

[Report 1902] / Medical Officer of Health, Newton Abbot R.D.C., Newton Abbot U.D.C., Dawlish U.D.C.

Contributors

Newton Abbot (England). Rural District Council.

Publication/Creation

1902

Persistent URL

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ANNUAL REPORT

OF THE

PUBLIC HEALTH

OF THE

NEWTON ABBOT (RURAL)

NEWTON ABBOT (URBAN)

AND

DAWLISH (URBAN)

SANITARY DISTRICTS.

For 1902.

BY

H. B. MAPLETON, M.A., M.D., D.P.H.

MEDICAL OFFICER OF HEALTH.

COMPARATIVE TABLE.

PLACES. 1902.	Birth-rate.	Annual death-rate per 1,000 of population.									Deaths under one year to every 1000 births.
		Total Death-rate.	From Seven Zymotics.	Small-pox.	Measles.	Whooping Cough	Scarlatina.	Diphtheria.	Continued Fevers.	Diarrhoea.	
*England & Wales...	27.4	15.3	1.14	.03	.27	.22	.10	.20	.10	.22	119
Newton Abbot, rural	23.6	14.8	.37	...	...	...	...	.11	.05	.21	96
Newton Abbot, urban	22.1	15.2	1.6	...	.63	.08	...	...	.24	.63	136
Dawlish, urban	20.2	17.5	.75	...	...	...	.25	...	...	.50	160

* less 176 towns.

RAINFALL IN 1902.

The total rainfall for the year was again below the average, January being an especially dry month. It will be remembered that, on the other hand, in the December of 1901, an excessive amount was recorded. There was, however, no prolonged period of drought; and to the general public, on account of the frequent intervals on which showery days occurred, the past year seemed rather wetter than usual. Again water supplies, especially those depending on deep springs, have run short, and the demands for more water, which have been increasing of late years, have been accentuated.

I give below statistics of the rainfall for various parts of the three Districts and it will be noticed that there is a considerable variation in the amounts; the fall, as a rule, increasing from the sea coast inland. The highest station, however—at the Blackinstone—gives a remarkably small figure, the second lowest on the list.

STATIONS.		Feet above sea level.	January	February	March	April	May	June	July	August	September	October	November	December	Total rainfall in inches	Average.
1	Bovey Tracey, Colehays ...	415	2.36	3.15	2.94	2.65	2.04	3.15	3.32	3.53	3.83	3.27	7.27	5.38	42.89	40.00
2	Dawlish, East (Lawn)	181	1.07	1.80	1.86	1.67	1.68	2.60	1.98	2.05	2.92	3.54	5.11	2.70	28.98	...
3	Dawlish, West, Vicarage ...	60	.97	1.70	1.77	1.55	1.67	2.15	1.79	1.96	2.36	3.07	3.52	1.99	24.50	...
4	Hemmock, Tottiford.....	718	1.46	2.80	2.13	2.12	1.72	3.04	3.46	2.78	3.15	2.66	6.70	3.45	35.47	...
5	Highweek, Newton Abbot	250	1.32	2.05	2.13	2.02	1.49	3.10	2.38	2.12	3.31	3.30	4.88	2.97	31.07	...
6	Ideford, Rectory ...	300	1.21	1.98	1.99	1.80	1.97	3.04	2.43	2.35	2.73	3.11	5.02	2.42	30.05	33.60
7	Kingskerswell, South Hill	270	1.04	1.98	2.02	2.09	1.37	3.19	2.45	2.15	2.58	3.28	5.00	2.62	29.77	31.79
8	Kingsteignton, Teignbridge	27	1.26	1.88	1.97	1.82	1.66	2.78	2.06	1.85	3.02	2.94	4.57	2.66	28.47	35.37
9	Moret'nham'stead Blackinst'e	1090	1.12	2.18	1.61	1.65	1.50	2.85	2.43	.63	2.60	2.26	5.82	2.23	26.88	...
10	Trusham, Rectory ...	320	1.42	2.48	2.15	2.07	1.66	2.58	2.26	3.02	2.73	2.87	5.11	2.98	31.33	37.05

The averages in the last column were for 7 years in the case of Bovey Tracey and Kingskerswell; for 10 at Teignbridge; and for 15 at Ideford and Trusham.

I am indebted for the above figures to the Revs. C. F. Benthall (West Dawlish); O. H. Cary (Trusham); and G. J. Ford (Ideford); Messrs. R. E. Clarke (Surveyor, Dawlish East); E. A. Foster (Kingskerswell); W. Ingham, Water Engineer to the Torquay Corporation (Tottiford and Blackinstone, on the Torquay Water Gathering Ground); F. H. Plumptre (Teignbridge); and E. Underdown (Bovey Tracey.)

ANNUAL REPORTS.

1902.

1.—NEWTON ABBOT (RURAL.)

PHYSICAL CHARACTERS.—A lake of the miocene period (said to be the only one in England) of irregular shape, being in its greatest dimensions, 8 or 9 miles by 2 or 3, drained by the river Teign and its tributaries, which flow eastwards to the sea, constitutes what may be called the kernel of the district. The soil of this former lake consists of beds of clay, quartzose sand and lignite, attaining it is said a maximum deposit of 300 feet; the working of these clay beds between Kingsteignton and Bovey Tracey constitutes a special source of trade and wealth in the neighbourhood. The level bed of the lake is bounded by hills of red breccia or sandstone (on the coast), greensand, shales and limestone, and to the westward by the igneous bosses of Dartmoor (attaining in this locality at Rippon Tor, an elevation of 1,560 feet, and culminating on the western margin of the district in the mass of Hameldown, 1750 feet above sea level), which have been thrust through the other sedimentary rocks, and so uptilted the latter that they lie on the flanks of the granite hills, being in some places nearly perpendicular. The lake floor being of granite debris, would be of more recent date than the upheaval or denudation referred to. Thus it happens that the district is in a pronounced manner divisible into two

parts. (1) the horizontal clayey floor of the lake, scarcely above sea level and drained by a somewhat sluggish river through a swampy delta—a geographical and geological configuration not to be considered as naturally salubrious. Formerly it was very malarious, and the village of Kings-teignton, situated on the margin of the lake bed, was noted for its ague, but that disease has now wholly disappeared. (2) the circumferential hills, which in their wooded slopes, pure moor breezes, and abundance of spring and upland water, are altogether faultless, as far as natural endowments go. The varieties of climate to be found among them are marked—the warm, sheltered, and well-wooded coombes, which run down to the sea or valley of the Teign, as for instance those in which lie the villages of Bishopsteignton, Coombe, and Lustleigh, are at one end of the scale ; whereas at the other are Moretonhampstead, Manaton, and Ipplepen, on uplands of considerable elevation with a strong stimulating atmosphere, and lower barometric pressure.

The district has an acreage of 99, 142, and a population at the census of 1901 of 18, 902 ; it includes 28 parishes, varying in density from those containing the small towns of Bovey, Chudleigh, and Moretonhampstead, to the purely rural and thinly inhabited areas of Widecombe, Manaton, and Woodland. There has been no change in the constitution of the district during the past year, and for the purposes of calculating the various rates given in the accompanying tables I have left the census figures of population unchanged.

VITAL STATISTICS.—The number of deaths in persons belonging to the district was 279, of which 143 were in males and 136 in females, giving an annual death rate of 14·8 per 1,000. This is ·8 below the average for the previous 10 years, but a fraction higher than that of 1901. Of these 279 deaths, 16 were in the Union House in persons belonging to the district, which are included in the tables according to the instructions of the Local Government Board ; if these are excluded, the figure is reduced to 13·9. The highest mortality was shown in the first quarter of the year, while the other three were practically equal in the number of deaths recorded, March and December being the most fatal months. 79 deaths were registered in the first quarter, 68 in the second, 66 in the third, and 66 in the fourth, giving rates per 1,000 per annum of 16·7, 14·4, 14·0, and 14·0 respectively.

CHIEF CAUSES OF FATALITY.—From 7 zymotic diseases, 7 deaths ; other septic diseases, 1 death ; influenza, 4 deaths ; constitutional diseases, 55 deaths, of which 23 were due to cancer and 20 to phthisis ;

Death Rates, &c., in each Parish.

PARISHES.	7 Ordinary Zymotics.							Influenza	Phthisis.	Other Tubercular Diseases.	Cancer	Apoplexy	Infantile Insanition.	Violence.	Deaths in Union House belonging to Parishes.	Total Deaths.	Death Rate,
	small Pox.	Scarlatina.	Diphtheria.	Whooping Cough	Measles.	Diarrhœa.	Continued Fevers.										
Abbotskerswell ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	8.8
Bickington.....	...	...	...	...	...	...	...	...	1	...	2	1	...	...	...	3	14.0
Bishopsteignton ...	...	...	1	...	...	...	...	1	3	...	3	2	...	...	2	15	13.9
Bovey Tracey	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	32	11.9
Broadsheмпston ...	...	...	...	...	...	...	...	...	...	3	...	3	...	2	...	15	33.7
Buckland	...	...	...	...	...	...	...	...	...	...	3	2	...	...	...	36	19.8
Chudleigh	...	...	...	...	...	...	1	...	2	...	1	2	...	2	3	4	15.1
Cockington	...	...	...	...	...	...	...	...	...	1	2	...	...	...	1	4	20.0
Coffinswell.....	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	4	11.2
Coombe & Haccombe	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	7	10.3
Dawlish (West) ...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	6	13.4
Denbury & Torbrian	...	...	...	...	...	...	...	...	1	...	2	...	...	...	...	7	9.8
Hennock.....	...	...	...	...	...	1	...	...	...	...	1	...	...	1	...	4	16.7
Ideford	...	...	...	...	...	...	...	...	1	...	...	1	...	...	1	9	10.2
Ilminster	...	...	...	...	...	1	...	...	...	...	1	1	1	...	1	12	16.2
Ipplepen	...	...	...	...	...	1	...	...	1	...	1	1	1	...	1	13	12.7
Kingskerswell	...	...	...	...	...	1	...	...	...	2	...	3	2	...	39	20.1	
Kingsteignton	...	...	...	...	...	...	...	...	...	...	2	...	1	...	5	12.5	
Lustleigh	...	...	...	...	...	...	...	...	...	1	...	...	...	...	25	9.5	
Manaton	...	...	...	...	...	...	...	...	4	...	1	...	...	1	4	16.2	
Moretonhampstead	...	...	...	...	...	...	...	...	...	...	1	...	...	...	2	10.2	
North Bovey.....	...	...	1	...	...	...	...	...	1	...	1	...	...	1	1	3	12.0
Ogwell	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	10.8
Stoke	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	5.3
Teigntrace	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	4	24.3
Trusham	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	12	18.3
Widcombe	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	3	18.2
Woodland	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Totals.....	...	...	2	...	...	4	1	4	20	7	23	16	9	9	16	279	14.8

diseases of the nervous system, 29 deaths ; of the respiratory system, 50 deaths ; of the circulatory system, 41 deaths ; of the urinary system, 14 deaths ; of the digestive system, 15 deaths ; of the generative system, 1 death ; of the skin, 2 deaths ; cellulitis, 1 death ; malformation, 2 deaths ; infantile inanition, 9 deaths ; premature birth, 7 deaths ; old age, 32 deaths ; and violence, 9 deaths, of which 6 were due to accident, and 3 to suicide.

AGE INCIDENCE.—Under the age of 1 year there were 43 deaths ; between 1 and 5 years, 6 deaths ; between 5 and 15 years, 6 deaths ; between 15 and 25 years, 13 deaths ; between 25 and 65 years, 77 deaths ; and over the latter age, 134 deaths. Thus 15·4 per cent. of the deaths were under 1 year, and 48·0 per cent. over 65 years, both showing a considerable improvement on last year's figures, which were 17·5 and 38·2 respectively. The infantile mortality, *i.e.*, the number of deaths under 1 year to every 1,000 births, was 96 ; the lowest since 1897. The causes of infantile mortality were 10 deaths from diseases of the respiratory system, 9 from inanition, 7 from premature birth, 4 from diarrhœa, 5 from other diseases of the digestive system, 2 from malformation, 2 from tubercular diseases, and 1 each from diseases of the nervous system, of the skin, from influenza, and accident.

The births of 237 boys and 209 girls give an annual rate of 23·6 per 1,000, a small fraction below the average of the previous 10 years. It is, however, the highest since 1898, and a considerable improvement on last year's rate, which was the lowest on record. 107 births were registered during the first quarter of the year, 124 in the second, 103 in the third, and 112 in the fourth, giving rates per 1,000 per annum of 22·6, 26·2, 21·8, and 23·7 respectively. The natural increase of population, *i.e.*, the excess of births over deaths, reckoning the mortality in the Union House, was 167 ; an increase of 46 over that of 1901.

The year under review may therefore be considered to have been statistically a favourable one ; the death and zymotic rates, especially the latter, are low ; the infantile mortality has greatly improved, while the birth rate shows signs of recovery. The figures are tabulated on page 7 with the averages of the previous 10 years (1892—1901) for purposes of comparison ; also the statistics for five preceding years.

In comparing the actual number of births and deaths in this table with those of preceding years, it must be remembered that the population was reduced by 2,553 in

Table of deaths occurring during the year 1902, in the several Sub-registration Districts of the Newton Abbot Rural Council, classified according to diseases and ages, and shewing death-rate, birth-rate, zymotic-rate, infantile mortality, and population of each locality.

SUB-REGISTRATION DISTRICT.	Population.	BIRTHS.		DEATHS.										MORTALITY FROM SUBJOINING CAUSES.												
		Registered.	Birth-rate per 1,000 annually.	At all Ages.	Death-rate per 1,000 annually.	Under 1 year.	1 and under 5.	65 and upwards.	Under 1 Year to every 1000 births	From 7 Chief Zymotics.	Zymotic Death Rate	In Union House belong'g to dist.	Small-pox.	Measles.	Scarlatina.	Diphtheria.	Whooping Cough.	Diarrhœa.	Contin'd Fevers (Typhoid, &c.)	Phthisis.	Other Tubercular Diseases.	Bronchitis, Pleurisy, Pneumonia.	Heart Disease.	Cancer.	Violence.	All Other Diseases.
Newton (Rural)	4,434	106	23.9	69	15.6	17	...	27	160	3	.67	3	...	...	...	1	...	2	...	4	3	8	11	4	3	33
Chudleigh	6,720	160	23.8	98	14.6	7	4	57	44	3	.45	5	...	...	...	1	...	1	1	...	3	17	12	10	4	42
Ashburton (Rural)	2,460	55	22.3	42	17.1	5	2	17	91	...	...	...	...	...	...	...	...	...	...	4	...	13	5	2	1	17
Moretonhamstead	2,654	69	26.0	37	13.9	7	...	17	101	...	...	4	...	...	...	...	...	...	...	4	1	4	6	2	1	19
Sea-border	2,634	56	21.3	33	12.5	7	...	16	125	1	.38	2	...	...	...	...	...	1	...	1	...	5	4	5	...	17
TOTALS, 1902.....	18,902	446	23.6	279	14.8	43	6	134	96	7	.37	16	...	...	...	2	...	4	1	20	7	47	38	23	9	128
Average for 10 yrs. 1892-1901.	23,362	559	23.9	364	15.6	62	27	142	111	18	.77	14	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1901	18,902	396	21.0	275	14.5	48	19	105	121	18	.95	11	...	...	...	2	2	2	4	18	8	42	37	14	10	128
1900	21,455	465	21.7	342	15.9	54	33	137	116	12	.56	15	...	...	...	3	3	1	1	21	8	61	36	15	14	175
1899	21,483	487	22.7	375	17.5	73	24	149	150	31	1.4	12	...	...	...	2	8	6	5	23	5	44	48	22	13	189
1898	21,529	524	24.3	345	16.0	76	28	135	126	25	1.2	14	...	...	...	1	13	1	8	14	14	57	36	15	14	170
1897	24,260	624	25.7	382	15.7	57	24	148	91	11	.45	18	...	...	...	1	1	7	2	29	2	65	43	35	11	186

1901, when Highweek ceased to form part of the district, and further by 2,731 in 1898, when Ashburton (Urban) dropped off. A considerable increase is, however, shown in deaths from cancer, and to a less degree from diseases of the respiratory system, while phthisis and heart disease remain at about the same figure.

Of the sub-registration Districts Moretonhampstead on the whole occupies the best position; its general death rate is a good one, while the zymotic rate is nil, and its birth rate is easily the highest. The infantile mortality is as might be expected with the higher birth rate, only moderate.

Sea Border shows the lowest general death rate, but the infantile mortality is high, and the birth rate is the lowest. There was one fatality from zymotic disease (diarrhœa) in the sub-district.

Chudleigh has a general death rate a fraction lower than that of the whole district, while its birth rate is slightly higher. The infantile mortality is an extremely low one. There were 3 deaths from zymotic disease, while it is to be noted that 10 deaths from cancer, or nearly half the total mortality of the District from this disease, were recorded.

Newton Rural has the second best birth rate, while its death rate comes fourth on the list. Its infantile mortality is considerable, and there were 3 deaths from zymotic disease.

Ashburton Rural has the highest general death rate, while on the other hand the infantile mortality is low, and there were no deaths from zymotic disease. The birth rate is somewhat lower than that for the whole district.

ZYMOTIC DISEASES.—To the seven ordinary zymotic diseases 7 deaths were assigned, against 18 in 1901 and 12 in 1900, viz., 4 to diarrhœa, 2 to diphtheria, and 1 to typhoid fever, giving the low annual rate of '37 per 1,000; last year the rate was '95.

The notifications were 58 in number—29 scarlatina, of which 14 were in the Chudleigh sub-district, 7 each in Newton Rural and Ashburton Rural, and 1 in Moreton; 8 diphtheria—of which 3 were in Newton Rural, 3 in Moreton, and 2 in Chudleigh; 14 typhoid fever—of which 9 were in the Chudleigh district, 3 in Newton Rural, and 1 in Sea Border; 6 erysipelas—Newton Rural being credited with 3, and Chudleigh, Ashburton and

Moreton with one each ; and 1 puerperal fever in Chudleigh. The following table shows the monthly incidence :

DISEASE.	January	February.	March	April.	May	June	July.	August	Sept'mber	October.	November	December	Total
Small Pox	...	...	...	...	...	...	...	...	...	...	...	...	...
Scarlatina	1	1	4	2	7	8	1	3	...	...	...	2	29
Diphtheria	2	6	...	...	...	...	...	...	...	...	...	...	8
Typhoid Fever	1	...	...	...	1	...	2	...	...	6	2	2	14
Erysipelas	...	...	...	...	...	...	1	2	...	1	1	1	6
Puerperal Fever ...	...	...	...	...	...	...	...	...	1	...	...	...	1
Cholera	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	4	7	4	2	8	8	4	5	1	7	3	5	58

MEASLES AND WHOOPING COUGH.—The District has been comparatively free from these diseases, so destructive to infant life, during the past year. Measles was, however, prevalent at Teigngrace and Leusden during the first quarter, and the school at the former place was closed for a fortnight. There was an outbreak at Abbotskerswell in the early spring. There were no fatalities.

SCARLET FEVER.—Out of the total 58 notifications, 29 or half were from this disease ; and of these 29, 14 were in the village of Bishopsteignton, constituting a limited epidemic. The first attack occurred early in April, and a dropping fire of cases followed up to the end of June. The parishes of Ogwell and Woodland, with 5 cases each, were also affected ; and isolated attacks were recorded at Torbryan, Ilsington, Lustleigh, and Kingsteignton. In the majority (18) the patients were between the ages of 5 and 15 years ; but there were 5 between 1 and 5 years, 3 between 15 and 25, and 2 over the latter age. Most of them were of the mild type, which of late years has obtained in this locality, and for the sixth year in succession no death resulted. Scarlet fever, measles and whooping cough are essentially diseases of childhood ; and it is interesting to note that in 1901 in South Devon, including a population of 289,000, there were only 4 deaths from scarlet fever, and one of these was a case of malignant type in a visitor from the midlands ; while measles was responsible for 105 fatalities, and whooping cough for 43. It is therefore a

little difficult to reconcile the attitude of alarm felt by a section of the public towards the former disease with the indifference usually displayed in relation to the two latter.

DIPHTHERIA.—Eight notifications were recorded, of which two were fatal, in three distinct groups. The first group (of 3 cases) occurred in a cottage at East Oghwell, where the general surroundings were of a most insanitary description. The small back yard belonging to the premises contained a pit privy, two large refuse heaps, and poultry in abundance. The patients were all removed to the hospital, and the usual sanitary precautions taken. The second batch (also of 3 cases) was in the Pepperdon district near Moreton, one being in a house where faulty drainage evidently had a share in the causation of disease, and the other two in cottages in the neighbourhood; there is reason to believe, however, that these originated outside the District. The children from the neighbourhood were excluded from school till the danger of infection was over, and no further outbreak occurred. The remaining two attacks were in a cottage at Heathfield, but no very obvious cause presented itself; one—an infant—died, and the other was removed to the Newton hospital. All these 8 cases took place during the first two months of the year; 5 of them were between the ages of 15 and 25 years, 2 or under 5 years and 1 over 25 years.

TYPHOID FEVER.—Fourteen attacks were notified in various parts of the District, with one fatality. Six of these were in the town of Chudleigh—all isolated cases, and all associated with drainage defects. This being an abnormal number for a town of 1,820, with, moreover, a water supply above suspicion, I have commenced a house to house inspection, with a view to removing at all events the visible insanitary conditions. The cases were scattered over the town; one was in May, two in July, two in October, and one in November. In one instance the drainage was of modern construction, but an old stone drain carrying off surface water had been left under the house and carefully connected by means of a Y junction with the sewer. Another house affected had also a stone drain in connection with the sewer running underneath it, with a defective pipe sewer in close proximity. In a third case, the sewer in the street—a narrow one—was close to the road surface and was found to be partly crushed, presumably being laid before the days of steam rollers. The ground floor of the dwelling, at a lower level than the said sewer, contained a pool of water; this, on examination, did not at the time appear to be sewage, but a stone drain from a rain spouting ran

from the footings of the house to the sewer with little or no fall, the whole constituting an extremely suspicious condition. The patient could not be accommodated in the hospital, and succumbed to the disease ; continuance in this insanitary environment doubtless was responsible for a fatal result. The sanitary deficiencies in all the above cases have either been remedied or are in process of being dealt with.

A limited outbreak occurred in the village of Abbotskerswell, three children in two cottages at Park View being attacked. This village contains many insanitary conditions, which cannot be remedied before the proposed water supply is introduced and an attempt made to deal with the sewage. The dipping well from which this block of cottages drew their water, abutted on the highway ; immediately above this is a dwelling with a pit privy in the yard ; the surface water from this yard (and the privy pit) in wet weather runs down the road past the well. The water was naturally of indifferent quality and the well was closed, though this necessitated a considerable journey for water for these 4 cottages. The hospital at Newton being full, two nurses were engaged, the healthy children boarded out, and a cask provided and filled with water daily to obviate the risk of dirty and possibly infected buckets being dipped into one of the wells supplying the village. This is one of the contingencies to which dipping wells are liable ; these, however picturesque, are by no means sanitary, being liable to pollution in various ways, and in my opinion all of them should be covered over—if merely wells, pumps can be provided, if springs, an overflow pipe inserted from which buckets may be filled.

Another group of three cases occurred in two houses at Lower Radway, Bishopsteignton. A defective and partly choked drain ran under one of these, and was the probable cause of disease. As Bishopsteignton is not in the hospital combination, removal of the patients was impossible, but the healthy portion of the families was accommodated in the Almshouses, with the consent of the Vicar.

Of the remaining two cases, one was at Broadhempston in a court, the owner of which was then under notice to reconstruct the closets and drainage ; and the other at Kingskerswell in the early part of the year, also associated with faulty drainage conditions.

Of the 14 persons attacked, 2 were between 1 and 5 years, 5 between 5 and 15 years, 4 between 15 and 25 years, and 3 over the latter age.

ISOLATION HOSPITAL ACCOMMODATION.—

Thirteen of the Rural Parishes within a radius of six miles from Newton Abbot are in combination with that town in regard to the hospital, which at present can take 3 adults or 5 children ; there is, however, prospect of the new block being opened in the summer of 1903. The existing accommodation has been inadequate to deal with all the cases which occurred. I have advised that Bishopsteignton should either join the Newton combination or throw in their lot with Teignmouth, and this is under consideration. The Northern parishes are unprovided for in this respect. No means exists at present for disinfection of bedding and clothing, but houses are lime-washed and disinfected where necessary.

Disinfectants are supplied by the authority, and can be obtained at the following places :—Abbotskerswell, Mr. R. Chudleigh ; Bishopsteignton, Mr. R. Berry ; Bovey Tracey, Mr. E. Steer ; Broadhempston, Mr. W. Atwill ; Chudleigh, Mr. R. Collings ; Denbury, Mr. T. Binmore ; Ipplepen, Mr. S. Lang ; Kingskerswell, Mr. R. Ford ; Kingsteignton, Mr. T. Lang ; Lustleigh, Mr. E. Arnold ; and Moretonhampstead, Mr. L. Endacott.

REGISTRATION OF DAIRIES.—The model regulations of the Local Government Board of 1899, under the Dairies, Cowsheds' and Milkshops' Order, are in force throughout the District. The majority of the Dairies in the District have now been inspected, and the water supplies of many of them examined. These are on the Register, and this latter will be kept up-to-date from year to year and periodical inspections made by myself and the Sanitary Inspectors. A copy of the regulations has been sent to all cowkeepers and dairymen.

HOUSES OF THE WORKING CLASSES.—

One house has been condemned as unfit for habitation during the year. Though no cases of overcrowding have been reported, yet there is a dearth of cottages in some parts of the District. This is being dealt with to some extent by the erection of workmen's dwellings at Bovey Tracey, Kingsteignton, and Moretonhampstead ; but in the purely rural parishes, where wages are low and building expenses somewhat heavier, suitable houses are difficult to obtain. In such localities sanitary reform often presents difficult problems on the question of expense, which should be kept as low as possible consistent with efficiency, or, in other words, sanitary necessities, not sanitary luxuries, can alone be provided. If on account of the latter, the tenant has to pay a higher rent to compensate his landlord for the additional capital outlay, then a

smaller portion of his wages is left for feeding and clothing his family, and no real advance in their condition has been attained.

HOUSE TO HOUSE INSPECTIONS have been made at Abbotskerswell, Broadhempston, Chudleigh, Ipplepen, and Ogwell; and the owners, where necessary, have been served with notices to remedy defects. Many sanitary improvements have resulted.

RAINFALL AND WATER SUPPLIES.—We have now had a succession of years of diminished rainfall, which is having its due effect on the water supply of the community; whether this is merely a cycle of dry seasons, or whether on the other hand the yearly rainfall of the country has permanently decreased, time alone can show. Modern sanitation, is among other things, making much greater demands upon water supplies; in towns and larger villages public supplies brought in by gravitation are fast replacing wells, often, when surrounded by houses, of inferior quality, and sometimes of uncertain quantity. In all the better class of houses baths have become a necessity rather than a luxury, and the flushing of closets is being universally insisted on by sanitary authorities, backed by public opinion. The present position is that many a community has a supply which, though considered ample a few years ago, from growth of population and increased demand per head on the one hand, and diminished yield on the other, finds itself on short allowance. A curious fact to be noted is that supplies of upland surface origin have as a rule in 1902 shown little or no failing, while it is those derived from springs—especially deep ones—which have to some extent defaulted. An explanation of this may be that while during the past year the rainfall as a whole was deficient, yet there were no long periods of drought, and showers fell at comparatively short intervals, keeping the surface water replenished. On the other hand, the underground reservoirs of water from which the deeper springs arise, and the quantity of which bears a relation to the total rainfall over a series of years, have become gradually depleted by a succession of dry seasons, and the yield is accordingly diminishing. In the winter of 1901-1902 many of the deep springs in the locality did not break to any extent, and in the succeeding summer were abnormally low.

In dealing with this situation improvement may be effected on two lines—either by husbanding present resources, or by obtaining an increased supply. The former includes all storage schemes—from a small tank

sufficient to conserve the nocturnal supply, and thus at least double the daily available yield, to a reservoir or impounding dam, calculated to store up the winter's flow to tide over the dry season; and it may be remarked that enclosing water within masonry walls is always a most expensive proceeding. Another method of husbanding a supply—and one more difficult to effect—is the prevention of waste; and the quantity of water wasted is enormous. I believe that in many instances if waste could be put an end to, supplies now considered deficient would be ample. Taps get leaky, especially where the pressure to be withstood is great, owing to faulty washers; tenants are careless, and will leave a tap running full bore and wasting hundreds of gallons a day. Quite recently I found a block of closets in a court, where, owing to faulty waste preventer ball taps, the seats were wetted. To remedy this the occupant of one of these had carefully fastened down the flushing chain, and the water was continually running through the closet pan. This had been going on for months, if not years. Such actions can only be stopped by a fine. I believe it would pay an authority to keep a man employed his whole time visiting the houses of consumers and inspecting their water fittings. New washers should be provided and fixed free of charge, or at a nominal cost, and the owners of leaky taps summoned. This method has been carried out at Dawlish with excellent results. To prevent taps being left running, that type which will only yield water while pressed is an excellent device, and should be insisted on where the supply is scanty; and water for other than domestic purposes should be supplied sparingly or not at all.

In such a District as this, mostly of hilly formation and with the watershed of Dartmoor close at hand, the attainment of good and abundant water at a moderate expense would seem an easy matter; but in actual fact there are many difficulties. Owners, both of the ground on which springs rise, and also those through whose land the water takes its course lower down, have to be negotiated, many interests being involved. It is therefore important for an authority to obtain all the water it can when the chance offers, remembering that even if above actual present needs, the future will sooner or later make such a progressive policy amply remunerative; and in a tourist centre good and abundant water supplies are of themselves an advertisement, and the lack of them a handicap for any holiday resort, apart from the sanitary aspect of the matter. This Council are, however, fully alive to the importance of this question, and water

schemes are now in contemplation for Ipplepen, Ilsington Parish, Lustleigh, Chudleigh Knighton, and Abbotskerswell; while Bovey Tracey, Chudleigh, and Bishopsteignton, are engaged in promoting increased supplies. In rural districts, owing to the sparsely populated condition of some of the parishes, there are many who are rated for these improvements while not deriving any direct personal benefit. These, however, must not forget that any inducement which tends to bring people into the locality and settle there, will indirectly advantage them; building is encouraged, and the more thickly any given area is populated, the more valuable (other things being equal) does land become; and also the greater the local market for agricultural produce, the better it is for the tenant farmer.

SANITARY CONDITIONS & PROCEDURE.

Abbotskerswell population 457—acreage 1486. Water supply is derived from springs and wells, some public and some private. Owing to several complaints I made a house-to-house inspection of the village early in the year, and investigated thoroughly the conditions existing as to drainage and water supply, with the result that an extremely unsatisfactory state of things was disclosed. Of the five chief water supplies (2 springs and 3 dipping wells) only one was a really good water—the Lady-well spring—and that resorted to by comparatively few houses. The Court shute, to which the majority go, is liable to pollution from surface water in wet weather; two of the dipping wells were decidedly suspicious, and one unfit for drinking purposes. I also tested various other wells, with equally bad results. Several of the private wells run dry in summer, and then the tenants have to fetch water, often from considerable distances. The greater part of the drainage of the village (including several water closets) finds its way into the brook, creating greater or less nuisance at various points in proximity to dwellings, especially in the summer months when the water is low. Some of the closets discharge into the cement gutters which run down the road side. As it appeared hopeless to remedy these conditions without a public water supply and some attempt to deal with the sewage, I advised that a supply be negotiated. After an attempt to find water locally, which was unsuccessful, the Council accepted the terms of the Torquay Corporation, and the scheme will shortly be ready for the Local Government Board enquiry. The sewerage question

will remain to be considered after the introduction of the water ; there are at present no sewers.

A new school house has been built, but the well sunk in connection with it was of indifferent quality.

The school drainage has been reconstructed, but water for flushing purposes has to be pumped.

Bickington population 215—acreage 1403. This parish depends for its water on private wells, and there has from time to time been shortage in summer. The water question here is one of difficult solution.

Bishopsteignton population 1076—acreage 4449. Water supply is mainly derived from two deep springs from under Haldon ; there are two reservoirs, containing together about 120,000 gallons. There is also a third spring with small reservoir, but the amount yielded from this is inconsiderable. The water is of good quality, but ran short for many weeks during the last summer. This being a residential village and containing several laundries, is a large consumer, and an increased supply in dry seasons has become imperative. To secure this negotiations are now proceeding with the Rev. G. Y. Comyns, with the view of obtaining a portion of the water from the Whitewell spring (of excellent quality) at a considerable elevation above the village.

SEWERAGE. Water closets are general ; the sewers are all piped except a piece above the Church extending up Fore Street. There are three chief outfalls, one of which has a settling tank. That in West Town meadow has been taken over by the authority, and the field is irrigated and the gutters attended to weekly.

NEW WORK. The drainage of one private house and a block of 4 cottages at Ashwell has been reconstructed.

LUTON. A village of about 20 houses in this parish ; has a good and abundant water supply piped down from a Haldon spring. There is a storage reservoir containing about 5,000 gallons. Closets are mostly on the dry system, and there are no sewers.

Bovey Tracey population 2694—acreage 7567. Water supply is from Yarnier Spring, and is of the usual type of a good granitic water. There is a reservoir containing 250,000 gallons above the church, but during the last few dry seasons the supply has been quite inadequate. The Local Government Board have held an enquiry, and given their consent to a scheme for constructing a new reservoir to contain 3,000,000 gallons on Trendlebeer Down,

which will supply Bovey, Brookfield and Wreyland, including a provision for duplicating the main to Bovey, as well for laying a new main to Brookfield; the total cost is estimated at £5,625. This work is now in progress.

SEWERAGE. A water closet town; all the sewers are piped. There are two main outfalls with settling tanks; one of these latter has been covered in and the overflow extended 50 yards. A consulting engineer was called in to report on the sewerage system, and a scheme has been prepared for dealing with the sewage from the north eastern part of the town, which was accepted by the Council. This includes provisions

(I) To carry the present outfall in Miss Divett's meadow down to the feoffee marshes.

(II) To bring a new sewer from the vicarage and surrounding locality to the same point.

Owing to difficulties connected with the purchase of the proposed site of the outfall works, the Local Government Board enquiry has not yet been held.

House refuse is removed as required.

Eight new dwellings have been built, 6 of these are cottages. The drainage of 13 houses has been reconstructed. Successful proceedings were taken by the Council against an owner of cottage property in a court in the upper part of the town, to secure the abolition of an offensive pit privy and the substitution of a pail closet.

Bovey Tracey is one of the growing towns in the District, and its representatives both on the District and Parish Councils have been consistent advocates of a progressive policy in sanitary matters. The possession of a good and abundant water supply and an up-to-date sewerage system will add to the many attractions which this neighbourhood has always afforded both for residents and summer visitors.

BROOKFIELD AND WREYLAND. These villages, though in the parish of Bovey, are geographically more closely connected with Lustleigh. Their water supply is derived from wells, and these are mostly insufficient in summer, and in some cases of indifferent quality. These, however, will shortly be replaced by the new supply from the reservoir on Trendlebeer Down.

The sewers form part of the Lustleigh system; one branch is flushed from the river, the other has no water for flushing purposes.

At **HEATHFIELD**, also in Bovey Parish, the long row of cottages (32 in number) is supplied by the Torquay water. They have a private sewer, with outfall in an adjacent meadow.

Broadhempston population 445—acreage 2,200. A rather populous yet scattered village. Water supply is derived from wells ; there is sometimes a deficiency in dry seasons. The water question here is, however, one that has proved very difficult of solution.

There is one sewer—nearly all piped—with outfall in an orchard, but there is little water closet sewage.

I made a house-to-house inspection of this village during the past year, with the usual result that a number of sanitary improvements were effected. A short piece of sewer (about 50 yards) has been laid to take the drainage of the Church Inn and two adjoining cottages, and a considerable nuisance thereby abated. The drainage of 11 houses has been reconstructed ; also of a court containing a block of 6 houses, and another block of 3 cottages. It will therefore be seen that a considerable amount of work has been done here during the past year.

Buckland population 87—acreage 1493. For the third year in succession no death has been recorded in this small moorland parish. The granitic formation of this neighbourhood yields pure and abundant water. There are no sewers. The cottage property is generally in good condition. No sanitary work has been carried out during 1902.

Chudleigh population 1820—acreage 6128. Water supply is derived from the Kennel spring, about 2 miles from the town ; this is of the excellent quality generally yielded by the Haldon greensand, or the limestone which underlies it. Of the total quantity discharged, the town is limited in ordinary times to 40,000 gallons a day, and the demand has now exceeded the supply. It therefore has become necessary to store at all events the nocturnal flow. There is a reservoir not at present in use, which has a capacity of about 75,000 gallons. This was built when the stream known as the "pot-water" constituted the drinking supply of the town. At the present time this reservoir is in such an unsound state as to be quite unfit for use without the expenditure on it of a considerable sum, and it appears that when utilized there were several houses which were not properly supplied owing to insufficient elevation. A sub-committee having inspected the reservoir and the Kennel Springs with the officers, on their report the Council very wisely decided to instruct an engineer (Mr. Segar) to report on the condition and position of the present reservoir, and to prepare plans and estimate of a new reservoir sufficient for the needs of the town at the Kennel spring, where Lord Morley has offered a site on reasonable terms. It remains to supply

Oxencombe Farm, the tenant of which has under certain conditions to get his drinking water by dipping a bucket into our intake tank — a most objectionable practice, and in my opinion every effort should be made to secure the whole yield of the spring (after supplying this farm), and thus settle the water question at Chudleigh for many years to come.

SEWERAGE. A water closet town ; the sewers are all piped except a portion of about 300 yards of the trunk sewer. There are two main outfalls irrigating meadows, but no settling tanks.

NEW WORK. The old sewer in Woodway Street being found to be defective and too near the surface, has been relaid for a distance of 100 yards, and a portion of the old stone sewer in Exeter Road was at the same time replaced by piping.

Mr. Rogers also prepared plans for a new sewer in the Parade to extend as far as the new houses now in course of construction, but this was not further proceeded with.

A grant for a new sewer in Culver Street has been sanctioned by the Council.

Two new houses have been built and 3 others are in course of construction, all of the villa type.

The drainage of 6 houses has been reconstructed.

I commenced a house-to-house inspection of the town late in the year, and several private sanitary improvements are now proceeding.

Cockington population 265—acreage 1451. The village of Cockington is supplied partly by the Torquay water and partly from Mr. Mallock's supply.

At **EDGINSWELL** there is a public well ; this has been short in previous dry seasons, but there were no complaints in 1902. The scheme for bringing in Torquay water has not been further proceeded with.

SHIPHAY has one public well of good quality. Closets generally in this parish are on the dry system.

NEW WORK. A new sewer has been laid at Edginswell from the Mission room to Mr. Easterbrook's, about 120 feet.

Coffinswell and Dacombe population 201, acreage 1152. There are three public dipping springs, 2 at the former village and 1 at the latter. These are of good quality, but open to the liabilities of pollution entailed by all dipping springs or wells.

There are no sewers, and closets are generally on the dry system.

NEW WORK. The drainage of 1 farm and 2 cottages has been reconstructed.

Coombe and Haccombe population 358—acreage 2,004. The water is derived from private wells. I have had no complaints of shortage during 1902.

There are no sewers, and few water closets.

Three new houses have been granted certificates ; one more is in course of construction.

Dawlish West population 678—acreage 3870. Cockwood and Middlewood are supplied with water from Starcross ; Westwood by a well. The former is not very satisfactory owing to the pressure being insufficient to carry it up to houses on the higher levels, or to flush the heads of the sewers. Negotiations are now proceeding for a supply with the Dawlish (East) Urban District Council. Failing these, a spring at Shutterton Bridge, abundant in quantity and of good quality, has been suggested. This, however, will have to be lifted.

The sewers from the ravines at Westwood and Middlewood join the Cockwood sewer, which discharges into the estuary. Water closets are general, but few are flushed.

The drainage of 2 farms and 3 cottages has been reconstructed.

Denbury population 448—acreage 3002. The water supply is derived from two adjacent springs ; there is a small reservoir containing about 10,000 gallons. This is of excellent quality, but in summer is only sufficient for domestic use, and there is not enough to allow of closets being flushed.

There are two main sewers which now join in one common outfall, discharging into a fissure in the limestone rock.

NEW WORK. A new sewer has been laid from the Church House Inn down South Street to join the existing sewer in Miss Cole's field, a total distance of 800 feet. This partly replaces an old stone sewer, and partly connects the sewerage system from two sides of the village with the common outfall.

The drainage of 12 houses has been reconstructed.

I have made a house-to-house inspection of the village during the year, and various sanitary improvements are being carried out.

Hennock population 711—acreage 3299. The village of Hennock occupies an isolated position about 700 feet above sea level. The water supply is obtained from a spring arising in the Vicarage garden; this runs in a partly open channel to a shute in the village. The water is of good quality, but has been known to fail.

There is a sewer in Bell Lane, but privies are general.

The cottage accommodation in this village is not altogether satisfactory, and new ones are needed. Speculative building not, however, giving much prospect of a pecuniary return, I am afraid the present state of things will continue.

CHUDLEIGH KNIGHTON, a village in this parish, has two public wells of fair quality. There is, however, no means of flushing the closets and sewer, and many of the inhabitants have to go some distance for their water. The Council have negotiated a public supply for the village from the Torquay Corporation, and Mr. Ingham, their engineer, is preparing plans for this scheme.

There is one sewer, which discharges into the brook.

Ideford population 254 — acreage 1440. This pleasantly-situated village has a pure and abundant spring water supply. There is a reservoir containing about 30,000 gallons.

There are no sewers, and closets are of the privy type. No work of importance has been carried out during the past year.

Illesington population 886—acreage 7843. This parish is a large one, and contains several villages. The village of that name—650 feet above sea level (with about 25 houses)—is supplied by a stream rising on Haytor Down, but being open to the road at various points and running through cultivated ground, is liable to pollution.

Livaton, Cold East and Halford are in the Teign Valley below. They are dependent on wells, many of which, especially at Cold East, are of inferior quality. There is, however, one public well at Livaton and another at Halford, which are quite potable. The clay formation of this locality generally yields indifferent waters, and owing to the scattered population the water question has been hitherto found difficult of solution. Now, however, that a disposition to build in the more elevated parts of the parish has manifested itself, a comprehensive water scheme has been under consideration, and after considerable discussion Mr. Segar has been instructed to prepare plans and estimates for piping the Haytor Down stream (which is the property of the parish) from its source on Haytor

to supply all the above mentioned villages, viz., Ilington, Livaton, Cold East and Halford, with a branch to the school at Blackpool, which now has a shallow well of somewhat indifferent quality. This is a progressive movement, from which the parish should derive much benefit in the future.

Most of the closets are of the privy type, except at Livaton, where water closets are more numerous. These, however, are not as a rule flushed.

NEW WORK. The public pumps at Livaton and Halford have been secured from surface pollution by re-channelling. The drainage of 6 houses and the hotel at Haytor Vale has been reconstructed; also of a block of 4 cottages at Livaton and 4 others; and of a block of 4 cottages at Cold East.

The two new hotels on Haytor Down and above Ilington were opened in the spring, and their success will, I hope, encourage the construction of others; there are eligible sites in plenty.

Ipplepen population 789—acreage 2887. This is the largest village in the District dependent on wells for a water supply, and it is to be hoped that the completion of the new Paignton scheme will not long be delayed. The wells are in many cases of very inferior quality, and both for domestic purposes and for flushing closets and sewers the want of water has been severely felt.

There are a good many water closets—without flush in most cases—and the sewerage is all brought to one outfall in a meadow and is piped throughout. There are no settling tanks.

NEW WORK. 1,100 feet of 8-inch sewer has been laid from Dornafeld Lane to Smerdon's Lane, taking the drainage from a large block of cottages.

The contract for laying 700 feet of new sewer from Mr. Jones' to Rosemount Farm, has been accepted; this will put an end to a nuisance at present arising in connection with a row of cottages belonging to the Star Bowlkett Building Company.

This all but completes Ipplepen sewerage, and with the advent of the water supply, the sanitation of this village will leave little to be desired.

The drainage of 7 houses has been reconstructed.

Kingskerswell population 1027—acreage 1797. This large village is supplied by the Torquay water; some wells remain in use, but are gradually being superseded by the public supply.

Water closets are general ; there are two sewer outfalls ; both of these have settling tanks, the overflow from which irrigates meadow land ; these are managed by the Authority. The sewers are piped throughout.

NEW WORK. The drainage of the Half Way Inn has been reconstructed, also of two other houses.

WHILBOROUGH, a small village in this parish, has a public dipping spring of very fair quality, but there is often a shortage in summer.

Kingstelgnton population 1942—acreage 3975. This populous and growing village has a good and abundant water supply from a limestone spring, known as the Holywell, in Ugbrook Park. Partly, however, owing to the number of fresh houses supplied, and partly owing to the enforcement of the bye-law as to the flushing of closets, the supply lately has been found unequal to the demand. Steps will now have to be taken either to build a storage reservoir, or to approach the owner of the spring with a view to obtaining more water. Lord Clifford, who has always shewn himself willing to meet the Council, has very generously allowed the parish to draw as much as they want until May 1st, 1903, the Authority in the meantime to come to a definite arrangement regarding the future supply.

The sewers are all piped with the exception of a large 2-foot culvert, extending from the main street to the eastern outfall ; there are two outfalls, which irrigate meadows ; these are managed by the authority.

NEW WORK. The sewer in Greenhill Lane was found to be badly laid, causing trouble from insufficient fall ; this has been relaid throughout. The sewer in Church Road has also been greatly improved on by being diverted and given a much greater fall.

A great deal of private sanitary reform has been proceeding in this village ; about 25 houses (besides new ones) have taken in the water, and 30 closets flushed during the year. Drainage reconstruction has been carried out at 2 farms and 11 houses, besides the flushing of closets, substitution of earthenware gully traps for cast iron traps and other minor improvements.

Building—mainly of cottages—is going on apace, and plans for 28 new houses have been passed.

For the first time, I believe, on record, the year has passed without a case of typhoid fever being notified in this village, once a veritable home of this disease ; this is no doubt partly due to the excellent water supply now available, though both by my predecessor and myself,

the typhoid fever here has been regarded as rather sewer borne than water borne, and I think the many improvements of public sewerage (especially the ventilation of the sewers, and the improved flushing, made possible by the public water supply) combined with reconstruction of faulty house drainage, have all combined to produce this result. Enlightened representation on the Rural Council, of late years backed by a progressive Parish Council, has therefore at length had its due reward. It cannot be expected that the locality will always be free from disease, but the improvement is enormous.

PRESTON, a small village in the parish, is well supplied with water from the Kingsteignton main.

Lustleigh population 400—acreage 2978. The water question has not yet been solved, though every effort is being made to do so. A Local Government Board enquiry was held in the summer on the South Harton scheme, but the Inspector considered that the gathering ground was likely to be polluted by a farm in the neighbourhood. The Council, however, have sent a request to the Local Government Board, asking them to reconsider their decision, as both Mr. Segar (the engineer who prepared the plans) and the M.O.H. were of opinion that by suitable drainage this difficulty could be surmounted, and another enquiry is shortly to take place.

There are a good many water closets; the sewers are all piped, and the outfall is in a meadow in Bovey Parish. There are flushing tanks on the terminus, but water for this purpose has to be carted.

NEW WORK. The sewer has been extended to Fairfield, the owner paying a portion of the cost.

The drainage of one villa has been reconstructed.

Proceedings were successfully instituted in a case of building without sending in plans to the authority.

Manaton population 315—acreage 6422. A moorland and sparsely populated parish, at an elevation of 800 feet above sea level, depends on wells chiefly; the waters are of the granitic type, and are generally abundant and of good quality.

No work of importance has been carried out in 1902.

Moretonhampstead population 1541—acreage 7910. This moorland town is situated at an elevation of nearly 700 feet above sea level. The water supply is derived from various granitic springs at Moor, about 2 miles from the town, and is good and abundant; there is

a storage reservoir of about 100,000 gallons capacity.

Moreton is a water closet town, and the closets are generally well flushed. All the sewers are piped except that in Fore Street, which is of stone, and awaits the new sewerage scheme to be renewed. There are two main outfalls, one irrigating in a meadow above the station, and the other discharging into a brook at Kinsmansdale; both—especially the latter—at times give rise to nuisance. Mr. Bellamy, C.E., of Plymouth, has prepared a sewerage scheme, with outfall works at Wray, which has been sanctioned by the Local Government Board after an enquiry held in August.

House refuse is removed twice a week.

NEW WORK. A new water main has been laid in Kinsmansdale and extended towards the Rectory, for the purpose of supplying this building and other houses in the route.

Drainage reconstructions have been carried out in a Court in Forder Street, Parford Cottages, and 1 private house.

A considerable amount of building is going on. A new rectory and 23 houses for Mr Bowring, at Kinsmansdale, are in course of erection; 2 new dwellings have been built at Langhill.

This is one of the tourist centres of the district, with a more than local reputation, and is evidently increasing in popularity.

The hamlet of Doccombe, on the Exeter Road, about 750 feet above sea level, is supplied with water by one spring and several wells, generally of very fair quality.

North Bovey population 398—acreage 5589. This parish adjoins that of Moreton. The village has one public well on the green, besides private wells. The closets are mostly on the dry system, and there are no sewers.

No work of importance was carried out during 1902.

Ogwell population 250—acreage 2089. The water supply is derived from a deep well, the water from which is pumped into a reservoir by a windmill; it is thence distributed to the village by means of stand-pipes. This source has been known to fail. There is another public well in the centre of the village, which has always yielded a good supply. Closet accommodation is of the privy type, and there are no sewers.

I made a house-to-house inspection in the early part of the year, and as a result one block of cottages was redrained. Drainage reconstruction was carried out in a house at West Ogwell.

Stoke population 463—acreage 2167. There are two public pumps, and many private wells; this is a sandstone district, which generally yields a plentiful supply. There is one small sewer which discharges into the brook, but there are few water closets.

The drainage of 1 villa has been reconstructed.

Teigngrace population 190—acreage 1496. A small and sparsely populated parish in the Teign Valley. The water is derived from wells, but these, as might be expected from the geological formation (the Bovey clay beds), are generally of moderate or indifferent quality.

Trusham population 165—acreage 625. An isolated and somewhat elevated village at about 300 feet above sea level. There is one public dipping spring of fair quality, but this is apt to run short in dry seasons. There are a few private wells in the lower part of the village, but those living on the crest of the hill have to go some little distance to fetch water. The question presents considerable difficulties, and I do not see any solution at present. There are no sewers, and closets are generally of the privy type.

Widcombe population 657—acreage 10786. This is the largest parish (in area) in the District, and contains a considerable proportion of uncultivated land. In it are situated the villages of Widcombe, Lower Town, and Ponsworthy. The geological formation is granitic, and the waters generally are pure, soft, and abundant. The majority of the houses at Widcombe village are supplied from a spring on the glebe land, which has been piped down. There is a spring of good quality at Ponsworthy, while Lower Town depends on wells, and in this locality there have been some complaints of scarcity in dry seasons.

NEW WORK. A settling pit has been constructed in connection with the laundry drain across the green, to remedy a nuisance arising at the outfall. The drainage at the Post-office and adjoining cottage has been reconstructed.

Woodland population 170—acreage 1634. This is another parish of purely rural type; there are no centres of population; slates and shales predominate. Private wells constitute the water supplies, and I have had no complaints of scarcity.

The details of Mr. Rogers' (the Sanitary Inspector) report have been incorporated under the various parishes. As a summary, it may be mentioned that 86 intimation or preliminary notices and 84 legal notices were served

during the year, all of which are complied with, or are being followed up. 66 plans for new houses have been passed, while 116 reconstructions of old drainage systems have been carried out. All drains laid down, whether for new houses or reconstructions, are tested—a most important work, and one that is to the interest alike of owners and occupiers, though it absorbs a considerable part of the Inspector's time in a scattered district. Owing to the administration of the Workshops' Act of 1901 being for the first time vested in the Local Authority, and also to the increasing work of the District, the Council has appointed Mr. F. Dunning as Assistant Sanitary Inspector, who entered on his duties in June, and has shewn himself to be an active and intelligent officer. This is a progressive step, and makes for increased efficiency.

I append Mr. Dunning's report on the working of the Factory and Workshops' Act in the District :—

Report on the Factory and Workshops and Bakehouses in the Newton Abbot Rural District for the year 1902.

I have inspected the whole of the above as contained in the list sent by the Factory Inspector from Plymouth, and several others not on the list.

My inspection includes :—Builders, 7 ; Wheelwrights, 4 ; Coach-builders, 2 ; Smiths, 6 ; Tailors, 5 ; Milliners, 5 ; Laundries, 12 ; Saddlers, 4 ; and Plumbers, 3.

In no case are outworkers employed, and only on exceptional cases are people worked overtime. I found the Abstract of the Factory and Workshops' Act fixed in all premises visited by the Factory Inspector.

The following is a summary of the condition of the several premises as follows :—

BUILDERS.

The workshops are mostly situated in the yard, and contain one ground floor and one on the first floor, the latter approached by a wood staircase on the outside. The rooms are large, and the light and ventilation good, and with the exception of two premises, limewashed. A large quantity of shavings was in two or three cases allowed to remain on the floor. This was pointed out to the employer, who promised to remove and cleanse the floor.

WHEELWRIGHTS & COACHBUILDERS.

The workshops are large, well ventilated, with plenty of light. The sanitary convenience is in good condition, and the drains satisfactory.

SMITHS.

These, with one or two exceptions where only an apprentice is kept, are fairly good buildings—large, well lighted and ventilated. Sanitary accommodation and drainage good.

TAILORS & MILLINERS.

These work-places are generally situated at the back of a shop or on the first floor. There are no instances of overcrowding, the premises being clean, well lighted and ventilated, limewashed or painted, safe means of escape in case of fire, sanitary conveniences suitable for workers' requirements, and the sinks and drains fairly satisfactory.

SADDLERS.

There are only 4 work-places for saddlers, and they are generally satisfactory.

PLUMBERS.

There are only 4 work-places for plumbers, and they are generally satisfactory.

LAUNDRIES.

Laundry work is carried on on a very small scale, and very few of the work-places come up to the required standard regarding the drainage of floors; although, with the exception of two or three at Bishopsteignton, no great fault prevails. Old disused cottages have been turned into laundries, and the back premises utilised for washing, the floor being broken and badly drained is damp for some considerable time. The premises are as clean as can be expected under the circumstances.

BAKEHOUSES.

The bakehouses inspected number about 24, and with the exception of a few at Kingsteignton, Bovey, Chudleigh and Moretonhampstead, are fairly satisfactory; the principal defect is in the situation of the bakehouse, in some cases a back kitchen or some such building has been turned into a bakehouse, and has doors leading to the living room, and in one instance to the sleeping rooms; in other cases two or three sides of the bakehouse are below the ground level 7 or 8 feet.

The majority of the premises are clean, well lighted and ventilated, with good sanitary accommodation; during the past year several bakehouses have been redrained.

ALFRED DUNNING, A.S.I.,

ASSIST. SANITARY INSPECTOR,

Newton Abbot.



II.—NEWTON ABBOT (URBAN).

PHYSICAL CHARACTERS. The bulk of the town is situated in the level basin of the Lemon, which debouches on to the Teign Valley. Some of the lower houses stand on the alluvial soil adjacent to the delta of these rivers. This valley is surrounded by hills 200-300 feet in height, on which numerous villa residences are advantageously placed. Of late years the town proper has been gradually extending on the lower slopes of the hills. The main streets are as a rule wide; there are comparatively few cross streets connecting them. Some of the intervening spaces are occupied by courts, containing in several instances as many as 15 houses; these are, however, gradually going out of occupation in favour of the newer buildings. The geological formation of the hills on the Wolborough or southern part of the District is greensand, gravels and clays; while on the Highweek or northern parish, shales predominate.

VITAL STATISTICS. The number of deaths registered during 1902, was 192 of whom 97 were males and 95 females, equal to an annual rate of 15·2 per 1,000 of the population, which I have computed to be 12,650, taking as a basis the rate of increase during the 10 years between the census of 1891 and that of 1901. Of this number of deaths, 12 were in the Union House in persons belonging to the District; if these are deducted, the death rate is reduced to 14·2.

The deaths in the four quarters of the year were 47, 45, 48, and 52; thus the last quarter showed rather the highest mortality. December was the most fatal month, when 25 deaths were recorded, chiefly due to an epidemic of measles, causing 7 in that month. More than half the total fatalities from zymotic disease took place in the last quarter. The death rates for the four quarters were 14·9, 14·2, 15·2, and 16·5 respectively.

CHIEF CAUSES OF FATALITY. Zymotic diseases, 20 deaths; anthrax, 1 death; influenza, 5 deaths; constitutional diseases, 41 deaths, of which 10 were due to

cancer and 25 to phthisis ; diseases of the nervous system, 18 deaths ; of the respiratory system, 18 deaths ; of the circulatory system, 20 deaths ; of the urinary system, 11 deaths ; of the digestive system, 13 deaths ; of the generative system, 1 death ; diseases of parturition, 1 death ; cellulitis, 1 death ; alcoholism, 2 deaths ; spinal abscess, 1 death ; malformation, 1 death ; inanition, 6 deaths ; premature birth, 6 deaths ; old age, 20 deaths ; operation, 2 deaths ; and violence, 4 deaths, of which 2 were due to accident and 2 to suicide.

Deaths from phthisis shew a large increase, and the

COMPARATIVE TABLE.

DEATHS FROM	1902.	Average of the years 1892-1901	1901.	1900.	1899.	1898.	1897.
Small Pox	...		...	...	...	...	...
Measles	8		3	...	1	13	...
Scarlatina	...		...	...	...	...	...
Whooping Cough	1		10	1	4	1	1
Diphtheria	...		2	...	1	...	...
Continued Fevers (Typhoid, &c)	3		4	1	...	9	...
Diarrhœa	8		4	6	3	7	4
SEVEN CHIEF ZYMOTICS :	20	13	23	8	9	30	5
Phthisis	25	10.5	10	12	6	12	9
Other Tubercular Diseases ...	5	4	4	6	2	5	3
Bronchitis, Pneumonia, Pleurisy	18	22	27	32	14	16	13
Heart Diseases	20	12	8	14	7	14	14
Cancer	10	9	17	7	8	6	5
Violence	4	4	9	4	2	2	4
All other Diseases	90	76	80	80	84	88	54
Total deaths	192	150	178	163	132	173	107
Estimated Population ...	12650	9511	12518	9600	9500	9400	9300
General Death Rate ...	15.2	15.8	14.2	17.0	13.9	18.5	11.5
Zymotic Death Rate ...	1.6	1.4	1.8	.83	.95	3.2	.54
Births	279	242	284	223	239	227	242
Birth Rate	22.1	25.4	22.7	23.2	25.2	24.1	26.0
Deaths under 1 year ...	38	32	39	34	24	37	29
" between 1 and 5 years	7	13	13	10	15	20	9
" over 65 years ...	61	46	53	45	42	55	27
" under 1 year to 1000 bths.	136	132	137	152	100	163	120
Deaths in Union House ...	64	53	54	55	64	66	47
Deaths in Union House belong- ing to District ...	12	9	7	15	15	11	8

In comparing the actual number of deaths in 1902 under the various headings with those of former years, it must be remembered that the total population of the District was increased considerably in 1901 by the inclusion of the parish of Highweek.

death rate from this cause is 2.0, as compared with an average rate of .83 for the preceding 10 years; while the cancer mortality is considerably less than last year, and is only one more than the average number for the same period of 10 years.

AGE INCIDENCE. Under the age of 1 year there were 38 deaths; between 1 and 5 years, 7 deaths; between 5 and 15 years, 8 deaths; between 15 and 25 years, 14 deaths; between 25 and 65 years, 64 deaths; and over the latter age, 61 deaths. Thus the percentage of deaths under 1 year to the total, was 19.8; and of deaths over 65 years of age, 31.8.

THE INFANTILE MORTALITY, or deaths under 1 year to every 1,000 births, was 136—nearly the same figure as last year, and rather higher than the average for the years 1892-1901. The causes of infantile mortality were:—Diarrhœa, 8 deaths; whooping cough, 1 death; tubercular diseases, 3 deaths; congenital syphilis, 1 death; diseases of the nervous system, 2 deaths; of the respiratory system, 3 deaths; of the digestive system, 4 deaths; premature birth, 6 deaths; inanition, 6 deaths; malformation, 1 death; operation, 1 death; and accident, 2 deaths.

The deaths from premature birth, operation and accident (9 in all), discount the somewhat high figures to some extent.

The births of 142 boys and 137 girls give a yearly rate of 22.1 per 1,000—another lowest on record—being a fraction less than that of last year, and 3.3 below the average rate for the preceding 10 years. The births for the four quarters of the year were 68, 69, 70, and 63, giving rates per 1,000 per annum of 21.5, 21.8, 25.0, and 19.9 respectively.

In the Union House, which is situated in this District, there were 64 deaths, of which 33 were males and 31 females; 24 of these were due to old age, and 7 were infants under 1 year of age. Their local distribution was as follows:—Newton Urban, 12 deaths; Newton Rural, 16 deaths; Torquay, 20 deaths; Teignmouth, 10 deaths; Dawlish Urban, 3 deaths; and Ashburton Urban, 3 deaths.

The above figures, with the exception of the general death rate, which, though below the 10 years' average, is one point higher, stand very nearly in the same position as in 1901. The zymotic rate, largely owing to measles and diarrhœa, is again high; while the infantile mortality has not decreased.

ZYMOTIC DISEASES. From the 7 ordinary zymotic diseases 20 deaths were registered, 8 being due to measles, 8 to diarrhœa, 3 to typhoid fever, and 1 to whooping cough, giving a rate of 1.6 per 1,000 per annum,

as compared with 1·8 in 1901, and an average of 1·4 for the 10 preceding years. The deaths from diarrhoea were all in children under 1 year of age, as was also the death from whooping cough.

The notifications of disease were 26 in number, of which 15 were typhoid fever, 4 scarlatina, and 7 erysipelas; 4 of the latter were in the Union House. Appended is a table showing the monthly incidence:—

DISEASE.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Small Pox.....	...	...	...	...	...	...	...	...	...	...	...	...	...
Scarlatina.....	...	..	...	...	1	1	...	1	...	1	...	...	4
Diphtheria.....	...	...	...	...	...	...	...	...	...	...	...	...	...
Typhoid Fever.....	...	1	...	...	...	...	...	3	4	3	2	2	15
Erysipelas.....	...	1	...	...	2	...	1	...	1	1	1	...	7
Puerperal Fever.....	...	...	...	...	...	...	...	...	...	...	...	...	...
Cholera.....	...	...	...	...	...	...	...	...	...	...	...	...	...
Total.....	...	2	...	...	3	1	1	4	5	5	3	2	26

TYPHOID FEVER. Of the 15 notifications received from this disease, 5 were associated with drainage defects. In one instance the house in question was only built five years ago, but the closet in this (and the other houses in the block) was connected with the drain by a brick and mortar channel, and no vent-shafts had been provided. A few weeks previously a fatal case of diphtheria occurred in a house two doors above, but at that time (November 1901) the results of the smoke-test were negative. Two other attacks occurred in a house in 5 Court, Wolborough Street, where the sewer running down the centre of the Court had become blocked, and a manhole within a few feet of the door was found full of sewage; a death from diarrhoea in an infant was here recorded about the same time. In a fourth—and fatal case, an adult over 40—the patient had been accustomed to smoke in a small outhouse adjoining a closet; the drain which ran under this place was found to be very defective, and the tenants admitted that bad smells were noticed at times.

Another group of 3 cases were probably due to the eating of shell fish from the river. One of these patients was a young adult, and with his wife, had partaken largely of cockles bought from a street hawker. Within a few hours the wife had a severe diarrhoeic attack, but escaped further

consequences ; while the husband, though not suffering in this way, contracted typhoid fever in a severe form, and finally succumbed. This case was further complicated by the fact that the patient was stated to be constantly subject to diarrhœa, and on examination of the premises a faulty drain—with rats holes—under the larder floor, where milk and meat was kept, suggested at least a possible cause.

The other two attacks of this class were in two young children in a Court in East Street—mussels this time being the object of suspicion. The hospital being full removal was impossible, but a nurse was obtained, and the children provided for by the Authority till convalescent. The danger of consuming shell fish from any sewage polluted waters cannot be too strongly impressed on the public. It is one on which repeated warnings have been issued, and there have been from time to time and in various parts of the country—not excepting our own neighbourhood—numerous cases, and groups of cases, traceable to this cause. Further, it has been shewn experimentally that the germs of typhoid fever can be taken up, and continue to live in what is known as the buccal cavity of shell fish.

Another case was connected with bathing in a dirty pool of water into which the tide flows, above the Kingsteignton Road—this is another dangerous practice. Those who wish to bathe should go a few hundred yards further and make use of the canal. A public bath would no doubt be a great boon to many, but the difficulty of getting a suitable site with available water without incurring a large expense, seems very considerable. In the meantime parents would be well advised to restrict their children from using any part of the tidal waters of the Teign, or any pools to which the tide has access.

The remaining 5 attacks, excluding one which obviously originated elsewhere, presented no very definite cause, but two of them deserve some notice ; these were in a house of the villa type. A visitor who came for a few days stay contracted the disease on her return home, and a little later two servants were attacked. About the same time two children in the house suffered from slight indisposition with rise of temperature. However, the sanitary condition of the house was thoroughly examined with a favorable result, and I am inclined to think—though by no means convinced—that the first case originated outside the District, and that the two servants were subsequently infected.

SCARLATINA. Four cases were notified—all of mild type, and ending favorably. In two of these a clear history of infection from external sources was obtained

There have been a considerable number of cases in the surrounding districts during the past year, and it would not have been surprising had more attacks occurred.

DIPHTHERIA. The district was free from this disease during the past year.

MEASLES. A considerable epidemic of this disease occurred in the month of December among the children in both parishes, resulting in 8 deaths up to the end of the year. Measles and whooping cough are always, when breaking out in the winter months, productive of many fatalities, owing to the lung complications which ensue if the children are not carefully looked after and kept warm. Owing to want of a little care, many lives which might be preserved are therefore sacrificed; the proof of this lies in the fact that in no class of zymotic disease is there such a marked difference in the case fatality between the children of the well-to-do and those of the poorer classes.

THE ISOLATION HOSPITAL is situated on the Totnes Road, about a mile from the centre of the town; it can accommodate 3 adults or 5 children. Fifteen parishes are associated with the Hospital combination, viz., Wolborough and Highweek (Newton Urban District), Abbotskerswell, Bovey Tracey, Chudleigh, Cockington, Coffinswell, Haccombe and Coombe, Hennock, Ipplepen, Kingskerswell, Kingsteignton, Ogwell, Teigngrace, and Torbryan. This institution was in greater demand than ever, and several cases had during the year to be refused owing to lack of accommodation. The new block of buildings is, however, well on its way to completion, and there is every prospect of its being opened early in the summer. I give the following extracts from the Annual Report for 1902 of Dr. J. W. Ley, the Medical Superintendent. "The last year has been an extremely busy one, and between January 1st and December 31st, 1902, I have admitted 18 cases, viz.—typhoid fever, 10; scarlet fever, 4; and diphtheria, 4. There has been one death in a case of diphtheria. I think I may safely say that at least three of the patients (one suffering from typhoid and two from diphtheria) were saved by removal to the hospital, as they were all cases of extreme severity. Most of the others were removed from very insanitary surroundings. There is nothing special to remark as to the working of the Hospital. Everything has been going on satisfactorily, and I have nothing to complain of except that I have had to refuse admission to a number of cases during the year through want of accommodation. The Hospital has been occupied during the whole year except a short interval from July 18th to August 11th. There are now two patients remaining."

DISINFECTION. Houses are limewashed and disinfected with formalin when necessary ; there is at present no means of dealing with clothes and bedding. A steam disinfecter has been provided in connection with the new Hospital, but this is not yet in use.

WASTE OF INFANT LIFE. The infantile mortality still keeps at the somewhat high level of 136 ; in other words, out of 1,000 children born, 136 die before they have completed their first year. I have made an investigation into the circumstances attending the 38 deaths of children under 1 year of age in Newton during the past year, with the following results :—Of the total, 34 or 89 per cent. belonged to the working classes—and it is the usual experience that the greatest waste of infant life is among these. In 19 cases (or 50 per cent.) the father was earning under £1 a week, or in uncertain employment. In 20, or (omitting the 3 accidents and 6 premature births) 69 per cent. the children were bottle fed, and of the 15 deaths from digestive disorders 12 were brought up by hand. The Courts only afforded 4 deaths among infants ; of these 3 were in No. 5 Court, Wolborough Street, which later in the year provided two cases of typhoid fever, associated with a choked sewer evidently of some weeks standing ; in one of these—a death from diarrhœa—it was stated that the child got ill immediately the parents moved into this court. The other death in a Court was one from congenital syphilis—so that in this connection the courts do not seem to show any disproportionate mortality. The deaths were scattered over various parts of the town ; 15 were in the older dwellings, and 18 were in houses on the lower level ; so that locality does not appear to have any particular influence. In 10 cases, however, insanitary conditions of one kind or other were evident. The causes of death were :—Accidental causes and operation, 3 deaths ; premature birth, 6 deaths ; diseases of the digestive system, 15 deaths, of which 8 were due to diarrhœa ; inanition, 6 deaths ; syphilis, 1 death ; phthisis, 1 death ; whooping cough, 1 death ; pneumonia, 2 deaths ; bronchitis, 1 death ; convulsions, 1 death ; malformation, 1 death.

In 13 cases the infants were stated to be delicate from birth—10 of these were hand fed, and 6 were twins—nearly always feeble. In the case of the death from phthisis, the mother had for some time been suffering from lung disease of tubercular type. In addition to the above there were 7 deaths in the Union House of illegitimate children under 1 year of age, 5 being assigned to inanition and 2 to premature birth ; and it may here be said that

of the 38 deaths in the town, only 1 was that of an illegitimate child.

The general causes of all this mortality—of which a large proportion is among the working classes—are deep-seated, and to attack them with any prospect of success is a difficult problem. There is no doubt that the condition of health of the mother has an important influence on the vitality of her children, and if she is overworked and not sufficiently nourished—as must often be the case when the father is earning low wages or is from time time out of work—sickly children are the result. Further, the wife of the working man, who as a rule has to attend herself to all the various household duties, goes about her usual work almost up to the day of her confinement, and resumes it at the earliest possible moment afterwards. Several mothers told me they knew that they should have laid up for a time, but circumstances did not permit of their doing so. Again hand feeding—and improper feeding—is a potent source of mischief; bottles are not cleaned, milk is kept under insanitary conditions, or kept too long in hot weather, causing acidity and provoking diarrhœa; and diseases of the digestive system are responsible for a large proportion of infantile mortality. I found, however, on general enquiry, that a large proportion of mothers nurse their own children, and many are proud of doing so; this is a hopeful sign.

Insanitary conditions of the dwelling house and its surroundings, probably have an important influence on the feeble life of an infant child, as well as acting indirectly through the constitutions of the parents; but with the general advance in sanitation, and the provision of adequate airspace in front and rear of dwelling houses, this adverse factor is being gradually eliminated.

The operation of the above causes, while being responsible for a definite number of deaths, unfortunately does not end there, and many of those who survive them grow up with enfeebled constitutions. Some of these no doubt gain strength as adult life is reached, but some do not, and these in their turn will become fathers or mothers and beget sickly offspring, and thus the evil is perpetuated. Under the present social system of thickly populated and highly civilised communities, much of this seems inevitable, but on the other hand much is preventable, and suitable instruction on the rearing of children should be placed within the reach of all. We have an elaborate educational system, which has been evolved with the aim of enabling children to make their way in the world to the best possible advantage; but education in sanitary matters is still in embryo, and unless we can start our future citizens in life with sound constitutions, we cannot expect that the best results will be attained either intellectually or physically.

SANITARY CONDITIONS AND PROCEDURE.

The WATER SUPPLY needs very little comment ; it is that of Torquay in the vast majority of houses, and is good and abundant. There are some wells in the more rural parts of the District ; a few still exist in the town, but these are gradually being replaced by the public supply.

SEWERAGE. Newton is a water closet town ; the sewers are all brought to one outfall in the Marshes, where there are settling tanks, the effluent from which discharges into the estuary of the Teign. Considerable attention is being paid to the sewerage, and old and defective sewers are gradually being replaced by modern constructions. New sewers have been laid up the Totnes Road to take the drainage of the new Hospital ; also up the Highweek Road, to take the Wain Lane sewerage ; and on the Abbotsburry Estate. A storm water relief sewer has been constructed in Bearne's Lane, with the view of preventing the flooding of Courtenay Street and Bank Street by the water which converges to this locality from the surrounding hills during sudden storms. In the Torquay Road an old and defective sewer has been reconstructed.

At the outfall a new settling tank with a screen has been built by Mr. Stevens—the first of four proposed—with the rapidly increasing population of the town, and with it a proportionate increase of liquid refuse, a more modern method of dealing with the sewage will sooner or later become a necessity. The expense of this will no doubt be considerable, but much depends on whether pumping has to be resorted to or not.

SCAVENGING. House refuse is removed three times a week in the more densely populated parts of the town, and twice a week on the outskirts.

HOUSING OF THE WORKING CLASSES. I have this year paid considerable attention to the Courts in the town, with a view to getting the worst dwellings condemned and the rest put into thorough sanitary order. In order that these proceedings may not involve hardship on tenants, who being turned out of their houses are not always able to obtain accommodation elsewhere, my practice is to keep a watch on dwellings which owing to low height of rooms and want of light and air, cannot be made really habitable. The tenants of such houses are as a rule constantly changing, and as soon as one becomes vacant, it is condemned before being re-occupied. Eleven dwellings have been thus condemned during the past year. Nos. 2 and 3 in Court 7, East Street, and No. 95, East Street—a house at the entrance of the same Court. With the exception of two (and these have been put in order) all the houses in this Court are now closed. Nos. 50 and 52 Wol-

borough Street, five houses in Court 4, Wolborough Street, and one in Court 10, East Street, have also been closed. No. 6 Court, Wolborough Street, has been redrained by the Authority, and the expense apportioned among the various owners. In several other Courts sanitary improvements with regard to paving and flushing of closets have been carried out. In addition to this a great number of sanitary improvements have been made under Mr Judd's supervision in various parts of the town. This is scheduled in detail in his report.

The builders have again been constantly employed during the past year, and 104 plans for new houses have been passed. The development of the Abbotsbury Estate and the Decoy suburb has been responsible for the largest number of new houses; but other available sites in the Wolborough Street locality, at the back of the Station Yard, Mount Pleasant, and on the Polyblank's Estate, Highweek Road, are being rapidly taken up. The great majority of these are let at a rental of from £13 to £18 a year.

The foundation stone of the new Free Library, presented to the town by the liberality of Mr Passmore Edwards, and the Technical Schools, was laid in the autumn; these form a single block, and when complete will be an extremely handsome municipal building. The architect is Mr Silvanus Trevail, F.R.I.B.A., of Truro. The enlargement of the Market, which has been found to provide insufficient accommodation for its ever increasing wants, is also in hand. A Local Government Board enquiry has been held, and a loan sanctioned for the purpose.

BY-LAWS. Considerable discussion has taken place with regard to the Building By-Laws. The Council have not, however, been able to see their way to adopting the Model By-Laws of the Local Government Board. Perhaps the particular item which stood most in the way, was that relating to the provision of an intercepting trap between the drain and the sewer—a debateable point. In this town we have as a general rule adopted the plan of ventilating the sewers by means of the house drains, and making every house take its share in this matter. Seeing that it is generally conceded that the ventilation of sewers is a necessity, the question to be considered is whether this is to be best done by discharging into the air a quantity of sewer gas at intervals more or less considerable—along lines of sewer at suitable points, which in a town are often difficult to obtain, or to distribute this discharge in small amounts house by house. As regards the actual ventilation of a sewer, the latter method is probably the most effective, because it is doubtful whether the effect of even a large ventilator extends over more than a very limited distance on either side of it. Moreover, in low-lying localities where little

fall for the house drain can be obtained. the question of chokeage of such traps comes in. An interceptor is from its nature an obstruction to the free flow of sewage, and forms a miniature cesspit, always containing fœcal matter, which is not cleared by the accompanying liquid, but stops in the trap—decomposition proceeding all the time—till a subsequent discharge of water in sufficient quantity carries it on. On the other hand the interceptor fulfils its object of shutting off sewer gases from the dwelling, but if free ventilation takes place from every contributory drain, it is reasonable to suppose that the air in such a sewer is comparatively pure, and also that it is under no pressure—an important point. Further, the decomposing filth practically always present in the trap, and also the interior of the drain, give rise to gases, which are prejudicial to health, so that the tenant is in all cases dependent for safety on the soundness of the house drain. On the whole I am inclined to think that it is better to have no hard and fast rule, but that in a few cases, as where cesspits exist or where drains run under a house, an interceptor is necessary ; while speaking generally, it is better to do without them.

An important regulation with regard to the width of roads has, however, been passed, to the effect that every new street shall be 32 feet in width, provided there is a garden not less than 6 feet in width on either side of the street (making a distance of 44 feet from house to house) or if the houses abut on the pavement, the street shall be 36 feet wide. The footpath in each case is to be 6 ft wide. Also back roads if over 100 yards long, shall be 12 feet wide ; if under, 10 feet wide. This is a progressive step, and one which will prevent the multiplication of narrow streets—only to degenerate into slums in the course of a few years

HOUSE TO HOUSE INSPECTION. I have during the past year inspected 104 dwellings ; this completes the town as far as the streets are concerned, though the larger class of houses still remain to be dealt with.

Mr. LEWIS STEVENS, Surveyor, reports as follows :—

The Sanitary work of replacing old stone and defective sewers and the laying of new sk pipe sewers has been proceeded with during the past year, and the work executed include the following :

ABBOTSBURY ESTATE.

The rapid development of this district with its consequent increase of storm water has necessitated the construction of an additional and larger sewer which has a storm outlet connected to the Mill Stream. In doing this 30 ft. of 15 in. sk pipe and 110 ft. of 12 in. sk pipe has been laid, and the outlet has been constructed with an efficient weir and air flaps, by which only storm water will be drawn off ; this also provides for the sewer that will be laid for the further development of this new district.

STATION ROAD (BY TORQUAY ROAD.)

The lower portion of the district by the Station has also received attention. To prevent the flooding of this part, a new storm relief sewer has been laid from the Railway to the intersection of the Forde Road and Torquay Road by Courtlands; about 210 feet lineal of 21 in. pipe and 335 feet of 18 in. pipe has been laid and the main sewers on the east and west side of Forde Park have been intercepted with the requisite weirs by which the storm water during heavy rainfall will be taken off. A penstock has also been fixed so that at times the water can be accumulated and used for flushing the sewer in the Station Road, which, with the other sewers of this district, has been entirely relaid; the gradient has thus been improved by the increased fall obtained. This has involved the laying of the following lengths of pipes:—90 ft. lineal of 15 in. and 12 in.; 870 ft. lineal of 10 in. and 9 in. pipes; also 120 ft. of 7 in. and 140 ft. of 6 in. pipes for the branches.

TOTNES ROAD.

The sewer in the Totnes Road has been extended, so that the drainage of the Cottages and the New Hospital has been connected to the towns system. In doing this 685 feet of 8 in. sk pipe has been laid.

HIGHWEEK ROAD AND WAIN LANE.

The old stone sewer of this district and the private drains, several of which passed directly under, and in close proximity to the houses, have been entirely taken out and replaced with the following lengths of sk pipe:—486 feet of 12 in.; 165 ft. of 10 in.; 110 feet of 9 in.; also 295 feet of 8 in.; the smaller sewer and branch drains taking 270 feet of 7 and 6 inch, also 360 ft. of 5 and 4 inch sk pipes. 21 manholes and lamp holes were formed for access and inspection. This provides for the sewers being extended in the Ashburton Road, also for the new sewer in Greenaway Hill that will be needed for the drainage of a portion of Highweek Village.

ST. JOHN'S STREET AND OSBORNE STREET.

The two blocks of houses on the east side and adjoining the Marsh School have also received attention; the drainage system has been entirely reconstructed, doing away with all drains passing under the houses, a new series of pipes having been laid at the back. In this work 175 feet lineal of 6, 5 and 4 in. sk pipes has been laid in forming the main drains, and 185 ft. lineal of 4 inch to the branches. Inspection chambers (9) have been formed for access and inspection, and several ventilating shafts have been provided.

BEARNE'S LANE RELIEF SEWER.

The Local Government Board's sanction having been obtained for the loan needed for the provision of the storm water relief sewers proposed to be constructed in Back Road, Wolborough Street, and Bearne's Lane, in the latter road the work of replacing the old stone sewer with the new culvert has been proceeded with and considerable progress made; the new culvert is provided with a 12 inch channel pipe to take the ordinary flow and first rainfall.

The culvert for the storm water is 4 ft. wide by 21 inches high, this form being necessitated by the very little fall and depth available.

Provision is made for the access of the storm surface water, two outlets being formed to each of the gulleys, which are being fitted with light air flaps having gun metal faces and bearings to prevent any stoppage, and allow of a free inlet of the surface water into the new culvert.

LEWIS STEVENS, SURVEYOR.

Mr. H. JUDD, Sanitary Inspector, reports as follows :—

FACTORY & WORKSHOPS' ACT, 1901.

This year a change has taken place in the administration of the law relating to Factories and Workshops, for until the passing of the above Act the Factory Inspector was the person authorized to inspect such places, and enforce the provisions of the old statutes affecting them.

Under the new Act the duty of inspecting Workshops and Workplaces is transferred to the Local Authority, whose officers have the same powers of entry, taking legal proceedings, etc., as are given the Factory Inspector.

The Local Authority is also made responsible for enforcing the fire escape clauses of the Act as regards Factories, in addition to that of Workshops ; but the general supervision of Factories comes under the Factory Inspector as before.

A Factory is defined as a place where mechanical power is used ; also certain classes of trades scheduled in the Act, whether mechanical power is used or not. A Workshop is a place where no mechanical power is used.

If we exclude the special trades mentioned in the Act, it will be seen that where machinery is used to assist manual labour, the place becomes a Factory and is subject to the supervision of the Factory Inspector ; whereas a place, in which manual labour only is employed, becomes a Workshop, and is subject to the supervision of the Local Authority.

Briefly, the provisions of the Act, having reference to Workshops, are as follows :—

(a) Sufficient air space (250 cubic feet during ordinary working hours and 400 during overtime) ; (b) proper and sufficient means of ventilation ; (c) cleanliness ; (d) drainage of floors where nature of trade causes same to be wet (it is one of the anomalies of the Act that this provision does not apply where men only are employed) ; (e) power to prohibit certain classes of home work being done in insanitary or infected dwellings ; (f) list of " Home Workers " to be sent to the Local Authority twice a year by occupiers of Factories and Workshops.

In the month of June we commenced our inspections, and by the end of the year we exhausted the list of Workshops, kindly furnished us by the Factory Inspector for this district.

We have on our books 61 Workshops, and the addresses of 4 " Outworkers." Doubtless there are a few more Workshops in the town which have not yet come under our notice, but we hope very shortly to have a complete list of them.

The contraventions of the Act met with are shown below :—

Cases of overcrowding, ..	3.	Abated, ..	2.
Premises requiring to be limewashed, ..	6.	" ..	6.
Foul closets and drains met with, ..	4	" ...	3.
Premises without closet accommodation ..	3.	" ...	nil.
Unsatisfactory water supply, ...	1.	" ..	1.
Total number of contraventions, ..	17.	Total ..	12.

In 5 instances it will be seen that the offenders have not yet brought their premises into line with the requirements of the Act, but notices have been served in respect to them, and they will be followed up.

I am pleased to be able to report that the majority of the Workshops were found in a good sanitary condition ; also that there is not a single Bakehouse out of the 17 that are in the town, that would admit of being termed an " Underground Bakehouse " as defined by the Statute.

I received 3 notices from the Factory Inspector, calling my attention to the fact that 2 Factories and 1 Workshop in the district were without satisfactory closet accommodation.

In one of the Factory cases the accommodation has been properly settled by the owner constructing a new system of trough closets; in the other it has been improved, but a system of water closets could not be introduced as the works are situate at too low a level to admit of the closets draining into the town sewer.

By arrangement with the Factory Inspector, the matter of providing a water closet for the Workshop has been deferred until the Council lay their new sewer in the River Lemon, when it will become less expensive and more convenient to drain the Workshop in question.

COMMON LODGING HOUSES.

The two registered houses have been periodically visited and found well kept. The bedrooms and bed linen have usually been found clean, and the ventilation and lime washing properly attended to.

The closets of the house in Wolborough Street have been put in order.

Midnight visits were paid to both houses on two occasions, but no infringement of the law or bye-laws was met with.

SLAUGHTER HOUSES.

The four slaughter houses in the district have received between them 86 inspections. It was found necessary to serve notices for lime washing, removing accumulations of manure and other refuse, and for the clearing of choked drains.—The notices were promptly attended to.

The slaughter house in Highweek Street has been properly paved and drained, so that now the places can be said to be in a sanitary condition.

DAIRIES, COWSHEDS & MILKSHOPS.

There are 24 persons registered as cowkeepers or milk purveyors, and their premises have received 39 inspections.

The necessary lime washing has been attended to, and in four cases the drains have been overhauled.

In the month of May anthrax broke out amongst the cattle of a farm at Highweek, and two bullocks died of the disease. The dairy was disinfected and limewashed and closed for a month, infected articles of clothing were destroyed, and the usual precautions as regards the carcasses and byres were taken by the police.

NEW HOUSES AND SEWERS.

During the year 103 new houses have been erected, the drains and sanitary fittings of which have been examined and tested.

On the building estates 2,727 feet of new sewers, varying in sizes from 6 to 15 inches, have been laid and tested.

INFECTIOUS DISEASE HOSPITAL.

The drains of the new hospital are now almost complete.

In order to get proper falls very deep trenches had to be cut in rock—the drain being at its lowest point as much as 13ft. below the surface of the ground.

From the terminus of the town sewer a 9-inch pipe had to be carried up the Totnes Road for a distance of 811 feet.

ST. JOHN AND OSBORNE STREETS.

I am glad to be able to report that the work of relaying the drains of Nos. 2 to 24 St. John Street, and Nos. 1 to 23 Osborne

Street, is now almost complete. There remain but 4 houses to drain, and these I hope to see dealt with before many weeks go by.

Here has been a sore of old standing, and it is hoped that at last it is satisfactorily cured.

In following up the various nuisances under observation, and in effecting the sanitary improvements classified below, it was found necessary to make 2,201 visits, and to apply 873 drain tests.

SCHEDULE :—OLD PROPERTY.

DRAINS—Drains relaid, 134 ; drains partly relaid or repaired, 77 ; disused drains destroyed, 13 ; defective stench traps replaced with gullies, 51 ; stench traps removed from indoors, 18 ; rain water down-pipes cut off from drains, 94 ; inspection chambers built on drains, 182 ; inspection chambers repaired, 9 ; new soil and vent shafts erected, 126 ; soil and vent shafts repaired, 10 ; internal soil pipes removed and fixed outside, 5 ; new sink troughs provided, 6 ; drains cleared, 24 ; urinals built, 2.

CLOSETS—New W.C.'s erected, 20 ; W.C.'s reconstructed, 16 ; W.C.'s repaired, 21 ; wash-down pedestal closets fixed, 47 ; W.C. pans and syphons renewed, 144 ; closets flushed, 117 ; closet flush cisterns repaired, 8 ; old container closets abolished, 13 ; disused closets destroyed, 17 ; privies destroyed, 2 ; foul closets cleaned, 4.

COURTYARDS—Yards paved, 35 ; yards repaired, 13.

WATER SUPPLY—Taps fixed on mains, 47 ; town water laid on to premises, 12 ; cisterns covered, 4 ; wells closed, 2.

MISCELLANEOUS—Stables drained, 3 ; stables, paved, 2 ; pig keeping discontinued, 1 ; refuse bins provided, 2 ; premises cleaned, 5 ; premises repaired, 6 ; cess-pools constructed, 2 ; cess-pools cleaned, 2 ; cowsheds drained, 5.

CLERICAL WORK.

Intimation notices served, 148 ; complied with, 129 ; statutory notices served, 26 ; complied with, 22 ; letters written, 252.

HOUSES CONDEMNED.

During the year 11 houses have been condemned by the Medical Officer as being unfit for human habitation, viz. :—65, East Street ; 2 and 3, 7 Court, East Street ; 1 in X Court, East Street ; 5 in IV Court, Wolborough Street ; and 50 and 52, Wolborough Street.

Magistrates' Closing Orders have been obtained in respect to 10 of these houses, and in due course an order will be applied for in respect of the eleventh.

HENRY JUDD, C.S.I.,
SANITARY INSPECTOR.



III.—DAWLISH (URBAN).

PHYSICAL CHARACTERS. The town is situated at the bottom and on the slopes of a picturesque ravine, running from Haldon in an easterly direction to the sea, and is in a remarkable degree isolated by the surrounding hills. The central portion of the town is occupied by extensive public gardens, through which runs the stream known as Dawlish Water. The hills vary from cliffs overhanging the sea at about 200 - 300 feet in height, up to 800 feet on the summit of Haldon. The district includes the residential village of Holcombe, pleasantly situated on the cliffs about $1\frac{1}{2}$ miles to the south. The geological formation is red breccia or sandstone.

VITAL STATISTICS. The number of deaths registered in 1902 was 69, of whom 34 were males and 35 females, giving an annual rate per 1,000 of 17.2. This is considerably above the low death rate of 1901, but is a fraction below the average rate for the preceding 10 years. Three of these deaths were in persons in the Union House at Newton Abbot belonging to the District ; deducting these the rate is 16.7. There were 8 deaths in visitors, excluding these the death rate is reduced to 15.2. The deaths in the four quarters of the year numbered 25, 12, 13 and 19 respectively, giving yearly rates per 1000 of 25.0, 12.0, 13.0, and 19.0. Thus the first and last quarters shewed considerably the greatest fatality. For statistical purposes I have left the census figures of population unchanged at 4,003.

CHIEF CAUSES OF FATALITY. From the 7 ordinary zymotic diseases, 3 deaths ; puerperal fever, 1 death ; constitutional diseases 14, of which 6 were due to phthisis ; diseases of the nervous system, 9 ; of the respiratory system, 8 ; of the circulatory system, 17 ; of the urinary system, 1 ; of the digestive system, 3 ; premature birth, 3 ; infantile inanition, 3 ; old age, 4 ; and violence, 3, of which 2 were due to accident and 1 to suicide. Deaths from heart disease shew a large increase ; on the other hand no death from cancer was recorded, and the fatality from respiratory diseases is considerably reduced ; that from phthisis remains at about the same figure.

COMPARATIVE TABLE.

DEATHS FROM	1902	Average of 10 years 1892-1901	1901	1900	1899	1898	1897
Smallpox	...		...	...	...	...	...
Measles	...		...	8	...	...	1
Scarlatina	1		...	...	...	...	...
Whooping Cough	...		...	...	8	...	...
Diphtheria	...		...	...	...	...	...
Continued Fevers (Typhoid, &c.)	...		...	1	...	...	...
Diarrhoea	2		5	...	1	2	1
Seven Chief Zymotics	3	3.5	5	9	9	2	2
Phthisis	6	6	8	7	3	6	2
Other Tubercular Diseases	4	2	2	3	2	...	1
Bronchitis, Pneumonia, Pleurisy	7	11.5	12	13	12	12	5
Heart Diseases	17	8	5	9	8	14	8
Cancer	...	5	6	4	5	5	5
Violence	3	3	2	...	3	2	2
All Other Diseases	29	35	19	34	47	36	40
Total deaths	69	74	59	79	89	77	65
Estimated Population	4003	4096	4003	4020	4040	4060	4080
General Death Rate	17.2	18.1	14.7	19.7	22.0	19.0	15.9
Ditto excluding visitors	15.2	15.8	13.7	18.1	18.5	16.0	13.0
Zymotic Death Rate	.75	.88	1.2	2.2	2.2	.49	.49
Births	81	87	59	77	84	102	69
Birth Rate	20.2	21.2	14.7	19.1	20.8	25.1	16.9
Deaths under 1 year	13	12	12	11	18	11	8
Deaths between 1 and 5 years	4	4.5	1	11	8	...	4
Deaths over 65 years	26	30	18	21	42	40	31
Deaths under 1 year to 1000 births	160	140	203	143	214	108	116
Deaths in Union House belonging to District	3	1.5	1	2	...	4	...

AGE INCIDENCE. Under the age of 1 year there were 13 deaths ; between 1 and 5 years, 4 deaths ; between 15 and 25 years, 3 deaths ; between 25 and 65 years, 23 deaths ; and over the latter age, 26 deaths. Thus the percentage of deaths under 1 year to the total was 18.8 ; and of those over 65 years, 37.7.

THE INFANTILE MORTALITY, or number of deaths under 1 year to every 1000 births, was 160—a considerable fall as compared with last year, but still a high figure. The causes of these infantile deaths were diarrhoea, 2 deaths ; inanition, 3 deaths ; premature birth, 3 deaths ; tubercular diseases, 2 deaths ; nervous

diseases, 2 deaths ; and pneumonia, 1 death. The deaths from premature birth discount the figures to some extent.

The births of 35 boys and 46 girls give an annual rate per 1000 of 20·2 ; this is a considerable improvement on last year's figure, which was the lowest on record ; it is, however, 1·2 below the average for the preceding 10 years. The births during the four quarters of the year were 28, 26, 12, and 15, giving rates per 1000 per annum of 28·0, 26·0, 12·0 and 15·0 respectively. It will be seen that the good prospects held out in this respect by the first two quarters were not sustained.

ZYMOTIC DISEASE. From the 7 ordinary zymotic diseases there were 3 deaths, 2 being attributable to diarrhœa, and 1 to scarlet fever. This gives an annual rate of ·75 per 1000, which is rather less than the average for the preceding 10 years. In both the cases of death from diarrhœa, the general surroundings were more or less insanitary ; one of the children was stated to have been nursed at the breast, while the other was brought up by hand. The scarlet fever fatality was in a visitor who probably contracted the disease outside the District ; this occurred in the beginning of the year, and the case was alluded to in my report for 1901.

The notifications were five in number ; 3 of these were typhoid fever, 1 puerperal fever, and 1 erysipelas. Of the former, one was sent in to the Infirmary from a farm outside the District, so that only two may be said to have been indigenous. One of these occurred in a house in Hatcher Street at the end of March, the patient being an adult. The drainage of the premises was found to be defective, but there was also a history of eating shell-fish from the Teign—always a suspicious circumstance ; this case was taken to the Infirmary. The third attack was located in a public house in Beach Lane, the patient being a young girl, who served at the bar. In the bar was a sink, which though trapped, was in direct communication with the drain, discharging into an inspection pit with iron cover, also inside the house ; the brick sides of this were not air-tight. Further insanitary conditions manifested themselves in the kitchen and larder, on the opposite side of the lane ; these were under the same roof as the stable in connection with the premises, and not properly separated from it. As the patient was too ill to be moved, nurses were provided by the authority, and a cottage taken for the healthy members of the family ; the illness was a long

one, but eventually removal to the Infirmary was effected, and under better sanitary surroundings, recovery from this point was rapid.

Besides the above, one case of phthisis was notified ; after death the premises were disinfected by the authority. Thus the town has again been practically free from infectious disease during the past year.

ISOLATION HOSPITAL. This question has not yet been solved, and is still under consideration. Early in the year a proposal was made by the Teignmouth Authority, that Teignmouth and Dawlish should combine together for the purpose of forming an Isolation Hospital District. A committee composed of members from both councils met to draw up a scheme ; a suitable site was found at Holcombe, and approved by both the medical officers, but at the last moment the owner refused to sell the field. The question of expense was also a drawback, and the Council finally came to the conclusion that the best way out of the difficulty was to act independently and erect a small iron hospital on a piece of land at Dawlish Water, which they have possession of. This will, I think, be sufficient for the purpose ; such a hospital would not deal with an epidemic—but only a large building put up at a great cost will do this. What is wanted is accommodation for the few scattered cases of disease which usually occur during the year, and which would then be removed from the town and properly isolated. In my opinion an isolation hospital is a necessity, and in a town like Dawlish, which depends largely for its prosperity on the visitors it can attract, the policy of such provision is obvious.

PHTHISIS. Dawlish being a watering place with mild winter climate, has rather more than its share of residents (who are really visitors for a period of years) suffering from this disease. Voluntary notification has now been in operation for 2 years, but only 3 cases have been notified. It is undoubtedly an infectious disease, but the difficulty of dealing with it in the hospital or isolation sense is great. During the last 10 years there have been on the average in Dawlish, 6 deaths in the year ; this probably means that there are at least a dozen people in the town who are more or less severely affected, and to deal with these a hospital with 10 or 12 beds at a considerable expense would be necessary. Further, as compared with the ordinary zymotic diseases, the course is more or less

prolonged, and in the earlier stages, patients are usually capable of following their occupation and earning a living. Nevertheless, sanatoria, such as that recently built at Didworthy, will do great service, and if the County Council could see their way to create Isolation Districts and by building hospitals on a larger scale, reduce the cost per bed to a minimum, not only would many valuable lives be saved, but the public would benefit by the removal of centres of infection. It must, however, still be remembered that this is treating the symptoms and not the cause. To strike at the origin of disease is the most important consideration, and this can only be done by the co-operation of the Sanitary Authority and the individual. By the prevention of overcrowding—the provision of sufficient air space in and around dwellings, and taking measures to remedy dampness or other insanitary conditions, the Authorities can do much ; but the public must remember that pure air is at least as great a necessity of life as pure water, and that this can be ensured by the open window—night as well as day. In other words the open air treatment is the best preventative, and in a climate such as that of South Devon, the open air life is possible, and beneficial for the great majority of the community.

Disinfection of premises is carried out by the Authority ; where necessary houses are limewashed.

The slaughter houses are still in an unsatisfactory state ; but more active steps are now being taken to effect an improvement in this matter, and I hope in my next year's report to be able to put on record real progress, both in this matter, and also in that of a hospital—both items of importance.

SANITARY CONDITIONS & PROCEDURE.

WATER SUPPLY is derived from two springs on Haldon, the water from which after a short course—in one case of $\frac{3}{4}$ of a mile and the other about $\frac{1}{4}$ mile—is collected in a small impounding reservoir with a sand filter, and is thence piped to the town, a distance of about 5 miles. The gathering ground is uncultivated and of moorland type, and is entirely free from houses or any source of animal pollution. There is a reservoir containing 500,000 gallons on the Burrows, a hill just outside the town. The main is continued to Holcombe, which is thus

supplied from the same source. The Council have very wisely decided to take more active steps for the prevention of waste, and one of the Surveyor's men has been constantly employed in visiting consumers to insist on the repair of leaking taps when found ; this has had a most beneficial effect. Now that the public are making greater demands on water supplies, the husbanding of resources which can be effected by this means, becomes most important.

In the latter part of the year an application was made by the Parish Council of West Dawlish, which contains a population of nearly 700 persons, to be supplied with water from this Council's reservoir, and negotiations are still proceeding with this object. There is probably sufficient water, but greater storage capacity might be needed.

SEWERAGE. Dawlish is a water closet town ; the sewers are all brought to one main outfall, which is taken out to sea at a distance of threequarters of a mile from the station ; the outlet is below low water level. The outfall sewer, which was cleared in 1901, after being more or less blocked for several years, is now working well, and has given no further trouble.

Holcombe has a sewer which also discharges into the sea.

SCAVENGING. House refuse is removed daily in the central portion of the town ; twice and thrice weekly in different parts of the outskirts ; and weekly at Holcombe. In connection with this, I think it would be very desirable if the Council could see their way to providing covered scavenging carts ; with the present open ones it is impossible to prevent dust, etc., being blown about in windy weather.

No great work in the public sense has been carried out during the past year, but on the other hand a considerable amount of private drainage reconstruction has been constantly proceeding ; this being done under the requirements of the By-laws for new houses, and every drain underground being subject to the water test before being covered in, is a permanent work. 53 sanitary certificates were granted during 1902 ; it is a sign of the times that these are now generally demanded when a sale of property is being negotiated, and if the present rate of sanitary levelling up continues—and there is no reason why it should not do so—at no very distant date few towns will be in a better position in this respect.

I have to record one case of overcrowding, which was abated on a notice being served.

The following are the details of Mr. R. CLARKE,
the Sanitary Inspector's Report :—

	No.
Houses inspected	123
Dairies and Cowsheds inspected	8
Slaughter-houses inspected	6
Intimation notices served	57
Statutory notices served	29
Houses disinfected	6
House drains, new connections to main sewer	50
Houses redrained with new drains in lieu of defective	55
House drains, disconnected by interceptor	55
Total number of smoke tests	65
Removal of offensive accumulations due to notices served	34
Total number of water tests	294
Total number of feet of drain water tested	9124
Total number of visits	1823
Total number of Sanitary Certificates granted under Public Healths Acts	53

R. CLARKE, C.E.,
Surveyor and Sanitary Inspector.

The Workshops, which under recent legislation come under the jurisdiction of the Local Authority, have been inspected by the Surveyor, but no report has as yet been drawn up.



ANALYSIS OF WATERS—1902.

No.	Source.	Date of collection of sample	Physical characters	Parts per 1,000,000				Nitrogen from Acids	Chlorine	Total Solids		Oxygen Absorbed	Remarks
				Free Ammonia	Albumenoid Ammonia	grains per gallon	grains per gallon						
1	Bovey Tracey, public supply	Feb 23	good	·02	·04	·15	1·4	8·0	moderate			A good granitic water	
2	Abbotskerswell, dipping well under foot-path	Mar 4	good	·015	·10	·19	2·8	25·2	moderate			Contains excess of organic vegetable matter	
3	Abbotskerswell, dipping well at Prospect Place	Mar 4	good	·015	·11	2·05	3·9	42·0	moderate			These two are most suspicious waters	
4	Abbotskerswell, dipping well at Rose Cottages	Mar 6	good	·04	·15	2·4	4·2	35·0	moderate				
5	Abbotskerswell Court Shute	Mar 6	good	·005	·04	·75	2·7	28·0	small			A very fair water, but liable to pollution at times	
6	Abbotskerswell Lady well	Mar 10	good	·015	·05	·82	2·5	30·8	small			The best water in Abbotskerswell	
7	Lustleigh, spring at S. Harton	Mar 17	good	·03	·06	·47	1·6	7·0	moderate			A water of granitic type, of very fair quality	
8	Ilington, well at Haytor Hotel	Apr 10	good	nil	·045	·41	1·2	11·2	small			A good well water	
9	Denbury, public supply	June 27	good	·015	·02	·10	1·7	16·8	small			A spring of excellent quality	
10	Ilington, supply of Moorland Hotel	July 7	A few floating particles	·02	·04	·03	1·2	9·8	moderate			An upland surface water, a polarite filter is in use	
11	Langdon Spring, West Dawlish	July 10	good	·005	·04	·13	2·1	16·8	small			An excellent water	
12	Lustleigh, spring at S. Harton	July 28	good	·005	·05	·25	1·9	7·5	moderate			See No. 7. This shows an improvement	
13	Trusham, public dipping well	July 29	good	·025	·09	...	5·0	35·0	moderate			Rather a large amount of organic vegetable matter, and also of chlorine	
14	Bishopsteignton, spring at Whitewell	Sept 9	good	nil	·03	·025	1·7	10·0	small			A spring from the greensand, of pure quality	
15	Teigngrace, well at Twin Yeo Farm	Sept 19	good	·02	·23	1·7	15·8	72·8	considerable			Unfit for drinking purposes	
16	Moretonhampstead, well at Stewart	Oct 21	good	·48	·36	...	2·1	30·8	large			This well is on the site of an old tan pit, quite unfit for drinking purposes	
17	Teigngrace, rain water, supply of Clay lane cottages	Oct 27	good	·48	·35	·05	4·1	16·8	large			Unfit for drinking purposes	
18	Granite Shute on Haytor Down, Ilington	Oct 30	good	nil	·13	...	1·05	8·4	moderate			An upland surface water, with considerable amount of peaty matter	
19	Edginswell, public well	Oct 31	good	·005	·06	·20	2·1	30·8	small			A spring of very fair quality	
20	Chudleigh, public supply from Kennel spring	Nov 14	good	nil	·03	·05	2·1	19·6	small			An excellent water	
21	Spring at North Harton, Lustleigh	Nov 21	good	·01	·035	...	1·05	9·0	small			Another granitic water of good quality	
22	Well at Home Farm, Stokelake, Chudleigh	Dec 16	good	·005	·06	1·2	2·4	27·0	moderate			Traces of iron in this water	
23	Supply of Stokelake House, Chudleigh	Dec 30	good	·015	·07	...	2·7	21·0	considerable			A considerable amount of iron in this water	

