics by Dr. Halliday has been established. These "flying" clinics have been arranged quite irregularly as the occasion arises and held at any convenient place. At these, the infant visitors present the infants and children under three years under their care about whom they are not satisfied as to their progress while they also discuss any difficulties in their work. These are very useful in places where there are no infant welfare centres. The method of work varies from the collection of a dozen or more children at the nurses' house or at a room taken for the purpose to the visiting of three or four scattered families in their own homes. Some ante-natal work is sometimes done at these visits. Forty-five such flying clinics were held during the year. The average number of children seen at each was seven.

The total number of children now included on our registers as under special observation at the end of 1930 was, rickets 268; other abnormal cases 435; total 703.

ORTHOPAEDIC SCHEME.

The County Scheme and the results of working during 1930 are described in considerable detail in my Report for 1930 as School Medical Officer.

The new cases seen and dealt with through the Clinics were as follows:—

Cases seen at the Clinics.

Tuberculosis of bones and joints	6
Spastic paraplegia	8
Infantile paralysis (poliomyelitis)	23
Osteo-myelitis	2
Congenital dislocation of the hip	10
Club foot	28
Other congenital deformities	9
Birth injury	5
Rickets	20
Scoliosis	14
Torticollis	10
Diseases and injuries of the toes	6
Postural deformities:—	
General defects of posture	39
Flat foot (often with other postural deformities)	52
Kyphosis	3
Knock knees (many old rickets)	113
Bow-legs	37
	<hr/>
	244
Results of injuries	9
Other defects and deformities	18
	<hr/>
	412
	<hr/>

The number of new cases seen is 63 less than in the previous year.

Great attention is paid to the prevention of crippling defects along the lines of the prevention of postural defects and their treatment in the very early stages, rickets scheme (*q.v.*) and the prompt treatment of poliomyelitis before the paralysis has affected muscle utility or when affected to restore to use as completely as possible. Considerable steps are also in operation to reduce tubercular infections of bones and joints from human sources but not much is done to reduce bovine infections. The latter is mainly a national question and large scale measures are necessary.

HEALTH PROPAGANDA.

A great deal of work was carried out during the year, most of it by Miss Lamb, B.Sc., the County Health Lecturer, but some in other ways.

The Health Exhibition has been further improved and the exhibits have been increased so that it is now a Health Exhibition instead of merely one dealing with Infant and Child Welfare work. It was held at twelve centres during the year, seven being in connection with Women's Institutes, two at Welfare Centres, one at an annual meeting of a District Nursing Association, and two at selected places (Dulverton and Minehead), to follow up work done previously in these areas. The attendance varied considerably, but all were successful and valuable. The transit of the Exhibition is now difficult, but the County Council has authorised the purchase of a trailer for this purpose.

Miss Lamb gave twenty-one talks to mothers at eleven different Infant Welfare Centres, and these included the display of posters and the distribution of leaflets.

An important feature of the work is giving lectures and talks to different Voluntary bodies, mainly Women's Institutes, but also other bodies such as to Girl Guides, to Mothers' Unions, etc., and Miss Lamb gave thirty-five such lectures during the year.

Great attention still continues to be paid to the school side of propaganda work. A special course for teachers, consisting of nine lectures on Physiology and Hygiene, was given at the following centres :—

Bath	...	...	( Average attendance, 14 teachers)
Glastonbury	...	...	( " 17 ")
Martock	...	...	( " 26 ")
Wiveliscombe	...	...	( " 10 ")
Chew Magna	...	...	( " 12 ")

A large number of posters and diagrams were used, while lantern slides were shown at most of the lectures. The whole course was made as practical as possible and to bring out the kind of instruction to be given on hygiene to school children. Lists of suitable books and posters were made out and can be obtained by Head Teachers through the County Education Office. It is anticipated that Teachers who have attended this course will be able to give, or greatly improve, hygiene instruction to the children in their schools.

Most teachers welcome short talks on health matters to the children, and the opportunity of being in the district often enables such a talk to be given. These lectures are given with the help of pictures and diagrams. Through these visits the teachers can be supplied with lists of the latest health books, with free literature, posters, health competitions, etc., all of which can be had on application to the different distributors. New ideas to help the teaching of hygiene are supplied at these visits. Schools which are not teaching hygiene are re-visited with the hope of stimulating the desire for taking this subject. During the year 81 schools were visited.

It has not been found possible to give a great deal of instruction in regard to the prevention of Venereal Diseases during the year, but in connection with the teachers' courses a tenth lecture is usually given on social hygiene, or rather two lectures since men and women teachers are taken separately. These are given by doctors on the County staff. Appropriate literature is given away or sold, and books indicated to be obtained from the County Library.

The Courses to Nurse-Midwives were continued and each course of eight lectures was held at six centres. Three lectures in each course were given by Miss Lamb, three by Dr. Halliday, two by Miss Gane. They were held at Bath, Glastonbury, Frome, Martock, Bridgwater and Chew Magna.

Two new developments were tried during the year. One was in relation to tuberculosis and lectures were offered through the tuberculosis Care Committees. This was only started in the autumn, and eleven lectures were arranged to spread the essential facts as to the causation and prevention of tuberculosis. The other was a development of free village lectures in villages that have no organisations and where, hitherto, nothing has been done. Miss Lamb speaks enthusiastically of the excellent response, and the keen interest shown and this is a most profitable line of development.

In addition to the above a considerable variety of other Health propaganda work has been done. Lectures have been given at many centres, such as Annual Meetings of Tuberculosis Care Committees or of Nursing Associations by Dr. Short and other tuberculosis officers, by myself and by other members of the staff. There has been extensive sale or free distribution of health literature. The Health and Cleanliness Council has been very helpful by means of numerous gifts of leaflets, calendars and posters, which have been distributed to schools and other centres. Our own stock of leaflets, posters, and lantern slides has been added to considerably during the year.

The above is a short account of work done mainly by Miss Lamb. In addition, a very great deal of propaganda work is carried out by the County Health Department as part of its ordinary routine work by all its Officers. This especially applies to tuberculosis, infant welfare work, and some aspects of school hygiene.

Welcome help towards improving the health knowledge standard in the County has been given by the Somerset Rural Community Council who have arranged a number of health lectures during the season 1930-31.

A course of ten lectures on various health topics was given in the autumn under their auspices, as part of a British Red Cross Tour, and also in the autumn a series of talks to Girl Guides at ten different centres on "Cleanliness in Relation to Health" in connection with their Guide Health Badge. A further nine individual lectures on health subjects were given in November and December, three on "Diet and Food Values" being given by Miss Lamb. In all, Miss Lamb gave seven free lectures in connection with the Rural Community Councils health work.

The implanting of a sound knowledge of health, and the ways to attain it, and the factors which prejudice it, is a slow, and at times uphill, task, but it is one of immense importance, although we have no means of measuring its results. We are glad to have the co-operation of all bodies interested in health improvement.

GENERAL SANITARY ADMINISTRATION.

WATER SUPPLIES.

Under Section 57 of the Local Government Act, 1929, the County Council has power to make grants towards the provision of water supplies in individual parishes and for the first time is directly concerned in water problems. It is desirable therefore that comprehensive information should be available as to the present position in the County. Utilising special returns from the Local Authorities and supplementing the information supplied—in most cases fairly full and complete but in others meagre—the following account has been compiled. In my Annual Report for 1914 a similar survey was given but nothing since has been attempted. From this Report it is possible to ascertain the water supply of every parish in the administrative County.

Somerset has an abundant rainfall and many geological formations which are suitable sources of water supply. There is really no lack of suitable water nor are their insuperable difficulties in the way of distribution. If there had been in the past one large authority, like the County Council, responsible for water provision it would not have been difficult to have made pure water supplies available over all the County. There is much evidence however that problems of water supply have been considered and solved in a purely parochial fashion, the immediate needs of the area in question being the only factor considered. This has resulted in some curious anomalies and much waste of money, while leaving areas without water, although with natural water supplies quite near, these having been acquired for other districts and so not being available. This piecemeal consideration with an inadequate appreciation of the importance of an abundant, available and pure supply of water has left considerable areas in the County inadequately supplied. This inadequacy applies to the inhabitants of many parishes only supplied with surface wells, often some distance from the cottages, but is particularly serious as regards water supplies to farms, most of which produce milk for sale.

The main Geological formations which are utilised in the County as sources of water supply are the following :—

The range of the Mendips collects a great deal of the water which is either obtained from the Old Red Sandstone forming the core and which is exposed over a considerable area, the carboniferous limestone forming so large a part, or the dolomitic conglomerate on its flanks. The Failand and other hills in the North of the County are the same formation. The detailed report shows many areas supplied from these sources. For the most part they are all bacterially pure but the limestone supplies give rise to some anxiety from the widespread arecence of fissures, which may allow contaminating matters to gain access. This is mostly noticeable after periods of heavy rain, and in late autumn some of the supplies frequently show evidence of some contamination absent at other seasons. As an example, and in consequence of this, the large Downside Abbey supply is chlorinated.

In the West of the County the Devonian rocks of the Quantocks, Brendon and Exmoor hills are largely impervious and the water collected from them is soft and pure and supplies many important districts. A very important source of supply is from the oolitic rocks in the East of the County, running as a belt from Milbourne Port to the North of Bath. The detailed report shows how many districts are supplied from water in the Midford Sands and from other rocks of this series. They form pure and reliable sources of supply. The chalk and Greensand formations are not extensive in the County but in the South West several important supplies are obtained from these strata. Supplies are also derived from the Lias formation, but for the most part these are not very abundant and mostly utilised for local supplies.

The areas worst off naturally for water are the district between Bridgwater, Weston-super-Mare and Glastonbury, and the area between Clevedon and Weston-super-Mare. Both are flat and covered with alluvium over the Red Marl and they are without local sources of supply. Water has to be conveyed some distance to give them a piped supply. Those not so supplied are mainly dependant upon surface wells of doubtful purity and inadequate quantity, and in a few parishes upon rain water. With proper conservation of existing supplies, there is no real difficulty in providing both areas with pure water.

On the chemical side the water collected from Devonian and other upland surfaces is soft and with but little mineral matters. For the most part the main water supplies are with a high mineral content and are hard and this particularly applies to the limestone supplies. The following are chemical analyses of a number of the typical supplies recently made in the County Laboratory.

TABLE XIX.

Chemical Analyses of Typical Supplies.

	Somerton Supply. (Lower Lias).	Compton Durville Springs. (Midford Sand).	Wellow Supply. (Fullers Earth).	South Marsh (Carboni- ferous Limestone).	Charterhouse Springs. (Old Red Sandstone).	Barrington Supply. (Marl- stone).
Reaction	PH=7.4	PH=7.4	PH=7.4	PH=7.4		PH=7.4
Total Solids	56.4	44.8	35.6	45.8	14.1	39.6
Alkalinity (As CaCO_3)	30.0	30.75	23.5	24.3	22.5	28.25
Total Hardness	40.0	32.5	24.8	28.5	13.31	34.0
a. Temporary	27.0	27.8	20.3	21.3	8.74	25.2
b. Permanent	13.0	4.7	4.5	7.2	4.57	8.7
Chlorine (in terms of sodium chloride)	3.75	3.8	1.9	13.8	2.5	3.1
Nitrogen as Saline and free Ammonia	Nil	Nil	Nil	Nil	Nil	Nil
Nitrogen as Albuminoid Ammonia	0.001	Nil	Nil	Nil	0.002	Nil
Nitrogen as Nitrates	0.2	Nil	0.54	0.16	0.1	0.7
Nitrogen as Nitrites	Nil	Nil	Nil	Nil	Nil	Nil
Oxygen absorbed from Permanganate (4 hours at 80° F.)	0.04	0.04	Nil	0.04		0.05
Lime (CaO)	21.35	9.1	16.3	12.6	8.08	16.65
Magnesia (MgO)	1.1	0.3	0.35	3.5		1.15
Sulphuric Anhydride (SO_3)	9.7	3.98	3.45	3.35		2.45
Nitric Anhydride (N_2O_5)	0.8	Nil	2.1	0.6		2.7
Carbon Dioxide (CO_2)	13.2	13.55	10.25	10.7		12.45
Free Carbon Dioxide	2.64	0.5	0.66			1.76
Iron	0.01	0.07	0.02	0.02		0.02
Silica (SiO_2)	0.2	0.25	0.1	0.13		0.2

The County Laboratory is extensively used for the examination of water samples and is prepared to analyse quarterly every public supply without charge. It is important to control the purity of all supplies by systematic examinations. If contamination occurs it is usually possible to locate the source by detailed examinations of each source of supply.

1.—RURAL DISTRICTS.

AXBRIDGE.

The following supplies are owned by the Rural District Council :—

(1) **South Marsh Supply.** Constructed in 1898. From springs in the carboniferous limestone at Cross and at Dunyeat, Compton Bishop. The well at Cross is protected from pollution, but more protection of the Dunyeat springs is required. The yield from the Cross well is 154,000 gallons per day ; from Dunyeat 36,000 gallons per day. The water is pumped to a service reservoir of brick and cement with a galvanized roof North of the pumping station ; capacity 138,000 gallons. No purification processes necessary. The contributory places are supplied by gravity from the reservoir.

An abundant supply. The parishes supplied are Badgworth, Biddisham, Burnham Without, East Brent, Lympsham, Mark, Weare and Chapel Allerton.

(2) **Cheddar and Axbridge Supply.** From springs from the old red sandstone emerging from the lower limestone shale. One set of springs are in Blagdon parish, near Ellick Farm, the others East of Lower Farm in Charterhouse Parish. The minimum flow, said to be 360,000 gallons per day. The water gravitates to a reservoir in Cheddar Gorge of 70,000 gallons capacity and to a reservoir at Brent Knoll of 180,000 gallons capacity. Supplies the parishes of Cheddar and Axbridge, parts of Charterhouse, a few houses in Compton Bishop and the Urban District of Highbridge. Nearly the whole of Wedmore is being supplied from the same source.

(3) **Winscombe, Rowberrow and Shipham Supply.** From springs in Rowberrow Warren, in the old red sandstone. Adequately protected. A gravity supply with a covered reservoir of 74,000 gallons capacity. Minimum flow said to be 41,000 gallons per day. Is inadequate in drought period and is supplemented from the mains of the Bristol waterworks at Sidcot (Winscombe) as required. Supplies the parishes of Winscombe, Shipham and Rowberrow, with small portions of Compton Bishop and Churchill.

(4) **Blagdon Supply.** From springs in Blagdon parish known as Ellick Springs, from the old red sandstone with underlying Devonian shale. Minimum flow 13,000 gallons per day. A gravitation supply with reservoir of 68,000 gallons capacity. Supplies all Blagdon Parish except a few houses.

The other parishes in the district are supplied as follows :—

Berrow. Wells, and in part from the Burnham Urban District Council Supply.

Brean. Supplied for the most part from the Burnham Urban District Council supply.

Brent Knoll. Part is supplied by a private enterprise with water obtained from the Burnham supply ; part from a private spring from the middle lias in the combe end of the church ; a few houses are supplied from the South Marsh supply ; part from wells.

Burrington. The village portion is supplied from a spring from the old red sandstone, three-quarters of a mile from the church which belongs to the Burrington Parish Council. The yield varies from 8,000 to over 150,000 gallons per day. The water gravitates to a reservoir of capacity 7,000 gallons. The rest of the parish is supplied from wells, local springs and rainwater storage.

Chapel Allerton. Twenty-three premises are supplied from the South Marsh Supply. The remainder of the parish obtains its water from wells and rainwater.

Charterhouse. A few houses are supplied from the Cheddar and Axbridge supply, the rest from local springs and wells.

Christon. The major portion of the parish is supplied from a spring in the Dolomitic Conglomerate. The average yield is 30,000 gallons per day. The water is pumped by ram to a reservoir of 11,500 gallons capacity. A private supply owned by Mr. W. Wainwright.

Churchill. Apart from about 25 houses from the Winscombe parish, water supplied from wells.

Loxton. The whole of the parish is supplied from a private supply owned by Major Lethbridge. Source of supply is from springs at Loxton Bottom with considerable yield except in times of drought. The water is pumped by windmill to two reservoirs of capacity 12,500 and 4,000 gallons respectively.

Uphill. Nearly all the houses supplied from the Weston-super-Mare supply ; the remainder from wells.

Worle. The greater part supplied from Weston-super-Mare water supply.

Hutton. The greater part of the parish is supplied from wells, but 16 houses are supplied from a small supply at Oldmixon, Hutton, the water being taken to a reservoir of 12,000 gallons.

Banwell. Supplies from standpipes belonging to the Weston-super-Mare Urban District Council are available for a number of houses but the rest of the parish is dependent upon wells, most of which are known to be polluted.

Bleadon. Most of the parish supplied from wells, but 13 houses derive their water from a private supply at Totterdown.

The remaining parishes, i.e., *Butcombe, Compton Bishop, Congresbury, Kewstoke, Locking, Nyland-cum-Batcombe, Puxton, Wick St. Lawrence* and *Wrington* are almost entirely dependent upon surface wells while in some of the higher parts the only source of water supply is rain water.

For a number of years the Axbridge Rural District Council has had under consideration an extensive scheme for the area known as the North Marsh which it is proposed to supply from the mains of the Bristol Water Company which pass through the district. There has been long delay but under this scheme the following parishes will be supplied :—*Banwell, Locking, Churchill, Congresbury, Puxton, Wrington* and *Wick St. Lawrence*.

BATH RURAL.

Supplied from the Bath City Water Supply. Their statutory area of supply includes the whole of the parishes of *Bathampton, Batheaston, Charlcombe, Swainswick, Weston, Langridge* and *Woolley*. The greater part of *Batheaston*, lower *Swainswick*, *Weston*, the hamlet of *Bailbrook* (*Swainswick* parish) and a few houses in *Charlcombe*, *St. Catherine's* and *Wooley* are supplied. The majority of the houses in the last three parishes are supplied from wells or local springs. In *Bathampton* 19 houses adjacent to the City Boundary are supplied from the City supply.

Supplied from the Combe Down Water Co. Their statutory area of supply includes the parishes of *Englishcombe, Claverton, Southstoke, Freshford, Monkton Combe, Hinton Charterhouse* and a small portion of *Combe Hay* parish. This water is derived from springs from the *Midford Sands*. This Company supply *Combe Down, Claverton* (excepting 18 houses supplied by the *Skrine Estate*), *Freshford, Southstoke* and 22 houses in *Hinton Charterhouse*, 13 houses in *Englishcombe*. In addition, 2 houses in *Wellow* and 2 in *Combe Hay* are supplied.

Monkton Combe. The *Combe Down* portion is supplied as above. The village of *Monkton Combe* is supplied from springs at *Claverton Down* issuing from the base of the *Great Oolite*, yielding about 8,600 gallons a day. The supply belongs to the *Bath R.D.C.*

Bathampton. The village is supplied from Oolite springs thrown out by the Fullers' Earth on Bathampton Down, the property of the Bath R.D.C. The yield varies from 12,000 to 30,000 gallons per day. A gravitation supply with a stone, closed reservoir of 24,000 gallons capacity just below the springs. Apart from the 19 houses from Bath City supply, the rest of the houses are from wells and springs.

Bathford. Nearly the whole of the parish is supplied from a spring from the Fullers' Earth at Ashley Wood, belonging to the Bath R.D.C. The yield varies from 16,000 to 45,000 gallons per day. The water is pumped to a covered reservoir on Bathford Hill of capacity 170,000 gallons.

Camerton. The majority of the houses are in Peasedown St. John. A Joint Water Committee buys water in bulk from Radstock U.D.C. (see page 65) and is stored in a reservoir of 70,000 gallons capacity at Haddox Hill just above Peasedown, and distributed by gravity. Also supplies parts of Wellow and Dunkerton. Camerton New Buildings with from 60 to 70 houses in all is supplied from a spring from the Oolite owned by the R.D.C. A gravitation supply with a small covered brick reservoir of 4,000 gallons capacity at Red Post. The rest of the parish from wells or local springs.

Dunkerton. The village part of the parish is supplied from a R.D.C. supply from springs in the Fullers Earth yielding 1,000 to 3,000 gallons per day. A gravitation supply with a reservoir of 2,500 gallons capacity. A small part from the Peasedown supply, the rest from wells.

Hinton Charterhouse. Nearly all from a R.D.C. supply, the water being derived from a spring from the Forest Marble on Newtown Down, yielding 11,000 to 20,000 gallons per day. The water is pumped to a reservoir of 21,000 gallons capacity.

Swainswick. Lower Swainswick supplied from Bath City. Upper Swainswick obtains its water from a spring from the Great Oolite at Charmydown belonging to the R.D.C., yield 3,000 to 8,000 gallons per day. A gravitation supply with one small reservoir of 2,000 gallons.

Wellow. The greater part of the village obtains its water from a spring at Upper Hayes, yielding 4,000 to 9,000 gallons a day, belonging to the R.D.C. A gravitation supply with a reservoir of 21,800 gallons capacity.

Shoscombe in the same parish, is supplied from a spring from the Lower Oolite at Wellow Tynning. The water is pumped to a covered reservoir of 50,000 gallons capacity. The supply belongs to the R.D.C. The yield is given as 13,000 to 28,000 gallons per day. A small part of the parish is supplied from the Peasedown supply; the remaining houses from wells.

The parishes of *Charlcombe, Combe Hay, Langridge, St. Catherine's* and *Wooley* are supplied from wells with a few local springs.

BRIDGWATER RURAL.

The two following supplies are provided and owned by the Rural District Council :—

The Willoughby Supply. The water is derived from the middle and lower Devonian strata in the Quantock Hills, collected in the parish of Broomfield. The Council rent the water rights from the owners of the Willoughby Estate. The water is collected by vertical cuttings down to about 12ft. below the water saturation level, the cuttings being subsequently filled up by loose stones. From these, the water passes by pipes underground to a small concrete covered service reservoir of 65,000 gallons capacity. The supply is augmented during the summer months from a borehole sunk to a depth of about 400 feet into the upper and middle Devonian strata, which was completed in 1924. A small pump is provided to convey the water into the reservoir. The total yield in winter from the supply is upwards of 1,000,000 gallons per day but it drops markedly in the summer. A gravitation supply, apart from the borehole, and no additional reservoir accommodation is provided.

The greater part of the following parishes are supplied from this supply, i.e., Bawdrip, Chedzoy, Cossington, Lyng, Huntspill, Middlezoy, North Petherton, Othery, Pawlett, Puriton, Westonzoyland, Woolavington. A small part of the following parishes are also supplied, i.e., Bridgwater Without, Broomfield, Chilton Trinity, Chilton Polden. The remainder of these parishes are supplied from wells.

Nether Stowey. Derived from springs in the Devonian at Bincombe, in Over Stowey parish. The springs are tapped beneath ground level and the water carried to a small service reservoir of 14,000 gallons capacity. The yield is over 100,000 gallons per day in winter, but much less in summer, but remains ample for the area supplied. Practically all Nether Stowey supplied.

Bridgwater Borough Supply (*q. v.*). The parishes within the area of this supply under the Bridgwater Act (Water) 1877, are Bridgwater Without (part), Cannington, Chilton Trinity (part), Durleigh, Charlynch, Spaxton and Wembdon. Of these, about two-thirds of Bridgwater Without, about 13 per cent. of Cannington, and about three-fourths of Wembdon are supplied, but not the other parishes.

Goathurst. The greater part is supplied from a private source owned by Lord Wharton. The rest of the parish from wells.

Thurloxton. The major part supplied from springs from the Ilfracombe Beds forming a private supply, formerly owned by Viscount Portman.

The remaining parishes have no piped supplies but obtain their water from wells, with a few small springs. These parishes are *Aisholt, Ashcott, Broomfield, Catcott, Charlinch, Durleigh* (one or two houses from Bridgwater Borough supply), *Chilton Polden* (a very few houses from Willoughby supply), *Edington, Enmore, Fiddington, Greinton, Moorlinch, Otterhampton, Over Stowey* (a few houses from the Quantock Sanatorium supply), *St. Michael Church, Shapwick, Spaxton, Stawell, Stockland Bristol and Sutton Mallet.*

CHARD RURAL.

The following supplies are owned by the Rural District Council:—

Combe St. Nicholas. The village is supplied from a spring from the Upper Greensand at Combe Head at the top of the village. A gravitation supply with a small reservoir close to the spring. Said to be ample for needs. Rest of the parish from wells or local springs.

Dowlish Wake. All the village is supplied from the Ilminster Urban Supply, the water being purchased in bulk at 1s. per 1,000 gallons. The Ilminster main passes through the village, the branch mains being the property of the R.D.C.

Misterton. The village is supplied with water purchased in bulk from the Crewkerne Water Supply Co., at 1s. per 1,000 gallons. The remainder from wells.

Winsham. A spring from the Upper Greensand at Winsham supplies the main part of the village. A gravitation supply with one reservoir of 5,250 gallons capacity. The supply is usually adequate, but in the summer of 1929 there was a shortage. The remainder of the parish, which is a very scattered one, is dependent on wells.

West Crewkerne. The hamlet of Hewish has a small gravitation supply from a spring at Hewish which yields about 400 gallons per day. One small reservoir of 100 gallons. The water is piped to two standpipes which are used by ten houses. Houses at Clapton are supplied from the Crewkerne Water Co. The remainder of the parish is from wells.

Chaffcombe. A spring in Chaffcombe Wood from the Upper Greensand is collected into a small 160 gallon tank and piped to the school and to one standpipe in the village. Liable to contamination and inadequate. The rest of the parish from wells.

A number of parishes have supplies provided by private owners :—

Chard Without. Perry St. and some houses at South Chard, a total of about 70—80 houses, are supplied from an undertaking owned by Messrs. Small and Tidmas, Ltd., Perry St. Works. The water is obtained from a spring from the base of the Greensand, West of South Chard, received into a tank built over the spring. A gravitation supply with a reservoir of 10,000 gallons at Dyke Hill, Perry St. Supply adequate with considerable surplus in wet seasons. Arrangements are under consideration to take some of this water in bulk by the Chard R.D.C. to supply the Combses district of this parish. A loan of £700 for mains and other work is asked for in an application to the Ministry of Health. At present the water supply is from an open stream.

A private pumped supply exists for 40 houses at Park Terrace, immediately north of Chard Borough. The rest of the parish is from wells or local springs.

Donyatt. Most of the parish is supplied from a spring at Downes Farm, Donyatt, and piped to the village and forced by a ram to the higher portions of the village. Owners, the Somerset County Council.

Hinton St. George. Hinton House and the village is supplied from a supply owned by Earl Poulett. The water is from springs from the Inferior Oolite and Midford Sands in Hinton Park. A gravitation supply with a reservoir of 80,000 gallons in Hinton Park.

Small parts of the following parishes have piped supplies :—

Ilminster Without. A certain number of houses have a piped supply from springs at Kingstone, owned by Col. Vaughan Lee (see Ilminster, page 64). Ten cottages at Dowlsh Ford have water from a private supply owned by Messrs. Hutchings, Shepherd and Co. Houses at Greenway have water piped from a spring owned by the Somerset County Council. The rest of the parish from surface wells, except a few houses at Crock St, which obtain their water from a stream.

Buckland St. Mary. Most of the parish is supplied from surface wells, but there is a spring from the Greensand, about 450 yards North of the Church, vested in the Chard R.D.C., which is piped to a public standpipe in the village from which water continually flows. Water from this source is also laid on to three properties, including the school.

Cricket Malherbie. There is a private piped supply to Cricket Court and Farmhouse. The other houses and cottages have wells.

Cricket St. Thomas. Cricket House has a private supply and this also goes to other houses on the estate. The few other houses have wells.

Lopen. A spring from the Midford Sands belonging to Earl Poulett supplies twelve houses in the lower part of the village. Surface wells supply the rest of the parish.

Merriott. There is a piped supply from a spring at Moorlands to a standpipe at Knapp in the village. Apart from this the whole parish is dependent on surface wells or local springs.

White Lackington. Rather under half the houses are supplied from two private supplies owned by Col. Vaughan-Lee, one being a spring at White Lackington, the other the Long Orchard Hill Supply. The rest of the parish from wells.

The remaining parishes have no piped supplies, apart from a few to large houses with their attached cottages, but are dependent almost entirely upon surface wells. There are *Ashill, Broadway, Chillington, Cudworth, Dinnington, Ilton, Kingstone, Knowle St. Giles, Seavington St. Mary, Seavington St. Michael, Shepton Beauchamp, Stocklinch, Wambrook, Wayford, West Dowlish and Whitestaunton*. As the major portions of many of the other parishes are supplied from wells it will be noted that a very large part of Chard Rural is dependent upon surface wells for their water.

CLUTTON.

There are no supplies owned by the Rural District Council but a considerable part of the area is supplied from water purchased in bulk from the Downside Abbey Authorities.

Downside Abbey Supply. For particulars as to source see Shepton Mallet Rural (page 50). The mains in Clutton area are the property of the Clutton R.D.C., and they also provide the Timsbury reservoir of capacity 170,000 gallons. Nine Clutton parishes obtain their water from this source. From the distributing reservoir, through a separate 3-inch main pipe, 208 out of a total of 220 houses in Chilcompton are supplied, the average daily consumption being nearly 10,000 gallons, equal to 3,500,000 gallons per annum. The minimum consumption is fixed at 6,000 gallons per day, or 2,190,000 per annum, there being no fixed maximum.

The remainder of the parishes enumerated hereunder derive their supply through an 8-inch main from the distributing reservoir with subsidiary mains, ranging from 5-inches to 3-inches, to supply the various villages. The number of houses supplied in each parish are as shown in the table :—

<i>Parish.</i>	<i>Total No. of Houses in Parish.</i>			<i>Houses supplied.</i>	<i>Houses not supplied.</i>
Cameley	122	100	22
Clutton	313	292	21
Farmborough	269	217	52
Farrington Gurney	163	163	—
High Littleton	249	220	29
Paulton	671	592	79
Ston Easton	94	78	16
Timsbury	460	355	105
Totals	2,341	2,017	324

In addition to the above, some 110 fields are supplied by meter.

The total amount consumed at present is practically 50,000,000 gallons per annum, equivalent to 137,000 gallons per day. The minimum quantity allowed is 70,000 gallons per day, or 25,550,000 gallons per annum. The maximum amount is 180,000 gallons per day, 65,700,000 gallons per annum. These figures show a surplus of 43,000 gallons per day.

East Harptree. 89 houses and the schools out of 157 houses are supplied from a private source belonging to Mr. Hill, of Harptree Court. The water is obtained from three springs from the Trias and two from the Lias in the hillside to the south of the village. The water passes by gravity to a collecting reservoir of about 15,000 gallons. Two other small springs supply eight houses. The rest of the parish is from wells.

Stowey. Part of the parish is supplied from a private supply belonging to Lord Strachie. The water is derived from a spring from the Lias at Stowey Hill. A gravity supply with a storage reservoir of about 12,000 gallons capacity. Ten houses in Stowey Bottom are supplied from the Bristol Water Company main, the remaining nine houses are from wells.

Stanton Drew. The village portion of this parish, including about seventy houses, is supplied from the Bristol Water Company's supply, the mains passing through the area—twelve houses at Pensford are similarly supplied. The remaining 140 houses are supplied by wells.

Chew Magna. Part of Bishops Sutton, in this parish, is supplied from the Bristol Water Co. mains. This supplies 35 houses and the school. There are about 432 houses in the parish and the rest are supplied from surface wells, with a few local springs. Many of the wells are liable to contamination, and the question of a proper water supply has been under consideration for over seventeen years.

The remainder of the district is supplied from surface wells, with a few local springs. The parishes so supplied are *Chelwood, Chew Stoke, Compton Martin, Hinton Blewitt, Litton, Nempnett, North Widcombe, Norton Malreward, Publow, Ubley and West Harptree.*

DULVERTON.

The only supplies owned by the Rural District Council are for Dulverton and Winsford.

Dulverton. The supply is from three sources: one is from Rock Inn Spring and the spring rises in the bottom of the service reservoir of capacity 8,500 gallons. The other sources are Govier's Gate Spring and Hollam Valley Springs, both from Devonian rock. The minimum yield recorded from the springs is 33,000 and the maximum at least 100,000 gallons per day. The supply is ample for present requirements and more springs, if necessary, can be tapped in Hollam Valley. In addition to the Rock Inn reservoir, there is one at Hollam Valley, capacity 10,000 and one at Battleton, 2,000 gallons capacity. A gravitation supply.

Winsford. The supply is from springs from Devonian strata in Burrow Wood, yielding about 15,000 gallons per day in the driest time. A gravitation supply, with five small service reservoirs with a total capacity of about 10,000 gallons. Supplies practically all the village.

Brompton Regis. The village has two piped supplies derived from springs from the Devonian. One spring is in a field about 400 yards from the Church, the other is in the Pound at Lower Town. The original spring yields about 5,000 gallons per day in an average summer season, but the lower (Pound) spring is very short in dry seasons. There are two small reservoirs.

Exford. Thirty-two houses and other properties in the village of Exford are supplied from a piped supply vested in the consumers as "The Exford Water Trustees." The water is derived from springs at Combe Farm, Exford, from Devonian Sandstone. The minimum yield is about 5,000 gallons per day. There are two sand filters and one service reservoir of capacity about 2,500 gallons.

Brushford. The village and several other cottages are supplied from a piped supply derived from a spring in a field above the vicarage, the water passing to a 1,000 gallon capacity tank. Another spring supplies a standpipe and two or three houses. The rest of the parish is supplied from local wells or springs.

Exton. A spring near Exton Church, with a small reservoir, furnishes a piped supply to a number of houses. A number of local springs are utilised by different owners.

Withypool. There is a local spring with one stand pipe, from which about a dozen cottages obtain their water. This runs out in summer as do also many of the surface wells which supply the rest of the parish.

Exmoor. A few houses at Simonsbath have a piped supply from a local spring, the rest of the area is dependent on local springs and wells.

The other parishes, i.e., *Hawkridge, Huish Champflower, Skilgate, Upton and Withiel Florey*, are dependent upon local springs and wells.

FROME RURAL.

The following supplies are owned by the Rural District Council:—

Buckland Dinham. The village and some isolated houses supplied from a spring from the Forest Marble at Lydes Water, Buckland Dinham, yielding about 12,000 gallons a day. A gravitation supply, with a small underground reservoir of 280 gallons capacity.

Hemington. A small part of the village is supplied from a spring in the sandstone, yielding about 1,000 gallons per day. A gravitation supply with a small stone tank. The greater part of the parish is supplied by surface wells.

Kilmersdon. Coleford is supplied from a spring from the Carboniferous Limestone rising in White Hole Hill, yielding about 8,600 gallons a day. In part a gravitation supply, but part has to be pumped to a reservoir of 40,000 gallons capacity. Kilmersdon village and Haydon are supplied from the Radstock U.D.C. supply, through Lord Hylton. The rest of the parish is from surface wells.

Leigh-on-Mendip. The village and most of the parish supplied from Tadhil spring and a spring near Town's End Hole, emerging from the Old Red Sandstone. Yield about 12,000 gallons per day. A gravitation supply with a reservoir of 2,400 gallons capacity.

Nunney. A spring at Gaer Hill, Marston Bigot, from the Upper Greensand, yielding about 46,000 gallons per day. A gravitation supply to two underground storage tanks at Nunney Catch, of a total capacity of 40,000 gallons. Supplies in Nunney parish the villages of Nunney and Trudoxhill with some isolated houses; also supplies few houses in Marston Bigot and Witham on the route of the main.

Rodden. All the parish is supplied by the R.D.C., from the Frome Urban Supply. No reservoir provided by the R.D.C.

Selwood. The Clink and Spring Gardens parts of this parish are supplied from the Frome Urban Supply. The mains, but no reservoir or other works, supplied by the R.D.C. Part of the parish is supplied from a spring at Selwood belonging to the Marquis of Bath.

Wanstrow. The village and some other houses supplied from a spring half-a-mile south west of the village from the Forest Marble, with a daily yield of about 12,000 gallons. A gravitation supply with a 5,000 gallons reservoir. Rest of the parish from surface wells.

Supplies owned by private owners are the following.—

Elm. A gravitation supply, owned by Mr. A. Starr, from a spring intercepted underground from the carboniferous Limestone, with a 500 gallon tank at Buckland Dinham.

Mells. Mells village is supplied from a spring a quarter-mile from the village, belonging to Lady Horner, which issues from Forest Marble beds overlying Fullers' Earth. A gravitation supply with one small tank.

The village of Vobster is partially supplied from a spring from the Limestone, belonging to Messrs. Wainwright and Co. A gravitation supply to filter bed and storage tank, capacity 4,000 gallons. The rest of the parish from wells.

Witham Friary. Nearly all the parish is supplied from five springs from the upper Greensand in West End Wood, three miles from Witham Friary. The average daily quantity available is 35,000 gallons. Two reservoirs.

Woolverton. Supplied from a spring at Woolverton. The water is filtered. A gravitation supply with a reservoir at Woolverton of capacity 60,000 gallons.

Writhlington. A considerable part supplied from the Radstock Urban Council supply, the water being purchased in bulk by Lord Hylton and distributed to the houses. Part of the parish of *Babington* is also supplied in this way, the rest from wells.

The remaining parishes, i.e., *Beckington, Berkley, Cloford, Farleigh Hungerford, Foxcote, Hardington, Laverton, Lullington, Marston Bigot* (about nine houses from the Nunney supply), *Norton St. Philip, Orchardleigh, Rode, Tellisford* and *Whatley* obtain their water from wells and local springs.

KEYNSHAM RURAL DISTRICT.

Brislington. Supplied by the Bristol Water Works Company with the exception of five farms and eleven houses which are supplied from springs and wells.

Burnett. The whole parish is supplied from an undertaking belonging to the Bristol Municipal Charities. There are three springs from the Coal Measures near the Compton Dando boundary. The site of the supply is grass land with no near sources of contamination. Receiving tank brick and cement. The springs discharge about 3ft. 6ins. underground into tank to work hydraulic ram. The dry weather yield taken July 27th, 1929, was 19,000 gallons per 24 hours. The water is pumped to two 1,500 gallon tanks in village by hydraulic ram, or alternately by oil engine. The cottages are supplied by standpipes, private houses and farms have the water laid on. There is a considerable surplus and the quality of the water is good.

Compton Dando. The greater part of the parish, including the hamlet of Woolard, is supplied from wells, but there are the following small sources of supply:—A spring in a field near Green Farm in red sandstone discharges underground into a brick tank and then to a large brick supply tank with concrete cover. The latest dry weather yield (July 30th, 1929,) was 7,200 gallons per 24 hours. The water is pumped to two farms but gravitates to a standpipe opposite the school from this supply, and this supplied the school and eleven cottages. Green Farm, Church Farm and four council houses (by gravity) are also supplied from the same source. Drinking water for six houses at Compton Common is obtained from a pump over a spring from which an increased supply was got by sinking in 1921 to a depth of about 11 feet. (This was previously a dipping well). There has been no shortage since. There is an excellent spring in a field near Tucking Mills, giving 50,000 gallons per 24 hours, dry weather flow. Good bacteriological analysis. This spring is on fairly high ground and the water would gravitate to a considerable number of houses if a new supply should be required.

Corston. This parish is included in the area of the West Gloucester Water Company but only ten houses are supplied. Most of the parish is supplied from a supply laid on for the use of the inhabitants by Earl Temple, who is the chief landlord. This is derived from a spring at water trough hill from the white Lias. The spring discharges about 4 feet underground into supply tank. The dry weather yield, August, 1929, was 1,200 gallons, but this spring is liable to run very low in drought. In a fairly wet season gives approximately 15,000 to 20,000 gallons daily. There is a large supply tank and the water gravitates to the standpipes which supply forty houses and one farm. Bacteriological analyses show good quality. Three farms in the Parish have separate piped supplies.

Keynsham. Practically the whole of Keynsham, including Chewton Keynsham and Stockwood, is supplied by the West Gloucester Water Company under West Gloucester Water Company Acts. Four outlying farms have their own supply. Six houses at Stockwood Vale and Charlton Bottom are supplied by three wells and three springs. Seven houses at Courtenay Road and Burnett Road by wells. One house in Manor Road by well.

Kelston. Most of this parish obtains water from a supply (Broadmore spring) owned by Captain Inigo Jones. It is derived from springs issuing from the base of the beds immediately succeeding the Lower Lias in agricultural land. The springs discharge into covered brick receiving tanks about 4ft. 6ins. underground. It supplies three farms and is laid on to twelve houses. Ten get their supply from a fountain to which this water gravitates. The dry weather yield on August 26th, 1931, was 8,280 gallons per day at fountain, July 23rd, 1929, 12,240 gallons per day at fountain. The supply is adequate, with a probable surplus if required.

A smaller supply South-east of village supplies one farm and six other houses. Kelston Park House has its own private supply. Ten cottages and one small holding at Kelston Mill are supplied by a separate spring.

The Broadmore spring has always provided a surplus supply, but the others would not during a drought.

Marksbury. The whole of this parish, with the exception of three farms and two private houses (which have their own supply,) and the hamlet of Hunstrete, obtains its water from a spring belonging to Mr. H. L. Popham. The spring is an underground one near the Post Office issuing from the Rhaetic white lias. The water is pumped by engine to supply tank in yard at Church Farm and gravitates to farm and standpipes. Recorded yields were:—August 13th, 1921, 8,640 gallons per 24 hours; July 29th, 1929, 12,960 gallons per 24 hours. There is no surplus in dry weather and the bacterial quality is unsatisfactory. A scheme for a supply of pure drinking water for the parish is under consideration.

The hamlet of Hunstrete is supplied by a spring on the estate of Mr. Popham, and from wells. The spring is a supply to Hunstrete Farm and seven houses. Five are supplied by wells. No recent analysis and no shortage reported.

There is a spring near the Priston boundary called Rattle Spring, with a flow of about 50,000 gallons per 24 hours in an average summer. The analysis of main spring was not satisfactory but a branch tapped on higher ground proved good. Another spring of probably 15,000 to 20,000 gallons per 24 hours discharges into a stream below Court Farm, Marksbury. No analysis yet made.

Newton St. Loe. The village is supplied by an undertaking belonging to Earl Temple. The water is derived from springs in field above the village near road to Wilmington, issuing from the base of the Midford Sands just above the 300ft. contour line. The water is collected in a brick tank covered. Tested yields were:—August 17th, 1921, 5,040 gallons per 24 hours; August 1st, 1929, 4,320 gallons per 24 hours.

The supply gravitates to the village with four standpipes for cottages, with water laid on to farms and private houses. In addition, Park Farm, Pennsylvania Farm and Newton Mill have their own supply, while six cottages near the estate workshops are supplied by a spring below the workshops, and four cottages near Clays End Farm supplied by another spring. Bacteriologically the supply is good. There is no surplus from the supply to the Parish, but there is a considerable quantity of spring water near Pennsylvania Farm on high ground.

Northstoke. The Parish of Northstoke, excluding Swinford, is supplied from springs in the hills above the village and under Lansdown. The springs come from the Great Oolite above the 600 feet contour line. The water is collected into two brick tanks. In addition to collecting

tanks there are two storage tanks. The water gravitates to farms and standpipes. Gaugings showed:—August 31st, 1921, 4,000 gallons per 24 hours; July 29th, 1929, 4,400 gallons per 24 hours. Sufficient, but no surplus in dry seasons.

The hamlet of Swinford, part of which is in the Warmley Rural District, is supplied from a spring in the field between Northstoke and Kelston Hills. The spring issues from the base of the beds above the lower lias, at an elevation of about 300 feet. The water is collected into a brick and cement supply tank in a grass field and gravitates to the hamlet. Gaugings:—August 11th, 1921, 17,280 gallons per 24 hours; July 23rd, 1929, 18,360 gallons per 24 hours. A surplus is available from this and other springs near. Only fifteen houses so supplied are in the Keynsham Rural District. The supply belongs to the Keynsham and Warmley District Councils.

Priston. The Parish of Priston, with the exception of the outlying Farms, Mill Farm and New Farm, which have their own supplies, two cottages at Pottern near New Farm, supplied by spring, two on the Tunley side supplied by spring and two new houses near Tunley supplied by well, obtains its water from a spring in field at Nailwell. The spring derived from lias stone discharges into a brick and cement tank arched over for protection. Yielded August 13th, 1921, 21,600 gallons, 24 hours *overflow*; July 22nd, 1929, 29,000 gallons, 24 hours *overflow*. The water gravitates to three standpipes for use of cottagers; water laid on to private houses and farms. Bacteriologically said to be good. There is a considerable surplus. There is also a spring which is not utilised, discharging into the stream below Village Farm, of a greater volume than the one supplying the parish.

Queen Charlton. Part of the village is supplied from three wells in Rhaetic White Lias, etc., about half a mile South-west of the village. Two wells, each 14 feet deep, are stope lined, the other, 26 feet deep, is brick lined. Two have cast iron M.H. cover, one under Windmill a wood cover. The quantity is not known, but is liable to run short during long drought. Four farms, Manor House and four private houses have the water laid on. One farm and ten cottages are supplied by wells. A spring at the water troughs is used as a supplementary supply in case of shortage. By windmill and petrol engine, the water is pumped to two galvanized storage tanks of 1,850 gallons capacity, from which it gravitates to village.

Saltford. The whole parish is supplied by the West Gloucester Water Company, with the exception of one outlying farm and a few cottages supplied by wells.

Stanton Prior. The Parish of Stanton Prior, with the exception of Manor Farm and Priory Farm, which have separate piped supplies, is supplied by an undertaking belonging to Earl Temple. The water is obtained from a spring in a field on the Wilmington side of the village, issuing from the base of the Midford Sands. It is piped to a brick and cement covered storage tank from which it gravitates to the village through iron pipes to standpipes for cottages, laid on to farms and private houses. Recorded yields were:—August 18th, 1921, 1,900 gallons per 24 hours; August 1st, 1929, 2,160 gallons (*overflow*) per 24 hours. Outlet to spring deepened in 1921. No shortage since.

Whitchurch. This parish is supplied by the West Gloucester Water Company, with the exception of four farms which have their own piped supplies, and four cottages near Bridge Farm supplied by spring, ten houses at Hursley Hill and Norton Lane supplied by wells, and one at Charlton lane by well. Three cottages in Woollard Lane are supplied by wells.

LANGPORT RURAL.

The Rural District Council owns the following supplies:—

Compton Durville Supply. The water is derived from two boreholes, one 150 feet deep, the other 250 feet deep, in the Midford Sands at Compton Durville, in the parish of South Pether-ton. The water is raised by two gas engines and air compression plant to a reservoir at the works with a capacity of 100,000 gallons. The average yields from the two boreholes are respectively,

3,500 and 7,000 gallons per hour. Daily consumption about 40,000 gallons per day. The parishes supplied are Kingsbury Episcopi and Langport, with small portions of Huish Episcopi. To remove iron two Candy filters, capable of dealing with 8,000 gallons per hour, are in use. The Council has under consideration the extension of this supply to other parishes in the district.

Barrington Supply. The water is obtained from the Marlstone under the Midford Sands by means of an adit in the hillside. The water collects into a partly natural and partially artificial reservoir, from which it is syphoned to two reservoirs near the spring. Part of the collecting area is enclosed by iron fencing. The yield varies from 25,000 to 50,000 gallons per day. The parishes of Barrington, Isle Brewers, Curry Rivel and Drayton are supplied mostly by gravity, but the water has to be pumped to a supply reservoir for the higher parts of Curry Rivel. The supply is inadequate in dry periods and has to be augmented from the Langport supply.

Lytes Cary Supply. Water from two springs from Lower Lias Limestones, supplemented by a well 36 feet deep in the Lower Lias, but probably reaching into the Rhaccic White Lias. The water is collected into a reservoir of 30,000 gallons and then pumped to two supply reservoirs on Kingsdon Hill, each with a capacity of 60,000 gallons. The yield is from 25,000 to 80,000 gallons per day and is barely sufficient during a dry period. Supplies Somerton and Kingsdon and in Yeovil Rural, ~~Minster~~
~~Ilchester~~ and Northover.

Long Sutton Supply. A well, 23 feet deep, with a 6 inch borehole to a further 20 feet, sunk in the Lower Lias at Long Sutton, about a quarter of a mile West of the Church. The water is pumped to a reservoir of 15,800 gallons capacity at Long Sutton. It supplies an estimated population of 647. The yield is approximately 10,000 gallons per day.

Puckington is in part supplied by an undertaking belonging to a private owner, from a well in the Lias at Puckington, and with a reservoir of 10,000 gallons capacity.

The other parishes in this area, i.e., *Aller, Babcary, Barton St. David, Beer Crocombe, Charlton Mackrell, Compton Dundon, Curry Mallet, Earnshill, Fivehead, High Ham, Huish Episcopi, Isle Abbots, Keinton Mandeville, Kingsweston, Muchelney, Pitney and Swell* are all supplied from local wells. In a number of these parishes, particularly *Aller, Huish Episcopi, Keinton Mandeville* and *Michelney*, the wells are contaminated and inadequate, and a pure piped water supply is badly required.

LONG ASHTON.

Yatton. The only supply provided and owned by the R.D.C. The water is obtained from a well and borehole 130 feet deep, at Bishop's Farm, Yatton, in the Keuper Sandstone. The water is pumped to a reservoir on Cadbury Hill of capacity 150,000 gallons. Supplies only a portion of the parish, the other parts obtaining their water from wells.

The Bristol Water Works Company supply the greater part of the following parishes:—*Abbots Leigh, Backwell, Barrow Gurney, Brockley, Bishopsworth, Flax Bourton* and *Long Ashton*. The other parts from local wells, which are mostly adequate, but small areas, such as the Downside part of Backwell parish, badly need water.

Dundry. The Bristol Water Works Company supply about twenty-five houses, about twenty houses obtain water from a well near the Church, but most rely upon surface wells and dipping places.

Nailsea. Part of the parish is supplied from the Bristol Water Works Co. At Buckland's Batch a group of twenty-five houses have a piped service supplied by the proprietor from an old coal shaft. The remaining houses from wells.

The Portishead Water Co. supply the greater part of the parishes of *Easton-in-Gordano*, *North Weston* and *Portbury*. At Pill (*Easton-in-Gordano* parish) there is a small supply from a spring from the Dolomitic Conglomerate in a small wood, which is piped to Pill and is available from a running tap. The Redcliff Bay Bungalow estate, in *North Weston* parish, is only partially supplied from this source, and some of the houses have rain water as their only supply.

Wraxall. The Bristol Waterworks Co. supply through Nailsea to the Battleaxes Inn and West Hill as far as their supply will gravitate. A portion of Lower Failand is supplied by the Portishead Water Co. The Tyntesfield Estate, in the centre of the parish, is supplied with water from a spring emerging from the Dolomitic Conglomerate. Upwards of fifty houses have been erected on Failand Hill, for which the only supply is rain water.

Clapton-in-Gordano. Springs emerging from the hillside and wells are said to provide a good supply at the village. Clapton Wick Farm depends on rain water. A small building estate development to the North of Cadbury Camp Road has a piped supply from a private spring which yields about 1,000 gallons daily.

Tickenham. The Clevedon Water Co. supply this parish as far as Middletown. The remainder from the Tickenham Mill supply, derived from a local spring.

Walton-in-Gordano. Walton Park and the part adjacent to East Clevedon from the Clevedon Water Co. The remainder of the parish from springs and wells.

Kenn. All from shallow wells, except five houses supplied by the Clevedon Water Co.

Kingston Seymour. Entirely from shallow wells and rhines, many of the wells are contaminated and this is the most unsatisfactory supplied parish in the district.

Winford. No piped supply. Kingdown, Felton St. Catherine and Potter's Hill areas have only rain water supplies. The new Bristol Crippled Childrens Hospital is supplied from a deep well, estimated to yield 50,000 gallons per day. Wells in other parts.

SHEPTON MALLET RURAL.

Ashwick. The greater part of the parish is supplied from the Downside Company, the water being purchased in bulk. R.D.C. have two reservoirs in the parish of capacity 40,000 and 72,000 gallons. Part of the village of Oakhill is supplied from a spring in the Old Red Sandstone at Little London, belonging to the R.D.C. There is a small reservoir of 8,000 gallons. Two private supplies serve a number of houses in Oakhill and Ashwick Grove.

Binegar and Emborough. From water obtained in bulk from the Downside Water Co. A reservoir of 20,000 gallons in Emborough.

Downside Water Co. This important supply belongs to the Downside Abbey Authorities. The well and pumping station are at Gurney Slade, in Binegar parish, and the water is pumped to a reservoir of capacity 600,000 gallons at Downside, Stratton-on-the-Fosse. The well which is 36 feet deep, with several lateral headings, is fed by a strong spring in the Carboniferous Limestone. As several villages appear to be on the gathering areas, there is some risk of contamination from sources not removable, and the water is chlorinated. Except after very dry periods, there is abundance of water, the daily average being over 250,000 gallons.

West Bradley, Hornblotten. A supply owned by the R.D.C., derived from two springs in the Middle Lias at West Pennard Hill. The dry weather yield is 15,000 gallons per day. A gravitation supply with a 10,000 gallon reservoir. Also supplies part of West Lydford and East Pennard.

Croscombe. Most of the parish from a supply vested in the Croscombe Water Trustees, obtained from a spring in the Carboniferous Limestone at Titwell Wood. A gravitation supply with a small reservoir. A small part of the village is supplied from the Dinder supply, purchased in bulk. About fifteen houses obtain their water from a spring in the Dolomitic Conglomerate close to the Church, belonging to the R.D.C.

Ditcheat, Milton Clevedon. Parts of Evercreech and East Pennard and all Baltonsborough (Wells Rural), as well as these two parishes, are supplied from two springs at Creech Hill, in the Inferior Oolite. The dry weather yield is 30,000 gallons per day. A ram pumps water from the springs to the top of Creech Hill and then on to Milton Clevedon. There are two reservoirs with capacity 1,000 and 10,000 gallons. The supply belongs to the R.D.C.

Doultong. The houses in the villages are supplied from a spring in the Inferior Oolite, the water being raised by a water wheel and pump to a small reservoir in the village. Quality unsatisfactory. A second and larger supply, at Long Cross, belongs to the R.D.C. and is obtained from a well about 40 feet deep, sunk in the igneous rock. An engine and pump with reservoirs of 20,000 and 45,000 gallons capacity. Minimum yield about 25,000 gallons per day. A third supply at Farncombe, about one and a quarter miles from Doultong village, is from springs from the Inferior Oolite, with a minimum yield of 10,000 gallons per day. A reservoir of 10,000 gallons for supply of village of Prestleigh, while the overflow goes to Evercreech.

Evercreech. The main supply belongs to the R.D.C. and is derived from springs, yielding about 20,000 gallons per day in dry weather; probably from the Middle Lias. One reservoir of 30,000 gallons. Springs at Chesterblade yield about 5,000 gallons in dry weather, the water being pumped to a reservoir of 20,000 gallons. Another source of supply is from springs to the west of the main supply, giving a dry weather flow of 10,000 gallons per day, and with a reservoir of 30,000 gallons. Supplies the hamlet of Stoney Stratton.

Stoke Lane and Holcombe. These parishes are supplied from a R.D.C. supply at Three Ashes, rather over a quarter of a mile from Stoke Lane Church. Springs at junction of Old Red Sandstone and Carboniferous Limestone. Minimum yield 15,000 gallons per day. Three reservoirs:—5,000, 5,000 and 30,000 gallon capacity.

Stratton-on-the-Fosse. Entirely supplied from the Downside Water Co.

Pilton. The village itself is partly supplied from a spring in the Lower Lias in the village, belonging to the R.D.C. An unsatisfactory supply, liable to contamination. Some houses are supplied from the Glastonbury Borough supply. The rest from wells or local springs.

Batcombe. Some houses supplied from springs in Inferior Oolite, mostly from local wells.

East Cranmore. The majority of the houses are supplied from springs owned by Sir Richard Paget.

Lamyatt. Most of the parish supplied from a spring in Inferior Oolite or Midford Sands, yielding about 6,000 gallons per day and with a small reservoir of 6,000 gallons. Supply belongs to R.D.C.

Pylle. A number of springs belonging to various private owners supply a number of the houses.

West Cranmore. Rather over half the houses in the parish are supplied from a source owned by Col. H. G. Spencer. Water from a spring in the Old Red Sandstone, yielding about 10,000 gallons a day (dry weather flow). One reservoir of 34,000 gallons.

East Pennard. Most of the village is supplied from a spring in the Middle Lias. Other parts of the parish obtain water from the Ditchat supply and about the same number from the West Bradley supply.

Downhead. A number of houses have piped supplies from the Downhead springs (Radstock U.D.C. supply) ; a few houses obtain water from local springs, the rest from wells.

Upton Noble. Part of the village is supplied from local springs in the Cornbrash with standpipes ; the rest from wells.

West Lydford. About forty out of the sixty-eight houses are supplied from an undertaking belonging to Sir E. Colston, from springs at Maiden's Copse. A small reservoir of 3,000 gallons.

East Lydford. From local wells : no piped supply.

TAUNTON RURAL.

The following supplies are owned entirely or in part by the Rural District Council :—

Bishops Lydeard and West Bagborough. The water is derived from springs from the Devonian at Cothelstone and West Bagborough. A gravitation supply with a reservoir of 10 000 gallons at Cothelstone, and one of 20,000 gallons at West Bagborough. Amount said to be adequate. Supplies nearly the whole of the two parishes, also the hamlet of Seven Ash, in Combe Florey parish. Cotford Mental Hospital has its own supply, and this also furnishes water to 46 houses at Cotford.

Hatch Beauchamp, North Curry, Stoke St. Gregory. The R.D.C. purchases water in bulk from Lord Portman from the Staple Hill supply, the distribution mains being the property of the Council, and a reservoir of 50,000 gallons capacity at North Curry. The R.D.C., under agreement, are able to obtain up to 60,000 gallons per day from this supply. At present this exceeds the consumption in the three parishes. The whole of the three parishes, excluding out-lying houses, are supplied from this source.

Supplied by private owners :—

Staple Hill Supply. Water derived from the Upper Greensand on the North side of the Blackdown Hills at Staple Hill. Numerous springs form a gathering area of several acres. A gravitation supply with a reservoir at Bickenhall of 70,000 gallons, and one at North Curry (R.D.C. owned) of 50,000 gallons. From the Bickenhall reservoir is supplied water to *Bickenhall* (practically the whole parish), *Staple Fitzpaine* (most of the houses), and part of *Thurlbear*. Part of *Thurlbear* is supplied from a separate supply belonging to Lord Portman, a spring from the Rhætic. *Curland* is partially supplied from this source. The remainder of these parishes from surface wells.

The Taunton Borough supply furnishes water to a number of parishes : these are :—*Staplegrove* : about a third of the houses supplied ; *Pitminster*, thirty houses supplied ; *Trull*, sixty-eight houses supplied ; *Bishop's Hull*, fourteen houses supplied (a very small part of the parish) ; *St. Mary Magdalene Without*, seventeen houses supplied ; *St. James' Without*, ten houses supplied ; *West Monkton*, thirty-six houses supplied ; *Angersleigh*, a few houses supplied. The houses supplied only constitute a small portion of the total, and the greater number are dependent upon surface wells or local springs.

Ash Priors. A small parish, mostly dependent on wells, but eight houses obtain their water from a ram owned by Mrs Savill Onley.

Combe Florey. As mentioned above, Seven Ash hamlet supplied from the Bagborough supply ; the rest from surface wells.

Cothelstone. About one-third of the houses from a private supply, the rest from surface wells.

Halse. Nine houses are supplied with water from a ram owned by Mrs. Hancock. The greater part of the parish from surface wells.

The remaining parishes are almost entirely supplied from local wells, i.e., *Cheddon Fitzpaine, Churchstanton, Corfe, Creech St. Michael, Durston, Heathfield, Kingston, Lydeard St. Lawrence, Orchard Portman, Otterford, Ruishton, Stoke St. Mary, Thornfalcon, Tolland and West Hatch.*

It will be seen from the above that the greater part of this area derives its water supply from surface wells and that very little of it has a piped supply.

WELLINGTON RURAL.

The supplies provided by or vested in the R.D.C. are the following :—

Milverton. The main supply is Furbers Spring, from a spring in the New Red Sandstone given out at the base of the Bunter Conglomerate at Higher Dovelinch. Collecting area fenced in. The water passes to a covered ventilated reservoir of 22,000 gallons capacity. There are two reinforced concrete collecting tanks, each 5,000 gallons and coupled, from the lower of which water is pumped by petrol engines up to the reservoir. The supply is supplemented by a spring at Langford Heathfield, the water being piped into the above reservoir. In 1922 a well was sunk 22 feet deep to augment the supply, the water being pumped to the reservoir. The total yield from all the springs in the driest part of 1929 was 30,000 gallons daily. The scheme was initiated in 1896 with a gift of £1,000 from a private donor.

Bradford. In part supplied from a spring half a mile from the Church at Bradford. The water gravitates to a small storage tank and from thence by hand pump to a small service tank to supply part of the village. Provided by a private donor and vested in the R.D.C. The rest of the parish from wells.

Sampford Arundel. A small gravitation supply from a spring from Upper Greensand on Sampford Moor, with a yield of about 5,000 gallons a day, is collected into a small tank and supplies twenty-four houses in the hamlet of Sampford Moor. The rest of the parish from wells.

West Buckland. Fourteen houses in the hamlet of Blackmoor supplied from a spring from the Upper Greensand at Blackmoor, with a yield of about 4,000 gallons per day. A gravitation supply with a small collecting tank of 500 gallons. Not supplied into the houses and the inhabitants have to fetch it from considerable distances. The other houses from wells, some of poor quality.

Wiveliscombe Without. The hamlet of Langley, in this parish, is supplied from springs in the New Red Sandstone: yield said to be abundant. Twenty-four houses supplied. The rest of the parish from local wells and springs.

Fitzhead. The lower part of the village is supplied from a spring which is piped into the village.

The only piped supply belonging to a private owner is at *Langford Budville*. The village is supplied from a spring with two small reservoirs. The rest of the parish from wells.

At *Chipstable* part of the village is supplied from a spring piped to a tap by the roadside above the Church. The remaining parishes, i.e., *Ashbrittle, Bathealton, Kittisford, Nynhead, Oake, Raddington, Runnington, Stawley and Thorne St. Margaret* are all dependent upon wells.

WELLS RURAL.

The following supplies are owned by the Rural District Council:—

Baltonsborough. The parish is supplied from the Ditchat Supply (see page 51) by an agreement with the Shepton Mallet R.D.C., the water being purchased in bulk. The mains and a reservoir of 25,000 gallons capacity provided by Wells R.D.C. A gravitation supply. Loan £4,200.

Godney. Supplied from the Street Urban supply, the water going to all but a few outlying buildings.

North Wootton. Two sources. The main supply is from a spring emerging from the upper Keuper Marls near Worminster, with a yield varying from 2,000 to 20,000 gallons per day. The other supply is also in the Red Marl from a borehole 100 feet deep, 4½ inch bore, at Wootton-field, North Wootton. A windmill pump, with capacity up to 8,000 gallons per day. One service reservoir of 30,000 gallons capacity.

Sharpham. Practically the whole parish is supplied from water purchased in bulk from the Street U.D.C. No reservoir, but a branch main and two standpipes. The capital loan of £300 paid off January, 1926.

West Pennard. The main supply is from water purchased in bulk from the Glastonbury Borough supply. The water is taken into a covered reservoir near West Pennard station, capacity 30,000 gallons, and distributed by gravitation. Loan £4,258 for reservoir and distributing mains. There is a small supplementary supply at Southtown derived from springs from the Middle Lias, with a service reservoir of 2,000 gallons.

The following piped supplies are provided by private owners:—

Butleigh. Nearly the whole of the parish is supplied from a spring owned by Mr. Nevill Grenville.

Chewton Mendip. Rather more than half the parish is supplied from springs from Old Red Sandstone at Eaker Hill, Chewton Mendip. This supplies the Waldegrave Estate. A gravitation supply, with three reservoirs each 10,000 gallons. Supply said to be ample. A few houses are supplied from the Bristol Waterworks, the rest from wells.

Dinder. A large part of the parish is supplied by water belonging to Mr. A. F. Somerville obtained from a spring from the Old Red Sandstone near Masbury Station. A gravitation supply, with two reservoirs, one at Dinder (7,500 gallons), and one at Sharcombe. An ample supply.

The supply of the other parishes is as follows:—

Rodney Stoke. Part of the parish is supplied from the Street Urban supply. The rest of Rodney Stoke and all Draycott, in this parish, are dependent upon wells or local springs.

Priddy. Water from a spring emerging on Lower Limestone Shales, quarter of a mile, N.N.E. of Priddy Church, is piped to a fountain on Priddy Green. This is inadequate in dry weather, while the rest of the parish is from wells.

Wells St. Cuthbert Out. The hamlet of Polsham is supplied from the Street U.D.C. mains. Dulcote obtains its water from a spring from the Carboniferous Limestone on Dulcote Hill, belonging to a private owner. East and West Horrington are partly supplied from a spring belonging to the Wells R.D.C. The Somerset and Bath Mental Hospital is supplied from a borehole 402 feet deep. Some houses are supplied from the Wells City supply. At Easton there is a borehole at the Milk Factory, which supplies a few houses, while two public wells have been sunk by the R.D.C., with attached pumps. The rest of this large parish is from wells.

Westbury. In 1930 three boreholes, each about 100 feet deep, were sunk in the parish and pumps have been attached. Part of the inhabitants obtain their water from these public wells, the rest from private surface wells or local springs.

Wookey. Wookey Hole village is almost entirely supplied with a pipe supply from a spring from the Dolomitic Conglomerate. Wookey itself is supplied from local wells.

The remaining parishes, i.e., *Meare*, and *Walton* have no piped supplies. The supply is from wells, most of which are contaminated and a pure supply is badly required.

WILLITON.

The following supplies are owned by the Rural District Council :—

Bicknoller. The village (about 200 persons out of 247 in parish) is supplied from a spring in the Devonian at Bicknoller. A gravitation supply with a 1,000 gallon reservoir. Ample supply. Minimum yield 18,000 gallons per day.

Brompton Ralph. About 50 persons out of 311 are supplied from a spring from the Devonian in Scott's Orchard, Brompton Ralph. A 500 gallon tank at the springhead. The rest of the parish from wells or small local springs.

Cutcombe. About three-quarters of the parish is supplied from a well 60 feet deep, sunk in the Devonian in the Moor above Cutcombe. The water is pumped by a windmill to two 30,000 gallon reservoirs. A petrol engine also installed for use when the wind fails. Minimum yield 4,000 gallons per day.

Old Cleeve. This extensive parish has several supplies. Washford, Leighland and upper and lower Roadwater are supplied from the Watchet supply, the distribution mains being owned by the R.D.C. Springs at Rodhuish supply the village of Old Cleeve and Bilbrook. These are from Devonian rock and belong to Mr. A. F. Luttrell. A gravitation supply with a 6,000 gallon tank over the springs. The minimum yield is about 50,000 gallons per day.

Porlock. Porlock village, Porlock Weir and West Porlock are supplied from springs from the Devonian; two in Hawk Combe and one at Halescombe. Minimum yield about 51,000 gallons per day. A gravitation supply with three small reservoirs of capacity 2,250; 4,500 and 28,000 gallons respectively. A small part of Porlock Village is supplied from the Doverhay supply.

Sampford Brett. Springs in the New Red Sandstone at Providence in the parish supply the village. The water is lifted by hydraulic ram to a reservoir of 12,500 gallons capacity. Water ample. A few houses from the Williton supply, the remainder from wells.

Stogumber. The village, i.e., about 400 out of 722, is supplied from a spring in the New Red Sandstone within the parish. A gravitation supply with a 18,000 gallon reservoir. Minimum yield 19,000 gallons: supply adequate. The remainder of the parish from local wells and springs.

Timberscombe. A spring from the Devonian on Timberscombe Hill supplies 200 out of 339 in the parish. A gravitation supply with a 500 gallon reservoir on the hillside. Minimum yield per day, 12,000 gallons.

Williton. There are two supplies, both owned by the R.D.C. One source is a spring from the Devonian at Rowden, Stogumber parish, yielding 18,000 gallons per day. There is a 15,000 gallon tank at the springhead and a 50,000 gallon reservoir at the top of Tower Hill. The other supply is from water issuing from a fissure in the New Red Sandstone in a field adjoining the main Washford Road. The minimum yield is 115,000 gallons per day. The water has to be pumped to a reservoir of 35,000 gallons capacity at Grove. The two supplies are connected by a 4-inch pipe. Together they supply nearly the whole parish.

Woolton Courtenay. Most of the houses in the parish are supplied from a spring on the slopes of Dunkery Hill, rising at the junction of the Devonian and New Red Sandstone, yielding about 18,000 gallons a day. A gravitation supply with a reservoir at the source of 10,000 gallons capacity.

In this district the number of piped supplies provided and owned by private owners is very considerable. The following parishes are so supplied:—

Withycombe and Carhampton. The supply is owned by Mr. A. F. Luttrell and is derived from a spring at the junction of the New Red Sandstone and Devonian in a valley about half a mile south of Withycombe village. A gravitation supply with a small 3,000 gallon reservoir at Withycombe, and one of 11,000 gallons at Carhampton. Supplies about 550 out of a total population of 775 in these two parishes. The hamlet of Rodhuish, in Withycombe parish, has a small piped supply from a local spring.

Crowcombe. Three quareers of the parish, including the village, is supplied from a spring on the hillside behind Crowcombe Court, owned by Mrs. Trollope, rising at the junction of the New Red Sandstone and Devonian. Minimum yield 15,000 gallons per day. A gravitation supply with a reservoir of 6,250 gallons capacity.

Dunster. Most of the parish is supplied from a spring from the Devonian, two miles S.W. of Dunster, owned by Mr. A. F. Luttrell. A gravitation supply with a small receiving tank of 500 gallons capacity and a reservoir of 45,000 gallons at Dunster Castle. An ample supply.

East Quantoxhead. A spring owned by Mr. A. F. Luttrell supplies most of the parish. It rises at the junction of the New Red Marl and Devonian on the side of the Quantocks south of the village. Yield 60,000 gallons per day. A gravitation supply with a 5,000 gallon reservoir.

Holford. Supplied by the Holford Water Co. from collecting pipes laid by the side of a stream with a gravel bed in Hodder's Combe, from the Devonian. A gravitation supply with one brick-covered reservoir.

Kilton and Kilve. Owner, Mr. A. F. Luttrell. A gravitation supply derived from a spring on the Quantocks, from the Devonian, yielding about 10,000 gallons per day, with an 8,000 gallon reservoir for Kilve and one of 5,000 gallons for Kilton. Out of a total population of 320 in the two parishes, about 250 are supplied.

Luccombe. At present supplied from springs on the hillside, with two small reservoirs. One owned by the R.D.C., the other by Sir F. Acland. The Doveshay part of Porlock is in Luccombe parish and is supplied from a spring belonging to Sir F. Acland.

Selworthy. The hamlets of Bossington and Allerford in this parish are supplied from a spring belonging to Sir F. Acland.

Mr. Jackman (Williton R.D.C. Surveyor) informs me that a scheme is in hand and nearing completion, whereby the whole area of Luccombe (including Doveshay) and Selworthy (including Bossington and Allerford) will be supplied from one source.

Luxborough. Four small springs, collected and owned privately, supply four groups of houses, with a total population of 180. The remaining population of about 60 from local wells or springs.

Monksilver. The village and most of the houses in the parish from a supply belonging to Mr. M. Notley. A spring from the Devonian at Monksilver yielding 3,000 gallons per day which runs short in very dry weather. A gravitation supply with a 500 gallon brick reservoir.

Nettlecombe. Nettlecombe Court and village supplied from a spring from the Devonian. A gravitation supply, owned by Sir W. Trevelyan, with one 14,000 gallon reservoir at the spring-head.

Stogursey, Stringston and Dodington. About 550 out of 978 total population are supplied from a piped supply belonging to Lord St. Audries. A spring yielding about 100,000 gallons a day at Dodington, supposed to come from an old copper mine and rising at the junction of the Devonian and Upper Keuper Marls. A gravitation supply with a 12,000 gallon reservoir at Dodington (for Stogursey), and one of 10,000 gallons at Highlands, the latter being supplied from the first reservoir by ram. A few houses in Stogursey village use the water from St. Anne's Well in the centre of the village. The rest of the parishes from shallow wells.

Treborough. While the majority of the houses rely on local wells, about 25 out of 93 population are supplied from a spring, the water from which is collected into a small tank and piped to the rectory and a few houses.

West Quantoxhead. About 60 out of a population of 139 supplied from a spring from the Devonian on the Quantocks, yielding about 12,000 gallons per day. One 10,000 gallon reservoir at Staple Plain.

The remaining parishes are *Clatworthy, Culbone, Elworthy, Oare, Minehead (Without)* and *Stoke Pero*. They are dependent on small local springs and wells. They are all areas with a small scattered population.

WINCANTON.

The following supplies are owned by the Rural District Council:—

1. Castle Cary Waterworks. The Castle Cary Water Co. was taken over by the R.D.C. in 1921. The supply is derived from a well $4\frac{1}{2}$ feet diameter for 30 feet with a borehole 10 feet lower in Midford Sand, at the bottom of Lodge Hill, Castle Cary. The water is pumped by pumps capable of raising 8,000 gallons per hour, to a reservoir of 100,000 gallons capacity on Lodge Hill. The pumping station and reservoir are fenced off from cattle. Daily yield adequate for the parishes supplied and with additional storage could serve a larger area. The area supplied comprises Castle Cary, Ansford, Alford, Lovington and Yarlington, with parts of North Cadbury, Pitcombe and North Barrow.

2. Bruton. Supply from springs from the Upper Greensand, intercepted underground, at Wingswood Warren, South Brewham. The collecting area is about seven acres and is fenced off. A gravitation supply, with a 100,000 gallon reservoir, at the Crosshands, North Brewham. During the summer months the yield is about 90,000 gallons per 24 hours, and the consumption about 70,000 gallons. The storage reservoir is inadequate. The parishes supplied are Bruton and North Brewham, and portions of South Brewham and Pitcombe. The Redlynch part of Bruton is supplied from the South Brewham supply.

3. South Brewham. Springs from the Upper Greensand collected at Hillcombe Hanging, $1\frac{1}{2}$ miles S.E. of the village. A gravitation supply with a storage reservoir of 15,000 gallons capacity just below the springs. The yield is only sufficient for the area supplied, which consists of the Hardway end of the parish of South Brewham and part of the parish of Bruton. The other part of the parish is supplied from the Bruton supply.

4. Wincanton. Springs at Penselwood from the Upper Greensand. There are a number of springs in fields used for pasture, and most of them are inadequately protected from contamination from animals or even from drainage from houses. The springs are collected into a main, which takes the water to Penne reservoir at Penselwood, with a capacity of 400,000 gallons, and below this to a supply reservoir at Bayford of 330,000 gallons. A gravitation supply. The yield of the springs during dry periods is barely sufficient for the area supplied, while consumers at the high levels are then very short of water. Supplies Wincanton and parts of Penselwood and Stoke Trister.

5. Milborne Port. Supply from the Midford Sands: a spring and borings at Bradley Head, Milborne Wick. There are two boreholes, one 70 feet, the other 30 feet deep, each six inches diameter. A pumping station at Milborne Wick, the water being pumped to a reservoir of 99,000 gallons at Miller's Head, Milborne Port. The collecting area, reservoir and pumping station are fenced off from cattle, and there is no likely source of contamination. Supplies all Milborne Port with the exception of a few outlying farms and cottages. No surplus available. Very poor pressure available at some of the high level parts.

6. Templecombe. A borehole at Milborne Wick into the Midford Sands. The water is pumped to two reservoirs at Templecombe, one 40,000, the other 160,000 gallons capacity. The water is ample for the area supplied, which is the parish of Templecombe with one farm and two cottages at Milborne Wick and one farm at Stowell. Henstridge is shortly to be supplied from this source.

7. Charlton Horethorne. The R.D.C. supply is from springs from the Inferior Oolite at Charlton Hill in the parish. A gravitation supply with a small reservoir. Springs at Silver Knapp Hill owned by Miss Sugmour, with a separate reservoir, supply another part of the parish. Sigwells Farm and six cottages have a private piped service from Sigwells springs.

8. Queen Camel, Sparkford and Weston Bampfylde Supply. Water is collected underground at Hicknoll, in Compton Pauncefoote parish, from the Midford Sands. A gravitation supply with a reservoir of 40,000 gallons below the springs. The area is fenced off. Supplies Queen Camel, Sparkford, Weston Bampfylde, and a portion of Compton Pauncefoot. A few outlying farms and cottages at Queen Camel and Sparkford have private supplies. The water is inadequate for the area supplied.

9. Henstridge. Supplied from a borehole some 800 yards from the village, with a supply reservoir of 11,000 gallons. The water is liable to considerable contamination and the supply is being abandoned, water being obtained from the Templecombe supply.

10. Charlton Musgrove. Most of the parish is supplied from springs from the Upper Greensand at New Park Wood, about two miles N.E. of the village. A gravitation supply with a reservoir of 15,000 gallons. The yield is 17,000 gallons per day, the consumption being about 12,000 gallons. Also supplies two houses in Stoke Trister.

The following parishes are supplied wholly or in part from private sources:—

North Cadbury. The centre of the parish is supplied from springs at Littleton Hill, South Cadbury, from the Inferior Oolite. A gravitation scheme, with a reservoir of 20,000 gallons. Water adequate for the area while the surplus is supplied to the R.D.C. to augment the Queen Camel supply. Portions of Galhampton and Woolston are supplied from the Castle Cary supply.

South Cadbury. Practically the whole parish is supplied from springs from the Midford Sand at Cadbury Camp and East End, South Cadbury. A gravitation supply with two small reservoirs, 2,500 and 1,300 gallons capacity.

Stowell. Springs from the Inferior Oolite at Clare Farm, Stowell, supply all the parish except a few outlying farms and cottages. A gravitation supply with a reservoir of about 10,000 gallons capacity. The supply is barely adequate for the area supplied.

Corton Denham. All the parish, except a few outlying farms and cottages, supplied from springs from the Midford Sands at Corton Ridge. A gravitation supply with one small reservoir of 2,000 gallons and two small tanks. Bacteriological reports of the water have been unsatisfactory.

Sutton Montis. Supplied from a spring from the Midford Sands at Littleton Hill, South Cadbury. A gravitation scheme with a small reservoir of about 3,570 gallons capacity.

Cucklington. Nineteen houses have a piped supply from Babwell, a spring from the Lower Calcareous Grit, while nine others fetch their water from this spring at an unreasonable distance. Two or three other houses have private supplies. The rest from wells.

Horsington. About forty houses are supplied from Mr. Wilcox, the Creamery, Horsington. A spring at Throop furnishes a piped supply to a few houses. The majority of the houses have only wells or local springs, most of which are unsatisfactory.

Pitcombe. The Cole end of the parish is supplied from the Bruton mains, a few houses are supplied from the Castle Cary supply, while Godminster Farm and cottages obtain their water from the South Brewham main. The centre of the parish is supplied from the "Shute" by the Railway Arches, a spring from the Midford Sands, but the supply is not within a reasonable distance of many of the houses. The rest of the parish from wells.

Stoke Trister. Twenty-eight houses supplied from the Wincanton, and two from the Charlton Musgrove supply. The rest of the parish from local supplies, many of which, on analysis, are unsatisfactory.

Penselwood. About eight houses are supplied from the Wincanton supply, a few farms and cottages supplied from local springs; the rest from wells.

North Cheriton. A few houses in Cheriton Street and the eight Council houses have a private piped supply; the rest from surface wells or local springs.

The remaining parishes, i.e., *Blackford, Bratton Seymour, Compton Pauncefoot, Holton, Maperton, North Barrow, South Barrow, Shepton Montague* and *Wheathill* are almost entirely dependent upon local wells or springs, many of which are unsatisfactory, a few houses only having piped supplies. Adequate supplies for a number of them are under consideration.

YEOVIL RURAL.

The Rural District Council has provided water supplies for the following parishes:—

South Petherton. From a well on the West side of the village, 79 feet deep, 6 feet in diameter to 65 feet and then 4 feet with a boring carried to 94 feet, through the Midford Sand into Marlstone. The water is pumped to a reservoir of capacity 66,800 gallons. The yield is estimated at about 70,000 gallons per day and the consumption at 40,000. Tenders for the installation of a filter plant have been accepted. Supplies the greater part of the parish. A number of houses supplied from the Compton Durville supply (see Langport Rural), and the remainder from wells.

Marlock. Nearly the whole parish supplied from a spring at Rixon, in Stoke-under Ham parish, the water from which gravitates into the reservoir, augmented from a well 55 feet deep some 200 feet behind the spring which is syphoned direct into the reservoir, capacity 58,000 gallons. At Bower Hinton a pumping plant is installed to raise the water to a high level reservoir of 100,000 gallons capacity. The supply is from the Marlstone under the Midford Sands. Maximum yield 36,000; minimum 23,000 gallons a day. There is a shortage for several months in the year, when about 20,000 gallons per day are obtained from the South Petherton supply.

Stoke-sub-Hamdon. About 1,450 inhabitants out of an estimated population of 1,650 are supplied from a borehole at Hedgecock Hill, East Stoke. The borehole is 10 inches in diameter and is 160 feet deep. It passes through the Midford Sands and Upper Lias Limestones. Two acres of land above the borehole are controlled by the R.D.C. On test, the borehole yield was 50,000 gallons in 10 hours. The water is pumped to a covered reservoir of 80,000 gallons capacity. There is an estimated surplus of 20,000 to 30,000 gallons per day available for other areas.

Montacute. All but a few houses supplied from springs on the South side of the village from the Midford Sands. Maximum yield 43,000; minimum 25,000 gallons per day. A gravitation supply with a covered reservoir of 18,500 gallons capacity.

Tintinhull. All but three or four houses supplied from springs at Woodhouse, Odcombe, from the base of the Midford Sands. Yield varies from 17,000 to 30,000 gallons per day. A gravitation supply with a reservoir of 12,500 gallons capacity.

West Coker. The Council's supply is obtained from springs from the Forest Marble at Font Hill, South-east of the village. The springs are protected by seven or eight acres of land above the springs. A gravitation supply with two reservoirs of 12,000 and 14,000 gallons capacity. Yield varies from 12,390 to 25,000 gallons per day. About 476 out of 820 in the parish receive this water, the rest depend upon wells or local springs.

East Coker. There are three piped supplies in the parish. One owned by the R.D.C., supplies about 360 persons; a second owned by Mrs. Heneage about 120, and a third owned by Mr. Hackwell about 40 persons. The remaining population, estimated at 280, are supplied from wells and local springs. The piped supplies are all from springs, the Council supply being from Midford Sands and the other two from Cornbrash. The R.D.C. supply is a gravitation one with a small reservoir of 1,800 gallons capacity. The yield varies from 20,000 to 25,000 gallons per day.

Barwick. An estimated population of 440 out of 520 are supplied from a piped supply owned by the R.D.C., the water being obtained by meter from the Yeovil Borough water mains.

Ilchester. The whole parish is supplied from the Lyles Cary supply of the Langport R.D.C., the water being purchased by the Yeovil R.D.C. by meter and supplied through their distribution system of pipes.

Northover. This little parish is supplied in the same way as Ilchester.

Sock Dennis. The total estimated population is only twenty-three and all are supplied from a pipe system owned by the R.D.C., the water being obtained for one farm from the Langport R.D.C. supply and the other five houses from the Tintinhull mains.

A number of parishes are mainly supplied from privately owned supplies.

Haselbury Plucknett. Supplied almost entirely from a piped supply owned by Lord Portman, the water being obtained from springs in the Midford Sands at Eastfields, West Chinnock. A gravitation supply, with a reservoir of capacity 10,000 gallons. Yield varies from 30,000 to 37,000 gallons per day. A surplus of 22,000 gallons per day is available, and a scheme has been prepared to utilise it to supply the parish of West Chinnock.

East Chinnock. A piped supply owned by Lord Portman supplies an estimated population of 200 out of 300. Water derived from springs north-east of the village, issuing from the Midford Sands. A gravitation supply with a 2,000 gallon reservoir. Yield varies from 20,000 to 23,000 gallons per day. There is a surplus of 15,000 gallons per day. The purchase of this supply by the R.D.C. is under consideration.

Rimpton and Marston Magna. Nearly all Rimpton and about two-thirds of Marston Magna are supplied from a borehole in Rimpton parish five-eighths of a mile South of the Church. The borehole is sunk through the Middle into the Lower Lias to a depth of 200 feet. The water is raised by an airlift pump to a reservoir of 15,000 gallons capacity. Maximum yield 50,000 gallons per day. There is an estimated surplus of 25,000 to 30,000 gallons per day. The rest of the parishes are supplied from wells.

Norton-sub-Hamdon. An estimated population of 250 out of 455 is supplied from springs owned by Col. Shuldhams, issuing above the Midford Sands in Norton Wood. A gravitation supply with a small reservoir of 600 gallons capacity. Yield varies from 20,000 to 25,000 gallons per day and there is a surplus. A few houses are supplied from a piped supply from springs at Little Norton, owned by Mr. Knight. The rest of the parish supplied from wells.

North Perrott. Rather over two-thirds of the parish is supplied from springs and wells from the Fuller's Earth formation collected South of the village, the supply belonging to Mr. H. W. P. Hoskyns. The maximum yield of the spring is 3,500, and the well 5,000 gallons per day. The water from the spring is supplied by gravitation; that from the well is pumped by two windmills. One reservoir, capacity 5,500 gallons.

Sutton Bingham. The village is supplied from a spring North-west of the village from the Cornbrash. A gravitation supply but no reservoir. Yield unknown, but ample for the needs of the parish. The supply is owned by Mrs. Heneage.

West Chinnock. About 100 out of an estimated 356 population is supplied from a piped supply owned by various owners. A gravitation supply obtained from Midford Sands at foot of hill in the village. The rest of the parish is supplied from wells and springs. An extended supply is under consideration.

Chiselborough. Nearly all supplied from wells and local springs, but about 50 persons (out of 245) obtain their water from three small piped supplies, owned by various owners, from springs in the Midford Sands.

Hardington Mandeville. About 100 persons out of 385 obtain their water from two piped supplies from springs on Pighill obtaining water from Fuller's Earth and Forest Marble formations. One is owned by the R.D.C., the other by various owners. The rest of the parish from wells or local springs.

Brympton. Except for a small piped supply owned by the Brympton Estate which supplies about thirty persons, the parish is dependent upon wells and local springs.

Pendomer. About forty out of the seventy-one inhabitants supplied from a piped supply belonging to Mrs. Heneage. The water is obtained from a spring in the Forest Marble on the hill-side South of the village. The rest of the parish from wells.

Odcombe. A borehole in the Midford Sands at the Council houses supplies an estimated population of 120. It is pumped to a reservoir of 10,000 gallons capacity. The rest of the parish from wells. An extended supply is under consideration.

The remaining parishes in Yeovil Rural, i.e., *Ash, Ashington, Chilthorne Domer, Chilton Cantelo, Closworth, Long Load, Lufton, Limington, Mudford, Puddimore Milton, Thorne, West Camel, Yeovilton* and *Yeovil Without* are entirely supplied from wells with a few local springs, apart from the following very small piped supplies for a few houses. At Ash the Council houses are supplied from a borehole into the Lower Lias, yielding 10,000 gallons a day when tested in 1920. At Limington about fifty persons are supplied from a borehole into the Lower Lias owned by Mr. H. Brake, with a reservoir of 5,000 gallons capacity. At Mudford there are several small supplies from boreholes, including a Council supply for thirty Council houses. At Yeovilton the Council houses are supplied from a borehole. In Yeovil Without the Yeovil Borough supply is piped to a few houses, while there are several small boreholes in the parish.

II.—URBAN AREAS.

BRIDGWATER.

Supplied by the Bridgwater Corporation under the Bridgwater (Corporation) Water Act, 1877. The area of supply in addition to the Borough, is the parishes of Bridgwater Without (part of), Cannington, Wembdon, Durleigh, Charlinch, Spaxton and Chilton Trinity. The last three parishes are not supplied, but most of the rest of the area is supplied from this source.

The water is obtained from Devonian strata from Seven Wells Combe and Cockercombe in the Quantock Hills. From these combs it passes by an open stream to the pumping station near Charlinch, where it is received into an uncovered settling tank. From this it is rapidly filtered through sand filters, and then pumped to a covered supply reservoir at Wembdon Hill capacity 600,000 gallons. There is also a reservoir at Cannington for part of the supply to the Rural District. The three sand filters have a capacity of 89,000 gallons each. The water is also chlorinated at the pumping station. This is necessary because of the contamination of the stream between the springs and the pumping station.

BURNHAM-ON-SEA.

The supply is owned by the Urban District Council and is derived from the Dolomitic Conglomerate from a spring and a borehole about three-quarters of a mile N.N.W. of Winscombe Church. The borehole is 49 feet deep, passing through peat (4 feet), and Upper Keuper Marls (21 feet) into Dolomitic Conglomerate to a depth of 24 feet. The spring and borehole are only a few yards apart. There is no filtration plant. The water gravitates to two receiving tanks at the foot of Brent Knoll, with a capacity of 80,000 gallons. From these it is pumped by electrically driven pumps to service reservoirs of 185,000 gallon capacity.

The water has a hardness of about 28 (permanent 20) and is of good quality bacteriologically. The quantity is abundant, and the Surveyor reports that so far as he knows, is limited only by the capacity of the existing pipes and pumps. It is adequate for all present needs.

The area supplied is the whole of the Urban District and, by bulk supplies, to parts of Brent Knoll, Brean and Berrow. The loans raised amount to £33,277.

CHARD.

The main source of supply is from a spring in the Upper Greensand in "Great Crow Close," a field N.W. of the town. A well has been sunk to a depth of 28 feet. The top of the well is 422 feet above O.D., and about one-third of the town is supplied direct without the water passing to the reservoir. The rest of the water is pumped to a reservoir on Snowdon Hill, of capacity 250,000 gallons, and about two-thirds of the Borough is supplied by gravity from this source. A spring near this well called "Resurrection Spring," from the Upper Greensand, is used as a supplemental supply for the lower zone in times of drought or for flushing sewers. The yield from the well on a test in 1926, was over 168,000 gallons per day. The well supply was formally opened in October 1929, and replaced an abundant supply but one liable to dangerous contamination. Only a small part of the Borough is now supplied from surface wells or local springs.

CLEVEDON.

Supplied from the Clevedon Water Company under the Clevedon Water Act 1909. Their water powers comprise Clevedon Urban District, the parishes of Tickenham and Kenn and part of the parish of Walton-in-Gordano. At the end of 1930 the area supplied was almost the whole of Clevedon, part of Walton-in-Gordano, forty-one houses in Tickenham and a few houses in Kenn.

The water is obtained from a well and 12 inch borehole at Tickenham Road, within the Urban district in the Keuper Marls. The well is 110 feet deep and the borehole a further 157 feet, making a total depth of 267 feet. About twenty-three acres round the borehole is the property of the Company and is kept as a protective area. The water is pumped to two covered service reservoirs on Dial Hill, with a total capacity of 336,000 gallons.

The average daily quantity of water available is 1,100,000 gallons as a maximum: minimum yield not known. No restrictions have had to be placed at any time on the supply and this appears to be abundant. Of satisfactory bacterial purity. Hardness about 29.7; temporary 17.8, permanent 11.9.

CREWKERNE.

Nearly all the Urban District is supplied by a private company, the Crewkerne Water Supply Co., Ltd. It has no statutory powers. The main supply is drawn from springs at Wayford, apparently from the Greensand. Several of these were open to surface contamination, but steps have been taken to cut out any liable to risk of pollution and to protect the others, and recent analyses have been satisfactory. The water passes through a screening filter and then by iron pipe to a reservoir at Maiden Beech above Crewkerne. A supplementary supply is from a borehole at Maiden Beech, 289 feet deep, apparently into and through the Midford Sands. The water is pumped into the reservoir. The supply from the springs is adequate in wet weather, but has to be supplemented from the borehole in times of diminished rainfall.

The Company also supplies most of Misterton, some houses in Wayford, and a small part of West Crewkerne.

FROME.

The supply is owned by the Urban District Council and is obtained from a well sunk in the Carboniferous Limestone at Egford. The well is sunk to a depth of 25 feet bore $9\frac{1}{2}$ feet, and yields an abundant supply. The water is pumped to a covered service reservoir at Cottles Oak, with a capacity of 1,000,000 gallons. Supplies the whole of the Urban District and the Frome Rural parishes of Rodden and Selwood.

GLASTONBURY.

Supply owned by the Glastonbury Corporation under the Powers of the Glastonbury Water Act, 1899. The water is derived from the following sources:—

(a) Two springs at West Compton, not far from the village; derived from the Upper Keuper Strata, or possibly the Dolomitic Conglomerate;

(b) A borehole at West Compton, about half-a-mile from the other supply. The borehole is 98 feet deep and just reaches the Carboniferous Limestone, the water being obtained from the Dolomitic Conglomerate. The water rises sufficiently in winter to flow into the main by gravity but in summer it has to be pumped;

(c) At Ringwell (within half-a-mile of the borehole), from a spring from the Rhaetic White Lias. Two other small springs are also taken up in the neighbourhood. The water from all three sources passes into the main supply to the Edgarley reservoirs.

(d) A small spring (Lynches spring) obtains water from the neighbourhood of Glastonbury Tor and is piped directly into Edgarley reservoir.

(e) From the Well House Lane supply, derived from the Midford Sands in the area of the Tor. This supply is for the most part pumped to the high level reservoir above the spring on Chalice Hill.

There are one or two other small springs from the Middle Lias, of small yield, and only occasionally utilised.

The main reservoir is at Edgarley, in Glastonbury, an open reservoir with a capacity of 5,000,000 gallons. At Wellhouse there is a reservoir of 137,700 gallons, while there is a High Level reservoir of 100,000 gallon capacity at the North side of the Tor Hill. There are two small covered reservoirs in the town of capacity 80,000 gallons and 30,000 gallons respectively.

The limits of the supply, under the Act, are the Borough of Glastonbury and the parishes of Pilton, North Wootton, West Pennard, and Sharpham, also the Street Urban District. Of these areas, only West Pennard is supplied, the Wells Rural District Council, under Deed, October, 1909, taking a supply in bulk with a minimum of 1,125,000 gallons in each half year. Apart from these, there are only a few accommodation supplies and a few houses supplied on the route of the main from West Compton.

The water is adequate for needs, but no surplus is available. The supply is hard. The latest analysis (1929) gives for the West Compton Spring supply, Hardness:—total 52, permanent 9.3; for the borehole, total 38, permanent 3.0.

HIGHBRIDGE.

Highbridge is supplied from the Cheddar and Axbridge supply under a joint scheme. (See Axbridge, page 38).

Under the agreement, approximately 60,000 gallons per day is delivered at Brent Knoll to a reservoir of capacity 180,000 gallons. From this reservoir it passes by gravitation to supply the town. There is no shortage in the supply, but difficulties have been experienced in receiving the necessary quantity of water at Highbridge.

ILMINSTER.

The whole of the Urban District, with the exception of a few houses at the eastern end of the town, obtain their water from a supply owned by the Ilminster U.D.C., which was completed in 1929, at a cost of £16,570. The springs are at Plumsham Wood, in Cudworth parish, and issue through fissures in the Marlstone and probably from the underlying sandy beds of the Middle Lias. The water is from a spring and from a heading driven into the side of the hill. About half an acre round is fenced, while the U.D.C. have protective rights over 20½ acres, and less complete rights over a further 15 acres. The water gravitates to a covered-in aeration chamber, the water circulating round and depositing much of the contained iron. All is not removed, however, and a roughing filtration plant has been installed to remove the rest of the iron. The yield is ample and during four tested months, (January, April, July and October) only varied from 95,000 to 110,000 gallons per day. Other springs in this srea are available if required. The present consumption in the Urban District is between 45,000 and 50,000 gallons per day, so there is ample surplus for other areas. A gravitation supply, the water being piped to a reservoir of 168,000 gallons capacity in West Dowlsh parish, about a quarter of a mile outside the town. Certain parishes in Chard Rural (*q. v.*) are supplied in part from this supply. Bacteriologically the water is pure, the total hardness is 28, almost all being temporary hardness.

The private supply, owned by Col. Vaughan Lee, is derived from springs in the Marlstone at Chink, Kingstone. There are two sources of supply—the Chink Springs, about one and a half miles from Ilminster—the main source—and the Long Orchard Springs, nearly half-a-mile nearer Ilminster.

MIDSOMER NORTON.

This Urban area is supplied from four sources :—

(a) Chilcompton supply owned by the U.D.C. A spring at Chilcompton from the Dolomitic Conglomerate. The actual immediate site of the spring is protected, but there is extensive liability to contamination and bacteriological analyses disclose marked pollution. In July, 1929, during a dry period, a gauging showed a yield of 60,000 gallons a day, and in August, 1929, a constant yield of 45,000 gallons a day. The water passes into two small tanks and from there to a covered reservoir of 135,000 gallon capacity. A gravitation supply to the central parts of the urban area, the population supplied being estimated at 4,056 (1930).

(b) Water purchased in bulk from the Downside Water Company (see page 50). The water supplies the Downside, Westfield and Clapton portions of the district, the estimated population being 2,492.

(c) Water from the Downhead supply, purchased in bulk from the Radstock U.D.C. Supplies all Clandown, most of Welton and other parts with an estimated population of 1,182.

There are no supply reservoirs in connection with (b) and (c).

(d) An estimated population of 356 (1930) in the outlying parts of this large area are supplied from wells and springs.

The quantity of water purchased from outside sources since 1924 is as follows :—

					<i>Downside.</i> Gallons.	<i>Radstock.</i> Gallons.
1924	...	...	...	...	25,669,000	5,247,000
1925	...	...	...	...	27,734,000	4,831,000
1926	...	...	...	...	28,024,000	5,334,000
1927	...	...	...	...	32,202,000	5,595,000
1928	...	...	...	...	33,743,000	5,646,000
1929	...	...	...	...	27,611,000	6,990,000

MINEHEAD.

There are various sources of supply, all owned by the Minehead U.D.C. These are :—

(a) From a stream at Long Combe at the foot of Croydon Hill. There is a roughing filter at the intake.

(b) From a spring in Broad Wood Combe. The overflow after Dunster is supplied is available.

(c) From Periton Combe.

(d) From a spring at Woodcombe.

(e) At Nutscale by impounding the head waters running into Horners Combe. Derived from the Exmoor Devonian Uplands this forms a very extensive additional supply. Limestone roughing filters are provided. A new supply only available in 1929.

The main reservoir has a capacity of 1,000,000 gallons, the second 127,000 gallons, while there is a quite small service reservoir of 7,600 gallons. A gravitation supply, capable of supplying by gravity all but a few houses in the very highest parts of the town.

These supplies are all derived from the Old Red Sandstone, and together form an ample supply. The amount of water is greatly affected by rainfall, but with the new supply there is ample water for all needs, while there is an enormous surplus during the winter.

PORTISHEAD.

All except about 130 houses, supplied from local springs and wells, is supplied by Portishead District Water Company. The area of supply included in their local acts, is Portishead, Portbury, Pill and part of Failand. With the exception of part of Failand, this area is supplied by the Water Company. The water is obtained from the following sources :—The main gravitation supply is at Carters from two headings and a spring (Carthouse spring). All apparently from the base of the Lower Limestone Shales. The water is collected into two covered reservoirs. The yield varies very greatly with season and rainfall. Considerable work has recently been carried out to remove possible sources of contamination. A small chlorination plant is installed to be used if required. Another gravitation supply is from two wells at Failand in the upper beds of the Old Red Sandstone just below the Lower Limestone Shales. The yield from these is small and they now form an unimportant part of the supply.

A third source of water is from a well at Portbury close to the railway station. Well 100 feet deep into Upper Keuper Marls, and possibly through them. The other source is from a bore hole at Middle Bridge, nearer Portishead. This is 200 feet deep into the same strata as the Portbury well. The gravitation supply suffices for winter and seasons with heavy rain, the water from the well and borehole being pumped direct into the mains as required, their being no reservoirs for these pumped supplies.

RADSTOCK.

All the urban area, except about twenty-five houses, is supplied from a supply owned by the U.D.C. The Bottlehead Springs are on Downhead Common, about 660 feet above O.D., and are from the Old Red Sandstone at the junction with the Carboniferous Limestone. In March, 1931, the Council completed the purchase of the springs and collecting grounds from Lord Portman. The gathering area is now adequately protected. The water is received into a small, covered reservoir of 50,000 gallons capacity. Conveyed to Radstock by a cast iron main 8 inches diameter, from which the different houses are supplied. The absence of any supply reservoir with consequent distribution direct from the main, is a considerable drawback, and causes difficulties in supply. The yield is considerable, and recent testings in 1930 were :—March 218,664, May 200,668, October 195,000 gallons per 24 hours. The approximate daily consumption in Radstock is about 116,000 gallons per day.

In addition to Radstock, water is supplied to Peasedown St. John (Bath Rural), parts of Writhlington, Kilmersdon, and a few houses in other parishes (Frome Rural), for part of Midsomer Norton, and part of Downhead village (Shepton Mallet Rural). About 74,000 gallons per day is supplied for these areas.

SHEPTON MALLET URBAN.

This district is supplied by a private company, the Shepton Mallet Waterworks Co., Ltd., under their private Acts of 1859, 1876 and 1922. The area of supply is the Urban District of Shepton Mallet and part of the parish of Croscombe, in the Rural District of Shepton Mallet, as far as the southerly and easterly sides of Ham Lane.

There are two sources of supply, i.e., Yelling Mill and Windsor Hill. The Yelling Mill supply is obtained from four springs, three being close together and collected in one catchment pit, the fourth being collected from an adjoining field. The water passes by a 12 inch pipe to the Windsor supply. The water appears to be derived from the Dolomitic Conglomerate and Old Red Sandstone.

The Windsor Hill supply is from a number of springs collected in a covered tank, and apparently from the same geological source. Steps have been taken to prevent surface water gaining access to these deep springs. The water from the two sources passes to a covered reservoir of 130,000 feet capacity. A gravitation supply. A third small supply at Lapwing Farm has not been used for many years.

The supply of water is usually abundant, but there is a considerable diminution in late autumn after very dry summers, and no surplus is available for other areas.

STREET.

The greater part of the area obtains its water from a supply owned by the Street U.D.C., under the Street U.D. Water Act, 1902. The main supply is from a spring from the Carboniferous Limestone half-a-mile from Rodney Stoke Church. It flows out of a cavern at the junction of the Carboniferous Limestone and the Upper Keuper Marls. A second source is from a borehole, 300 feet deep, in Millyard, Rodney Stoke. A recent third source of supply is from springs, also at Rodney Stoke, from the Dolomitic Conglomerate. The Rodney Stoke springs gravitate to a Low Service Reservoir at Street, of capacity 300,000 gallons. In dry weather, pumping is necessary from the low level sources of supply at Rodney Stoke to High Service Reservoir of 150,000 gallons. Water is pumped from the Low Reservoir to the High Reservoir to supply the higher parts of Street. With the new supply, the water is said to be ample in quantity. The total yield during the winter months varies from one to two million gallons per day. In addition to Street, portions of Rodney Stoke, Godney, Polsham hamlet (St. Cuthbert out parish) and Sharpham are supplied. Meare and Walton are also in the area of supply.

TAUNTON.

Practically the whole of the Borough is supplied with water from the Blackdown Hills, about five miles from Taunton, owned by the Taunton Corporation under the Taunton Waterworks Act, 1858, and the Taunton Corporation Act, 1900. The water is derived from the Upper Greensand from small springs and from two tunnels into the hills through the Upper Keuper Marls. The water is in large part upland surface water, the gathering area being approximately 400 acres. This, so far as possible, is protected from pollution. At the western end of the gathering area the water is collected into a catchment reservoir lined by flints set in cement of capacity nearly a million gallons.

From these different sources, the water passes to three uncovered impounding reservoirs, one at Blagdon of 7,000,000 gallons, one at Leigh 30,000,000 gallons, and the third at Luxhay 120,000,000 gallons capacity. The water is then piped to Fulwood, about $3\frac{1}{2}$ miles from Taunton, where there are three sand filter beds, each bed with an area of 7,000 superficial feet. After filtration, the water flows into two service reservoirs adjacent to the filter beds with a total capacity of approximately 1,000,000 gallons. From there it is piped to the town. A gravitation supply. It is not possible to exclude every possible source of contamination so as a precautionary measure the water is chlorinated before consumption. The supply is adequate in the winter, but in dry seasons there is shortage and the Corporation are promoting a Bill for the acquisition of an additional supply to be utilised with the present sources. The area supplied also includes

the parish of Staplegrove, part of Bishops Hill, Trull, Pitminster, Angersleigh, St. James' and St. Mary's Without, all in Taunton Rural. The limits of supply in their water works Act are much more extensive.

WATCHET.

Supplied by the Watchet Water Co. The water is collected from springs from the Devonian strata in the Brendon Hills at Traphole, near Leighland Chapel. The springs are collected underground into a jointed pipe laid along the old Mineral Railway line track. There are two small collecting tanks below ground level. From this collecting area the water is piped by a 5 inch main to a covered reservoir above Watchet, said to have a capacity of 62,000 gallons, from which it gravitates to supply the town. Part of Old Cleeve, in Williton Rural, is supplied from this source. A second supply pipe from the collecting area to the reservoir has been laid and the outside supply is taken from this pipe which prevents, what previously happened, the outside consumers draining off the water and leaving Watchet inadequately supplied.

WELLINGTON.

Two sources of supply, both owned by the Urban District Council, which provide water for all the Urban area except a few houses in outlying portions, supplied by wells and springs. The original source of supply is from springs at Westford in the Old Red Sandstone. The water is collected into a well about 15 feet deep and from which it gravitates to an underground storage reservoir in the field opposite the pumping station. A well at the pumping station 156 feet deep into the Upper Sandstone yields a little additional water. In 1912 springs were acquired at Payton, Holywell Lake, also from the Old Red Sandstone. The water from these springs gravitates to a small pumping station whence it is pumped to the Westford Pumping Station. From this it is pumped to two water towers, one at Rockwell Green with a capacity of 27,000 gallons, the other at Dark Lane holding 48,000 gallons. The total storage capacity is 159,000 gallons. The water from the three sources is mixed and there is a total daily yield of 230,000 gallons, which is ample for present requirements.

The total capital cost was £13,600. The loan and redemption charges, together with the maintenances charges, are approximately covered by the water rent of 5 per cent. on rateable value charged to consumers.

The total hardness is about 18 degrees, permanent, 11 degrees.

WELLS.

Supply owned by the Wells Council with powers under the Wells Corporation Water Act, 1901. The water is derived from a number of sources, i.e. :—

(a) Holes Ash Spring, at Rookham, 572 feet above O.D. Springs from the hillside, derived from Old Red Sandstone, emerging in Lower Limestone Shales.

(b) In the neighbourhood of Holes Ash Spring there are other sources of water. A borehole some 500 feet from (a) yields a little water. Depth 574 feet. Two other springs have also been picked up in this area and yield a certain quantity.

(c) A borehole in Wells itself, on the Athletic Ground, has recently been sunk. Bore 12 inch depth 202 feet. Abundance of water, apparently derived from the Dolomitic Conglomerate. Electric pumps pump the water to the service reservoir.

The winter yield from the springs is up to 246,000 gallons a day, but in summer may be down to 150,000 gallons. The borehole in Wells is kept as a supplementary supply for dry weather.

The Rookham supplies are by gravitation, with service reservoirs on Milton Hill of capacity 150,000 and 220,000 gallons respectively. The Rookham supply is a comparatively soft water, that from the borehole on the Athletic Ground has a hardness as high as 31 parts for 100,000, of which 14 is permanent. Bacteriologically satisfactory. Supplies Wells City and parts of the St. Cuthbert Out parish of Wells Rural.

WESTON-SUPER-MARE.

Supply owned by the Urban District Council under various Acts. The area of supply includes the parishes of Kewstoke, Worle and Uphill, and these are in part supplied from this source. The main source of water is from a spring at Banwell, from the Carboniferous Limestone. This yields an abundant supply which varies from about 1,500,000 to 10,000,000 gallons per day, according to the season. The water passes by gravity to the pumping station in Weston.

The older supply is from two wells in the Carboniferous Limestone at the pumping station, sunk to depths of 7 and $4\frac{1}{2}$ feet O.D. respectively, yielding an abundant supply, but of excessive hardness, now mainly used to supplement the Banwell supply in seasons of shortage. The water is pumped to two reservoirs of total capacity 1,800,000 gallons. There are two small supply reservoirs for the low level and two others of 50,000 gallons capacity for the high level.

The Urban District Council has also powers to sink a borehole in the neighbourhood of Banwell should additional water be required. The total capital expenditure on water to March 1st, 1929, amounted to £225,948.

WIVELISCOMBE.

The two sources of supply are both owned by the U.D.C. The main source is from springs in the Withycombe valley, issuing from the Devonian rock, collected under the soil and passing into a main which runs along the valley. The pipes are so arranged that the individual springs can be added or cut off as required; an important point, since some of them in the past have been found to be contaminated. The contaminated springs have been cut out and improved protection against contamination provided. The water gravitates to a covered masonry reservoir of capacity 600,000 gallons, and from this is supplied by gravitation to the town. As a rule this is adequate for needs but when short the other supply is used. This is from an artesian well in the Lower Sandstone in the centre of the town. The borehole is 285 feet deep. This yields an abundant supply of water which is pumped into the mains when required, or can be pumped into the reservoir. There is no outstanding loan for the water.

YEOVIL.

The Water Supply is derived from three main sources, namely:—Cattistock, Stockwood and Spring Pond, with two auxiliary supplies to the latter from Evershot Tunnel and Haydon Wood. All five sources are situated to the South-east, on the Greensands of Dorsetshire. Cattistock is 10, Stockwood is $6\frac{1}{2}$, and the other sources about 8 miles from Yeovil.

The Spring Pond supply is derived from two springs in the Greensand in a wood near Evershot station. The maximum and minimum yields are about 1,095,000 gallons every 24 hours, and 186,000 for the same period, the average daily yield being 500,000. The water passes through a gravel strainer.

The Haydon Wood springs are only a short distance from the Spring Pond Springs and the supply is from the same formation. There is a lower spring about 100 yards away which is liable to contamination from surface surroundings and is not now used. The average daily yield from the upper spring is about 20,000 gallons per day, only used as an auxiliary supply, i.e., when necessary.

The Evershot tunnel supply is from a spring at the end of, and in the tunnel, also in the Greensand. The water is used as a regular source of supply, average daily yield, 188,000 gallons per day.

The water from the above three supplies is taken by a 12 inch main to two reservoirs on Newton Hill, capacity 1,000,000 gallons and 250,000 gallons respectively.

The Stockwood supply is derived from two deep-seated springs from the Greensand. The water passes into a collecting tank and through a small gravel filter by a separate 9 inch pipe to a covered reservoir of 750,000 gallon capacity on the top of Hendford Hill, near Yeovil: average daily yield, 325,000 gallons per day.

At Cattistock Farm in Dorset, a further source of supply was obtained in 1929 from a borehole, 20 inches diameter, sunk to a depth of 315 feet. The water supply from this source is estimated at 240,000 gallons per day. It passes into a reservoir (capacity 250,000 gallons) and then into the main taking the Spring Pond supply. This water has to be pumped, but the rest of the supply is by gravity. A duplicate borehole is now being constructed which will yield the same daily average.

The average daily consumption is about 30 gallons per day. The statutory area of supply consists of the Borough of Yeovil and Yeovil Without, part of West Coker, Brympton, and various parishes in Dorset. At present only part of Yeovil Without is so supplied, whilst Barwick is supplied by the Yeovil Rural District Council from the Yeovil Corporations main trunk through meter.

The present supply is ample in winter and a large volume runs to waste. In summer the springs are fairly quickly affected by the rainfall and the supply diminishes; the Stockwood supply is the slowest to be affected. The Cattistock water is only used to supplement a diminution of supply from the springs.

RIVER POLLUTION AND SEWAGE.

Although there are so many milk depots in the County no trouble was experienced during the year from the effluent from any of them. In one instance an extension of business had caused certain rooms hitherto only used for dry products to be used for processes dealing with liquids and the floor washings from this room went for a short period into the river. The directors of the concern altered the drainage arrangements so that these washings should be treated with the rest of the effluent, which removed the trouble.

Many sewage disposal works were visited, and the majority were working fairly well, but some required attention. Forty-two samples of sewage effluent, etc., were examined in the County Laboratory.

All complaints of alleged river pollution were promptly investigated, while many visits were paid to works and other places from which possible river pollution might occur. Many samples were personally collected. In all the cases, when unsatisfactory conditions were met with they have been dealt with by the persons concerned, and it was not necessary to report any to the County Council for legal action.

ADMINISTRATION OF THE HOUSING ACTS.

A comprehensive report on the subject of housing, particularly dealing with housing construction since the War, was given in my Report for 1928, so the subject is not dealt with in detail in this Report.

The following shows the housing construction since 1921 :—

	Urban.	Rural.	Total.
1921	493	685	1178
1922	395	637	1032
1923	279	375	654
1924	432	551	983
1925	581	812	1393
1926	974	1217	2191
1927	1393	1442	2835
1928	960	718	1678
1929	857	1070	1927
1930	887	833	1720

These figures show a steady and very considerable programme of housing construction. The housing conditions in the County have been very materially improved in consequence. The problem of those who can only afford a very small rent has not been met, but the shifting of some of the population into better houses has set free a number of cheaper houses. A census of those

who exactly occupy the new houses would be of interest because, while the needs of local inhabitants are considered, I know of many instances in rural areas where they cannot afford the rents and the houses are let to persons from an adjacent town.

Table XXI. shows that 108 houses were closed as unfit during the year, the figure for the previous year being 158. This is a very small proportion of those which are unfit but which are not being dealt with for economic reasons. Houses found defective but not unfit for habitation numbered 2,604. 3,573 houses were inspected under the Housing Acts during the year, which is a very inadequate proportion. In consequence, many defective houses which could be made fit are still showing serious sanitary defects.

HOUSING (RURAL WORKERS) ACT, 1926.

During 1930 grants were authorised by the County Council under this Act in respect of 18 dwellings, amounting to £1,587, in the following areas :—

<i>Rural District.</i>				<i>No. of dwellings.</i>		<i>Amount.</i>		
						£	s.	d.
Axbridge	1	100	0	0
Chard	2	200	0	0
Langport	10	805	0	0
Shepton Mallet	1	100	0	0
Wincanton	3	300	0	0
Yeovil	1	82	0	0
					<hr/> 18	<hr/> £1587	<hr/> 0	<hr/> 0

The total grants authorised under the Act to the 31st December, 1930, amounted to £6880 : 13 : 4d. in respect of 76 dwellings. Of these, grants amounting to £4,962 : 13 : 4d. in respect of 55 dwellings were paid prior to that date ; the applications in respect of 9 dwellings amounting to £900 were not proceeded with by the applicants ; and in the remaining cases the works were not completed, and therefore the grants were not paid.

TABLE XX.

NUMBER OF NEW HOUSES ERECTED DURING THE YEAR.

AREA.	With State assistance.		Otherwise	Total.
	By the Local Authority.	By other bodies or persons.		
RURAL.				
AXBRIDGE	46	0	61	107
BATH	0	0	30	30
BRIDGWATER	0	0	48	48
CHARD	4	0	10	14
CLUTTON	0	0	28	28
DULVERTON	16	0	3	19
FROME	0	0	6	6
KEYNSHAM	14	90	0	104
LANGPORT	56	0	5	61
LONG ASHTON	0	0	102	102
SHEPTON MALLET	0	0	13	13
TAUNTON	32	33	0	65
WELLINGTON	12	0	1	13
WELLS	0	0	10	10
WILLITON	26	3	12	41
WINCANTON	20	8	0	28
YEOVIL	122	0	22	144
All Rural Areas	348	134	351	833
URBAN.				
BRIDGWATER	106	0	5	111
BURNHAM	0	0	21	21
CHARD	0	4	0	4
CLEVEDON	0	0	18	18
CREWKERNE	0	0	2	2
FROME	0	0	12	12
GLASTONBURY	0	0	3	3
HIGHBRIDGE	0	0	1	1
ILMINSTER	3	1	3	7
MIDSOMER NORTON	0	0	8	8
MINEHEAD	35	0	29	64
PORTISHEAD	0	0	9	9
RADSTOCK	0	0	4	4
SHEPTON MALLET	0	4	0	4
STREET	0	5	0	5
TAUNTON	54	0	37	91
WATCHET	0	0	3	3
WELLINGTON	8	0	7	15
WELLS	0	0	2	2
WESTON-S-MARE	102	0	118	220
WIVELISCOMBE	0	1	0	1
YEOVIL	232	0	50	282
All Urban Areas	540	15	332	887
County	888	149	683	1720

TABLE XXI.
HOUSING INSPECTIONS.

Area.	Houses inspected for housing defects.	Houses specially inspected under Housing Acts.	Number Found unfit.	Number defective but not unfit.	Houses Closed as unfit.
RURAL.					
AXBRIDGE	420	350	5	198	3
BATH	91	51	5	30	3
BRIDGWATER	526	52	103	119	1
CHARD	201	201	6	124	3
CLUTTON	175	79	0	62	0
DULVERTON	48	14	2	23	0
FROME	125	16	2	114	2
KEYNSHAM	91	41	2	64	1
LANGPORT	238	36	28	202	8
LONG ASHTON	134	86	20	51	4
SHEPTON MALLET	72	52	2	10	0
TAUNTON	624	570	3	236	0
WELLINGTON	56	22	1	8	1
WELLS	93	58	3	31	0
WILLITON	87	27	10	65	0
WINCANTON	161	161	4	142	0
YEOVIL	643	595	63	210	23
All Rural Areas.	3,785	2,411	259	1,689	49
URBAN.					
BRIDGWATER	276	117	14	191	12
BURNHAM	11	7	2	5	1
CHARD	87	42	2	19	2
CLEVEDON	81	49	7	36	0
CREWKERNE	94	82	3	38	0
FROME	201	68	0	118	0
GLASTONBURY	104	51	0	39	0
HIGHBRIDGE	106	0	0	12	0
ILMINSTER	72	42	4	31	2
M'SOMER NORTON	103	103	18	39	0
MINEHEAD	7	3	1	2	1
PORTISHEAD	15	12	0	8	0
RADSTOCK	0	0	0	0	0
SHEPTON MALLET	134	76	3	15	3
STREET	11	11	2	6	2
TAUNTON	532	118	15	175	15
WATCHET	92	92	0	0	0
WELLINGTON	292	0	0	22	0
WELLS	151	151	17	63	0
WESTON-S-MARE	575	65	5	57	10
WIVELISCOMBE	15	0	1	6	1
YEOVIL	73	73	10	33	10
All Urban Areas.	3,032	1,162	104	915	59
County.	6,817	3,573	363	2,604	108

SUPERVISION OVER THE FOOD SUPPLY.

A. **Slaughter Houses and Meat Supervision.** The Public Health (Meat) Regulations 1924, came into operation April 1st, 1925. A summary of their requirements was set out in my Report for 1925.

Theoretically these regulations should enable every animal slaughtered for human food to be inspected and passed or rejected for human consumption. In practice this does not by any means occur, although the regulations mark a considerable advance in the control over meat.

TABLE XXII.
SLAUGHTER HOUSES.

Sanitary Area. (Urban).	Licensed.	Registered.	Total.	Sanitary Area. (Rural).	Licensed.	Registered.	Total.
Bridgwater	4	11	15	Axbridge	21	8	29
Burnham	2	0	2	Bath	2	11	13
Chard	3	1	4	Bridgwater	14	7	21
Clevedon	—	—	P	Chard	15	20	35
Crewkerne	0	3	3	Clutton	8	14	22
Frome	1	7	8	Dulverton	1	3	4
Glastonbury	2	4	6	Frome	11	0	11
Highbridge	5	1	6	Keynsham	4	8	12
Ilminster	2	3	5	Langport	12	2	14
Midsomer Norton	2	2	4	Long Ashton	2	11	13
Minehead	—	—	P	Shepton Mallet	15	0	15
Portishead	2	2	4	Taunton	36	0	36
Radstock	1	2	3	Wellington	5	0	5
Shepton Mallet	4	2	6	Wells	14	2	16
Street	5	0	5	Williton	6	6	12
Taunton	5	7	12	Wincanton	2	19	21
Watchet	1	2	3	Yeovil	26	0	26
Wellington	2	7	9				
Wells	5	6	11				
Weston-super-Mare	—	—	P				
Wiveliscombe	2	0	2	Total.	194	111	305
Yeovil	9	0	9				
Total.	57	60	117	County Total.	251	171	422

P = Public Slaughter-house.

TABLE XXIII.
MILK PRODUCERS AND DISTRIBUTORS.

Sanitary Area. (Urban).	Producers.	Distributors.			Sanitary Area. (Rural).	Producers.	Distributors.		
		Also Producers.	Not Producers.	Total.			Also Producers.	Not Producers.	Total.
Bridgwater	11	7	59	66	Axbridge	771	87	15	102
Burnham	21	4	10	14	Bath	161	54	15	69
Chard	10	2	8	10	Bridgwater	758	183	8	191
Clevedon	24	22	11	33	Chard	632	55	2	57
Crewkerne	11	11	3	14	Clutton	451	112	13	125
Frome	14	9	21	30	Dulverton	141	141	7	148
Glastonbury	59	10	5	15	Frome	342	328	6	334
Highbridge	8	5	3	8	Keynsham	108	35	8	43
Ilminster	9	7	2	9	Langport	428	122	0	122
Midsomer Norton	37	12	5	17	Long Ashton	420	53	31	84
Minehead	9	8	2	10	Shepton Mallet	410	31	1	32
Portishead	12	7	5	12	Taunton	369	24	70	94
Radstock	8	5	9	14	Wellington	133	35	0	35
Shepton Mallet	33	7	4	11	Wells	548	155	9	164
Street	27	12	5	17	Williton	303	5	43	48
Taunton	2	17	35	52	Wincanton	424	24	28	52
Watchet	4	2	2	4	Yeovil	464	43	6	49
Wellington	61	18	8	26					
Wells	0	0	5	5					
Weston-super-Mare	6	3	73	76					
Wiveliscombe	2	2	0	2					
Yeovil	18	4	25	29					
					Total	6,863	1,487	262	1,749
Total	386	174	300	474	County Total	7,249	1,661	562	2,223

B. Milk Supply. Table XXIII. gives the number of producers and distributors registered.

The Milk and Dairies Order, 1926, came into operation in October, 1926, and an account of its aims was given in my 1927 Report. Considerable improvements are being effected as the result of the working of the Order, but only very slowly, and in some districts very inadequate attention is being paid to this important work. The educational work also goes on and is making itself felt, and this is resulting in higher standards. During the year 10 Clean Milk Demonstrations were given at farms in various parts of the County, with an average attendance of 19.6. A Clean Milk competition was run in the County between February 1st and the end of July, 1930, in which 15 farmers competed; the competition was only open to cheesemakers.

During the year 344 samples of mixed milk, collected at the cowsheds, were examined for tubercle bacilli. Virulent tubercle bacilli were found in 8, a percentage of 2.32.

This percentage keeps very constant, the percentage figures for previous years being 2.2 (1926); 2.18 (1927); 2.2 (1928), and 2.67 (1929).

In addition to these 8 cases, reports on milk derived from Somerset, but found to be tuberculous by outside authorities, have been received in 5 cases. Three of these were from the London County Council, one from Croydon, and one from Wandsworth Borough, London.

By chance, one of the farms reported by the London County Council had been sampled at almost the same time in the County and found positive, and is included in the 8 mentioned above. There are only, therefore, 12 positive cases to consider. In 5 instances the tuberculous cow infecting the milk was found at the first examination of the herd by the County Veterinary Surgeon, while in 3 further cases he detected the infectious animal or animals at a subsequent examination, with bacteriological aid. In one instance the infecting animal was only found by examining the herd bacteriologically in groups and the animal located. In another herd the infected cows had been sold but were traced before slaughter into another County and, when killed, these were both found to be suffering from extensive tuberculosis, and one with definite udder infection. In one herd no infective animal was found, but a cow with a very suspicious history was sold between sampling and the result of the bacteriological examination, and this animal was probably the source of infection. In the remaining case the milk was from a creamery receiving milk from a very large number of sources and there was no means of tracing the source of infection. Excluding this case, it will be noted that in 10 out of 11 cases the infective animal was detected and destroyed.

Graded Milks. The number of producers supplying graded milks remained unaltered during 1930.

The following shows the figures at the end of the years referred to:—

	1924	1925	1926	1927	1928	1929	1930
Certified Milk ...	1	4	3	6	4	4	4
Grade A (tuberculin tested) ...	1	5	7	9	8	6	6
Grade A ...	2	4	6	11	12	14	14

C. Administration of the Sale of Foods and Drugs Acts. During the year 1,079 samples were examined. Of these, 30 were submitted by private individuals and firms, and 16 were "Appeal to cow" samples. The following Table shows the nature of the 1033 samples submitted by the police, excluding the 16 "appeal to cow" samples.

TABLE XXIV.

Article.	Number examined.	Number genuine.	Number adulterated.	Per cent. adulterated.
Dairy Products —Milk	506	480	26	5.1
Cream	15	15	0	0
Cheese	11	11	0	0
Butter	50	50	0	0
Condensed Milk	20	20	0	0
Dried Milk	13	13	0	0
Edible Fats	25	25	0	0
Cereals	25	25	0	0
Meat and Fish Products	38	38	0	0
Tea, Coffee, Cocoa	24	24	0	0
Condiments	30	29	1	3.3
Saccharine Products	24	24	0	0
Miscellaneous Groceries	105	103	2	1.9
Beer, Spirits and Wine	97	96	1	1.0
Drugs	50	50	0	0
Total	1,033	1,003	30	2.9

The samples adulterated, as shown in the Table, were mostly milk, the adulteration of other products being very few. 26 milk samples were reported as adulterated. No legal proceedings were taken in 12, seven were dismissed, while in the remaining 7 convictions were obtained. The legal position as regards chemical milk adulteration remains very unsatisfactory.

TABLE XXV.

The number of samples analysed and the number adulterated during the past 10 years.

	Year.	Number examined.	Number adulterated.	Percentage adulterated.
Somerset	1921	1,084	67	6.2
"	1922	1,075	50	4.65
"	1923	1,049	40	3.8
"	1924	1,045	48	4.6
"	1925	1,142	37	3.5
"	1926	1,044	29	2.8
"	1927	1,067	39	3.6
"	1928	1,043	25	2.4
"	1929	1,111	23	2.2
"	1930	1,079	30	2.8
England and Wales	1929	133,584	7,260	5.4

PUBLIC HEALTH LABORATORY.

The Laboratory continues to be extensively made use of by the different Local Authorities for the examination of water supplies, sewage samples, diagnosis of infectious cases, etc. It is also very valuable in connection with Tuberculosis, School Work, Venereal Diseases and other work directly under the County Council.

During the past year 14,835 samples have been examined (excluding all food and drug samples) as follows:—

Drinking Water :—							
Bacteriological examinations	...	...	...	...	...	...	707
Chemical analyses	...	...	...	...	...	...	27
Sewage, sewage effluents, rivers and streams	...	...	...	...	...	...	42
Swabs for diphtheria bacilli	...	...	...	...	...	...	10,276
Sputum for tubercle bacilli	...	...	...	...	...	...	1,689
Blood for typhoid, paratyphoid, etc.	...	...	...	...	...	...	106
Hairs and skin for ringworm	...	...	...	...	...	...	354
Specimens for Venereal Disease	...	...	...	...	...	...	691
Urine for tubercle bacilli, B. coli, sugar, albumin, casts, etc.	...	...	...	...	...	...	170
Faeces for typhoid and dysentery	...	...	...	...	...	...	40
Milk for tubercle bacilli	...	...	...	...	...	...	432
Milk for bacteriological examination (general)	...	...	...	...	...	...	51
Milk : Grade A, Grade A (T.T.), etc.	...	...	...	...	...	...	96
Cerebro-spinal fluid and Post-nasal swabs	...	...	...	...	...	...	7
Other specimens	...	...	...	...	...	...	147
Total							14,835

Of the 10,276 swabs examined, 1,905 showed the presence of diphtheria bacilli ; of the 1,689 specimens of sputum, 468 contained tubercle bacilli ; of the 106 specimens of blood, 24 gave a positive Widal reaction ; of the 354 specimens of hair, 151 contained ringworm fungi ; and of the 691 specimens for venereal disease, 112 contained gonococci.

TABLE A.

Causes of, and Ages at Death during the Year 1930.

CAUSES OF DEATH.	NETT DEATHS AT THE SUBJOINED AGES OF "RESIDENTS" WHETHER OCCURRING WITHIN OR WITHOUT THE DISTRICT.								
	All ages.	Under 1 year.	1 and under 2 years.	2 and under 5 years.	5 and under 15 years.	15 and under 25 years.	25 and under 45 years.	45 and under 65 years.	65 and upwards.
Enteric Fever	0	0	0	0	0	0	0	0	0
Small-pox	0	0	0	0	0	0	0	0	0
Measles	3	0	2	0	0	0	0	1	0
Scarlet Fever	4	0	0	1	3	0	0	0	0
Whooping Cough	14	8	4	1	0	0	1	0	0
Diphtheria and Croup	28	1	2	5	17	2	1	0	0
Influenza	65	2	0	1	1	3	9	17	32
Encephalitis Lethargica	10	0	0	0	0	0	1	7	2
Meningococcal Meningitis	2	0	0	0	0	2	0	0	0
Tuberculosis of respiratory system	216	0	1	1	5	40	95	59	15
Other Tuberculous Diseases	37	6	1	4	5	4	10	6	1
Cancer, Malignant Disease	652	0	0	0	0	3	37	231	381
Rheumatic Fever	8	0	0	1	1	1	2	2	1
Diabetes	69	0	0	0	2	3	4	21	39
Cerebral Haemorrhage, etc.	289	0	0	0	0	0	4	61	224
Heart Diseases	982	0	0	0	4	8	34	217	719
Arterio-sclerosis	199	0	0	0	0	0	0	38	161
Bronchitis	194	12	2	0	0	3	2	23	152
Pneumonia (all forms)	178	27	10	2	1	6	35	40	57
Other Respiratory Diseases	45	0	0	1	0	1	4	19	20
Ulcer of Stomach or Duodenum	57	0	0	0	0	1	9	30	17
Diarrhoea, etc.	31	11	0	0	0	0	4	4	12
Appendicitis and Typhilitis	36	0	0	1	7	5	5	11	7
Cirrhosis of Liver	23	0	0	0	0	0	2	11	10
Acute and Chronic Nephritis	221	0	0	1	2	2	17	69	130
Puerperal Sepsis	12	0	0	0	0	1	11	0	0
Other Accidents and Diseases of Pregnancy and Parturition	13	0	0	0	0	1	11	1	0
Congenital Debility and Malformation, including Premature Birth	142	138	1	0	0	1	0	2	0
Suicides	45	0	0	0	0	2	15	23	5
Other Deaths from Violence	199	11	5	11	15	22	33	41	61
Other Defined Diseases	955	49	6	5	27	30	86	175	577
Diseases ill-defined or unknown	4	1	0	0	0	0	0	1	2
	4733	266	34	35	90	141	432	1110	2625

TABLE B.

Causes of Death at all Ages in each District during the Year 1930

RURAL DISTRICTS.

URBAN DISTRICTS.

CAUSES OF DEATH.	URBAN DISTRICTS.																																COUNTY TOTAL.													
	AXBRIDGE.	BATH.	BRIDGWATER.	CHARD.	CLUTTON.	DULVERTON.	FROME.	KEYNSHAM.	LANGPORT.	LONG ASHTON.	SHEPTON MALLET.	TAUNTON.	WELLINGTON.	WELLS.	WILLITON.	WINCANTON.	YEovil.	TOTAL RURAL DISTRICTS.	BRIDGWATER.	BURNHAM.	CHARD.	CLEDON.	CREWKERNE.	FROME.	GLASTONBURY.	HIGHBRIDGE.	ILMINSTER.	MIDSOMER NORTON.	MINEHEAD.	PORTISHEAD.	RASTOCK.	SHEPTON MALLET.		STREET.	TAUNTON.	WATCHET.	WELLINGTON.	WELLS.	WESTON-SUPER-MARE.	WIVELISCOMBE.	YEovil.	TOTAL URBAN DISTRICTS.				
Enteric Fever ...	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Small Pox ...	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Measles ...	0	0	0	0	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Scarlet Fever ...	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Whooping Cough ...	3	0	2	0	2	0	0	0	0	0	0	1	0	0	1	0	2	0	11	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Diphtheria ...	1	0	1	0	0	0	4	0	0	0	0	1	0	1	1	1	0	1	10	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Influenza ...	0	7	3	2	0	0	4	3	7	1	4	4	0	2	1	4	2	45	3	0	0	0	1	0	1	3	0	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Encephalitis Lethargica ...	0	1	0	0	1	1	0	1	0	2	0	0	0	0	0	0	0	1	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Meningococcal Meningitis ...	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Tuberculosis of respiratory system ...	19	0	14	6	7	2	4	8	6	16	2	14	2	4	6	9	6	125	14	3	3	6	2	4	1	4	2	0	3	1	0	1	1	18	1	4	1	13	0	9	91	216				
Other Tuberculous Diseases ...	0	0	0	2	1	0	1	4	1	1	0	1	0	0	0	0	0	21	2	0	0	1	0	1	1	1	0	0	0	0	0	0	2	2	0	0	1	3	0	2	16	37				
Cancer, Malignant Disease ...	42	34	22	26	17	11	19	21	27	27	12	33	8	8	12	29	24	372	28	13	6	16	5	24	7	5	12	6	3	6	5	10	44	0	12	16	37	4	16	280	652					
Rheumatic Fever ...	0	0	1	1	1	0	0	0	0	1	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Diabetes ...	5	3	4	0	2	1	1	4	1	3	1	3	1	1	2	0	4	36	1	1	0	1	0	0	2	0	0	0	1	1	1	2	4	0	4	0	4	0	7	0	4	33	69			
Cerebral Haemorrhage, etc. ...	22	4	11	9	14	1	7	8	15	14	6	15	7	4	7	18	11	173	18	3	4	5	1	7	3	5	2	6	0	5	4	3	0	10	3	2	2	19	2	12	116	289				
Heart Diseases ...	66	38	33	32	42	22	25	26	34	36	28	39	22	31	35	45	37	591	33	15	5	21	6	28	16	12	12	5	2	7	4	0	4	1	12	55	4	17	13	68	1	36	391	982		
Arterio-sclerosis ...	15	6	8	3	9	2	6	4	2	7	6	5	3	5	10	7	9	107	8	1	8	5	4	4	1	12	5	2	7	4	0	4	1	12	0	3	3	7	2	9	92	199				
Bronchitis ...	12	9	7	7	10	0	5	4	11	5	1	5	4	4	11	13	11	119	9	2	2	4	3	2	0	2	0	1	1	2	3	4	1	12	0	3	3	7	2	9	95	194				
Pneumonia (all forms) ...	8	11	5	4	2	1	3	12	6	12	6	3	2	8	5	3	8	89	8	4	0	3	1	8	0	2	2	0	9	1	4	2	2	1	10	0	2	3	21	0	8	89	178			
Other Respiratory Diseases ...	2	3	2	2	0	0	4	1	3	2	0	3	0	0	1	2	3	28	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ulcer of Stomach or Duodenum ...	3	0	1	4	3	0	1	1	0	3	1	4	0	2	2	1	3	29	4	1	0	0	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diarrhoea, etc. (under 2 years) ...	0	0	0	0	0	0	2	0	0	0	0	3	0	1	0	0	0	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Appendicitis and Typhilitis ...	2	2	0	1	2	0	0	1	0	0	2	1	1	1	1	1	0	15	1	2	0	1	0	0	1	0	2	0	0	0	0	0	0	1	1	7	0	2	0	1	0	2	21	36		
Cirrhosis of Liver ...	2	1	1	0	0	0	0	0	0	0	1	0	0	1	0	2	2	10	0	1	1	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Acute and Chronic Nephritis...	11	13	8	2	8	3	5	6	18	11	8	9	4	6	4	14	7	137	5	2	2	11	4	3	3	2	1	1	0	3	1	1	4	14	1	1	1	20	0	4	84	221				
Puerperal Sepsis ...	0	1	1	2	1	0	0	0	1	0	0	1	1	0	0	0	1	9	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other accidents and diseases of pregnancy and parturition...	2	0	0	0	0	0	0	0	0	2	0	0	1	1	0	1	0	7	1	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	0	0	0	1	0	1	6	13			
Congenital Debility and malformation, premature birth ...	8	1	4	5	5	4	3	3	4	13	5	10	2	5	4	6	5	87	6	0	0	6	0	4	1	4	0	2	0	6	1	1	1	6	0	1	5	5	0	6	55	142				
Suicides ...	4	0	2	3	1	0	1	0	1	1	0	1	1	1	1	1	1	22	3	3	2	0	0	2	0	0	1	0	1	0	0	0	2	3	0	0	1	2	1	2	23	45				
Other deaths from violence ...	9	8	13	7	11	2	6	6	5	7	3	11	2	6	6	9	9	120	16	3	2	1	3	5	1	2	1	4	2	0	2	3	1	18	1	1	0	8	0	5	79	199				
Other defined diseases ...	54	30	39	30	27	9	37	19	36	27	20	47	19	15	27	61	60	557	45	10	11	29	9	27	9	4	8	13	10	7	13	11	7	67	9	22	11	55	2	39	418	975				
Causes ill-defined or unknown ...	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
All causes ...	290	172	182	148	167	60	138	123	181	191	108	213	80	112	137	235	210	2747	211	64	46	114	39	125	52	36	36	70	56	43	40	48	51	295	24	80	66	301	12	177	1986	4733				

TABLE C.

Table showing, for each Rural District, the number of Births and Deaths, the number of Deaths of Infants, also the Birth Rate, Death Rate, and Rate of Infantile Mortality.

DISTRICT.	Area. Acres.	No. of Births.	No. of Deaths.	No. of Deaths Under 1 Year.	Population.	Birth Rate.	Death Rate.	Standardized Death Rate.	Rate of Infantile Mortality.
RURAL :—									
1. AXBRIDGE	93,015	382	290	19	24,840	15.38	11.67	8.68	49.7
2. BATH	27,360	199	172	3	14,350	13.87	11.99	9.82	15.1
3. BRIDGWATER	87,354	245	182	11	17,020	14.39	10.69	8.98	44.9
4. CHARD	55,236	179	148	8	12,110	14.78	12.22	9.57	44.7
5. CLUTTON	41,133	252	167	12	15,670	16.08	10.66	8.66	47.6
6. DULVERTON	78,980	59	60	4	4,649	12.69	12.91	10.17	67.8
7. FROME	51,558	167	138	7	10,590	15.77	13.03	10.32	41.9
8. KEYNSHAM	20,949	170	123	7	12,530	13.57	9.82	8.40	41.2
9. LANGPORT	59,407	197	181	9	12,680	15.54	14.27	10.53	45.7
10. LONG ASHTON	47,681	301	191	14	20,290	14.83	9.41	7.61	46.5
11. SHEPTON MALLET	46,561	160	108	9	9,399	17.02	11.49	8.84	56.2
12. TAUNTON	71,095	239	213	15	16,860	14.18	12.63	9.28	62.8
13. WELLINGTON	34,626	79	80	2	5,782	13.66	13.84	10.62	25.3
14. WELLS	58,119	176	112	11	10,140	16.37	11.05	8.41	62.5
15. WILLITON	97,364	162	137	6	12,140	13.34	11.29	8.26	37.0
16. WINCANTON	64,540	229	235	15	16,200	14.14	14.51	11.16	65.5
17. YEOVIL	53,494	269	210	10	16,790	16.02	12.51	9.70	37.2
Totals of Rural Population	988,472	3,465	2,747	162	232,040	14.93	11.84	9.14	46.8

TABLE D.

Table showing, for each Urban District, the number of Births and Deaths, the number of Deaths of Infants, also the Birth Rate, Death Rate, and Rate of Infantile Mortality.

DISTRICT.	Area.	No. of Births.	No. of Deaths.	No. of Deaths Under 1 Year.	Population.	Birth Rate.	Death Rate.	Standardized Death Rate.	Rate of Infantile Mortality.
URBAN :—	Acres.								
1. BRIDGWATER	1,092	277	211	13	16,960	16.33	12.44	10.45	46.9
2. BURNHAM	1,502	61	64	1	5,338	11.43	11.99	9.15	16.4
3. CHARD	442	49	46	0	4,105	11.94	11.21	8.87	0.0
4. CLEVEDON	3,017	65	114	6	6,866	9.47	16.60	11.09	92.3
5. CREWKERNE	1,243	40	39	2	3,540	11.30	11.02	8.75	50.0
6. FROME	1,194	127	125	5	10,600	11.98	11.79	9.21	39.4
7. GLASTONBURY	5,019	76	52	2	4,460	17.04	11.67	9.86	26.3
8. HIGHBRIDGE	744	46	36	3	2,604	17.67	13.82	11.90	65.2
9. ILMINSTER	531	37	36	1	2,280	16.23	15.79	12.65	27.0
10. MIDSOMER NORTON	3,970	118	70	5	7,865	15.00	8.90	8.82	42.4
11. MINEHEAD	2,816	67	56	1	6,031	11.11	9.29	7.61	14.9
12. PORTISHEAD	1,006	57	43	6	3,889	14.66	11.06	9.04	105.3
13. RADSTOCK	1,014	61	40	3	3,705	16.46	10.80	9.48	49.2
14. SHEPTON MALLET	3,548	54	48	1	4,176	12.93	11.49	9.44	18.5
15. STREET	2,742	51	51	2	4,506	11.32	11.32	9.86	39.2
16. TAUNTON	2,015	364	295	16	25,450	14.30	11.68	10.29	44.0
17. WATCHET	493	34	24	0	1,929	17.63	12.44	8.97	0.0
18. WELLINGTON	5,295	92	80	1	7,310	12.59	10.94	8.70	10.9
19. WELLS	719	97	66	9	4,634	18.77	14.24	10.05	103.4
20. WESTON-S-MARE	2,412	278	301	15	27,410	10.14	10.98	8.93	54.0
21. WIVELISCOMBE	201	16	12	1	1,262	12.68	9.51	7.96	62.5
22. YEOVIL	2,258	283	177	11	17,910	15.80	9.88	9.33	38.9
Totals of Urban Population	43,273	2,340	1,986	104	172,830	13.54	11.50	9.51	44.4
Administrative County	1,031,745	5,805	4,733	266	404,870	14.34	11.70	9.30	45.8
England and Wales, 1930						16.3	11.4	11.4	60