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ANNUAL REPORT

OF THE

PUBLIC HEALTH

OF THE

NEWTON ABBOT RURAL

NEWTON ABBOT URBAN

AND

DAWLISH URBAN

SANITARY DISTRICTS.

For 1903.

BY

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

MEDICAL OFFICER OF HEALTH.

COMPARATIVE TABLE.

PLACES. 1903.	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 *	27.3	14.8	1.08	.02	.17	.22	.10	.17	.09	.31	118
Newton Abbot Rural	18.2	12.5	.69	...	.16	...	.05	.21	.26	...	84
Newton Abbot Urban	24.6	14.8	.70	...	.39	...	...	...	.16	.16	105
Dawlish Urban.....	15.5	17.2	.25	...	...	...	.25	...	...	...	81

* less 179 towns.

RAINFALL IN 1903.

The past year presented a striking contrast to its immediate predecessors, and in place of the low rainfall and consequent shortage of water supplies which has obtained for several seasons, an almost constant succession of wet periods has to be recorded. The years 1824, 1852, and 1879, also stand out prominently in this respect, at intervals of just over or under 25 years, which may or may not be a coincidence. As a result water has been abundant everywhere, and complaints of scarcity have for the time ceased. The heaviest fall was attained in October, while April, June, and November were the driest months. An inch of rain is roughly equal to 101 tons of water per acre, and on this basis, supposing 45 inches to have been the average figure for the whole area, the enormous quantity of 475,000,000 tons of water was distributed over the three districts during the past 12 months.

I give below statistics for stations in these districts: all shew a great increase on the figures for 1902, varying from 36 per cent. at Dawlish East to 60 per cent. at the Blackinstone.

STATIONS.	Feet above sea level.	January	February	March	April	May	June	July	August	September	October	November	December	Total rainfall in inches	Average.
1 Dawlish, East (Lawn)	183	3.11	2.15	3.73	1.98	3.74	2.43	3.71	3.41	3.12	7.24	1.29	3.59	39.50	...
2 Dawlish, West, Vicarage ...	603	3.23	1.99	3.63	1.86	3.11	2.33	3.37	2.81	3.04	6.83	1.23	2.89	36.32	...
3 Hennock, Tottiford.....	718	4.54	2.74	5.11	2.45	3.23	2.65	4.27	4.12	4.30	9.02	2.21	6.15	50.79	41.2
4 Highweek, Newton Abbot	250	4.57	2.48	4.61	1.85	2.55	1.85	4.28	4.30	4.11	8.11	1.53	5.36	45.60	...
5 Ideford, Rectory ...	300	3.88	2.16	4.21	2.24	3.02	2.64	3.69	3.82	4.07	7.53	1.78	4.25	43.29	33.3
6 Kingskerswell, South Hill	270	3.81	2.15	4.12	1.64	2.40	1.74	4.24	3.44	3.63	7.70	1.51	4.90	41.28	31.5
7 Kingsteignton, Teignbridge	27	4.17	2.43	4.52	1.77	2.53	1.99	3.80	3.66	3.71	7.61	1.30	4.82	42.61	34.7
8 Moret'nham'stead Blackinst'e	1090	3.34	1.98	3.71	2.18	3.29	2.96	3.20	3.65	4.31	7.35	2.05	4.91	42.93	30.9
9 Trusham, Rectory ...	320	4.19	2.81	4.41	2.64	2.36	2.96	3.83	4.03	3.83	8.22	1.92	5.62	46.82	36.6

The averages in the last column are for 7 years at the Blackinstone; 8 at Kingskerswell; 11 at Teignbridge; 16 at Ideford and Trusham; and 26 at Tottiford.

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. S. Chapman, Water Engineer to the Torquay Corporation (Tottiford and Blackinstone); R. E. Clarke, Surveyor (Dawlish East); E. A. Foster, (Kingskerswell); and F. H. Plumtre (Teignbridge.)

ANNUAL REPORTS

1903.

1.—NEWTON ABBOT RURAL.

PHYSICAL CHARACTERS.—A lake of the miocene (or late eocene) 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, 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, which have been estimated to attain a maximum depth of 300 feet; there is however on record a boring which was extended to 525 feet without reaching the bottom of the formation. For the first 260 feet this penetrated strata of sand and clay fairly evenly distributed, with some scattered beds of lignite; below this depth the sand almost entirely disappeared, and from about 260 to 420 feet clay alternated with lignite; then the clay also failed and the last 100 feet of the boring showed lignite alone.

The sand and clay represent the washings of untold ages from the granite mountain range, of which Dartmoor, as we know it to-day, is the surviving remnant: while the lignite, a substance in an intermediary stage between wood and coal, bears witness to the forests which must at one time have grown in the valley. The present surface is little above sea level and it will be apparent therefore that considerable subsidence has taken place since this forest epoch—the main mass of lignite being 400 feet below the ordnance datum—with the result, first of submerging the vegetation, and then imbedding it with granite debris brought down by the mountain streams and

slowly deposited on the lake bed. Probably from time to time these deposits approached the surface of the water and then formed areas of dry land, with further tree growth—to be again submerged and give rise to the smaller lignite bands interspersed among the upper strata of clay and sand. It is impossible to estimate the time required for the operation of all these changes : geological periods once reckoned by thousands are now computed at millions of years ; and as modern researches progress, the age of the earth recedes further and further into the remotest antiquity. This miocene lake however, shows many interesting geological features : a point of practical importance lies in the fact that the working of the clay beds in the lower part of the Teign valley constitutes a special source of trade and wealth in the neighbourhood. The level area 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 an elevation of 1,560 feet at Rippon Tor, and culminating on the 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 Kingsteignton, situated on the margin of the lake bed, was noted for its ague, but that disease has now wholly disappeared ; (11) 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 the 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. At the time of the above census there were 4,229 inhabited houses, with an average of 4·5 persons per house ; since that

Death Rates, &c., in each Parish.

PARISHES.	Census 1901.		7 Ordinary Zymotics							Influenza	Phthisis.	Other Tuber- cular Diseases.	Cancer	Apoplexy	Infantile Inanition.	Violence.	Deaths in Union House belonging to Parishes.	Total Deaths.	Death Rate.
	Population.	Acreage	Small Pox.	Scarlatina.	Diphtheria.	Whooping Cough	Measles.	Diarrhœa.	Continued Fevers.										
Abbotskerswell ...	457	1486	...	...	...	...	...	...	...	...	...	...	...	2	...	2	2	6	13.1
Bickington.....	215	1403	...	...	...	...	...	...	...	...	...	...	...	2	...	2	2	3	14.0
Bishopsteignton ...	1076	4449	...	...	...	...	...	...	...	3	...	1	...	...	...	...	16	14.9	
Bovey Tracey	2694	7567	...	...	...	...	...	...	...	...	...	2	3	2	...	...	27	10.0	
Broadhempston ...	445	2200	...	...	...	...	...	...	...	...	...	...	...	1	...	2	9	20.2	
Buckland	87	1493	...	...	...	...	...	...	...	1	...	...	...	3	1	...	25	nil	
Chudleigh	1820	6128	...	...	1	...	...	...	...	...	2	...	1	...	1	1	5	13.7	
Cockington	265	1451	...	...	...	...	...	...	...	...	...	...	...	3	...	1	5	18.9	
Coff'swill & D'emb'e	201	1152	...	...	...	...	...	...	...	...	...	...	1	...	...	1	2	10.0	
Coombe & Hacombe	358	2004	...	...	...	...	...	...	...	1	...	...	...	...	...	...	4	11.2	
Dawlish (West) ...	678	3870	...	1	...	...	...	...	...	...	2	...	...	...	...	...	5	7.4	
Denbury & Torbrian	448	5002	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	6.7	
Hennock.....	711	3299	...	...	...	...	...	...	...	1	...	...	1	2	...	...	7	9.8	
Iddeford	254	1440	...	...	...	...	...	...	...	...	...	...	...	...	...	1	3	11.8	
Ilington	886	7843	...	...	...	...	...	...	...	...	...	...	1	...	...	1	8	9.0	
Ipplepen	789	2887	...	...	...	...	...	...	...	...	1	...	1	1	...	1	8	10.1	
Kingskerswell	1027	1797	...	...	...	...	...	...	...	...	...	...	...	1	1	...	12	11.7	
Kingsteignton	1942	3975	...	...	3	...	...	1	...	...	2	2	4	2	1	...	36	18.5	
Lastleigh	400	2978	...	...	...	...	...	...	...	...	...	...	...	1	...	...	2	5.0	
Manaton	315	6122	...	...	...	...	...	...	...	...	...	...	...	1	1	2	2	6.3	
Moretonhampstead	1541	7910	...	...	...	...	...	...	...	...	...	...	...	2	2	1	27	7.5	
North Bovey.....	398	5589	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	12.0	
Ogwell	250	2089	...	...	...	...	...	...	...	...	...	...	...	...	...	1	3	21.6	
Stoke	463	2167	...	...	...	...	...	...	...	...	...	...	...	...	...	...	10	5.3	
Teigngrace	190	1496	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	12.1	
Trusham	165	625	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	9.1	
Widecombe	657	10786	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6	5.9	
Woodland	170	1634	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	
Totals.....	18902	99142	...	1	4	...	3	...	5	5	16	8	18	19	4	15	18	236	12.5

time, however, some **building** has been going on in various localities—notably in Kingsteignton, Bovey and Moreton. There has been no change in the constitution of the district during the past two years, 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 236, of which 111 were in males and 125 in females, giving an annual death rate of 12·5 per 1000. This is 2·3 below that of 1902 and nearly 3 below the average for the last 10 years ; indeed it is the lowest general death rate yet attained, the best previous figure being in 1896, viz : 13·3. Of these 236 deaths, 18 took place in the Union House in persons belonging to the district ; if these are excluded, the rate is reduced to 11·6. The highest mortality was shown in the first quarter of the year, while January was the most fatal month, nearly one-sixth of the total deaths being then recorded. 76 deaths were registered in the first quarter, 63 in the second, 41 in the third, and 56 in the fourth, giving rates per 1000 per annum of 16·1, 13·3, 8·7, and 11·8 respectively.

CHIEF CAUSES OF FATALITY.—From 7 zymotic diseases, 13 deaths ; influenza, 5 deaths ; erysipelas, 1 death ; constitutional diseases, 54 deaths, of which 18 were due to cancer and 16 to phthisis ; diseases of the nervous system, 39 deaths ; of the respiratory system, 33 deaths ; of the circulatory system, 29 deaths ; of the urinary system, 5 deaths ; of the digestive system, 11 deaths ; of the generative system, 1 death ; parturition, 1 death ; debility and inanition, 4 deaths ; malformation, 1 death ; premature birth, 2 deaths ; old age, 22 deaths ; and violence, 15 deaths, of which 9 were due to accident, 4 to suicide, and 1 to manslaughter.

AGE INCIDENCE.—Under the age of 1 year there were 29 deaths ; between 1 and 5 years, 14 deaths ; between 5 and 15 years, 6 deaths ; between 15 and 25 years, 19 deaths ; between 25 and 65 years, 69 deaths ; and over the latter age, 99 deaths. Thus 12·3 per cent of the deaths were under 1 year, and 41·9 per cent over 65 years ; in 1902 the figures were 15·4 and 48·0 respectively ; an improvement is manifested in the former item, whereas the proportion of deaths in the aged has decreased.

THE INFANTILE MORTALITY or number of deaths under 1 year to 1000 births was 84, the lowest since 1896 and 29 below the 10 years average. The causes of infantile mortality were diphtheria, 1 death ; measles, 2 deaths ; constitutional diseases, 3, of which 2 were due to tubercular affections ; diseases of the nervous system, 5 ; of the respiratory system, 5 ; of the digestive organs, 4 ; from inanition, 4 ; malformation, 1 ; premature birth, 2 ; and accident, 2.

The births of 164 boys and 180 girls give an annual rate of 18.2 per 1000 ; this is more than 5 below the average figure for the previous ten years and constitutes a lowest on record. 100 births were registered during the first quarter of the year, 75 in the second, 76 in the third, and 93 in the fourth, giving rates per 1000 per annum of 21.2, 15.8, 16.1 and 19.7 respectively. The natural increase of population, i.e. the excess of births over deaths, reckoning the mortality in the Union House, was 108, as against 167 in 1902 and 133 in 1901.

The year under review may be considered to have been statistically favourable on the whole ; indeed, extremely so as regards the death rate and infantile mortality ; while the zymotic rate is well below the 10 years average. The birth rate, however, which showed last year some signs of recovery, has resumed its downward course—a decline which is being accelerated by the concentration of the adult population towards the larger towns. The figures are tabulated on page 8, for purposes of comparison, with the averages for the previous ten years ; 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 1901, when Highweek ceased to form part of the district. On November 1st, 1903, Bishopsteignton was transferred from the Chudleigh to the Teignmouth sub-registration district and will in future, therefore, be included in the Sea Border.

Under almost every heading decreases in the number of deaths are shown—those important maladies, phthisis, bronchitis, &c., heart diseases, cancer, being all below the 10 years average ; while deaths from violence have slightly increased. It is to be noted that there were no deaths from infantile diarrhoea.

Of the sub-registration districts, ASHBURTON RURAL on the whole occupies the best position ; the general death rate and infantile mortality are easily the lowest ; the zymotic rate is nil, while the birth rate, though only third, is greater than that for the whole district. This division occupied the last place on the list in 1902.

MORETONHAMPSTEAD shows the highest birth rate ; the zymotic fatalities were also nil, and the infantile mortality is just below that of the whole area ; the general death rate is third.

CHUDLEIGH has the low death rate of 11.9 and also a much diminished birth rate ; but there were 7 deaths from zymotic disease, including 2 measles, 1 diphtheria and 4 typhoid fever. With the low birth rate, the infantile mortality is somewhat larger. It is to be noted that nearly half the deaths due to diseases of the respiratory system occurred in this sub-district.

SEA BORDER as regards birth rate occupies the last place, and in consequence has a very high infantile mortality compared with the other districts. There were 2 deaths from

Table of deaths occurring during the year 1903, 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 DISTRICTS.	BIRTHS.				DEATHS.							MORTALITY FROM SUBJOINING CAUSES.															
	Population.	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 Unit n House belong g to dist.	Small-pox.	Measles.	Scarlatina.	Diphtheria.	Whooping Cough.	Diarrhoea.	Contind Fevers (Typhoid, &c.)	Phthisis.	Other Tubercular Diseases.	Bronchitis, Pleurisy, Pneumonia.	Heart Diseases.	Cancer.	Violence.	All Other Diseases.	
Newton Rural	4,434	93	21.0	61	13.8	6	6	19	65	4	.90	5	..	1	..	3	..	..	..	..	5	2	5	6	4	4	31
Chudleigh	6,720	106	15.8	80	11.9	10	6	38	94	7	1.0	8	..	2	..	1	..	..	..	4	4	4	14	9	6	4	32
Ashburton Rural	2,460	48	19.5	27	11.0	3	..	14	62	..	..	1	..	..	..	1	..	..	..	..	..	1	3	7	2	2	12
Moretonhampstead	2,654	60	22.6	34	12.8	5	2	13	83	..	..	2	..	..	..	..	..	..	..	..	5	..	2	2	2	3	19
Sea-border	2,634	37	14.0	34	12.9	5	..	15	135	2	.76	2	..	..	1	..	..	..	..	1	2	1	6	5	4	2	12
TOTALS, 1903.....	18,902	344	18.2	236	12.5	29	14	99	84	13	.69	18	..	3	1	4	..	..	..	5	16	8	31	29	18	15	106
Average for 10 yrs. 1893-1902.	22,616	536	23.7	348	15.4	60	25	135	113	18	.79	14	..	3.9	.6	1.7	5.3	3	3.3	23	8	55	39	20	13	171	
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	
1901	18,902	396	21.0	275	14.5	48	19	105	121	18	.95	11	..	8	..	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	..	4	..	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	..	10	..	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	..	2	..	1	13	1	8	14	14	57	36	15	14	170	

zymotic disease, 1 from typhoid fever and 1 from scarlatina ; the general death rate is a fraction below that of Moreton.

NEWTON RURAL has the highest general death rate, though this is one which, in ordinary years, would be favourable ; the birth rate occupies the second position, as also the infantile mortality—this latter a very good item. There were 4 deaths from zymotic disease, 1 being due to measles and 3 to diphtheria.

ZYMOTIC DISEASES.—To the 7 ordinary zymotic diseases 13 deaths were assigned, against 7 in 1902 and 18 in 1901, viz :—3 to measles, 1 to scarlatina, 4 to diphtheria and 5 to typhoid fever, giving the annual rate of '69 per 1000 ; this figure for the previous ten years averages '79.

The notifications were 60 in number :—26 scarlatina, of which 5 were in the Newton Rural sub-district, 4 in Chudleigh, 8 in Ashburton, and 9 in Sea Border ; 10 diphtheria, of which 9 were in Newton Rural and 1 in Chudleigh ; 17 typhoid fever, of which 6 were in Newton Rural, 8 in Chudleigh, 1 in Moreton, and 2 in Sea Border ; and 7 erysipelas, Newton Rural being credited with 1, Chudleigh with 4 and Moreton with 2. The following table shows the monthly incidence :—

DISEASE.	January	February	March	April	May	June	July	August	September	October	November	December	Total
Small Pox	...	...	...	...	...	...	...	...	...	...	...	...	...
Scarlatina	...	...	4	6	2	1	...	3	...	4	2	4	26
Diphtheria	3	3	1	...	1	...	2	...	...	...	...	...	10
Typhoid Fever	4	3	1	1	..	...	4	2	2	...	...	...	17
Erysipelas	2	...	...	...	...	...	...	...	1	...	4	...	7
Puerperal Fever ...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cholera	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	9	6	6	7	3	1	6	5	3	4	6	4	60

MEASLES AND WHOOPING COUGH.—The district has again been comparatively free from these diseases ; measles was, however, prevalent at Luton and Ideford in the early part of the year, necessitating the closure of the schools and resulting in 2 deaths in the former village. There were a few scattered cases at Brookfield and Kingsteignton about the same time with 1 death at the latter place. A mild outbreak of whooping cough took place at Bickington in the last quarter of the year ; a few cases have also been reported at Coombe. There were, however, no fatalities.

SCARLET FEVER.—Out of the total 60 notifications, 26 or 43 per cent. were from this disease, which

has of late years shown a tendency to linger about the district, without resulting in any defined epidemic within its borders. The parishes affected in 1903 were Abbotskerswell, Buckland, Bishopsteignton, Dawlish West, Ipplepen, Woodland, and Widecombe. In the majority (18 or nearly 70 per cent.) the patients were between the ages of 5 and 15 years; but there were 2 between 1 and 5 years, 2 between 15 and 25, and 4 over the latter age. Most of them were of the mild type which is commonly seen in this locality, but there was one death—the first since 1896. The 4 Abbotskerswell cases originated in a visitor—a boy from a town outside the district then undergoing an epidemic, who developed the disease two days after his arrival and subsequently infected three others in the house. This cottage was successfully isolated and no further spread took place. The 2 cases at Buckland, and most of the 9 Dawlish West attacks were among children attending school in neighbouring towns where the disease was prevalent; the Cofton School however did not wholly escape and 4 of these children were affected. Bishopsteignton was responsible for 4 cases at the end of the year, the first of which was unrecognized for some weeks, till the peeling attracted the attention of the parents; the wonder is that more of the school children were not affected. At Widecombe 4 children in an isolated farm house were attacked; these with the two Woodland cases and one at Ipplepen were of doubtful origin.

DIPHTHERIA.—Ten notifications were recorded, of which 4 were fatal. Nine of these were in the parish of Kingsteignton, the first occurring in Greenhill Lane about the middle of January, to be followed about a week later by another at Weir's Cross. I could not discover any connection between these children, who attended different schools, and in neither house could the sanitation be described as more than indifferent. In the first week in February two other children were attacked, one in a newly built dwelling, and the other in a cottage adjoining premises in a very insanitary condition; towards the end of the same month another child at Gestridge was infected—a most virulent case, which quickly proved fatal. After another week's interval a sixth case occurred, this time in one of the new houses in York Terrace. As all but one of these children attended the National School and there seemed a probability that the disease was being spread in this manner—in the absence of any other common origin—by my advice the school was closed for 14 days, thoroughly scrubbed with disinfectant and the walls lime washed, with the result that no more attacks occurred, at this time. Later on in the year

however, there were 3 further cases, 1 at the beginning of May and 2 in July. These latter were in an isolated block of cottages outside the village, and the particular house affected was in a bad condition from the soakage of damp through the roof; one patient was a child of 4 years old, who only attended school once a week; the mother also had a mild attack, probably as the result of direct infection.

The remaining case was at Chudleigh in a baby who contracted the disease outside the district, and calls for no special comment.

Of the 10 notifications, 1 was under 1 year, 2 between 1 and 5 years, 6 between 5 and 15 years, and 1 over 30.

None of the above could be accommodated in the hospital, but the usual method of clearing the house of all the healthy children was pursued, and in one instance only, where the mother was infected, did a second attack take place in the same house.

Diphtheria is a disease of which the origin is in many cases obscure, but once established easily spreads by direct contact among school children; therefore the closing of an infected school for a short period will often arrest its progress. In common with typhoid fever the home sanitary conditions are a great factor in determining the result of any given case. I have at times been consulted as to the advisability of holding the funeral service in church in cases of death from this disease; in my opinion this is always to be avoided, not only from risk of infection from the body, which in this and other dangerous zymotics should be packed in sawdust moistened but not entirely saturated with disinfectant (this substance besides possessing antiseptic properties is a good absorbent), but owing to the well proved fact that the throats of persons—otherwise healthy—who have been in contact with the patient may be in a state capable of conveying the infection to others. It is therefore preferable that the whole of the service should be held in the open air; and the practice of the schoolmates of the deceased attending the funeral in such cases should be discouraged.

TYPHOID FEVER. — The most serious incident during the past year was an outbreak of this disease in a court and neighbouring house at the lower end of Radway Street, Bishopsteignton, in which 9 persons were attacked with 3 fatalities. This court was common to three houses, two of which shared a closet and drainage system, while the third, under a different ownership, had its own separate accommodation. At the end of 1902, three cases developed almost simultaneously in the two

former cottages ; as the parish did not form part of the hospital combination and no suitable premises for the purpose were available, the healthy members of the two families (10 in number) were accommodated in the almshouses, but any examination or reconstruction of the drainage, which ran under the buildings, was out of the question till the patients were convalescent. About the middle of January, two children in the third house fell ill ; the same policy was enjoined, but my instructions were not satisfactorily carried out. Towards the end of February, the mother, who had with outside nursing assistance, provided by the authority, attended to the patients, contracted the disease, and a little later another boy, who though lodging out, from time to time visited his home and had meals there, in spite of the protests both of myself and the medical attendant, was also attacked. The mother rapidly sank, and two of the three children also died. Two children in a house on the opposite side of the street, who were relations and therefore in association with this family, were also infected ; these however were living in good sanitary conditions and eventually recovered, as did also the three original sufferers. In the meantime, as soon as the lower houses could be cleared, the drainage was examined and reconstructed ; a defective and almost choked drain under the kitchen floor of one of them soon revealed itself ; the drains of the third house were wholly external, but in a bad condition, and both closets were without water. Had it been possible therefore to remove the first 3 cases to hospital and get the sanitary defects promptly remedied, it is probable that the other 6, who were attacked either as the result of infection or of the faulty drainage, with the loss of 3 lives, would have been avoided.

Kingsteignton, which was entirely free from typhoid in 1902, afforded 6 cases in the past year ; the village, however, cannot be held responsible for 4 of them. In one instance a railway guard came home ailing, and a week later the disease fully developed itself ; two other attacks, one in an adult and the other in a child, were associated with eating shell fish from the river—in the latter case bathing at Hackney also afforded a likely origin. A fourth lived in the Pottery Cottages, but I could discover no very probable cause for disease. Of the two remaining patients, one was a mason constantly employed on drainage work, and the other lived in a cottage in Greenhill Lane—in past years a favourite haunt of this complaint. These cases were spread over several months, 1 being in January, 1 in February, 2 in July, 1 in August and 1 in October ; four were treated

in hospital ; permission for removal was refused in one instance, while in another there was no accommodation, though the patient and his friends were desirous of this course ; all eventually recovered.

Two notifications were reported from Chudleigh ; one, a young lad, died in hospital from brain complications ; the other, an adult, also succumbed to the disease ; neither case needs any particular comment. Isolated attacks also occurred at West Dawlish, Moreton, and Kingskerswell. That at West Dawlish was in an adult living in an isolated group of cottages ; the closets were on the dry system and in good order, but the slop drain ran near the well and was found to be defective. The water proved to be of rather doubtful quality, but there was no history of any illness among the other tenants. The Kingskerswell case was at Dacca Bridge, in a block of buildings which has on previous occasions been invaded by the disease ; the father of this patient, a labourer in a neighbouring manure factory, had only recently recovered from an indefinite bowel complaint of several weeks duration. The child attacked at Moreton afforded another instance of the danger attending the consumption of shellfish from a sewage polluted estuary.

Of the total 17 notifications, 2 were between the ages of 1 and 5 years, 7 between 5 and 15 years, 3 between 15 and 25 years, and 5 over the latter age ; there were 5 deaths,—a case mortality of 29 per cent.

ISOLATION HOSPITAL ACCOMMODATION.—Thirteen Rural parishes, within a radius of six miles from Newton Abbot, are in combination with that town with regard to the hospital ; the new block opened last summer can accommodate 8 adults in the wards devoted to typhoid fever ; while the iron building, now approaching completion, affords 12 beds for scarlatinal patients. The northern parishes are unprovided for in this respect. In the early part of the year, a motion was brought forward to include the whole district ; this, however, was defeated by a small majority. I think it desirable that at least all the principal centres of population within the six mile radius should be brought into the combination ; this would accommodate 20 out of the 28 parishes. Dawlish West has determined to throw in its lot with the Dawlish Urban District in this matter ; so that the 7 more distant localities would remain to be provided for.

Houses are limewashed and disinfected where necessary and there is a steam apparatus for dealing with clothes and bedding at the hospital. 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. F. Steer ; Broadhempston, Mr. W. Atwill ; Chudleigh, Mr. R. Collings ; Chudleigh Knighton, Mr. T. Gibbs ; Cockington, Mr. W. Dyer ; Dawlish West, Mr. R. Coombes ; Denbury, Mr. T. Binmore ; Ipplepen, Mr. S. Lang ; Kingskerswell, Mr. R. Ford ; Kingsteignton, Mr. T. Lang ; Lustleigh, Mr. E. Arnold ; Moretonhampstead, Mr. L. Endacott ; and Widecombe, Mr. A. Nosworthy.

DAIRIES AND SLAUGHTERHOUSES. — The model regulations of the Local Government Board of 1899, under the Dairies, Cowsheds' and Milkshops' Order are in force throughout the district. The dairies are regularly inspected by myself and the Sanitary Inspectors, and the water supplies of many of them have been examined. These, with the slaughterhouses, to which periodical visits are also paid, are on the register, which will be kept up-to-date from year to year. A copy of the regulations has been sent to all cowkeepers and dairymen.

OFFENSIVE TRADES.—On the application of the Council the Local Government Board have granted Urban powers over the whole district with respect to offensive trades (Public Health Act 1875, Sections 112-114), and a committee has been appointed to consider the adoption of by-laws.

HOUSING OF THE WORKING CLASSES.—Three cases of overcrowding have come to my knowledge during the past year ; all these have been abated—one without a notice. In the construction of the new reservoir at Tottiford for the Torquay Corporation, about 130 workmen are employed ; these are lodged in the neighbouring villages, and in consequence of complaints received, I visited several houses at Hennock, but with a little rearrangement of sleeping rooms, the legal requirements as to air space could, I found, be easily complied with. This is of course in the nature of a temporary emergency, but there is nevertheless a want of working class houses in parts of the district, which is being met in some degree by the building which is going on at Kingsteignton, Bovey, and Moreton. There are many dwellings in the more rural localities which are not up to modern standards, but on the other hand, the rents are considerably lower than the requirements of these standards will allow of—an important consideration to the agricultural labourer. As a rule water supplies are good and abundant ; air space is unlimited ; and the sanitation of the cottage and its surroundings is largely in the hands of the tenants themselves, when the landlord has paid due attention to the walls and

roof and provided a dry closet. One effect of the rural exodus now proceeding is that the worst cottages are being abandoned—soon to fall into ruin ; when the population, encouraged by cheap and rapid locomotion, garden cities—that ideal of the future—or the development of special localities as the resort of tourists, to some extent reoccupies the country, modern and efficient dwellings will of necessity replace them.

HOUSE TO HOUSE INSPECTIONS have been made at Broadhempston, Chudleigh, and Chudleigh Knighton ; these will be noticed under the respective parishes.

SANITARY CONDITIONS AND PROCEDURE.

Abbotskerswell population 457 — acreage 1486. Water supply is derived from springs and wells, some public and some private, and is very unsatisfactory. Of the 5 chief sources (2 springs and 3 dipping wells) only one is 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 others when analysed in 1902 were suspicious, and one unfit for drinking purposes. Several of the private wells are either polluted or run dry in summer and then the tenants have to fetch water often from a considerable distance. To remedy this the Council have come to terms with the Torquay Corporation, whose engineer prepared a scheme which was duly submitted to the Local Government Board. This however was referred back for alteration in some details connected with the reservoir for Aller. Difficulties with respect to leasing the land required and a change of engineers also contributed to delay, and the enquiry is still in abeyance.

The greater part of the sewage of the village (including several water closets) finds its way into the brook, creating nuisance at various points, especially when the water is low in summer ; some of it discharges into the cement gutters which run down the road side. This question will need some attention in the near future.

With the exception of 4 cases of scarlatina in one house, originating in a visitor, the parish was free from infectious disease during the past year.

Some complaints have been made respecting a smell arising from the Aller manure works, and the Council have obtained urban powers as respecting offensive trades : this enables them to adopt by-laws regulating the carrying on of such trades and the construction of the premises involved.

The drainage of 1 farm and 2 cottages has been renewed.

Bickington population 215—acreage 1403. The parish depends for its water on private wells, and there has from time to time been shortage in summer. I had however no complaints during 1903.

With the exception of a mild outbreak of whooping cough among the children in November and December which did not necessitate the closing of the school, the past year has been without incident.

Bishopsteignton population 1076—acreage 4449. Water supply is mainly derived from two deep springs from under the Haldon greensand; there are two covered reservoirs containing together about 120,000 gallons. There is also a third spring with small reservoir, but this is inconsiderable. The water is of excellent quality, but ran short for many weeks during the dry summer of 1902. An unsuccessful attempt was made to obtain an additional supply from the Whitewell spring, about $\frac{3}{4}$ mile above the village; with the discovery, however, of a considerable leak in the main, and the general abundance of water, there was a constant supply during the past year; but this being a residential village, and containing several laundries, is a large consumer, and probably the question will, sooner or later, again come to the front.

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 meadows is managed by the authority; the field is irrigated and gutters attended to weekly. The sewerage of Radway Street is not at present satisfactory and needs some attention; a beginning has however been made by the extension of the main sewer for 100 yards up Radway Hill; at the same time the owners of adjoining property were required to put the private drains in order.

NEW WORK. Besides the new sewer above mentioned, the water main has been extended down to the Moors—a distance of about 1000 feet. The drainage in connection with 18 private dwellings has been re-constructed and closets flushed.

Major Templer has given a piece of land to the parish for the deposit of refuse—a very welcome acquisition.

A block of six houses is in course of construction in Radway Street; also a new lodge at Lindridge.

Proceedings were instituted against an owner of cottage property to enforce the by-law relating to the flushing of water closets, with the result that a conviction was obtained and a fine imposed.

The chief incident of the year was an outbreak of typhoid fever in some cottages in Radway Street (mentioned in detail on page 11); there were also a few mild scarlatina cases in December. An application has been made to the County

Council to include the parish in the Newton hospital combination.

Bishopsteignton from November 1st, 1903, was transferred from the Chudleigh to the Teignmouth sub-registration district, and will in future therefore come under the Sea Border.

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 reservoir containing about 5,000 gallons. Closets are mostly on the dry system, and there are no sewers.

There was an epidemic of measles among the school children, with 2 deaths, during the first quarter of the year.

Bovey Tracey population 2694 — acreage 7567. Water supply is from Yarner 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 previous dry seasons the supply was quite inadequate to meet the growing needs of the town. The new scheme, which includes a reservoir on Trendlebeer Down to contain 3,000,000 gallons, as well as duplicating the main to Bovey, with an extension to Brookfield and Wreyland, was commenced in the latter part of 1902 ; but the failure of the contractor has unfortunately caused several months delay ; the work, however, has been resumed and will doubtless at no distant date be satisfactorily concluded.

SEWERAGE. A water closet town ; all the sewers are piped ; there are two main outfalls with settling tanks, one of which is covered. Last autumn a Local Government Board enquiry was held to consider a scheme for dealing with the sewage from the north eastern portion of the town, with certain extensions and alterations of the present outfall in Miss Divett's meadow ; this however was not accepted on the ground that the proposed scheme was not sufficiently comprehensive.

House refuse is removed as required

NEW WORK. The drainage of 5 private houses has been re-constructed, and a good water supply has been piped down to Higher Coombe Farm from a spring on the adjacent hill.

Two blocks of houses (9 in number) have been built in the rapidly developing suburb of Brimley, and the increasing requirements of the Grammar School have necessitated the addition of a pavilion affording further sleeping accommodation ; this institution occupies an admirable situation, and under progressive management is rapidly acquiring a more than local reputation.

Bovey still continues to extend its borders ; there are some excellent building sites available, and with the desire of the local representatives to possess all the modern sanitary

advantages, this picturesquely situated little town should have a prosperous future before it. The recent building operations, have not, however, fully met the demand for working class houses in the parish.

The parish has been entirely free from infectious disease during the past year and the general death rate is the lowest of the larger centres of population in the district—only 10.0 per 1,000.

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 this purpose.

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

Broadhempston population 445—acreage 2,200. Water supply is derived from wells—mostly in the shale, which is the geological formation of the neighbourhood ; there is sometimes a deficiency in dry weather. The water question here is, however, one that has proved very difficult of solution. A well in the road near the church—closed for many years—might become a valuable addition to the water resources of the immediate neighbourhood, now that the drainage of the adjacent houses has been re-constructed and the sewer in the road relaid in concrete. A fairly favourable analysis was obtained in April, and a pump provided for use as slop water only ; this however was not much drawn upon and either from stagnation, or some pollution washed in by the heavy rains, there was a considerable deterioration a few months later. (See nos. 6 and 18 water analyses at end of report).

There is one sewer—nearly all piped—with outfall in an orchard, but not a great deal of water closet sewage.

I have nearly finished the house-to-house inspection of this village, and several further sanitary improvements have resulted.

The drainage of 3 farm houses has been re-constructed ; also that of a public house and two blocks of cottages (one containing 6 dwellings and another 2). Little Ambrook Farm and adjoining cottage have been provided with an efficient water supply by gravitation and the drains put in order.

The parish has been free from infectious disease.

Buckland population 87—acreage 1,493. For the fourth year in succession no death has been recorded in this

small moorland parish. The granitic formation of the neighbourhood yields pure and abundant water ; closets are on the dry system and there are no sewers.

The school was permanently closed in the summer, and as there is no other within 3 miles, the 9 children affected have thus a considerable distance to go daily, which means that in bad weather either the health or the education of young or delicate children has to suffer. There are of course many others in thinly inhabited parishes who are in much the same predicament ; and, with the decline in birth rate and the shrinking of the rural population, educational difficulties will thus increase for those that remain—as this instance shows. As a further result there were 2 cases of scarlatina in the village—the patients being children who attended school in an adjacent town where this disease existed.

Chudleigh population 1,820—acreage 6,128. Water supply is derived from the Kennel spring about 2 miles from the town ; this is of the excellent quality usually yielded by the Haldon greensand or the limestone which underlies it, these being the geological formation of the locality. Of the total quantity discharged, the town is limited in ordinary times to 40,000 gallons a day, and without sufficient storage to conserve at all events the nocturnal flow, this is insufficient to meet the present needs. There is a reservoir not at present in use, having a capacity of about 75,000 gallons, which was built when the stream known as the pot water constituted the drinking supply of the town ; this however is in such an unsound state as to be quite unfit for use without considerable expenditure ; and it appears that when utilized there were several houses which were not properly supplied owing to insufficient pressure,—moreover any future building on the higher levels would be seriously handicapped. Plans for a new reservoir at a suitable elevation have been prepared by Mr. Segar and accepted by the Council ; a Local Government Board enquiry will shortly be held.

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

NEW WORK. A new sewer has been laid in Culver Street, as far as the school—a distance of 890 feet.

A short piece of sewer—about 300 feet—has been relaid at the back of the White Hart Hotel.

The sewer and water main have both been extended in Woodway Street.

Sixteen houses in the town have had drains re-constructed and closets flushed.

As a result of the house-to-house inspection, the whole of the closets in Woodway Street (with the exception of 7 whose

owners are under notice) have been flushed, and many of the drainage systems entirely renewed. The old Exeter Road will shortly be dealt with in the same manner.

Successful proceedings were instituted by the Council against the owner of a block of cottages in Woodway Street to secure the abolition of 3 pit privies and the substitution of water closets and also to provide a proper flush for an existing closet.

Zymotic disease in 1903 was limited to 2 cases of typhoid fever, and 1 of diphtheria—the latter however being of external origin.

The opening of the Exeter railway, which has brought Chudleigh within an hour's journey of that city, should have a stimulating effect on the fortunes of this pleasantly situated little town—already one of the favourite tourist centres of the neighbourhood, and possessing many residential advantages.

Cockington population 265—acreage 1,451. The village of that name is supplied partly by the Torquay water, and partly from a private source belonging to Mr. Mallock.

At EDGINSWELL there is a public well; this has been known to run short, but there were no complaints in 1903.

SHIPHAY has one public well of good quality.

Closets generally in this parish are on the dry system; there is one short sewer at Edginswell.

Several dairies which contribute to the Torquay milk supply are situated in this parish; these are inspected both by the officers of this Council and the Torquay authorities. No work of importance was carried out during the past year, and there were no cases of infectious disease.

One new cottage has been built.

Coffinswell and Dacombe population 201—acreage 1,152. There are three public dipping springs, two at the former village and one 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. Some small improvements have been carried out with regard to the public spring at Dacombe; two cottages in this village have been put in habitable repair and closets provided.

No infectious disease was reported.

Coombe and Haccombe population 358—acreage 2,004. The water is derived from private wells; there were no complaints of scarcity during the last year.

There are no sewers and few water closets.

One new house has been built at Elmfield and the drainage at Rose Cottages re-constructed.

The parish has been free from infectious disease, with the exception of a few cases of whooping cough.

Dawlish West population 678—acreage 3 870. Cofton and Middlewood are supplied with water from Starcross ; Westwood by a well. These are not very satisfactory owing to the pressure in the former case being insufficient to reach the houses on the higher levels and to the absence of means for flushing closets and sewers. Negotiations were commenced with a view to obtaining a supply for the whole parish from the Dawlish Urban Council ; these however fell through. Another scheme has been considered, by which an ample spring of good quality at Shutterton Bridge would be lifted to a reservoir on Mount Pleasant and thence piped to Cofton, Middlewood, and Westwood. Estimates were prepared by Mr. Dobell, C.E., but the expense seemed rather large for a small community, and the Council, on my advice, before finally endorsing this, are endeavouring to secure a better service from Starcross.

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

The houses at Mount Pleasant are supplied by wells in the sandstone, which is the general formation of the district. The hamlet of Dawlish Water also depends on wells and I have had no complaints on the subject.

The drainage of 2 farms and 5 cottages has been reconstructed, and 2 other cottages have been provided with dry closets.

There were several cases of scarlatina in different parts of the parish among the school children, in the earlier months of the year, with one death ; there was also a fatality from typhoid fever.

Denbury population 448—acreage 3,002. 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 water closets (of which there are 26, accommodating 38 out of the total 67 houses) being flushed ; moreover in times of scarcity the few dwellings which have taps on the premises are cut off. The Rectory and 2 other large houses have an independent supply by gravitation. As the general opinion is locally held that the hill above the village, on the slopes of which the springs and reservoir are situated, contains an abundance of water, a committee was appointed with the object of supplementing the present resources ; and on their report it is proposed to open out an old well sunk many years ago about 150 yards from the reservoir, and if this in the dry autumn months is found impracticable, to make an attempt to get water at a somewhat higher level. This scheme is now under consideration ; if

successful, it will confer a great boon on the village at a comparatively small cost.

There are two main sewers which unite to form a common outfall, discharging into a fissure in the limestone rock, upon which formation the parish is mainly situated.

The drainage of one farm and 6 cottages has been renewed.

The village of **TORBRYAN**, also in this parish, has a good and abundant water supply brought in by gravitation; the closets are on the dry system and there are no sewers.

The drainage of 1 house has been partly re-constructed.

The parish has been free from infectious disease.

Hennock population 711—acreage 3299. This parish embraces part of the lowlying area of the Teign valley, as well as some granite uplands of considerable elevation. On these latter the village of Hennock occupies an isolated position at 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 run short, and some of the villagers have to go a distance to fetch it.

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

The cottage property in this village (which contains about 40 houses with a population of 160) is not in a very satisfactory condition; rents are, however, very low.

CHUDLEIGH KNIGHTON lies in the valley; it has two public wells of fair quality, besides about half-a-dozen private wells. There is, however, no means of flushing the water closets (17 in number, supplying 21 houses, including 2 inns) and sewer, and many of the inhabitants have to go a considerable distance for their water, especially in dry seasons, when one or two of the private wells fail. The school is also without a supply.

There are 73 houses in the village with an estimated population of about 350.

The Council have accepted terms from the Torquay Corporation to supply the village with water; a scheme has been prepared and a Local Government Board enquiry was held in December. There is no doubt that a public water service would be a great boon to Chudleigh Knighton.

There is one sewer which discharges into the brook.

The drains of Church House have been reconstructed; Knowle Cottages (2) have been provided with a good water supply, brought down by grantation.

There were no cases of infectious disease.

Ideford population 254—acreage 1440. This village is pleasantly situated on the slopes of Haldon, from which it obtains a pure and abundant spring water supply. There is a reservoir containing about 30,000 gallons. The

Schools, Rectory and some half-a-dozen adjacent cottages have a separate service from an auxiliary tank at a higher level, as the chief reservoir does not give the required pressure to supply them. Owing to the corrosion of the pipes forming this subsidiary main, there were several complaints as to the amount of iron contained in the water, which I found fully justified. A committee was appointed to consider the question, and on their report Mr. Segar has been instructed to prepare plans for a new reservoir at a sufficient elevation to supply the whole village, with provision for renewing the mains where necessary. This water, like many others in the district of upland origin readily attacks iron, and when the protective coating is once worn off, piping of this material very quickly corrodes, oxides of the metal being formed, some of which are carried on with the stream, while the rest remain behind to gradually occlude the pipe.

The water supply of Olchard, a hamlet about a mile distant, is not altogether satisfactory, as two or three of the wells run dry in summer.

There are no sewers, and closets are of the privy type.

No work of importance was carried out during the past year.

An outbreak of measles in the early spring necessitated the closure of the schools; there were, however, no fatalities. Apart from this the parish remains free from zymotic disease; it has always had a good record in this respect.

Ilington 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 this, 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 one belonging to some parish property at Halford, which are quite potable. The clay formation of the valley generally yields indifferent waters and owing to the scattered population the water question has hitherto been found difficult of solution. The success of the two new hotels, which I am glad to record, and a growing demand for houses in the upland parts of the parish, has encouraged a comprehensive scheme for piping the Haytor-Down stream—the property of the parish—from its source, to supply all the above mentioned villages, viz :—Ilington, Livaton, Cold East and Halford, with the hamlets of Pinchaford and Brimley, and a branch to the school at Blackpool, which has now a shallow well of somewhat indifferent quality. Mr. Segar has been directed to prepare plans and estimates for carrying out this scheme; it is, however, desirable, in my opinion, to take the water from

the granitic sand which underlies the somewhat boggy source of the stream ; and as permission to lay the requisite pipes entailed some negotiations, considerable delay has resulted.

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. There are no sewers.

NEW WORK. Four of the higher block of cottages at Haytor Vale have had their drainage reconstructed. Two new houses have been built opposite the above ; Rock Cottages, South Knighton, have been provided with slop drainage.

There were no cases of infectious disease.

Ipplepen population 789—acreage 2887. An upland village, which is still dependent on wells—in many cases of inferior quality ; but with the progress made during the last 12 months on the Paignton waterworks, it may be said that the public service, so long waited for, is now in sight. The Council have decided to provide a small reservoir on a site not yet fixed.

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

NEW WORK. The new sewer on the Newton Road has been completed and all houses on the line connected where water closets existed. With the exception of one or two short lengths yet to be constructed, the village has now a modern sewerage system, on which there is no debt. A considerable proportion of the private drains has also been reconstructed during recent years.

The drains of New House, also of 5 cottages, were renewed.

One new house has been erected.

At Coombefishacre the water supply of two cottages has been improved.

Infectious disease was limited to an isolated case of scarlatina.

Kingskerswell population 1027—acreage 1797. A large residential village occupying a position nearly midway between Newton Abbot and Torquay, whose water supply it shares ; a few wells, however, still remain in use. Water closets are general ; there are two sewer outfalls ; both of these have settling tanks, the overflow from which irrigates meadow land ; they are managed by the authority. The sewers are piped throughout.

NEW WORK. The drainage of " Elm Bank " has been reconstructed, also that of 2 cottages.

The sewer at Brookador has been provided with additional manholes and covers.

Two new cottages have been built on the Coffinswell Road.

An application for a license in respect to a new slaughter-house situated about 110 feet from houses in Fore Street and at a lower level was refused by the Council on my advice. There are now 6 slaughter houses in this parish, 3 of which are in the village ; such buildings are always liable to cause nuisance if in the neighbourhood of dwelling houses. A time will probably come when all private slaughterhouses will be abolished in favor of public abattoirs ; in the meanwhile new licenses should only be granted where the premises are well removed from any centres of population.

WHILBOROUGH, a hamlet in this parish, has a public dipping spring of fair quality, but there is often a shortage in summer. There are 4 dairies here which send milk to Torquay.

There was one case of typhoid fever at Dacca Bridge, otherwise the parish was free from infectious disease.

Kingsteignton population 1942—acreage 3975. This little town—for such it has now become—is situated in the Teign valley at a distance of about a mile from Newton, and derives its prosperity largely from the clay industry of the neighbourhood. It has an excellent water supply from a limestone spring, known as the Holy-well, in Ugbrook Park. As the proportion of the daily flow granted to the parish has proved unequal to meet the growing demand, plans for a storage reservoir are to be prepared by Mr. Segar ; the nocturnal yield will then be available. 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. A 12 inch sewer has been laid at York Terrace—a length of 820 feet, all connections being made ; also a short piece of about 100 feet in Dicker's Court.

The drainage of 4 blocks of houses has been reconstructed, containing 11, 7, 6 and 5 cottages respectively ; also of 10 other dwellings and an inn. There still remain a few hand-flushed closets to be dealt with ; but at no very distant date these, too, will have disappeared.

Thirteen new houses have been erected ; the "Dewdrop" inn is being rebuilt. Application has been made for the water main to be extended to Weir Barton, a distance of 1320 yards ; the Council have offered to do this on the usual terms, and the negotiations are now proceeding.

PRESTON, a hamlet in the parish, is well supplied with water from the Kingsteignton mains.

The drainage of a farm has been reconstructed here, and a new farmhouse has been built.

Kingsteignton has not shown the clean bill of health that was presented in 1902, and several cases of typhoid fever and diphtheria were recorded in the course of the year; these, however, are noticed in detail on pages 10 and 12.

Lustleigh population 400—acreage 2978. The water question has at last been solved, and the Local Government Board have given their consent to the South Harton scheme. This spring, which during the last four years showed a minimum guaging of 6000 gallons daily, but generally yielded from 8,000 to 10,000 or more, will, I think, meet all the requirements of the village for many years to come. It is a soft water, derived from granitic sand, containing little solids. In common with all moor waters, some peaty matter is in evidence in wet seasons, but this is of no consequence.

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 at present.

NEW WORK. The drainage of two dwellings has been reconstructed; one new house has been built at Lower Combe, and another is in course of erection.

The parish was free from infectious disease.

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.

There is a short sewer crossing the Green.

The drainage at Leighton has been reconstructed.

A new farm house has been built at Holwell.

Zymotic disease was absent.

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 two 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.

The new sewerage scheme has been in progress for some months and is approaching completion; the outfall works and a portion between that point and the town have yet to be finished.

House refuse is removed twice a week.

NEW WORK. The sewer has been extended to "Moor View" in Chagford Road.

A good many private drains have been overhauled in connection with the new sewerage works, and reconstructions have been carried out with respect to 24 dwellings.

A dangerous building in Court Street has been partly removed by the Council, on a magistrates' order.

Thirteen cottages have been built at Kinsmansdale; also a nurse's home, and a villa on the Chagford Road.

Some little trouble was caused in the spring and summer months by large growths of vegetation of a low order on the surface and sides of the reservoir, making frequent cleanings necessary; these algæ and fungi require light and air, and though probably atmospheric conditions were favorable to their propagation last year, I think they will always appear to a greater or less extent in the summer months till the reservoir is covered over. I made analyses of the chief sources of the water supply and found them all of excellent quality (see water analyses, Nos 9, 10 and 11).

The hamlet of Docombe 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.

The water supply of Cossick Farm has been improved.

There was one case of typhoid fever in a child, for which, however, the town was not responsible; with this exception a clean record was presented.

North Bovey population 398—acreage 5589. This parish is on the borders of the moor and 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.

The drainage of one house has been reconstructed.

There were no cases of infectious disease.

Ogwell population 250—acreage 2089. The water supply is derived from a deep well about a mile from the village; the water from this is pumped into a reservoir by a windmill, and thence distributed by means of standpipes. This source has been known to fail; considerable damage was done to the windmill in a gale in September last, and in consequence this supply was not available for some weeks, though the work of repairing the mechanism was at once put in hand. There is, however, a spring in the centre of the village, which has always afforded a good yield. Closet accommodation is of the privy type and there are no sewers.

The drainage of 6 cottages has been reconstructed.

The parish has been free from infectious disease.

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 Lower Gabwell Cottages, also of a public house and adjoining farm have been reconstructed.

The sewer was extended a distance of about 35 yards, to accommodate the latter.

The parish continues to show a clean bill of health as regards zymotic disease.

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 clay formation of the district, are generally of moderate or indifferent quality.

The drainage of Twin Yeo Farm has been reconstructed, and that of the Feoffee Cottages is in hand.

There were no cases of infectious disease.

Trusham population 165—acreage 625. This is considerably the smallest parish in the district in area, and all but the least in population. The village is isolated and lies on the western slopes of Haldon at a elevation of about 300 feet. There is one public dipping spring of fair quality, which has been known to run short in dry seasons ; last summer, however, there were no complaints of scarcity. There are also 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 ; no solution of the question is at present in sight.

There are no sewers, and closets are generally of the privy type.

The drainage of one house has been partly reconstructed.

The quarries near the station, from which a hard type of trap rock is obtained, similar to that at Bickington and much in request for road metalling, afford a small local industry.

The parish remains free from infectious disease.

Widcombe population 657—acreage 10786. This moorland parish is the largest in area in the district, and comprises a considerable proportion of uncultivated land. The villages of Widcombe, Lower Town, and Ponsworthy contain the majority of the inhabitants. The granite formation of the locality yields generally speaking pure, soft, and abundant waters. Many of the houses in Widcombe village are supplied by a spring from the glebe land, brought in by gravitation.

There is a spring of good quality at Ponsworthy, while Lower Town depends on wells ; there have been complaints of scarcity in the latter place in dry summers.

There are few water closets, privies being general.

One new house has been built, and another is in course of erection.

The sanitary arrangements of the Post office and two adjoining houses have been put in order.

There were 4 cases of scarlatina in an isolated farm house, but the parish has been otherwise healthy.

Woodland population 170—acreage 1634. This is another parish of purely rural type, in which there are no centres of population. Shales and slates predominate; the latter are quarried to a small extent. Water is derived from wells and is generally abundant.

The drainage of one farm house has been put in order.

There have been one or two isolated cases of scarlatina, a disease which seems to linger about the neighbourhood.

The details of Mr. Rogers' (the Sanitary Inspector) report have been incorporated under the various parishes. As a summary, it may be mentioned that 132 intimation or preliminary notices and 79 legal notices were served during the year, which have either been complied with or are being followed up. 54 plans for new houses have been passed. 18 large houses have been redrained at the instance of the owners, and in all, the drainage systems in connection with 171 dwellings have been reconstructed; and although a number of these are in blocks and courts where from 2 to 6 cottages have a combined system, yet when the wide area over which they are scattered is taken into account, the amount of work undertaken by Mr Rogers and his assistant is enormous in this department alone.

About 2,700 feet of sewer was laid in the district, not including large contracts prepared and carried out by different engineers.

Water mains have been extended in the different parishes for a distance of 1510 feet, independent of the Bovey Tracey scheme.

The by-law relating to the flushing of water closets is being enforced in all places where a public water supply is available, but of course some time must elapse before all hand-flushed closets are abolished.

The number of Local Government Board enquiries recently held or impending on the questions of water and sewage is evidence of the progressive policy pursued by this Council—and also by the various parochial authorities concerned—indeed sanitary matters generally are given every attention.

Mr. F. Dunning, the late assistant sanitary inspector, has been transferred to the Highway department of the District, and his place was taken in March last by Mr. Rowden, who has shown himself to be a capable officer and well justified his appointment.

I append his 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 1903.

I have inspected the whole of the above as contained in the list and several others not on the list.

My inspection includes :—Builders, 8 ; Wheelwrights, 4 ; Coach-builders, 2 ; Laundries, 13 ; Milliners, 5 ; Tailors, 5 ; Plumbers, 3 ; Saddlers, 4 ; Smiths, 6 ; Bakehouses, 24 ; making a total of 73 inspections of workshops, &c., in the district.

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

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

BUILDERS.

The workshops are mostly situated in the yard, containing ground floor and first floor, the latter being approached by a wood staircase from the outside. The rooms are large, being well lighted and ventilated ; some had been limewashed within a few weeks of visit. In no case were shavings allowed to remain on the floors.

WHEELWRIGHTS AND COACHBUILDERS,

These workshops in the majority are well constructed with regard to ventilation and light, their sanitary condition being satisfactory.

LAUNDRIES.

This work is carried on in a very small scale, considering the area of the district. There are very few that come up to the standard regarding the floor drainage, although with the exception of a few in the village of Bishopsteignton, the others are, generally speaking, fairly good, some being large, with plenty of ventilation and light. In some cases old disused cottages are turned into laundries, the front room being used as an ironing room, and the back as wash house, the floors of which are very rough and broken. This prevents them from draining properly, thus the floors are damp for a long time. On the whole they were clean, and limewashed regularly. One or two have had the drains renewed.

MILLINERS AND TAILORS.

These workplaces generally occupy one of the rooms in the house, or a place at the back. In no case was overcrowding found. The premises are well lighted and ventilated, being painted, limewashed, or papered, and the whole are fairly clean, safe exit in case of fire being provided. All had necessary conveniences for the workers, with one exception ; a notice was served on the latter, which has been complied with.

PLUMBERS.

These are only four in number. They are in good condition with respect to drainage, ventilation and light, and all were limewashed.

SADDLERS.

There are only three workplaces for the above, and they are generally satisfactory ; a notice served on one to repair and lime-wash walls and ceiling, has been complied with.

SMITHS.

These workshops, with one or two exceptions, where only the occupier, or an apprentice is kept, are of good size ; the whole are well ventilated, with good light, sanitary accommodation and cleanliness being satisfactory.

BAKEHOUSES.

These number 24, and with the exception of a few at Moreton-hampstead, Bovey Tracey, and Chudleigh, are fairly satisfactory. The chief objections are in the situation of the bakehouses, in some instances the back kitchen being used as such, or a direct entrance from the living rooms. In two cases the bakehouses are below the ground level 6 or 7 feet. These are constructed fairly well.

The majority of the premises are clean and well ventilated and lighted, with good sanitary accommodation; two or three have been redrained.

In addition to the above work I have, by orders of the Medical Officer of Health, fumigated about 16 rooms, in the different parishes, and applied test to the drains of about 140 houses, during my appointment.

RICHARD J. ROWDON,

Assistant Sanitary Inspector.



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 from 200 to 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. In the older parts of the town some of the intervening spaces are occupied by courts, 22 in all, containing from 1 to 18 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.

The district comprises the parishes of Wolborough, Highweek, and Milber (the latter being a portion detached from Haccombe in 1901), a total area of 4,132 acres ; the estimated population for the year under review is 12,800. At the last census there were 2,704 inhabited houses—4·6 persons per house.

VITAL STATISTICS. The number of deaths registered during 1903 was 190, of whom 93 were in males and 97 in females, equal to an annual rate of 14·8 per 1,000. Of the above deaths 17 were in the Union House in persons belonging to the district ; if these are deducted, the rate is reduced to 13·5.

The deaths in the four quarters of the year were 56, 44, 45, and 45, giving rates of 17·7, 13·9, 14·2, and 14·2 per 1,000 per annum respectively. The first quarter thus showed considerably the highest mortality, while the other three were practically equal ; two-thirds of the deaths from zymotic disease were registered during the former period. January, March, May, and September, were the most fatal months.

CHIEF CAUSES OF FATALITY. Zymotic diseases, 9 deaths ; influenza, 5 ; erysipelas 4, constitutional diseases, 42, of which 16 were due to cancer and 13 to phthisis ; diseases of the nervous system, 23 ; of the respiratory system, 24 ; of the circulatory system, 26 ; of the urinary system, 5 ; of the digestive system, 9 ; of the organs of locomotion, 1 ; infantile inanition, 3 ; premature birth, 6 ; old age, 26 ; violence, 6, of which 5 were due to accident and 1 to suicide ; and found dead, 1. Phthisis and cancer have interchanged the positions they occupied in 1902 ; for while the mortality from the former has dropped to 1·0 per 1,000 (the average rate for the preceding 10 years being 1·2) the latter has advanced to 1·2, the figure for the last decennial average being ·91 ; deaths from heart diseases and bronchitis, &c., have also increased to some extent.

AGE INCIDENCE. Under the age of 1 year there were 33 deaths ; between 1 and 5 years, 15 ; between 5 and 15, 3 ; between 15 and 25, 9 ; between 25 and 65, 62 ; and over the latter age, 68. Thus the percentage of deaths under 1 year was 17·4 ; and of deaths over 65 years, 35·8 ; both these are slight improvements on the figures for 1902, which were 19·8 and 31·8 respectively.

THE INFANTILE MORTALITY, or deaths under 1 year to every 1,000 births, was 105 ; as against 136 in 1902, and 134 for the preceding 10 years—a great advance—especially considering that 6 deaths from premature birth, 1 from accident, and 1 ‘found dead,’ increase the figure to some extent.

I have continued the investigations begun in 1902 on this subject, with the following results :—Of the total 31 deaths of infants under 1 year of age occurring in the town, 29 or 94 per cent. belonged to the working classes ; while in 22 cases (or 76 per cent.) the father was earning under £1 a week, or in uncertain employment. In 17 or (omitting 5 premature births, 1 accidental, and 1 ‘found dead’) 71 per cent. the children were either wholly or partially brought up by hand, and of the 8 deaths from disorders of the digestive system 7 were bottle fed. In 13 instances one or both parents were stated to be constitutionally weak, while 17 of the infants were described as delicate from birth, 13 of these being hand fed. Of the three deaths from tubercle, one presented a family history of this disease, while in another case the evidence was

negative ; I could get no information concerning the third.

The courts were responsible for 4 fatalities among infants, equal to a rate of 7·3 per 1,000, as against 2·4 for the whole area. The deaths were scattered over various parts of the town, but 23 were in houses on the lower levels and 15 in the older dwellings ; in only two cases were any insanitary conditions present, but cistern water

COMPARATIVE TABLE.

DEATHS FROM	1903.	Average of years 1893-1902	1902.	1901.	1900.	1899.	1898.
Small Pox	...		...	...	...	...	...
Measles	5		8	3	...	1	13
Scarlatina	...		...	...	...	...	...
Whooping Cough	...		1	10	1	4	1
Diphtheria	...		...	2	...	1	...
Continued Fevers (Typhoid, &c)	2		3	4	1	...	9
Diarrhoea	2		8	4	6	3	7
SEVEN CHIEF ZYMOTICS :	9	14	20	23	8	9	30
Phthisis	13	12	25	10	12	6	12
Other Tubercular Diseases ...	6	4	5	4	6	2	5
Bronchitis, Pneumonia, Pleurisy	22	21·5	18	27	32	14	16
Heart Diseases	26	12·5	20	8	14	7	14
Cancer	16	9	10	17	7	8	6
Violence	6	4	4	9	4	2	2
All other Diseases	92	79	90	80	80	84	88
Total deaths	190	156	192	178	163	132	173
Estimated Population ...	12800	9907	12650	12518	9600	9500	9400
General Death Rate	14·8	15·7	15·2	14·2	17·0	13·9	18·5
Zymotic Death Rate	70	1·4	1·6	1·8	·83	·95	3·2
Total Births	315	247	279	284	223	239	227
Birth Rate	24·6	24·9	22·1	22·7	23·2	25·2	24·1
Deaths under 1 year ...	33	33	38	39	34	24	37
" between 1 and 5 years	15	12	7	13	10	15	20
" over 65 years	68	46	61	53	45	42	55
" under 1 year to 1000 bths.	105	134	136	137	152	100	163
Deaths in Union House ...	65	53	64	54	55	64	66
Deaths in Union House belong- ing to District	17	10	12	7	15	15	11

In comparing the actual number of births and deaths in 1903 with those of former years, it should be remembered that the total population of the District was increased considerably in 1901 by the inclusion of the parish of Highweek.

was used in one case of death from bowel complaint. Six of these children were illegitimate—nearly 20 per cent. ; 9 were first born, while only one was a twin.

Chief causes of mortality were : measles, 1 death ; premature birth, 5 (fright and worry were said to have caused two of them) ; diseases of the digestive system, 8, of which only 1 was due to diarrhoea and 2 to tubercular enteritis ; inanition, 3 ; diseases of the respiratory system, 8, of which 5 were credited to pneumonia and 2 to bronchitis ; of the nervous system, 4, of which one was tubercular ; accident, 1 ; and ' found dead,' 1.

In addition to the above there were 8 deaths of infants in the Union House—all but one illegitimate—3 being assigned to premature birth, 2 to inanition, 2 to digestive disorders, and 1 to bronchitis. In two cases the mother belonged to Newton, and these deaths are therefore included for statistical purposes in the Urban District, bringing the total number up to 33.

This analysis coincides in the main with that of last year, though the mortality was less. The great proportion of the loss of infant lives among the working classes is again marked, and the percentage of those earning less than £1 a week is more than maintained. Deaths from digestive disorders were fewer, but in those recorded nearly all were hand fed ; on the other hand fatalities from pneumonia and bronchitis largely increased, the climatic conditions being such as to favor this interchange. Insanitary conditions were, however, less prominent ; illegitimacy more pronounced.

The figures at present available are too small to draw really reliable conclusions, but an investigation continued from year to year on the above lines, will by degrees allow of more correct inferences being drawn ; its value, therefore, will increase as time goes on.

The births of 160 boys and 155 girls give an annual rate of 24.6 per 1,000 ; this is within a fraction of the 10 years average, but is still a low figure for a growing urban community ; in these days of declining birth rate, however, any advance, slight though it be, must be welcomed. The births for the four quarters of the year numbered 70, 79, 98, and 68, giving rates per 1,000 per annum of 22.1, 25.0, 31.0, and 21.5 respectively.

In the Union House, which is situated in this district, there were 65 deaths, of which 32 were in males and 33 in females ; 20 of these were assigned to old age, and 8

were infants under 1 year of age. Their local distribution was as follows :—Newton Urban, 17 deaths ; Newton Rural, 18 ; Dawlish Urban, 6 ; Teignmouth, 4 ; Torquay, 19 ; and Ashburton Urban, 1.

The above figures may be considered satisfactory in every respect ; the general death rate has decreased ; that from zymotic disease, in spite of the measles epidemic in the early months of the year, is only half the 10 years' average ; while the infantile mortality has greatly improved, in conjunction with an advance in the birth rate, which, though slight, is still a change in the right direction.

ZYMOTIC DISEASES. From the 7 ordinary zymotic diseases 9 deaths were registered, 5 being due to measles, 2 to typhoid fever, and 2 to diarrhoea, giving a rate of .70 per 1,000 per annum ; as compared with 1.6 in 1902, and an average of 1.4 for the preceding 10 years. The deaths from diarrhoea were both in children under 1 year of age, as was also one of the fatalities from measles.

The notifications of disease were 33 in number, of which 16 were typhoid fever, 5 scarlatina, 3 diphtheria, and 9 erysipelas ; 1 of the latter was 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	...	...	...	4	...	...	...	...	5
Diphtheria	...	...	1	...	1	...	...	1	...	...	...	...	3
Typhoid Fever	...	...	...	...	3	1	1	1	8	2	...	...	16
Erysipelas	1	1	1	1	1	1	1	...	1	1	...	...	9
Puerperal Fever	...	...	...	...	...	...	...	...	...	...	...	...	...
Cholera	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	1	1	2	2	5	2	2	6	9	3	...	...	33

TYPHOID FEVER. There were 16 notifications of this disease, 9 of which occurred between September 11th and October 9th ; these latter were, however, isolated attacks, with no common origin. Eight, or rather more than half of the total, were associated with drainage defects of the ordinary type ; and it is the usual experience that a large proportion of attacks from the disease come under this category.

The consumption of shellfish presented a likely cause in two cases ; while another patient was a boy who for some weeks previously had been in the habit of bathing at the boathouses, and admitted that he occasionally swallowed some of the water. These are risks that can be avoided by everyone, and I have more than once alluded to them in former reports, as illustrative attacks of illness have cropped up. Of the remainder, one was probably the result of direct infection, while in two there was no obvious cause of disease ; a fourth came home ailing from camp, and a little later the fever fully developed itself ; one of the hospital nurses concludes the list. Of the above, 11 were treated in hospital, while 4 could not be accommodated in that institution, though consent to go was readily obtained. It is interesting to note that in 12 cases the houses affected were situated in the lower levels of the town, and that only one attack at even a moderate elevation was recorded. Five of the patients were between the ages of 5 and 15 years ; 6 between 15 and 25 ; and 5 over the latter age.

DIPHTHERIA. Three notifications were recorded without fatality. In one instance—a villa residence at Highweek—a reconstruction of the drainage was in progress ; it was stated that with one exception all those in the house had suffered from sore throats, culminating in an attack of this disease in one of the 4 children. Another case—also that of a child—was associated with a defective drain under part of the dwelling ; while the origin of the third was obscure, the subject this time being an elderly person. The district, though not presenting the clean record of 1902, was yet comparatively free.

SCARLATINA. Five notifications were received, two of which were in the same house. In one instance there were 5 other children from 2 to 12 years of age with a general history of sore throats and slight ailment some weeks previously ; probably all were mild attacks, and seeing that they continued to attend school and associate freely with other children, it is a wonder that no further cases resulted. The remaining three were isolated attacks. This disease has been of late prevalent in more than one neighbouring locality ; the type is in most instances very mild, and sometimes unrecognised till the peeling stage commences ; this favors its spread, but fortunately the infectivity appears to be small.

MEASLES. The outbreak among the school children in both parishes, which commenced towards the end of 1902, continued throughout the following January, and resulted in 13 fatalities ; 5 of these belong to the year under review. This is, however, somewhat less than the average mortality caused by a winter epidemic. All the schools—principally the infant departments—were affected, with the exception of the British School, which suffered comparatively little. The last occasion on which this disease was general took place in the winter of 1898—1899—4 years ago.

WHOOPING COUGH was prevalent among the Highweek school children in the summer months, but the favorable season prevented fatality.

THE ISOLATION HOSPITAL is situated on the Totnes Road, about a mile from the centre of the town. Fifteen parishes are associated with the hospital combination, viz., Wolborough and Highweek (Newton Urban District), Abbotskerswell, Bovey Tracey, Chudleigh, Cockington, Coffinswell and Dacombe, (Coombe and Haccombe, Hennock, Ipplepen, Kingskerswell, Kingsteignton, Ogwell, Teigngrace, and Torbryan and Denbury. An application has been made to add Bishopsteignton to the number. This institution continues to do good work, and it is encouraging to note that in many cases removal thither is requested by the patients or their friends. The new buildings, with administrative block, typhoid fever wards (8 beds), steam disinfectors and mortuary, with all the equipment of an up-to-date hospital, were opened in the summer. There is also a corrugated iron pavilion with 12 beds for scarlatinal patients. I give the following extracts from the annual report of Dr. J. W. Ley, the Medical Superintendent :—

“ During 1903 I took 17 cases into the hospital ; 16 of these were typhoid fever, of whom all recovered with one exception, who died from perforation ; the seventeenth succumbed soon after admission to tubercular meningitis. Many of these cases were severe, and owe their recovery to hospital nursing : the average detention was 49 days. Several patients have been refused admission owing to want of accommodation.”

PHTHISIS caused 13 fatalities, 5 in males and 8 in females ; one of these was in a visitor who died within 3

weeks of arrival, and another took place in the Union House in a person belonging to the district. There was 1 death under 15 years of age, 2 between 15 and 25, 9 between 25 and 65, and 1 over the latter age. The duration of illness, as far as could be ascertained, varied between 5 months and 10 years. In 5 cases a previous attack of influenza was recorded, while hereditary/pre-disposition existed in 5 more.

Disinfection of the sick room after death is carried out by the authority where consent can be obtained, and this is seldom refused ; indeed in many cases re-papering and painting was done by the relatives at their own instance. The infectivity of this disease is evidently becoming well recognised by the public.

DISINFECTION. Houses are limewashed and disinfected by the authority where necessary ; clothes and bedding are dealt with by the steam disinfector at the hospital. The Council have purchased a Lingner apparatus for disinfecting rooms ; the principle upon which this machine works is that steam under pressure is driven through formaldehyde, a powerful disinfectant, and thus a concentrated solution of formalin is deposited on every object ; it has worked very well in practice.

SANITARY CONDITIONS & PROCEDURE.

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

SEWERAGE. Water closets are general ; 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. The process of renewing old and defective sewers is gradually going forward, and new work in this direction was carried out in Osborne Street and St. John's Street, Gladstone Road, and No. 10 Court, East Street. The new storm relief sewer in Bearne's Lane was completed, and seems to work well.

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

DAIRIES, COWSHEDS, &c. These have been inspected from time to time by Mr. Judd and myself, and generally found satisfactory. Some milk is brought in from farms in the Newton Abbot Rural District.

SLAUGHTERHOUSES. There are one public and three private slaughterhouses in the town, which have been kept in good order.

I have also visited all the Workshops on the list ; details are given in Mr. Judd's report.

HOUSING OF THE WORKING CLASSES.

In the early part of November I made a house-to-house inspection of the Courts, Hillman's Meadow, the Bowden Hill district, and Vale Road, Decoy—in all 442 dwellings. The following details of this investigation, which affords a comparison of various types of working class houses in the town, may be of interest ; it deals, moreover, with the housing of 1,684 persons, or $\frac{1}{8}$ of the population of the Newton Urban District.

It may be prefaced that, though the greater part of Newton Abbot is of quite recent date, yet certain areas, including Wolborough Street, East Street, and Bank Street, in the parish of Wolborough ; Highweek Street and Exeter Road, in the locality formerly known as Newton Bushel, with their courts, have been in existence for many generations. These courts therefore, generally speaking, may be taken to represent the working class dwellings of presanitary ages, and I have therefore classed them together as being on the whole of the most inferior type in the district. In some the tenements are obviously very old ; for instance in Court 5, Wolborough Street, there are four cottages of Tudor style, constructed partly of stone and partly of cob ; possibly these constituted in their time one house of a better class, and there is evidence to this effect in the doors of intercommunication on the upper story. The court system is expressed in three types.

(1) and the most objectionable—a narrow passage a few feet wide with tenements on both sides, so that direct

sunlight is excluded from the lower rooms, and a minimum of fresh air is obtained ; this is exemplified in Court 9, Wolborough Street, now closed.

(II) the commonest—a passage with the dwellings on one side only, facing a wall or outbuildings belonging to neighbouring premises.

(III) a more or less spacious area surrounded wholly or partially by houses—as in Court 1, Highweek Street.

The worst feature of this system is the lack of through ventilation of the dwellings ; this, combined with the small size and lowness of the rooms, which in many instances are barely 7 feet in height, renders them cheerless, obstructs the access of the sun's rays, and prevents the free circulation of air—both of such importance to life and health. The common courtyard with its lack of privacy, its public closets and washhouses, is liable to become a dumping ground of refuse waiting for the scavenger, and is in many ways inconvenient. These conditions are, however, mitigated in some instances—notably in Court 3, Wolborough Street, where there are four pairs of semi-detached dwellings, each with a small courtyard of its own ; Court 8, also in the same street, has the advantage of a considerable garden space in front of its one row of cottages ; and one or two others.

The worst of the tenements have now been closed, and in this process the whole of Courts 1 and 7 East Street, and Court 9, Wolborough Street, have ceased to be occupied, besides 17 houses scattered about among the remaining courts.

The want supplied by this class of dwelling is that 2, 3, and 4 roomed cottages can be obtained at a low rent per house by those whose wages are small or employment uncertain ; the tenants are to some extent a shifting population, but on the other hand many of them have occupied the same premises for long periods—hence the variations in rent for much the same accommodation ; in many cases I found that consideration was given to old tenants, while from later comers an increased amount had been exacted.

At the present time (November 1903) there are 22 courts in occupation, of which 10 are in Wolborough Street, 10 in East Street, and 2 in Highweek Street ; the number of houses per court varies from 1 in Court 3, East Street, to 18 in Court 11, Wolborough Street ; as will be seen by the table, the Wolborough Street courts are the most populous. Altogether 167 tenements are included,

of which 149 are inhabited. The population of these 149 consisted at the above date of 551 persons, of whom 298 were adults and 253 under 15, living on a combined area of 2.29 acres, or 241 persons to the acre. The rents vary considerably in the different courts, for though this works out on the average at 11d per room per week, the extreme limits run from 8½d to 1s 3d. A cottage of 4 rooms can be obtained for a sum ranging from 2s 6d to 4s per week, with a mean of 3s 2d ; of 3 rooms from 2s to 3s 9d, with a mean of 2s 8d ; and of 2 rooms from 1s 6d to 2s 9d, with a mean of 2s 3d. The accommodation afforded is to be considered in this connection, and also the fact, before alluded to, that many of the lower priced houses have tenants of long standing ; in certain courts rents have been raised on account of sanitary improvements demanded by the authorities.

I found no undue crowding—in fact rather less than might have been anticipated in these localities—and the average number of persons per living room, varying from .75 to 2.7 in the different courts, worked out at 1.3 over the whole, by no means out of the way figures ; perhaps the diminishing birth rate accounts for this to some extent. Of the total of 167 houses, there are 57 with two rooms, 74 with 3 rooms, and 34 with 4 rooms ; there is one single room tenement, with one tenant ; and one of 6 rooms. This includes living rooms but not sculleries or washhouses—moreover these are mostly outhouses in the court.

With regard to open space, this amounts on the average to 249 square feet per house, but in individual courts the limit runs from 108 to 469 (omitting the 900 square ft. belonging to the single house constituting Court 3, East Street.)

This falls very far short of what is exacted by modern by-laws, as a glance at the table of comparisons will show. From a sanitary aspect, however, much has been done of late years. New drains have been laid, water closets flushed, and impervious paving put down ; all have the public water supply. In fact, in all those respects in which improvement is possible, much better conditions now obtain ; but of course the inherent structural defects still remain, and cannot be negotiated without complete reconstruction.

That the courts are a property of some value is shown by the fact that the gross rental (the landlord paying the rates) amounts to about £1,150 annually—nearly £7 per house and over £500 per acre.

TABLE GIVING VARIOUS STATISTICS OF THE COURTS.

Courts.	Population.			Tenements			Persons per Room.	Rent per Room.	Rooms per Tenement.					Area occupied by Court in square feet	Open space per tenement in square feet
	Adults.	Under 15.	Total.	Occupied.	Empty.	Closed.			1	2	3	4	6		
Wolborough Street															
I	21	15	36	10	1	...	1.0	-/8 $\frac{3}{4}$	...	...	4	7	...	7565	309
II	11	5	16	6	1	...	1.2	1/2	...	6	1	...	...	2706	176
III	18	26	44	9	...	...	1.2	1/-	...	...	...	9	...	8554	443
IV	7	10	17	3	3	5	1.7	/10 $\frac{1}{2}$	...	3	1	1	1	5100	232
V	35	23	58	16	...	4	1.3	-/11	...	5	9	2	...	9978	215
VI	11	13	24	5	1	...	1.6	1/-	...	2	2	2	...	5125	469
VII	10	11	21	5	...	...	1.5	/10 $\frac{1}{4}$	...	3	1	1	...	2519	228
VIII	25	17	42	14	2	...	1.0	-/11	...	...	16	...	...	11550	460
X	22	13	35	11	2	...	1.3	1/-	...	8	5	...	...	5151	192
XI	30	32	62	16	2	...	1.4	-/11	...	10	4	4	...	9610	177
Total Wolborough Street Courts.	190	165	355	95	12	9	1.3	-/11	...	37	43	26	1	1.56 acres	280
East Street.															
II	14	5	19	6	...	5	1.2	/10 $\frac{1}{2}$	...	2	4	...	...	3928	163
III	3	5	8	1	...	...	2.7	1/1	...	...	1	...	...	1325	900
IV	12	13	25	6	...	2	1.5	/11 $\frac{1}{2}$	...	3	1	2	...	4725	237
V	4	4	8	2	...	...	1.3	1/3	...	...	2	...	...	1416	308
VI	7	7	14	3	1	...	1.5	-/11	...	1	3	...	...	2340	256
VIII	8	7	15	5	1	...	1.1	-/9 $\frac{1}{2}$	...	1	1	4	...	1929	175
IX	5	1	6	4	...	...	.75	/10 $\frac{3}{4}$	...	4	...	...	...	1394	108
X	11	10	21	6	1	1	1.0	-/10	...	...	4	3	...	5187	291
XI	3	3	6	1	1	...	1.5	-/8 $\frac{1}{4}$	...	...	...	2	...	988	143
XII	4	3	7	3	...	...	1.7	1/1 $\frac{1}{2}$	...	3	...	...	...	1753	202
Total East Street Courts.	71	58	129	37	4	8	1.3	-/11	1	14	19	7	...	.57 acres	223
Highweek Street.															
I	24	12	36	10	1	...	1.3	/11 $\frac{1}{4}$	...	4	6	1	...	4123	123
II	13	18	31	7	1	...	1.6	1/0 $\frac{1}{2}$	...	2	6	...	...	3000	140
Total Highweek Street Courts.	37	30	67	17	2	...	1.4	/11 $\frac{3}{4}$	...	6	12	1	...	.16 acres	130
Grand Total.....	298	253	551	149	18	17	1.3	-/11	1	57	74	34	1	2.29 acres	249

From the courts I now turn to the more modern artizan's dwellings which have been erected by the hundred in various directions, and have for purposes of comparison selected two of the most densely populated areas in the town, viz., Bowden's Hill and Hillman's Meadow. The former was built over about a dozen years ago, and though of course a great advance on the courts yet belonged to a period when there was still a tendency to interpret leniently the by-laws as regards airspace—including size of backyards and width of roads and back roads. This matter of airspace is perhaps the most important subject in the by-laws which the Council have to administer, because houses will probably stand about a couple of centuries, and thus conditions expressing the opinions of one generation are perpetuated throughout a more progressive era.

On the BOWDEN HILL area, taking Beaumont Road, Hilton Road, Western Road, Spencer Road, and Hampton Road—8 blocks of houses—which occupy a space of 4·3 acres, are 165 dwellings, containing a present population of 708 persons (429 adults, and 279 under 15), with a density of 165 to the acre. 89 per cent. of these are 5 roomed houses (the rest having 6 or more rooms) besides a scullery or back kitchen—a considerable apartment. The average weekly rent per room worked out at 1/0 $\frac{1}{4}$, or only -/1 $\frac{1}{4}$ more than in the courts; on the other hand the accommodation is greatly superior and the rooms are all 8 feet or more in height, with back entrance and through ventilation; in most cases there are staircase windows, which, however, are somewhat rudimentary and do not open. The rent varies from 4/6 to 6/- weekly for a 5 roomed house, with a mean of 5/1 $\frac{1}{2}$.

The average number of persons per living room amounted to ·85—a drop of 35 per cent. as compared with the courts; 4·3 was the mean population per house, as against 3·7 in the courts; but it must be remembered that the rooms are fewer in the latter case.

Each dwelling has its own courtyard, with access provided by a back road, and the mean available air space (including share of roads and back roads) is 640 square feet per house. The main roads are however only 25 feet and the back roads 8 feet, while the space from tenement to boundary wall is in most cases considerably short of the statutory 15 feet. These houses are, nevertheless, substantially built in the main, and their elevated position counteracts to some extent the density of the buildings. The gross annual value of the 8 blocks amounts to about £2,244, or over £520 per acre.

At HILLMAN'S MEADOW, on an inclusive area of 2·83 acres, 98 houses in 4 blocks have been erected in the last 3 years, forming Hillman's Road and Buller Road. These have a present population of 379 persons (237 adults and 142 under 15) or 133 persons to the acre. It will be noted that the number of persons per room and per house (.83 and 4.2 respectively) approximate within a small fraction to those on Bowden Hill; the rent obtained is slightly higher, being $1/1\frac{1}{4}$ per room weekly; 95 per cent. are 5 roomed houses and $5/6$ per week is almost invariably paid. In laying out this property the by-laws as regards 'open space exclusively belonging to the dwelling' were enforced, but width of roads and back roads still left room for improvement, these being only 27 feet and 10 feet respectively. There is however some advance on the mean total air space, which works out at 725 square feet per house. The internal accommodation is very similar to that provided on Bowden Hill, but these houses have the advantage of an easily accessible staircase window. Some attempt was made to introduce baths, but the additional water rate of 10/- a year proved too great an obstacle.

The gross annual rental of these blocks is about £1,425, or a little over £500 per acre; it may be noted that the value per acre of the courts, Bowden's Hill and Hillman's Meadow, as represented by this item, is practically the same.

COMPARATIVE TABLE.

Locality.	Population			Houses		Persons per house	Persons per Room.	Rent per Room.	Total space occupied in acres.	Available open space per house in square feet
	Adults.	Under 15	Total.	Occupied.	Empty.					
22 Courts	298	253	551	149	18	3·7*	1·3	0/11	2·29	249
Bowden's Hill.....	429	279	708	163	2	4·3	·85	1/0 $\frac{1}{4}$	4·3	640
Hillman's Meadow	237	142	379	90	8	4·2	·83	1/1 $\frac{1}{4}$	2·83	725
Vale Road, Decoy ...	30	16	46	12	...	3·8	·77	1/1 $\frac{1}{2}$	·94	2828

* It is to be noted that the houses in Courts are 2, 3, and 4-roomed, while in other localities all houses have 5 or more.

In conclusion, it is instructive to compare the above type of houses, built in long rows of deadly monotony, and

abutting on streets, which, with their courtyards and back roads, have been cut down to the minimum requirements of the local authority, with 12 workmen's dwellings, put up about 5 years ago, in Vale Road, Decoy. These are built in 6 pairs—semi-detached; they stand a few feet back from the road and have a small garden in front and a considerable space at the back and sides, an immense advance on the usual circumscribed area at the back—too small for a garden and little more than a yard. Their position is not quite so central as that of the other blocks under consideration, but they are within a few minutes walk of the station and the denser parts of the town. They let at an average price of $1/1\frac{1}{2}$ per room weekly, or only $1/4$ more than those in Hillman's Meadow; the rents of the individual houses, which are of the usual 5 roomed type, with scullery, vary from $5/4\frac{1}{2}$ to $5/10$ a week, with a mean of $5/7$. Including, as before, their share of roads and back roads, they occupy nearly an acre (.94 to be exact), and each dwelling averages in open space 2,828 square feet—more than 11 times that available in the courts and roughly 4 times that of Bowden Hill and Hillman's Meadow. At present they are all tenanted, and I am told that there is considerable competition for them; their population numbers 46 (30 adults and 16 under 15), or about 49 persons to the acre. This does not quite come up to Sir Benjamin Richardson's standard of 25 to the acre, but it is a very appreciable advance towards it. The advantages of this type are numerous:—

- (I) there is free circulation of air and direct access for the sun's rays on the three unattached sides of the house.
- (II) a staircase sash window can be provided at the side without architectural difficulty.
- (III) the back road,—a space often littered and untidy with refuse buckets—and with its difficulties and expense of lighting and keeping in repair, can be dispensed with, and access for the scavenger obtained at the side.
- (IV) the drainage of each house can all be brought to a front sewer without passing under the buildings.
- (V) the monotony of a long row of similar dwellings is broken and all slumlike appearance avoided.
- (VI) the available open space 'exclusively belonging to' the house is increased.

A still more attractive appearance might be presented and an appreciable expense saved, if the long stone walls

which separate the various premises were replaced by a light wire railing, which would serve as the centre of a privet or other evergreen hedge.

The particular houses mentioned are of course on the outskirts of the town, where land does not command so high a price, but there must be many sites where equally good dwellings can be provided for the working man at the same rent, and surely the health of children brought up under the favourable conditions afforded, more than compensates the tenant for the small additional outlay; moreover I am told that already many are leaving the denser parts for suburbs such as the Decoy and Abbotsbury. These more open localities evidently meet with approval.

One other point.—If the courts are to be finally abolished, to accommodate the class of tenant they now cater for, smaller and cheaper houses of some sort must be provided, for it is to be observed that all the modern dwellings are of the 5 roomed (or more) type, at about 5/6 a week. One would think it possible to put up cottages of 3 and 4 rooms to suit those with small families who do not care to take lodgers—and several housewives told me that they found lodgers ‘more plague than profit’; in fact those who let rooms were comparatively few. From a sanitary as well as economic point of view it would be preferable to abolish the front sitting room—an apartment entering but little into the life of the labourer and his family—and devote the whole of the ground floor to a large kitchen and living room combined, placed if possible on the sunny side of the house, and a small back scullery with sink and washing boiler; this with two bedrooms above would constitute a 3 roomed house, cheaper to build and occupying less ground. When it is seen that in the courts alone there are 74 cottages of this type but inferior construction at present in occupation, it is a matter for wonder that builders should not find it worth while to cater for the demand; one can only conjecture that the class of tenant is not one which is considered worth while to encourage.

Six houses have been condemned—all in the courts; and one case of overcrowding was abated.

The reconstruction of faulty house drainage continues to progress and a large amount of work has again to be recorded in this direction; details are given in Mr. Judd's report.

Plans for 30 new buildings were passed ; only 20 however, were on behalf of dwelling houses—and few of these of the working class type. Though a certain amount of building activity is still proceeding with respect to houses, plans for which were before the Council previous to 1903, there are evidences of some falling off in this industry as compared with the last few years ; this is perhaps to be expected. The Abbotsbury estate, Coronation Road, Decoy, Snow's Orchard, and sites in the vicinity of the station, are, however, still being developed. The Free Library and Technical Schools are approaching completion, and will probably be opened in the summer.

From time to time discussion has arisen over plans for alterations and additions to existing buildings, and it is encouraging to report the increasing tendency of late years to insist on the necessary open area of air space being preserved in such cases ; business premises may not be used for sleeping accommodation, but they are dwelling houses for their employées during many hours of the day—and that largely on the ground floor, the least accessible to light and air ; this is an especially important consideration to those who spend a great part of their lives indoors.

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

Sanitary work effected during the year ending 31st December, 1903.

STORM RELIEF SEWER, BEARNE'S LANE.

The work of constructing this culvert, which was commenced in the latter end of the preceding year, was completed about the end of March. This culvert was laid through the remaining portion of Bearne's Lane across Bank Street and then connected with the same sewer in Wolborough Street. Some difficulty was met with when passing between the different gas and water mains, which, in one or two instances, had to be lowered.

The sewer has worked very successfully during the past year, and the culvert has kept very clean. No deposit or silting, as far as can be seen, has been left on the sloping sides, or in the channel invert. In connection with this culvert, the old 2 ft. stone sewer in the lower end of the Grove has been entirely removed and replaced with 9" sk pipe and at the junction of this sewer with the culvert, a specially large grating was fixed, fitted with two gun metal faced flaps to ensure a free inlet for the surface water in time of floods.

The construction of this sewer has involved the laying of 390 ft. of 12 in. channel pipe, 100 ft. of 9 in. sk pipe, and all the branch drains have been made good with pipes of respective sizes.

OSBORNE STREET AND ST. JOHN'S STREET.

It was found necessary to take up the old sewer which crossed the playground of the Marsh Schools and to replace it with new sk pipe. In doing this 210 ft. lineal of 9 in. sk pipe, and 55 ft. of 8 in. were used. In connecting and relaying the sewers from Salisbury Road and the road at the back of Buckland Terrace 160 ft. lineal of 7 in. sk pipe were laid. In the latter case it was found necessary to relay the sewer because the pre-

vious one had been laid too shallow and consequently many of the pipes were found to be damaged. The new sewer has been laid at a lower depth and a more even gradient.

GLADSTONE ROAD.

In making up this road under the Private Street Works Act and in dealing with the drainage of No. 61, Queen Street, it was found necessary to relay the sewer at the back of the South block of houses in Gladstone Road. This necessitated the laying of about 100 ft. of 8 in. sk pipe, 130 ft. of 7 in. and 60 ft. of 6 in. The making good of the branch drains involved the laying of 645 ft. lineal of 4 in. sk pipe bends and junctions. By doing this the old sewer which passed under the back wings and outhouses was done away with.

NO. 10 COURT, EAST STREET.

A short length of 7 in. sk pipe was laid in place of an old stone sewer

In all of the above cases inspection and access chambers have been formed fitted with cast iron covers and frames. All the pipes laid were fitted with Stanford joints and carefully stopped with cement.

PLANS FOR NEW BUILDINGS.

The plans sent in shew a decided falling off in number. The total for the past year being only 44 against 104 for the previous year.

Of the plans sent in 24 were for new buildings consisting of 4 for detached villas, 10 for semi villas, 6 for houses in streets or blocks, 8 for new shops, 2 for stables.

For alterations and additions to existing premises there were 24 plans submitted, consisting of 11 for additions to dwelling houses, 7 for additions to shops, 1 for addition to store.

A plan has been received for a new dwelling house and shop which are to take the place of two old houses.

Two were received as amended plans to the ones that have been previously submitted.

LEWIS STEVENS, SURVEYOR.

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

MR CHAIRMAN AND GENTLEMEN,—

With pleasure I am able to report that during the past year steady progress has again been made in the matter of improving the sanitation of our district; but although much has already been accomplished more remains to be done towards modernizing the domestic sanitary arrangements of the town.

Each year, however, brings us nearer our objective—that of seeing the sanitation of Newton Abbot brought to as high a state of efficiency as the circumstances of the district will permit.

Of course it is not to be expected that the standard can be so high as that of a modern, or comparatively modern, town when it is remembered that we have in the old parts several properties which are fast getting into decay, and 22 Courts, in many of which are dwellings structurally of the most undesirable type.

The utmost that can be done to these places is constantly to keep them under observation making sure that the drains and closets are working satisfactorily; that no nuisance is allowed to exist; and that the dwellings themselves, such as they are, are maintained wind and weather proof.

The number of occupied cottages in these Courts diminishes yearly due to the Council's action in condemning them as unfit to live in, and in consequence of being deserted by the people themselves for more desirable abodes. By to-day 48 of them are closed, and were it not for the fact that those remaining afford shelter—and this is the most that can be said of the

majority of them—at a small rental to a large number of poor people whose earnings do not permit of them paying 4/- or more per week for better class dwellings, one would wish to see nearly all of them shut up and never occupied again.

Some important buildings have had their drainage systems renewed and their sanitary appurtenances brought up-to-date during the year, chief among which is that old and historic residence, Forde House, and the Conservative Club, Union Street.

A decided and much needed improvement has been effected in Salisbury Road where the whole of the main drainage has been relaid, together with the branch drains, of the block of houses on the West side. This had always been a source of nuisance by continually choking up. When exposed, the old drains presented a disgusting sight; the 9 inch pipes being almost completely choked with sewage matter. Many of the pipes were fractured in consequence of which much filth must have been escaping for years, and that very near the houses.

It is therefore not surprising that a case of typhoid fever occurred there; in fact the wonder is that more cases did not break out.

A new system of 7 inch pipes, with frequent manholes for cleaning purposes, has been installed and the fall obtained is 1 inch in 9 feet, which, although little, has been found to answer satisfactorily. The work was completed 8 months ago, and when examined a few days since there was no evidence of any silting up.

SCHOOL BUILDINGS.

New drainage and a new system of closets and urinals have been installed at the British Schools, Queen Street, which have hitherto worked splendidly and given every satisfaction.

Improvements either to drainage or closets have been carried out at the Infant Schools, Highweek Street; the Girls High School, Courtenay Park; the Wolborough Hill Boys School; and the new Girls School, South Road. Other schools where improvements are needed are receiving attention.

COMMON LODGING HOUSES.

Periodical visits have been paid to the registered houses, and the necessary lime washing, cleansing, &c., enforced.

FACTORIES & WORKSHOPS' ACT, 1901.

There are now on the register 79 work places or workshops, as compared with 61 for the previous year. These have nearly all been visited and the contraventions of the Act met with have been rectified, except for the remedying of a drain and closet nuisance at one establishment. This will be seen to in the course of a few weeks.

The other nuisances were :—Overcrowding 2; neglect of limewashing 5; insufficient closet and urinal accommodation 1. All these have been abated.

DAIRIES, COWSHEDS & MILKSHOPS ORDER, 1885.

There has been no alteration in the number of persons registered under this Order. The number is 24 as previously. These places always have careful attention. The usual limewashing has been attended to, and improvements carried out in 4 places in the way of storing the milk and cream so as to reduce to a minimum the risks of contamination. In one instance the drainage of a dairy has been overhauled.

SLAUGHTER HOUSES.

These have had constant supervision and I have no reason to complain of the way in which they are kept.

UN SOUND FOOD.

In the latter part of the year two trucks of rhubarb standing on the railway siding were destroyed under a Magistrates' Order. The matter was not proceeded with as there was not sufficient evidence to prove as to whom the stuff belonged.

NEW HOUSES & SEWERS.

The drains and sanitary arrangements of 55 new houses have been supervised and tested previous to granting habitation certificates. On the building estates an aggregate of 642 feet of sewers varying from 12 inches to 6 inches diameter have been supervised and tested. All branch drains were tested with water, and the sewers with smoke-water not being available.

SCHEDULE : - OLD PROPERTY.

Below is a summary of the sanitary improvements effected during the year.

DRAINS—Drains relaid, 146; drains partly relaid or repaired, 107; defective stench traps replaced with gullies, 21; disused drains destroyed, 14; rain water down-pipes cut off from drains, 41; defective shutting repaired, 23; inspection chambers built, 95; inspection chambers repaired, 21; soil and vent shafts erected, 77; those repaired, 13; internal soil pipes removed and fixed outside, 6; drains cleared, 18; urinals built, 2; cesspools cleaned, 2; cesspools built, 2.

CLOSETS—New W.C.'s erected, 6; W.C.'s reconstructed, 3; W.C.'s repaired, 12; wash-down pedestal pans fixed, 34; pans and syphons renewed, 67; closets flushed, 76; those repaired, 17; old container closets abolished, 6.

COURTYARDS—Yards paved, 29; yards repaired, 25

WATER SUPPLY—10 samples of water were submitted to the Medical Officer for analysis, 4 of which he reported satisfactory and 6 unsatisfactory. In each case where the water was found to be bad the town water has been laid on to the premises and the wells closed; 68 taps have been fixed on the main supply pipes.

MISCELLANEOUS—Stables drained, 5; stables paved, 5; pig keeping discontinued, 2; fowl keeping discontinued, 4; slaughtering on unlicensed premises discontinued, 3; foul accumulations removed, 6; premises repaired, 31; premises cleaned, 18; overcrowding abated, 1.

CLERICAL WORK.

Intimation notices served, 147; complied with, 116; statutory notices served, 17; complied with, 16; letters written, 209.

HOUSES CONDEMNED.

6 houses have been condemned; 4 in No. 5 Court, Wolborough Street, 1 in No. 10 Court, East Street, and 1 in No. 11 Court, East Street.

A resolution has been passed by the Council to demolish 2 of the 4 condemned houses in No. 5 Court, Wolborough Street.

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 with a height of 200—300 feet, up to 800 feet on the summit of Haldon. The district, which has a total area of 1,500 acres, 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.

The population at the census of 1901 was 4,003, which for statistical purposes I have left unchanged; there were at that time 892 inhabited houses, with an average number of persons per house of 4.5.

VITAL STATISTICS. The number of deaths registered in 1903 was 69, of whom 30 were in males and 39 in females, giving an annual rate per 1,000 of 17.2. This is identical with the figures of 1902, but is a fraction below the average for the preceding 10 years. Six of these deaths were in persons in the Union House at Newton Abbot belonging to the district; deducting these the rate is 15.7. There were 10 fatalities in visitors, and if these are also excluded there is a further reduction to 13.2. The deaths in the four quarters of the year numbered 22, 16, 9, and 22, giving annual rates per 1,000 of 22.0, 16.0, 9.0 and 22.0 respectively. Thus the first and last quarters again shewed considerably the highest mortality; March and November were the most fatal months.

CHIEF CAUSES OF FATALITY. From the 7 ordinary zymotic diseases, 1 death; influenza, 5 deaths; erysipelas, 1; constitutional diseases, 23, of which 7 were due to cancer and 10 to phthisis; diseases of the nervous system, 4; of the respiratory system, 7; of the circulatory system, 10; of the urinary system, 3; of the

digestive system, 2 ; infantile inanition, 1 ; premature birth, 1 ; old age, 8 ; and violence, 3, of which 2 were due to accident and 1 to suicide. Deaths from phthisis and cancer show a considerable increase, while the mortality from the respiratory group remains at about the same figure ; that from heart disease is much reduced.

COMPARATIVE TABLE.

DEATHS FROM	1903	Average of years 1893-1902	1902	1901	1900	1899	1898
Smallpox	...		...	...	...	...	...
Measles	...		...	...	8	...	...
Scarlatina	1		1	...	...	...	...
Whooping Cough ...	...		...	...	...	8	...
Diphtheria	...		...	...	...	...	...
Continued Fevers (Typhoid, &c.)	...		...	...	1	...	...
Diarrhoea	...		2	5	...	1	2
Seven Chief Zymotics ...	1	5.5	3	5	9	9	2
Phthisis	10	6	6	8	7	3	6
Other Tubercular Diseases	3	2.5	4	2	3	2	...
Bronchitis, Pneumonia, Pleurisy	6	11	7	12	13	12	12
Heart Diseases	9	9	17	5	9	8	14
Cancer	7	3	...	6	4	5	5
Violence	3	3	3	2	...	3	2
All Other Diseases ...	30	35	29	19	34	47	36
Total deaths	69	73	69	59	79	89	77
Estimated Population ...	4000	4076	4000	4003	4020	4040	4060
General Death Rate ...	17.2	18.0	17.2	14.7	19.7	22.0	19.0
Ditto excluding visitors ...	14.7	15.9	15.2	13.7	18.1	18.5	16.0
Zymotic Death Rate ...	.25	.88	.75	1.2	2.2	2.2	.49
Total Births	62	85	81	59	77	84	102
Birth Rate	15.5	20.9	20.2	14.7	19.1	20.8	25.1
Deaths under 1 year ...	5	12	13	12	11	18	11
Deaths between 1 and 5 years	2	4	4	1	11	8	...
Deaths over 65 years ...	31	50	26	18	21	42	40
Deaths under 1 year to 1000 births	81	147	160	203	143	214	108
Deaths in Union House belonging to District	6	1.5	3	1	2	...	4

AGE INCIDENCE. Under the age of 1 year there were 5 deaths ; between 1 and 5 years, 2 ; between 5 and 15, 2 ; between 15 and 25, 5 ; between 25 and 65, 24 ; and over the latter age, 31. Thus the percentage of deaths under 1 year to the total was 7.2 ; and of those

over 65 years, 44.9. Both these figures compare very favourably with those of 1902, which were 18.8 and 37.7 respectively.

THE INFANTILE MORTALITY, or number of deaths under 1 year to every 1,000 births, was 81—almost exactly half that of the previous year, and 66 below the decennial average. The causes of these deaths were: influenza, 2; pneumonia, 1; inanition, 1; and premature birth, 1. It is to be noted that there were no fatalities from infantile diarrhoea.

The births of 34 boys and 28 girls give an annual rate of 15.5 per 1,000, which is 5.4 below the average for the preceding 10 years, and only a fraction above the lowest recorded—in 1901. The births during the four quarters of the year were 21, 15, 13, and 13, giving rates per 1,000 per annum of 21.0, 15.0, 13.0, and 13.0 respectively.

With the exception of the last item—the birth rate, the above figures may be considered very satisfactory. The death rate is the same as that of the previous year, but there were more fatalities among visitors and also double the number of deaths to be included from the Union House. The zymotic rate is greatly reduced, and the infantile mortality is the lowest reached since 1891.

ZYMOTIC DISEASE. From the 7 ordinary zymotic diseases there was only 1 death—that of a child 2 years old from scarlatina. This gives an annual rate of .25, as compared with .75 in 1902 and an average decennial rate of .88.

The notifications were 56 in number, of which 49 were scarlatina, 4 phthisis, 2 diphtheria, and 1 typhoid fever.

DIPHTHERIA. There were 2 cases reported, both in an isolated dwelling in a rural part of the district, in February. A child of 2 years was first attacked, and the mother about 10 days later also contracted a mild form of the disease. The drain of this cottage, though external, was found to be choked,—the result of using the closet pan as a depository for various kinds of rubbish, even stones being included; a considerable nuisance was thereby created in close proximity. A nurse was provided by the authority and both patients speedily recovered.

TYPHOID FEVER. For the solitary attack from

this disease the town cannot be considered responsible, the patient being a visitor who came here more or less ill from a neighbouring town ; there was some history of eating shell fish.

SCARLATINA has afforded the chief incident of the past year in the shape of an outbreak resulting in 49 reported cases with 1 fatality. The first attacks were in 4 children, in a court in the neighbourhood of Old Town Street, towards the end of February ; being of mild type, the disease escaped notice till the peeling stage was reached, and the children were therefore going about for some time in a condition of infectivity. The origin of the illness is doubtful, but scarlatina has been prevalent of late in more than one neighbouring locality. From this time to the end of May a dropping fire of cases was recorded—26 in March, 12 in April, and 8 in May—which were spread over the town and among all classes. No one school was specially affected, neither did any milk supply fall under suspicion. One of the patients was under 1 year of age ; 15 between 1 and 5 years ; 21 between 5 and 15 ; 9 between 15 and 25 ; and 3 over the latter age. There were 8 instances of multiple cases in the same family ; in one—a small cottage—6 out of 7 children were affected, while the seventh was said to have suffered on a previous occasion ; in another 5, and a third, 4, were attacked. In 20 households however only single cases were recorded, though in more than half of these there were other children living under the same roof. The Cottage Hospital unfortunately became infected, resulting in several attacks and the closing of the institution for some weeks. In the main the disease was of mild character—often indeed consisting of little more than sore throat with some peeling two or three weeks later. The one death that took place was in a sickly child 2 years old that succumbed at once ; there were 6 other children in this house, all of whom, with the mother, gave a history of slight sore throat with no further consequences. No building suitable for a hospital was available and effective isolation was in many cases difficult to obtain, but all precautions as far as possible under the circumstances were taken to prevent the spread of the disease ; fortunately, owing to the benign symptoms which generally prevailed—though probably this fact contributed to its spread—the epidemic created more annoyance than danger in a sanitary sense.

ISOLATION HOSPITAL. Some real progress is at length to be reported in this matter. Plans have been prepared for a small building on the field belonging to the Council at Dawlish water ; it is not yet decided whether this is to be constructed of iron or whether brick or other more substantial material is to be employed, and Mr. Clarke has been instructed to get out estimates for both. The site is about $1\frac{1}{2}$ miles from the town and occupies an isolated position in a well sheltered valley, with S.W. aspect ; the Dawlish water main runs in the adjoining road—a great consideration. The parish of West Dawlish, in the Newton Rural District, within whose boundary the field is situated, will share in the benefits of this institution. The work is to be started in the early spring months.

DISINFECTION. Houses are disinfected and lime washed where necessary, but there is at present no means of dealing with infected clothing and bedding.

PHTHISIS. Ten deaths were recorded from this disease, an unusually large number, the decennial average being 6. One of these was in a recent visitor, but the various towns in this locality contain many who have come from other parts of the country on account of its climatic advantages and whose deaths—perhaps after many years—are there recorded. Thus the figures are not reliable as representing the actual phthisis rate of the communities involved ; they rather pay a tribute to the general estimation in which this part of the county is held.

SANITARY CONDITIONS & PROCEDURE.

WATER SUPPLY is derived from two springs on Haldon, the flow from which, after a short course—in one case of $\frac{3}{4}$ of a mile and in the other of 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, though some of the houses derive their water from a spring on the hill above. Frequent attention is paid by the Surveyor to the intake at the Thorns, in the direction of clearing out leaves or other debris brought down by the stream ; a constant supply has been maintained throughout the past year.

The application made by the Newton Rural District Council, with a view to obtaining water for the parish of West Dawlish from this source, was further considered, but the negotiations fell through.

SEWERAGE. Water closets are general; the sewers are all brought to one main outfall, which is taken out to sea at a distance of three quarters of a mile north of the station; the outlet is below low water level. The outfall sewer is regularly flushed and continues to work well.

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. The Council have very wisely provided a covered refuse cart for this purpose—a great advance on the dust and germ distributing vehicle of former years.

The chief sanitary work of the past year was the reconstruction of the drainage of 3 blocks of houses which stretch along the sea front above the station, known as Riviera, Sea Lawn, and San Remo, in all 25 dwellings. In the former, the combined drain running along the back of the premises had become partially choked and in addition was defective. This, with the individual house drains, has all been relaid—a work of some weeks duration. The houses in question are admirably situated, and form one of the many residential attractions of the town.

In addition to the above, much work continues to be done in the direction of drainage renewal, flushing closets, paving yards, &c.; it may be mentioned that the Cottage Hospital has been redrained throughout. 30 sanitary certificates were granted during the year.

Brook Street and Manor Street, comprising a total length of about 300 yards, with a width of roadway varying from 8 to 10 feet have been remetalled with tarred macadam; this substance forms a smooth and even surface, is said to wear well, and admits of being scoured with a hose, thus possessing certain sanitary advantages in the prevention of dust and refuse accumulations. In narrow streets, such as these, consisting mainly of cottage property, the value of such a system is still more apparent.

Some little disposition to build has of late manifested itself; this is a favourable indication, in that it implies increasing prosperity of the town, and the accompanying tendency to improved working class accommodation. A block of cob and thatch buildings has disappeared in Old Town Street to be replaced by 4 modern cottages of tasteful design; there are many of the older habitations which might with advantage be similarly treated. Plans for 11 new houses were passed last year; I regret, however, that in one case—that of a

block of cottages in Stockton Lane—the statutory amount of open space as required by the by-laws was not enforced.

DAIRIES, COWSHEDS, &c. These are periodically inspected by Mr. Clarke and myself, and are, generally speaking, in good order ; the town is partly supplied by milk brought from farms in the Newton Rural District

The slaughterhouses remain in much the same condition, which is unsatisfactory ; no great improvement can be expected in this matter till a public abattoir is provided.

I have inspected all the workshops on the list ; only one of the 8 bakehouses comes under the definition of 'under-ground,' and the construction of this being satisfactory a certificate will be granted by the Council in due course. Details are given in Mr. R. Clarke, the Sanitary Inspector's report, which follows :—

	No.
Houses inspected	149
Dairies and Cowsheds inspected	8
Slaughter-houses inspected	6
Intimation notices served	71
Statutory notices served	61
Houses disinfected	31
House drains, new connections to main sewer	49
Houses redrained with new drains in lieu of defective	83
House drains, disconnected by interceptor	83
Total number of smoke tests	62
Removal of offensive accumulations due to notices served	29
Total number of water tests	213
Total number of feet of drain water tested	5167
Total number of visits	1189
Total number of Sanitary Certificates granted under the Public Healths Acts }	30

WORKSHOP AND FACTORY ACT, 1901.

Under the above the following workshops and rooms have been visited twice during the year. It is satisfactory to be able to report that there were no cases of overcrowding, and that the sanitary arrangements were fairly satisfactory ; those cases which did not comply with the requirements have been or are being dealt with.

Builders	5	Laundries	15
Blacksmiths	2	Printers	3
Bakehouses	8	Saw Mills	1
Dressmakers	11	Tailors	3
Gas and Water Fitters	3	Upholsterers & Cabinet Makers	2
Wheelwrights	2		

R. CLARKE, C.E.,

Surveyor and Sanitary Inspector.

ANALYSES OF WATERS—1903.

No.	Source.	Date of collection	Physical characters	Free Ammonia				Nitrogen from Acids	Chlorine	Total Solids	Oxygen Absorbed	Remarks
				Parts per 1,000,000	Alumina	Ammonia	grains per gallon					
1	Well at Stoke Lake Lodge, Chudleigh	Jan 16	good	nil	·035	1·8	2·1	28·0	small			A good well water
2	Spring at S. Harton, Lustleigh	Jan 17	good	·02	·065	...	1·7	7·0	moderate			A granitic water of good quality
3	Well at Ford Stables, Newton Abbot	Mar 7	yellowish tinge	·02	·25	...	5·3	49·0	large			Unfit for drinking purposes
4	Well at Ford House, Newton Abbot	Mar 7	good	·02	·11	...	3·5	30·0	considerable			A suspicious water
5	Lidwell Stream, West Dawlish	Apr 11	yellowish tinge, floating particles	·015	·05	·20	1·5	14·0	considerable			A fair water
6	Well in Church Road, Broadhempston	Apr 24	good	·01	·09	...	3·8	56·0	moderate			Has improved to some extent
7	Well at Forges Cross, Highweek	May 15	good	·01	·11	...	7·8	44·8	considerable			Shows considerable signs of pollution
8	Spring at Shutterton Bridge, W. Dawlish	June 4	good	nil	·06	·7	2·1	16·8	moderate			A good water
9	Public Supply, Moreton	June 9	good	·005	·045	...	1·3	9·8	small			Granitic waters of excellent quality
10	New springs at Moor, Moreton	June 9	good	·005	·05	...	1·3	9·8	small			
11	Hill Spring, Moreton	July 10	good	·005	·04	...	1·3	9·8	small			
12	Dawlish public supply	July 1	good	·01	·09	·29	1·35	5·9	considerable			Some vegetable matter is in evidence
13	Ideford public supply	July 9	good	nil	·03	...	1·4	14·0	small			A water from greensand of good type
14	Well, Bridport Terrace, Newton Abbot	Sept 4	good	·005	·06	...	4·8	57·4	small			A very hard well water
15	South Harton Springs, Lustleigh	Oct 9	good	·02	·14	...	1·5	8·4	considerable			The recent heavy rains have washed some peaty matter into this
16	Chudleigh Knighton South public well	Oct 21	good	·01	·065	...	1·7	14·0	moderate			A surface well of fair quality
17	Chudleigh Knighton well (Mr Ellis)	Oct 23	good	·01	·07	...	1·8	15·0	moderate			Shows signs of pollution
18	Broadhempston well in Church road	Oct 31	some floating particles	·01	·14	3·3	4·9	63·0	considerable			Much deteriorated - see No. 6
19	Chudleigh Knighton North public well	Nov 7	good	·015	·06	...	1·8	21·0	moderate			A spring of good quality
20	South Harton Spring, Lustleigh	Dec 4	good	·01	·12	·40	1·5	8·4	considerable			Still some peat, but of no consequence

