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1909.

ANNUAL REPORT

OF THE

MEDICAL OFFICER OF HEALTH

FOR THE

BOROUGH OF MAIDSTONE.

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BOROUGH OF MAIDSTONE.

REPORT OF THE MEDICAL OFFICER OF HEALTH

FOR THE YEAR 1909.

TO THE URBAN DISTRICT COUNCIL.

MR. MAYOR AND GENTLEMEN,

In accordance with the duty imposed on me by Section 14 of the Order issued on March 23rd, 1891, by the Local Government Board on the Duties of Medical Officers of Health "to prepare an Annual Report to be made to the end of December in each year comprising a summary of the action taken during the year for preventing the spread of disease, and an account of the state of his district generally at the end of the year," I herewith have the honour to submit the following Report for the year 1909.

As in previous years for the convenience of comparison the Report is based on a plan similar to its predecessors.

The calculations arrived at are based on the assumption that the rate of increase of the population of the Borough during the year ended December 31st, 1909, has been the same as prevailed during the ten years forming the last inter-censal period, 1892—1901. It should, however, be borne in mind that although this is the only available method of estimating the population, yet the margin of error is obviously an increasing one in proportion to the period that has elapsed since the last census.

With this reservation the estimated population of the Borough is fixed at 34,960 at June 30th, 1909, this date corresponding to the one selected in previous years.

From out of this population there were registered :—

Of Births	766
„ Deaths	434
„ Marriages	279

So that the rates per thousand were :—

Of Births	21·9
„ Deaths	12·4
„ Marriages	7·9

Birth Rate.—This rate still shows a downward tendency. The one which is now recorded—21·9—being 1·7 per 1000 lower than the average in the ten years 1899—1908, is, with one exception (1907), the lowest yet recorded.

This steady decline in the Birth Rate is not special to Maidstone, for throughout the country generally the same condition holds.

The Registrar General's returns indicate that the Birth Rate in England and Wales in 1909 was 25·6 per per 1000 of the population, which is 0·9 per 1000 below the rate in 1908, and lower than the rate in any other year on record. Compared with the average in the ten years, 1899—1908, the birth rate in 1909 showed a decrease of 2·2 per 1000.

As usual the number of female births is higher than that of males ; of those born in Maidstone 367 were male and 399 female, thus giving an excess of female births of 32.

Included in the total number of births are 33 of illegitimate children, giving a rate of 4·3 per 100. This is lower than last year, when it was 5·5 per 100.

Death Rate.—The nett Death Rate expresses the Death Rate of all ages of persons belonging to the Borough, and in arriving at this rate notice is taken of all persons registered as having died within the Borough whether inhabitants or otherwise. From this total the number of those who have died in the Kent County Asylum at Barming and the West Kent General Hospital and who are not inhabitants of the Borough are subtracted. On the other hand the residents of Maidstone who have died in Public Institutions outside the Borough, more particularly those dying in the Infirmary at Coxheath are added during the year, this number alone amounting to 44. The nett Death Rate for Maidstone arrived at in the above manner is 12·4 per 1000 of the estimated population. This is very satisfactory it being the lowest yet recorded, and to a large extent it is to be accounted for by the saving of infants under twelve months old.

The average for the previous ten years 1899—1908 was 14·6.

The Death Rate for England and Wales in 1909 was 14·5 per 1,000, which was lower than the rate in any other year on record.

In Table I. of the Appendix to this report details of the Births and Deaths for the past year are given, together with the details and averages for the previous ten years.

In Table III. the 434 Deaths of the Residents of the Borough are classified in their various age periods, and also under their various causes.

It will be seen that 30 people died in Maidstone from all forms of cancer, from which number 12 were above 65 years of age. The average for the previous ten years was 29.

Epidemic Influenza has at length entirely disappeared as a cause of death, not one death having been directly due to this cause throughout the year.

Measles as a cause of death is again entirely absent. It is now two years since a death from this malady occurred within the Borough, but outbreaks of this highly infectious malady have in previous years arisen in Maidstone with suprising regularity every three or four years, and as three years have now elapsed since our last epidemic, it may reasonably be expected that we may have our usual visitation at any time.

Whooping Cough caused three deaths.

INFANTILE MORTALITY.

In my last year's Report I drew attention to the low rate of Infantile Mortality, that is to say the small number of children who died before the age of twelve months was reached. During the year under review there has been a further improvement in this direction, the records showing that of the 766 children born in Maidstone during the year we lost only 68 before the age of one year. This expressed in terms per thousand births is 88, and is the lowest yet recorded in Maidstone. This low rate of Infantile Mortality is accounted for by the almost complete absence as a cause of mortality of children of this age of the common infectious diseases—Measles, Scarlet Fever, Diphtheria and Whooping Cough, there being but two cases only of the last-named disease. A further factor at work was, as last year, the few deaths from Diarrhœal diseases, only thirteen cases proving fatal.

An examination of the subjoined Tables reveals the fact that the great saving of Infantile life has been brought

Deaths per 1,000 Births of Children under one year in Maidstone.

Year.	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	Whole Year.
1870	165	97	263	115	160
1871	258	107	278	117	190
1872	181	116	171	144	153
1873	136	118	246	127	157
1874	182	93	261	119	164
1875	187	106	157	165	154
1876	147	112	141	98	124
1877	211	140	187	84	155
1878	161	176	209	155	175
1879	135	145	122	165	142
Average	176·3	121·0	203·5	128·9	157·4
1880	135	120	229	118	153
1881	120	119	122	64	106
1882	138	110	100	151	125
1883	218	79	122	139	138
1884	189	79	159	139	138
1885	140	75	187	125	133
1886	118	105	191	166	142
1887	80	59	158	114	103
1888	167	136	167	145	154
1889	132	99	173	137	135
Average	143·7	98·0	160·8	129·8	132·7
1890	136	117	93	113	115
1891	140	113	150	157	140
1892	128	87	110	80	102
1893	64	90	222	80	111
1894	167	119	112	116	128
1895	133	62	172	157	129
1896	156	82	129	162	133
1897	143	80	219	100	138
1898	153	89	234	155	152
1899	81	58	239	197	129
Average	130	89	168	131	127
1900	108	87	143	128	115
1901	157	73	162	104	132
1902	130	60	106	145	117
1903	147	141	97	123	128
1904	128	57	165	81	108
1905	161	70	84	129	109
1906	88	106	127	102	107
1907	237	82	94	107	131
1908	128	62	87	136	104
1909	97	98	77	85	88
Average	128	83	114	114	113

about mainly during the months of July, August and September, this being the period when Infantile Diarrhœa is so common. This malady falls heavily on children which are brought up by hand and live in the smaller courts and alleys where the rooms are small and ill ventilated. Doubtless the heavy rainfall and absence of high temperature during the summer months were also factors of no inconsiderable value in keeping down the Infantile Mortality.

Of the 68 Infants who died under one year of age 25 were born prematurely and died directly from this cause.

The rate of Infantile Mortality is among the most reliable indications of the sanitary state of a town, and this low rate of 88 per thousand births in a town of the character of Maidstone, consisting in the main of an industrial and working class population, indicates that attention to sanitary matters has been attended with beneficial results.

The rate for England and Wales was 109, that for the 76 great towns 118, and for the 142 smaller towns 111.

NOTIFIABLE DISEASES.

SCARLET FEVER.

Scarlet Fever was present more or less throughout the year, but the number of cases notified, viz., 47, was less than it has been for the past four years. The heaviest incidence of the disease was during the first half of the year, there being 32 cases during this period, and only 15 during the last six months.

The cases were scattered throughout the Borough generally, and on at least three occasions the malady was imported directly into the town. Seventeen cases were

notified as occurring in that portion of the Borough lying on the East side of Sandling Road, Week Street, Gabriel's Hill and Stone Street, while thirty were notified from the West side of this dividing line. The type of the malady still remains of a mild character, so much so that in several instances the initial case was of so slight a nature that the existence of the malady was not even suspected by those best qualified to judge until the peeling of the skin occurred. The very mildness of the disease makes it all the more difficult to deal with from a Public Health point of view since the malady is most infectious during the acute stage, and it is during this stage that the cases should be notified if efficient means of isolation are to be taken.

Quarter.	1899.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	Previous 10 Years' average.
1st.....	17	8	6	22	12	1	3	78	21	19	11	18
2nd ...	17	19	17	9	10	11	35	60	11	11	21	20
3rd.....	22	7	34	7	5	11	27	87	11	11	6	22
4th.....	14	11	73	22	...	9	198	44	24	22	9	41
Year ...	70	45	130	60	27	32	263	269	67	63	47	102
Cases removed to Sanatorium.	31	34	75	47	25	29	170	218	56	58	42	74

TYPHOID FEVER,

Three cases only of Typhoid Fever were notified as existing within the Borough during the year, and of these two were brought into the Borough for treatment, so that one case only actually arose within the district.

This was that of a man whose illness unfortunately proved fatal, and whose occupation was that of working in sewers, where he was of necessity exposed to the conditions which produce the malady. The almost entire absence of Typhoid Fever arising from conditions existing within the Borough itself for the past two years is very satisfactory. The previous ten years' average was 11 per year.

During the year I received notice from the Military Authorities that a soldier who had been discharged from the Army as unfit for service proposed to come to Maidstone to take up his residence. This discharged soldier had contracted Typhoid Fever, and a most careful watch had been kept on him, it being observed that he was what is termed a "typhoid carrier," he still developing and "carrying" the germs of Typhoid Fever, and of necessity disseminating them from time to time. The man is apparently in the best of health, and shows no obvious signs of the danger he is to the public health. Detailed instructions have been given him to minimise this risk as much as possible. The man himself is in every way loyal to my instructions. A bacteriological examination is made every 14 days to determine the progress that is made in our endeavours to render the man no longer a danger to the community. In his own interests the patient is most anxious to rid himself of this disability, as he finds he is unable to find employment to enable him to earn a living.

Quarter.	1899.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	Previous 10 Years' average.
1st.....	5	13	7	1	1	...	...	...	2	1	2	3
2nd ...	8	2	3	2	1	3	2	3	...	...	1	2·4
3rd.....	4	2	4	3	2	1	...	...	1	2	...	1·9
4th.....	6	11	7	5	5	1	1	2	4	1	...	4·4
Year ...	23	28	21	11	9	5	3	5	7	4	3	11

DIPHTHERIA.

The record of cases of Diphtheria has been the highest since 1899, there having been 109 cases notified during the year. Most occurred in the higher parts of the town in West Maidstone, 74 cases being notified in this district. The incidence of the disease was most severe in the line of the Tonbridge Road, but the malady was not entirely confined to this portion of the town, 35 cases originating in East Maidstone.

At first the type of the malady was mild, but in February it assumed a virulent type, and then again became mild during the autumn. In all 16 cases died, equal to a mortality of 14·6 per 100 of cases notified; last year it was 13·5. The outbreak originally commenced in December, 1908, and was associated with the opening up and relaying of an old sewer in Upper Fant Road; this outbreak, however, was checked.

On January 28th I received a notification of a case that had proved fatal the day before. As usual I visited the house and discovered that the doctor was called in after the unexpected death of the child, who had, however, been ill for four days with throat symptons. There was, moreover, a younger child in the same room obviously ill from Diphtheria, and who doubtless had contracted the malady from her older sister who had suddenly died. The mother of these children had recently had Scarlet Fever in her house and not unnaturally imagined these children were also suffering from this malady, but as no rash appeared did not seek medical advice until one child unexpectedly died. The malady was contracted in a house from which this family had recently removed and where there were grave sanitary defects.

A large proportion of the cases were associated with defective sinks. These sinks are made of gravel and concrete. In course of time the gravel becomes detached, leaving small holes presenting a pitted appearance where the slop waste collects, decomposes, and gives rise to a horribly offensive odour. It is impossible to cleanse these sinks with any pretence to thoroughness, and in all cases where they are met with they are being replaced by glazed stoneware ones.

Quarter.	1899.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	Previous 10 Years' average.
1st.....	94	16	25	38	4	13	6	10	10	13	31	22
2nd.....	47	9	18	23	5	6	3	6	6	3	26	12
3rd.....	36	9	14	15	2	9	12	3	13	6	24	11
4th.....	72	16	25	13	5	11	3	6	12	15	28	17
Year ...	249	50	82	89	16	39	24	25	41	37	109	65
Removed to Sanatorium.	103	34	54	63	11	35	17	13	34	32	98	40

SMALL POX.

For the seventh successive year no case of Small Pox has been notified as existing within the Borough. During this period the number of children not protected by vaccination has been a steadily increasing one, so much so that during 1908 practically only one half of the children born have been vaccinated, and I have every reason to believe, although precise figures are not yet at my disposal, that the same condition holds for 1909, and to a slightly increased extent. Provision should certainly

be made to meet this menace to the Public Health by the acquisition of suitable land near the Borough where buildings could be rapidly erected in the event of an outbreak of any magnitude. At present the only accommodation is an iron building for 20 cases erected in the grounds of the Sanatorium, and which is adjacent to a large number of inhabited houses.

SMALL POX.

Quarter.	1899.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	Previous 10 Years' average.
1st.....	...	...	...	6	...	...	...	...	..	...	...	·6
2nd ...	...	...	...	11	...	...	...	...	...	...	...	1·1
3rd.....	...	...	1	15	...	...	...	...	...	...	..	1·6
4th.....	...	1	2	...	...	...	...	...	...	...	...	·3
Year ...	...	1	3	32	...	...	...	...	...	...	...	3·6

VACCINATION.

Year.	Births.	Successfully Vaccinated	Insusceptible to Vaccination.	Had Small Pox.	Died unvaccinated.	Number in respect of whom Certificates of Conscientious Objection have been received.	Vaccination postponed.	Removals.	Remaining.	Children not vaccinated (including cases postponed) per cent. per birth.
1898	716	314	1	...	84	27	41	69	180	44·2
1899	818	433	2	...	64	59	79	87	94	38·9
1900	825	420	1	...	61	35	35	81	192	53·6
1901	763	567	1	..	61	95	2	33	15	19 0
1902	815	649	3	..	63	71	10	16	3	12·2
1903	806	620	2	...	76	84	7	12	5	12·1
1904	832	661	1	...	69	91	3	14	3	13·3
1905	799	591	...	...	68	111	6	23	...	17·4
1906	830	629	...	...	61	112	6	20	3	24·3
1907	763	520	...	...	58	169	5	11	...	26·4
1908	844	425	...	...	58	342	3	18	1	49·6
1909*	397	176	...	...	22	182	4	12	1	55·6

* January to June.

ERYSIPELAS.

Quarter.	1899.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	Previous 10 Years average.
1st.....	9	3	3	6	10	3	4	4	6	7	2	5
2nd ...	6	5	3	5	4	3	0	8	5	3	2	4
3rd.....	2	3	3	6	5	1	4	3	4	2	5	3
4th.....	6	9	8	13	6	1	8	10	7	3	2	7
Year ...	23	20	17	30	25	8	16	25	22	15	11	19

There were 11 cases only of Erysipelas, all were of a mild character, not one proving fatal.

PUERPERAL FEVER.

Quarter.	1899.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	Previous 10 years' average.
1st	1	...	1	...	1	2	...	...	1	1	...	·7
2nd ...	1	...	...	1	3	..	...	1	...	...	1	·7
3rd.....	...	...	..	1	...	...	...	1	...	...	...	·2
4th	1	...	...	2	1	...	...	1	1	2	...	·8
Year ...	3	...	1	4	5	2	...	3	2	3	1	2·3

The only case of Puerperal Fever occurred in the practice of a Nurse who was not a registered midwife.

TOTAL NOTIFICATIONS.

Throughout the year 171 Notifications were received, the annual average for the previous ten being 203. The cases were fairly evenly distributed throughout the year. 109 of the cases were due to Diphtheria alone.

The detail appears in the following tables :—

Quarter.	1899.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	Previous 10 Years' average.
1st	126	40	42	73	28	19	12	92	40	41	46	51
2nd ...	79	35	41	51	23	24	40	78	22	17	51	41
3rd.....	64	21	56	47	14	22	43	94	29	21	35	41
4th.....	99	18	115	55	17	23	210	63	48	43	39	69
Year ...	368	114	254	226	82	88	306	327	139	122	171	203

Disease.	Previous 10 Years' average.	1909.
Diphtheria .. .. / Croup	65	109
Scarlet Fever	102	47
Typhoid Fever ..... / Continued Fever.....	11	3
Erysipelas	21	11
Puerperal Fever	2·3	1
Small Pox	3·6	...

CONSUMPTION.

This malady has for the past year been added to the list of notifiable diseases, but the notification at present is only to a limited extent. The Local Government Board issued an Order coming into force on January 1st, 1909, providing for the compulsory notification to the Medical Officer of Health of all cases of pulmonary tuberculosis (commonly known as Consumption) arising among patients attended by Poor Law Medical Officers. In addition to these notifications originating amongst the very poor, the Army authorities notify cases occurring amongst discharged soldiers and who intend residing

in the district. Certain hospitals in town also notify cases amongst patients who may have come to them from the district. From these various sources I received notifications of 19 cases of Consumption. This number of necessity does not represent anything like the total number of cases in our midst, since the number of deaths alone last year amounted to 29. These notifications, however, have enabled us to carry out certain administrative measures aimed at checking the spread of the disease, among which may be mentioned the inspection of the houses in which these consumptives live, with especial reference to the prevention of overcrowding and securing efficient means of ventilation. Further, should a case be removed to hospital, change their place of residence or die, the bedding and soiled articles are removed for disinfection at the Sanatorium and the house cleansed by fumigation. Instructions are also given calling attention to the well recognized and undisputed fact that the great danger of disseminating the disease arises from the expectoration. A card, the text of which is printed below, is left at the patient's house:—

"Borough of Maidstone.—Health Department.

"Directions to Persons suffering from Consumption.

"Consumption is an infectious disease, being spread by germs. The conditions favourable for its spread are:—

"Want of cleanliness.
"Absence of fresh air.
"Not enough sunlight.
"Dark rooms.

"It kills in England and Wales alone over 50,000 persons every year. All these deaths are preventable and the malady when taken early curable.

"In order to assist in checking the scourge the following directions have been prepared for your information and guidance, and you are requested to follow closely the instructions herein given :—

"1.—Do not swallow your expectoration.

"2.—Do not spit on the ground, floor, or fireplace, but expectorate into a proper vessel containing a liquid disinfectant. Once or oftener during the day be careful that the contents of the vessel are emptied into the pan of the water-closet, or on to a bright fire, but never anywhere else, not even on to the dust heap.

"3.—When away from home and unable to make use of a spitting cup, expectorate into a piece of rag which can be burned on arriving home. If the pocket-handkerchief be used for this purpose, the expectoration must not be allowed to become dry, hence on arrival home take immediate steps to disinfect the soiled handkerchief by boiling it for 10 minutes. It may afterwards be washed in the usual manner.

"4.—Keep your room well aired, throw the window wide open when you leave the room, and always keep it open, at least at the top, all night.

"5.—If there is a fireplace in the room do not block up the chimney, but always keep it free for the passage of air.

"6.—Keep your room clean; do not allow dust to remain on the floor.

"7.—Suitable disinfecting fluid will be supplied free of any charge whatever on applying at the office of The Health Department, Fair Meadow, Maidstone.

"IMPORTANT.

"The phlegm coughed up in consumption contains the seeds of the disease. Therefore—

"(1) Swallowing the expectoration may lead to consumption of the bowels.

"(2) Consumptive patients should sleep alone.

"(3) Mothers who are consumptive should not suckle their children.

"(4) After removal of an infected person the rooms occupied by such person will be thoroughly disinfected by the Health Authority."

THE SANATORIUM.

During the year the following cases have been admitted for treatment, viz.:—

Diphtheria	98
Scarlet Fever	42

These are the only two infectious maladies that can be treated at the same time in the Sanatorium. As evidence of the growing popularity of the institution, it may be stated that of the 156 cases of these maladies that occurred in Maidstone, 140 were removed here for treatment. This confidence that the general public reposes in

the institution is much appreciated by the Matron and the Staff, and that this confidence is not misplaced is vouched by the fact that the percentage of deaths from Diphtheria of those removed was 12·2 per cent., whereas of those not removed it was 36·3 per cent.

The efficiency of the institution would be much increased by the erection of a properly constructed discharging block apart from the Wards and from the administration block.

At the present time there are no efficient means of thoroughly disinfecting the patient and his clothes immediately before returning to his home. An attempt is made to do this in a bath room adjoining the ward, but this small room being part of the ward must of necessity itself be infected, and it is quite impossible under existing arrrangements to return a child to its home absolutely free from infection.

A further matter which is at present receiving the consideration of the Health Committee is the condition of the flooring of both blocks. At present the surface of the floors is rough, due to a very large extent to constant scrubbing; several of the boards are loose, and are separated from each other, leaving an interval in some cases of half an inch in width, and allowing of the accumulation of the debris and dust of several years.

The present condition of the flooring allows the dried particles of the skin which are the result of the peeling in Scarlet Fever to accumulate in the interstices between the boards, and being quite inaccessible in these crevices they cannot be removed by the ordinary process of cleaning. Further these Wards should be from time to time systematically disinfected, especially when a series of acute

cases is admitted, and it is highly problematical if the disinfectant either aerial or fluid ever even reaches the depths of these recesses.

This condition is obviously one of a very insanitary character, more especially in a building used for the treatment of infectious disease, and in addition of so dealing with patients that on their return to their homes they may be free from infection.

The flooring throughout both blocks should be of a hard impervious nature, allowing of polishing, noiseless, and not cold, and of such a character that there are no interstices where dirt may accumulate.

During the past year a great improvement has been effected by the removal of two tortoise stoves. Their place has been taken by the erection of an open coal stove in the centre of the ward, so arranged that the fresh air is taken from the outside, passed through a warm chamber at the back, and discharged as pure warm air into the centre of the wards, while the products of the combustion of the coal and the used up air pass up a central chimney.

The number of patients treated in the Sanatorium for the past year and for the previous ten years is as follows :—

Disease.	1899.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	Previous 10 Years' average.
Diphtheria	103	34	54	68	11	35	17	13	34	32	98	40
Scarlet Fever	31	34	75	47	25	36	170	205	56	58	42	73
Small Pox.....	...	1	2	31	...	...	...	...	...	...	...	3
Totals	134	69	131	146	36	71	187	218	90	90	140	113

INSPECTION OF MEAT.

In compliance with instructions received from the Local Government Board asking that they may be informed precisely what arrangements are made for the inspection of meat in this district, I beg to state that there is no public slaughterhouse in Maidstone, and in consequence there is considerable difficulty in carrying out a systematic and thorough inspection of meat. There are in Maidstone at the present time 24 slaughter-houses. These are regularly inspected by the Sanitary Inspector both during times of slaughtering and at other times. In addition to the inspection of the slaughter-houses, a careful watch is kept on the animals sold in the market, emaciated beasts have been watched, and their place of destination for slaughter discovered. By these means, on at least two occasions, the authorities were able to prevent the sale of meat which was not fit for the food of man. The Sanitary Inspector has no special certificate in Meat Inspection, but for some years has carried out the duties, and on two occasious during last year tuberculous meat was found in slaughter-houses. In one case the carcase was surrendered and destroyed, in the other case the procedings against the occupier of the slaughter-house on which the tuberculous carcase was discovered were dismissed.

GENERAL SANITARY CONDITION AND PROGRESS.

From Mr. Bunting, the Borough Surveyor, I learn that the following works of Sanitary interest have been carried out during the year:—

New Houses erected	55
Buildings undergone alterations	22

Buildings of Warehouse class erected ... 9

Number of connections to Public Sewer 17

The following Sewer extensions have been made :—

Soil Sewers.

London Road ..... 1,158 yards.

Surface Water Sewers.

London Road ..... 1,414 yards.

The following Sewers have been removed and relaid :—

Soil Sewers.

Upper and Lower Fant Roads... 808 yards.

Surface Water Sewers.

London Road ..... 1,414 yards.

Campbell Road ..... 93 yards.

The drainage work carried out in London Road, which is now completed so far as the Council is concerned, has already enabled certain properties in that district which had never before been provided with the means of disposing of their drainage except by cesspolls to be connected with our sewerage system. It now only remains for provision to be made for a sewer to be constructed in Queen's Avenue, which would connect with London Road and provide the means for doing away with the remaining cesspools. The Upper Fant Sewer, which was completed during the year, has effected an enormous improvement in a thickly populated district, and is working most satisfactorily. The necessity for the use of a flushing chamber at the bottom of Dover Street has been entirely removed, and this will also do away with what, at times, was a danger to the health of the neighbourhood. The new sewer does not require any such means to make it self-cleansing.

The sewage disposal works at Aylesford have been completed during the year. These are situated some three miles from the town, and consist of a series of sedimenta-

tion tanks in which the sewage undergoes definite changes of a biological character prior to treatment on the filter beds, where further biological changes take place, resulting up to the present in an excellent effluent. At the commencement of the working of the system the residents of the district complained of offensive odour from the beds, but this nuisance has since been very considerably mitigated. Much assistance has been afforded in this direction by the advice and co-operation of Dr. Howarth, the County Medical Officer of Health.

The routine work of sanitary interest accomplished during the year is set forth in the following table compiled by Mr. Jackling, the Chief Sanitary Inspector :—

Table shewing the Number of Premises dealt with by Notice or otherwise.

House Drains reconstructed	66
House Drains repaired	26
Old Drains trapped from sewer and ventilated	4
Sink and other Waste Pipes renewed, disconnected or trapped	57
New Stoneware Gullies provided	63
Cesspools emptied and cleansed	6
Cesspools filled	5
New Cesspools constructed	1
W.C.'s repaired	32
W.C. Flushing Apparatus repaired	548
W.C. Basins replaced	59
Houses provided with New W.C.'s	34
W.C.'s provided with new Flushing Apparatus	39
Houses provided with Dustbins	319
Soil Pipes removed outside and ventilated	3
Urinals repaired or provided with Flushing Apparatus... ...	7
Shooting to Houses provided or repaired	25
Houses Cleansed and Limewashed...	18
House Roofs repaired	24
Back Yards paved or repaired	48
House Refuse collected on complaint	29
Overcrowding abated	4
Manure and other refuse removed	10
Poultry and Animals removed	4
New Sinks provided...	29
Miscellaneous defects remedied	78
New Stoneware Drainage laid ... ... 3628 feet	
New Iron Drainage laid ... ... 68 feet	
New Vent Shafts provided	23

Public Health Acts Amendment Act, 1907.—Parts II., III., IV., V., VI., and X. of the above Act are now in force in Maidstone, having come into operation on the 6th December, 1909.

Bake-house Regulation Act.—The Bake-houses in the Borough both underground and otherwise have from time to time been inspected. Instructions for cleansing have in all cases been carried out.

Canal Boat Act.—The various provisions of this Act have been carried out. No case of notifiable infectious diseases has been introduced in the Borough by means of barges.

Factory and Work Shop Act, 1907.—The details of work accomplished under this Act will be found in the Appendix.

As required by the Act a copy has been forwarded to the Secretary of State (Home Office.)

WATER REPORT.

From January until December 4th the Borough was supplied with water derived from the chalk at Boarley and at Cossington, and from the deep well driven into the lower green sand at Forstal. The heavy rainfall commencing in June and continuing until the end of the year, (during which period 23·06 inches of rain fell) filled up the springs in the chalk to such an extent that there was an ample supply from these sources alone during the latter part of the year.

The Cossington Supply.—The three spring heads from which the water constituting this supply is derived have had an abundant supply of water throughout the year. The grounds immediately surrounding these heads have been inspected from time to time and found to be in excellent condition. The fence surrounding No. 3 has recently been renewed. The guard houses were clean and in excellent repair.

This supply has been chemically examined 26 times, the specimen for analysis having been collected as near the source as possible every 14 days. On no occasion has there been any marked departure from its standard composition, and it has been invariably clear.

The Boarley Sepply.—This supply is derived from spring heads situated in the chalk. Each of these spring heads is well protected. In three cases the protection is by means of a stout wooden fence with barbed wire on top; the gates leading into the enclosure are also well protected against intruders. The fourth source constituting this supply is situated in the midst of a large meadow the turf of which is very compact. The entrance to the spring is protected by a raised cemented circular wall some 5ft. high, sealed by a heavy iron plate, thus rendering contamination impossible. The reservoir into which these four springs discharge is a covered one, well protected by a thick covering of turf, and surrounded by a stout wooden fence on all sides.

The supply has been analysed on 53 occasions, the sample for analysis being collected as near the source as possible alternately with one near the point of distribution. The analyses indicate a high degree of organic purity from this supply.

Forstal Supply.—The pumping station and the head of the deep well have been visited from time to time and found to be in a satisfactory condition.

This supply has been chemically examined on 24 occasions, the specimens for analysis being collected just as it leaves the deep well. It has been found to be uniform in composition and free from discolouration.

Cossington and Forstal (Mixed).—This mixed supply has been analysed on 50 occasions, the samples being taken from various houses in the area of distribution. It has always a chemical composition consistent with the composition of the two sources from which it is obtained. At one time complaints were received that this supply was at times turbid, but during the last year no complaints of this character have reached me.

The high level reservoir at Detling has also been visited, and found to be well protected against any possibility of contamination.

Bacterial Examination.—The supplies from Boarley, Cossington and Forstal have been, as heretofore, examined periodically by Professor Sims Woodhead, whose report states that "these waters from a bacteriological point of view, are of an extraordinarily high standard of purity."

The detail of the various chemical analyses, 153 in number, appear in the appendix.

The average results of these analyses are shewn in the subjoined table, and constitute the standard for the year.

On comparing these results with those of 1908 there is no material difference :—

Source of Supply.	Boarley.	Cossington.	Forstal.	Cossington and Forstal (Mixed).
Total Solids	38·9	39·8	40·4	40·0
Chlorine	2·3	2·2	2·9	2·4
Nitrogen as Nitrates	·617	·438	·163	·314
Free Ammonia	·00	·00	·00	·00
Albuminoid Ammonia	·02	·02	·01	·01
Oxygen absorbed in 4 hours ...	·003	·003	·003	·003
Hardness, Total	25·5	24 9	27·8	25·3
,, Perm	6·6	7·1	7·6	7·2
Colour and Appearance in 2-foot tube...	clear	clear	clear	clear
Smell	none	none	none	none
Phosphoric Acid	none	none	none	none

☞ All results are given in parts per hundred thousand, except Free and Albuminoid Ammonia, which are in parts per million.

Water from Private Wells.—In only one case was there necessity to examine water from a private source, and in this instance there was no evidence of organic pollution.

METEOROLOGY.

The detail of meteological observations is set forth in the Appendix. The mean reading of the barometer for the year is 29·73 inches, the highest monthly mean being for January, 30·10, and the lowest for March, 29·45. The hottest month was August, giving a mean of the maximum readings of the thermometer in the shade of 69°, and a mean of the minimum readings of 55°, while the coldest month was January, with a mean of maximum readings of 40°, and a mean of minimum readings of 32°. The prevailing winds were S.W., there being 128 days on which the wind was in this quarter. The total rain-fall for the

year was 31·26 inches, the heaviest amount falling in October, viz., 6·67 inches, while during January the amount registered was ·8 inches, this being the driest month of the year. There were 185 days in the year on which ·01 of an inch or more rain fell.

CONCLUSION.

In bringing this Report to a close it may be interesting to compare the rates relating to Births and Deaths and to Infantile Mortality with those of former years. The earliest records I have in my possession for Births and Deaths are those of 1882, and I find that the Birth Rate then was then 31·8 per 1,000, whereas now it is 21·9. The Death Rate was 17·4, now reduced to 12·4. The records of Infantile Mortality are available since 1870, and I find that during this year it was 160 per 1,000 births now reduced to 88.

The markedly reduced Birth Rate is a disquieting feature, but the great reduction in the Death Rate and in the rate of Infantile Mortality justify to the full the expenditure of time and currency that are necessary in order to control the many evils so dangerous to the public health, and which as people congregate together seem to develo p so rapidly and continuously.

I have the honour to be,
Mr. Mayor and Gentlemen,
Your obedient servant,
C. PYE OLIVER, M.D.,
AND
Doctor in State Medicine (Lond.).

THE GABLES,
MAIDSTONE,
March 31st, 1910.

BOROUGH OF MAIDSTONE, 1909.

GENERAL SUMMARY.

Population (estimated to the middle of 1909)			34,960
Number of Inhabited Houses at Census of 1901 ...			6,648
Average Number of Persons to a House			5·14
Area ...	East Maidstone 2,019 acres West ,, 1,989 ,,		4,008 acres
Density...			8·6 persons per acre
Annual Birth Rate		per 1,000	21·9
Annual Death Rate		,,	12·4
Zymotic Death Rate		,,	·88
Phthisis and other Tubercular Diseases' Death Rate		,,	1·1
Respiratory Death Rate		,,	1·9
Infantile Death Rate per 1,000 Births			88
Births	Males 367 Females 399		766
Deaths	Males 229 Females 205 — 434 — East Maidstone 238 West ,, 196		434
Excess of Births over Deaths			322

Elevation.—The Population reside at a mean Elevation of 70 feet above the sea level, ranging from 20 to 120.

Area.—The area of 4,008 acres is divided into two divisions, by Week Street, Gabriel's Hill, and Stone Street; all to the West, including the Western sides of those Streets constituting West Maidstone; the Eastern portion forming East Maidstone.

TABLE I—Vital Statistics of Whole District during 1909 and previous Years.

Year.	Population estimated to Middle of each Year.	Births.		Total Deaths Registered in the District.				Total Deaths in Public Institutions in the District.	Deaths of Non-residents registered in Public Institutions in the District.	Deaths of residents registered in Public Institutions beyond the District.	Nett Deaths at all ages belonging to the District.	
				Under 1 Year of Age.		At all Ages.						
		Number.	Rate.*	Number.	Rate per 1,000 Births registered	Number.	Rate.*				Number.	Rate.*
1	2	3	4	5	6	7	8	9	10	11	12	13
1899	33,262	820	24·65	106	129	702	21·1	179	168	50	578	17·3
1900	33,305	813	24·41	94	115	710	21·3	313	215	53	548	16·4
1901	33,548	762	22·11	101	132	640	19·0	272	197	39	482	14·3
1902	33,717	792	23·50	92	117	632	18·5	313	222	60	470	14·2
1903	33,832	810	23·94	104	128	617	18·2	260	227	48	438	12·9
1904	34,052	841	24·69	91	108	586	[illegible]	210	127	52	491	14·4
1905	34,225	795	23·22	87	109	677	19·7	241	210	53	320	15·1
1906	34,403	830	24·12	89	107	601	17·4	224	178	47	470	13·6
1907	34,585	755	21·80	99	131	669	19·3	231	187	52	534	15·4
1908	34,771	831	23·90	87	104	594	17·3	234	197	55	452	12·9
Averages for years 1899-1908.	33,970	804	23·63	95	118	642	18·8	248	192	50	498	14·6
1909	34,960	766	21·91	68	88	625	17·8	278	235	44	434	12·4

* Rates in Columns 4, 8 and 13 calculated per 1,000 of estimated population.

NOTE.—The deaths included in Column 7 of this Table are the whole of those registered during the year as having actually occurred within the district or division. The deaths included in Column 12 are the number in Column 7, corrected by the subtraction of the number in Column 10 and the addition of the number in Column 11.

By the term "Non-resident" is meant persons brought into the district on account of sickness or infirmity, and dying in public institutions there—these institutions are: (1) The Kent County Asylum, Barming; (2) West Kent General Hospital, Maidstone; (3) Ophthalmic Hospital Maidstone; and by the term "Residents" is meant persons who have been taken out of the district on account of sickness or infirmity, and have died in public institutions elsewhere, viz.: Union Workhouse, Coxheath.

The "Public Institutions" taken into account for the purpose of these Tables are those into which persons are habitually received on account of infirmity, such as Hospitals, Workhouses and Lunatic Asylums.

Area of District in acres (exclusive of area covered by water) } 4,008 acres.

Total population at all ages 33,516
Number of inhabited houses 6,648
Average number of persons per house 5·04
} At Census of 1901.

TABLE II.—Cases of Infectious Disease notified during the Year 1909.

Notifiable Disease.	Cases Notified in Whole District.							Total Cases Notified in Each Locality.		No. of Cases Removed to Hospital from Each Locality.		Total Cases removed to Hospital.
	At all Ages.	At Ages—Years.						East Maidstone.	West Maidstone.	East Maidstone.	West Maidstone.	
		Under 1.	1 to 5.	5 to 15.	15 to 25.	25 to 65.	65 and upwards.					
Small Pox	...	...	...	...	.	...	...	...	...	...	...	...
Cholera	...	...	...	...	...	..	...	...	...	...	...	...
Diphtheria (including Membranous Croup)	109	1	26	65	7	10	...	35	74	30	68	98
Erysipelas	11	1	...	...	1	8	1	3	8	...	...	...
Scarlet Fever	47	...	8	31	8	...	...	17	30	15	27	42
Typhus Fever... ...	...	...	...	...	...	...	..	...	...	...	...	...
Enteric Fever... ..	3	...	...	...	...	3	..	1	2	...	...	...
Relapsing Fever ..	...	...	...	...	...	...	...	...	...	...	...	...
Continued Fever ...	...	...	...	...	...	...	...	...	...	...	...	...
Puerperal Fever ...	1	...	...	...	1	...	...	1	...	...	...	...
Plague...	...	...	...	...	...	...	.	...	...	...	...	...
Totals	171	2	34	96	17	21	1	57	114	45	95	140

Isolation Hospital—The Sanatorium, Fant Lane. Total Available Beds—20.
Number of Diseases that can be concurrently treated—2.

TABLE III.

Causes of, and Ages at, Death during the Year 1909.

CAUSES OF DEATH	Deaths at the subjoined ages of "Residents" whether occurring in or beyond the District							Deaths at all ages of "Residents" belonging to Localities, whether occurring in or beyond the District.		Total Deaths whether of "Residents" or "Non-Residents" in Public Institutions in the District.
	All Ages.	Under 1.	1 to 5.	5 to 15.	15 to 25.	25 to 65.	65 and upwards.	East Maidstone.	West Maidstone.	
Small Pox	...	...	...	...	...	...	...	...	...	...
Measles	...	...	...	...	...	...	...	...	...	...
Scarlet Fever	3	...	...	3	...	...	...	...	3	3
Whooping-cough	3	2	...	1	...	...	...	2	1	...
Diphtheria (including Membranous Croup)	16	...	8	8	...	...	...	2	14	13
Croup	...	...	...	...	...	...	...	...	...	...
Fever { Typhus	...	...	...	...	...	...	...	...	...	...
Fever { Enteric	1	...	...	...	...	1	...	...	1	2
Fever { Other continued	...	...	...	...	...	...	...	...	...	...
Epidemic Influenza	...	...	...	...	...	...	...	...	...	...
Cholera	...	...	...	...	...	...	...	...	...	...
Plague	...	...	...	...	...	...	...	...	...	...
Diarrhœa	8	7	1	...	...	...	...	5	3	5
Enteritis	11	4	2	...	...	5	...	9	2	19
Gastritis	...	...	...	...	...	...	...	...	...	...
Puerperal Fever	...	...	...	...	...	...	...	...	...	...
Erysipelas	...	...	...	...	...	...	...	...	...	...
Phthisis (Pulmonary Tuberculosis)	29	...	1	1	6	20	1	18	11	50
Other Tuberculous Diseases	20	2	4	7	2	5	...	8	12	1
Cancer, Malignant Disease	30	...	...	...	...	18	12	14	16	4
Bronchitis	35	8	2	...	...	6	19	23	12	15
Pneumonia	33	6	8	2	...	7	10	20	13	13
Pleurisy	...	...	...	...	...	...	...	...	...	...
Other Diseases of Respiratory Organs	3	...	1	...	...	...	2	3	...	1
Alcoholism, Cirrhosis of Liver	4	...	...	...	...	4	...	2	2	...
Venereal Diseases	...	...	...	...	...	...	...	...	...	...
Premature Birth	25	25	...	...	...	...	...	12	13	...
Diseases and Accidents of Parturition	...	...	...	...	...	...	...	...	...	...
Heart Diseases	45	...	...	2	1	22	20	24	21	41
Accidents	14	...	1	...	...	11	2	8	6	11
Suicides	7	...	...	...	...	6	1	5	2	1
All other Causes	147	14	8	5	2	36	82	81	66	99
All Causes	434	68	36	29	11	141	149	238	196	278

TABLE IV.—Infantile Mortality during the Year 1909.

Deaths from stated causes in Weeks and Months under One Year of Age.

Causes of Death.	Under 1 Week.	1–2 Weeks.	2–3 Weeks.	3–4 Weeks.	Total under 1 Mth.	1–2 Months.	2–3 Months.	3–4 Months.	4–5 Months.	5–6 Months.	6–7 Months.	7–8 Months.	8–9 Months	9–10 Months.	10–11 Months.	11–12 Months.	Total Deaths under 1 year.
ALL CAUSES:—																	
Certified	20	2	...	2	24	12	4	4	6	2	3	3	1	...	...	2	61
Uncertified	2	1	...	...	3	1	1	...	2	...	...	...	...	...	...	...	7
COMMON INFECTIOUS DISEASES:—																	
Small Pox	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chicken Pox	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Measles	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Scarlet Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diphtheria (including Membranous Croup)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Whooping Cough	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	2
DIARRHŒAL DISEASES:—																	
Diarrhœa, all forms	...	...	...	...	...	1	2	1	1	...	1	1	...	...	...	...	7
Enteritis, Muco-enteritis, Gastro-enteritis	...	1	...	...	1	2	...	...	...	...	...	...	...	...	...	1	4
Gastritis, Gastro-intestinal Catarrh	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
WASTING DISEASES;—																	
Premature Birth	22	...	...	...	22	3	...	...	...	...	...	...	...	...	...	...	25
Congenital Defects	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Injury at Birth	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Want of Breast-milk, Starvation	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Atrophy, Debility, Marasmus	...	1	...	2	3	3	...	...	...	...	2	...	1	...	...	...	9
TUBERCULOUS DISEASES,—																	
Tuberculous Meningitis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Tuberculous Peritonitis: Tabes Mesenterica	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Tuberculous Diseases	...	...	...	..	...	...	...	1	...	...	...	...	...	...	...	1	2
OTHER CAUSES:—																	
Erysipelas	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Syphilis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Rickets	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Meningitis *(not Tuberculous)*	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Convulsions	...	1	...	...	1	1	2	...	...	...	...	1	...	...	...	...	5
Bronchitis	...	...	...	...	...	3	...	1	4	...	...	...	...	...	...	...	8
Laryngitis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Pneumonia	...	...	...	...	...	...	...	2	1	2	...	1	...	...	...	...	6
Suffocation, overlying	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other causes	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	22	3		2	27	13	5	4	8	2	3	3	1			2	68

Births in the Year { Legitimate ... 733 / Illegitimate... 33 } Population, estimated to middle of 1909—34,960.

Deaths in the Year { Legitimate Infants..... 61 / Illegitimate ,, ... 7 }

Deaths from all Causes at all Ages—434.

TABLE V.

Factories, Workshops, Laundries, Workplaces and Homework.

1.—INSPECTION. (Including Inspection made by Sanitary Inspectors or Inspectors of Nuisances.)

Premises.	Number of		
	Inspections.	Written Notices.	Prosecutions.
Factories (Including Factory Laundries).	75	27	—
Workshops (Including Workshop Laundries).	246	25	—
Workplaces (Other than Outworkers' premises included in Part 3 of this Report).	24	1	—
TOTAL	345	53	—

2.—DEFECTS FOUND.

Particulars.	Number of Defects.			Number of Prosecutions.
	Found.	Remedied	Referred to H.M. Inspector.	
Nuisances under the Public Health Acts:—				
Want of Cleanliness	24	24	—	—
Want of Ventilation	1	1	—	—
Overcrowding	—	—	—	—
Want of Drainage of Floors	2	2	—	—
Other Nuisances	3	3	—	—
Sanitary Accommodation—				
Insufficient	1	—	1	—
Unsuitable or Defective	29	29	—	—
Not Separate for Sexes	—	—	—	—
Offences under the Factory and Workshop Act:—				
Illegal Occupation of Underground Bakehouse (s. 101)	—	—	—	—
Breach of Special Sanitary requirements for Bakehouses (ss. 97 to 100)	1	—	1	—
Other Offences (Excluding Offences relating to Outwork which are included in Part 3 of this Report)	3	—	3	—
TOTAL	64	59	5	—

3.—HOMEWORK.

NATURE OF WORK.	OUTWORKERS' LIST, SECTION 107.											Inspections of Outworkers' Premises.	OUTWORK IN UNWHOLESOME PREMISES, Section 108.			OUTWORK IN INFECTED PREMISES, Sections 109, 110.		
	Lists received from Employers.						Addresses of Outworkers.		Notices Served on Occupiers as to keeping or sending lists.	Prosecutions.								
	Sending Twice in the Year.			Sending Once in the Year.														
		Outworkers.			Outworkers.													
	Lists.	Contract'rs	Workmen.	Lists.	Contract'rs	Workmen.	Received from other Councils.	Forwarded to other Councils.		Failing to keep or permit Inspection of lists.	Failing to send lists.		Instances.	Notices served.	Prosecutions.	Instances.	Orders made (S. 110).	Prosecutions (Sections 109, 110).
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
Wearing Apparel—																		
(1) Making, &c.	18	—	40	1	—	5	3	5	—	—	—	22	—	—	—	—	—	—
(2) Cleaning and Washing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
TOTAL	18	—	40	1	—	5	3	5	—	—	—	22	—	—	—	—	—	—

4.—REGISTERED WORKSHOPS.

Workshops on the Register (s. 131) at the end of the year.	Number
(1)	(2)
Important classes of Workshops such as Workshop Bakehouses, may be enumerated here.	
Registered Workshops	280
,, Bakehouses	24
Total number of Workshops on Register	304

5.—OTHER MATTERS.

Class.	Number.
(1)	(2)
Matters notified to H.M. Inspector of Factories :—	
Failure to affix Abstract of the Factory and Workshop Act (S. 133)	5
Action taken in matters referred by H.M. Inspector as remediable under the Public Health Acts, but not under the Factory and Workshop Act (S. 5). — Notified by H.M Inspector	8
Action taken in matters referred by H.M. Inspector as remediable under the Public Health Acts, but not under the Factory and Workshop Act (S. 5). — Reports (of action taken) sent to H.M. Inspector	8
Other	4
Underground Bakehouses (S. 101) :—	
Certificates granted during the year	—
In use at the end of the year	5

TABLE VI.—Boarley Water Supply.

Source of Sample.	Date of Collection.	Total Solids.	Chlorine.	Nitrogen as Nitrates.	Ammonia. Free.	Ammonia. Albuminoid.	Oxygen absorbed in 4 hrs. at 80° F.	Hardness. Total.	Hardness. Perm.	Colour and appearance in 2-ft. tube.	Smell.	Phosphoric Acid.
	1909.									clear	none	none
37, Brewer Street ..	Jan. 4.	39·6	2·2	·526	·00	·04	·003	24·8	6·2	"	"	"
Gathering Grounds	" 11	39·4	2·4	·669	·00	·03	·004	24·6	6.8	"	"	"
92, Sandling Road...	" 18	39·4	2·3	·724	·00	·02	·004	22·7	6·4	"	"	"
Gathering Grounds	" 25	39·6	2·3	·411	·02	·02	·004	22·6	6·3	"	"	"
24, Albert Street ...	Feb. 1	39·8	2·2	·427	·01	·02	·004	23·6	6·9	"	"	"
Gathering Grounds	" 8	40·2	2·3	·411	·00	·02	·004	23·4	6·5	"	"	"
Union Pl, Union St.	" 15	40·4	2·2	·444	·00	·02	·005	23·0	6·6	"	"	"
Gathering Grounds	" 22	40·2	2·2	·411	·02	·02	·004	24·3	6·8	"	"	"
55, Sandling Road .	Mar. 1	40·4	2·1	·427	·00	·02	·005	24·3	6·4	"	"	"
Gathering Grounds	" 8	39·6	2·4	·411	·01	·02	·006	24·3	6·6	"	"	"
3, Sandling Road ...	" 15	40·4	2·3	·510	·00	·01	·004	24·7	7·1	"	"	"
Gathering Grounds	" 22	40·4	2·4	·526	·00	·01	·004	23·8	6·4	"	"	"
29, Church Street...	" 29	41·0	2·2	·691	·00	·02	·004	23·5	6·0	"	"	"
Gathering Grounds	April 5	40·0	2·6	·794	·002	·044	·003	25·3	7·2	"	"	"
Sandling Road ...	" 13	40·8	2·4	·798	·00	·003	·004	22·7	9·2	"	"	"
Gathering Grounds	" 19	40·6	2·4	·707	·02	·022	·003	23·2	8·2	"	"	"
16, Perry Street ...	" 26	39·8	2·4	·625	·01	·01	·004	22·9	7·5	"	"	"
Gathering Grounds	May 3	40·6	2·4	·444	·00	·00	·003	23·8	7·8	"	"	"
92, Sandling Road .	" 10	40·8	2·4	·469	·00	·004	·003	24·6	8·4	"	"	"
Gathering Grounds	" 17	39·7	2·4	·823	·01	·04	·004	25·0	6·8	"	"	"
26, Perry Street ...	" 24	40·4	2·4	·839	·01	·02	·004	27·6	8·2	"	"	"
Gathering Grounds	June 1	39·6	2·3	·411	·00	·03	·004	24·6	7·5	"	"	"
10, Sharp's Yard, King Street... ...	" 7	40·5	2·3	·872	·00	·02	·004	28·5	8·2	"	"	"
Gathering Grounds	" 14	40·8	2·3	·623	·01	·02	·004	28·4	7·1	"	"	"
37, Perryfield Street	" 21	39·8	2·3	·596	·01	·03	·004	27·3	7·1	"	"	"
Gathering Grounds	" 28	39·8	2·3	·740	·01	·02	·004	26·6	7·3	"	"	"
94, Sandling Road ..	July 5	39·8	2·3	·694	·01	·01	·002	27·6	7·2	"	"	"
Gathering Grounds	" 12	40·0	2·3	·771	·00	·02	·004	27·6	7·5	"	"	"
2, Arundel Street...	" 19	39·9	2·2	·743	·01	·02	·004	27·4	7·6	"	"	"
Gathering Grounds	" 26	40·2	2·2	·723	·01	·02	·004	27·8	8·0	"	"	"
24, Boxley Road ...	Aug. 3	40·2	2·6	·694	·01	·02	·004	28·2	7·6	"	"	"
Gathering Grounds	" 9	40·3	2·5	·726	·01	·02	·003	27·9	8·1	"	"	"
Bonny's Court ...	" 16	40·3	2·3	·806	·01	·03	·004	27·8	7·7	"	"	"
Gathering Grounds	" 23	39·9	2·3	·710	·01	·02	·004	27·0	7·1	"	"	"
37, Thornhill Place	" 29	40·0	2·1	·411	·00	·03	·004	27·7	7·2	"	"	"
Gathering Grounds	Sept. 6	40·2	2·4	·536	·01	·02	·004	27·4	7·3	"	"	"
91 Sandling Road .	" 14	40·1	2·4	·644	·00	·01	·004	28·8	7·6	"	"	"
Gathering Grounds	" 20	40·0	2·4	·704	·00	·01	·003	27·7	7·3	"	"	"
20, Paradise Row ...	" 29	40·1	2·5	·724	·02	·02	·004	27·6	7·0	"	"	"
Gathering Grounds	Oct. 4	40·1	2·4	·710	·01	·02	·004	27·1	6·9	"	"	"
117, Union Street ...	" 11	40·0	2·4	·744	·01	·02	·004	27·3	7·0	"	"	"
Gathering Grounds	" 18	40·0	2·4	·641	·00	·01	·004	27·2	7·2	"	"	"
Union Sq., Union St.	" 25	40·0	2·4	·681	·00	·02	·003	26·8	7·0	"	"	"
Gathering Grounds	Nov. 1	40·1	2.5	·644	·00	·01	·003	25·8	7·2	"	"	"
52, Union Street ...	" 8	40.1	2·3	·588	·00	·01	·003	26·1	7·8	"	"	"
Gathering Grounds	" 15	40·0	2·3	·635	·00	·01	·003	26·4	7·2	"	"	"
80, Sandling Road	" 22	40·0	2·4	·588	·00	·01	·003	26·6	7·3	"	"	"
Gathering Grounds	" 29	40·0	2·4	·610	·00	·01	·004	26·4	7·1	"	"	"
18, Tufton Street ...	Dec. 6	40·0	2·3	·634	·00	·01	·003	26·8	7·1	"	"	"
Gathering Grounds	" 13	40·1	2·3	·622	·00	·01	·003	26·5	7·0	"	"	"
37, Boxley Road ...	" 20	40·0	2·4	·625	·01	·02	·004	26·8	7·3	"	"	"
Gathering Grounds	" 29	40·1	2·4	·460	·02	·02	·003	26·6	7·3	"	"	"
	Mean results for 1909.	38·9	2·3	·617	·00	·02	·003	25·5	6·6	clear	none	once

All results are given in parts per hundred thousand, except Free and Albuminoid Ammonia, which are in parts per million.

TABLE VII.—Cossington Water Supply.

Source of Sample.	Date of Collection.	Total Solids.	Chlorine.	Nitrogen as Nitrates.	Ammonia		Oxygen absorbed in 4 hrs. at 80° F.	Hardness.		Colour and appearance in 2ft. tube.	Smell.	Phosphoric Acid.
					Free.	Albuminoid.		Total.	Permanent.			
	1909.											
Gathering Grounds	Jan. 4	40·4	2·4	·329	·00	·01	·002	25·6	6·6	clear	none	none
" "	" 18	39·8	2·3	·312	·00	·02	·005	24·0	6·8	"	"	"
" "	Feb. 1	39·8	2·4	·164	·02	·02	·005	23·9	7·1	"	"	"
" "	" 15	40·6	2·3	·312	·00	·02	·004	23·5	6·7	"	"	"
" "	Mar. 1	40·4	2·2	·296	·00	·02	·004	24·5	7·1	"	"	"
" "	" 15	39·8	2·4	·296	·01	·02	·005	25·3	7·3	"	"	"
" "	" 29	40·0	2·3	·444	·01	·01	.006	24.4	7·1	"	"	"
" "	April 12	38·6	2·2	·444	·001	·03	·003	24·8	7·6	"	"	"
" "	" 26	39·5	2·2	·526	·01	·01	·003	24·8	7·2	"	"	"
" "	May 10	39·5	2·1	·411	·01	·02	·004	20·9	7·3	"	"	"
" "	" 24	39·6	1·9	·395	·00	·02	·004	26·8	7·4	"	"	"
" "	June 7	40·0	2·1	·658	·00	·02	·004	28·8	9·1	"	"	"
" "	" 21	39·9	2·1	·420	·01	·02	·004	27·8	8·3	"	"	"
" "	July 5	39·6	2·1	·420	·01	·02	·004	26·3	8·2	"	"	"
" "	" 19	39·4	2·1	·663	·01	·01	·003	26·6	6·4	"	"	"
" "	Aug. 3	40·5	2·9	·783	·02	·02	·006	27·0	7·1	"	"	"
" "	" 16	40·0	3·0	·444	·01	·02	·003	27·2	7·0	"	"	"
" "	" 29	39·8	2·2	·345	·00	·01	·005	26·6	8·1	"	"	"
" "	Sept. 14	39·6	2·2	·431	·00	·01	·003	24·6	6·8	"	"	"
" "	" 27	39·9	2·2	·559	·01	·02	·004	24·8	7·2	"	"	"
" "	Oct. 11	39·7	2·2	·487	·01	·01	·004	23·8	6·7	"	"	"
" "	" 25	39·7	2·2	·422	·00	·02	·002	24·1	6·7	"	"	"
" "	Nov. 8	39·8	2·2	·444	·01	·02	·002	24·7	6·9	"	"	"
" "	" 22	40·1	2·3	·442	·01	·02	·004	24·5	6·6	"	"	"
" "	Dec. 6	40·0	2·2	·444	·01	·02	·002	23·7	6·5	"	"	"
" "	" 20	39·9	2·3	·493	·00	·01	·003	24·5	6·8	"	"	"
	Mean results for 1909.	39·8	2.2	·438	·00	·02	·003	24·9	7·1	clear	none	none

All results are given in parts per hundred thousand, except Free and Albuminoid Ammonia, which are in parts per million.

TABLE VIII.—Forstal Water Supply.

Source of Sample.	Date of Collection.	Total Solids.	Chlorine.	Nitrogen as Nitrates.	Ammonia.		Oxygen absorbed in 4 hrs. at 80° F.	Hardness.		Colour and appearance in 2ft. tube.	Smell.	Phosphoric Acid.
					Free.	Albuminoid.		Total.	Perm.			
	1909.											
Gathering Grounds	Jan. 11	40·8	2·9	·106	·00	·02	·004	27·0	7·7	clear	none	none
" "	" 25	40·4	2·8	·106	·00	·02	·005	26·5	7·5	"	"	"
" "	Feb. 8	41·4	2·7	·106	·00	·02	·004	25·3	7·3	"	"	"
" "	" 22	40·8	2·7	·148	·00	·02	·003	26·3	7·4	"	"	"
" "	Mar. 8	40·8	2·7	·106	·00	·01	·005	25·4	7·5	"	"	"
" "	" 22	42·8	2·9	·213	·00	·00	·004	27·1	7·9	"	"	"
" "	April 5	40·0	2·9	·049	·00	·00	·004	25·9	7·8	"	"	"
" "	" 19	40·8	2·9	·164	·00	·01	·004	24·5	7·1	"	"	"
" "	May 3	40·9	2·9	·279	·01	·01	·003	24·8	8·0	"	"	"
" "	" 17	40·3	2·9	·106	·01	·02	·004	28·3	9·6	"	"	"
" "	June 1	40·1	2·9	·164	·00	·03	·004	25·4	8·0	"	"	"
" "	" 14	40·2	2·8	·324	·01	·02	·004	27·5	7·1	"	"	"
" "	" 28	40·0	2·9	·148	·01	·02	·003	28·3	8·2	"	"	"
" "	July 12	39·9	2·9	·133	·00	·03	·004	27·8	7·3	"	"	"
" "	" 26	39·1	2·8	·138	·00	·03	·004	25·4	7·3	"	"	"
" "	Aug. 9	40·8	3·0	·284	·01	·02	·004	28·3	8·4	"	"	"
" "	" 23	40·2	2·9	·179	·01	·02	·004	27·6	7·5	"	"	"
" "	Sept. 6	40·4	3·0	·144	·00	·01	·004	27·8	7·6	"	"	"
" "	" 20	40·2	2·9	·144	·01	·02	·005	26·8	7·2	"	"	"
" "	Oct. 4	39·8	3·0	·244	·01	·01	·003	26·4	6·7	"	"	"
" "	" 18	40·2	3·0	·138	·00	·01	·003	26·7	7·0	"	"	"
" "	Nov. 1	40·1	2·9	·163	·00	·01	·002	26·5	7·0	"	"	"
" "	" 15	40·1	3·0	·178	·01	·02	·003	26·4	7·0	"	"	"
" "	" 29	40·1	3·0	·158	·01	·02	·003	26·4	6·8	"	"	"
	Mean results for 1909.	40·4	2·9	·163	·00	0·1	·003	27·8	7·6	clear	none	none

All results are given in parts per hundred thousand, except Free and Albuminoid Ammonia, which are in parts per million.

TABLE IX.—Forstal and Cossington Water Supply.

Source of Sample.	Date of Collection.	Total Solids.	Chlorine.	Nitrogen as Nitrates.	Ammonia.		Oxygen absorbed in 4 hrs. at 80° F.	Hardness.		Colour and appearance in 2-ft. tube.	Smell.	Phosphoric Acid.
					Free.	Albuminoid.		Total.	Perm.			
	1909.											
93, London Road ...	Jan. 4.	39·8	2·5	·246	·00	·00	·004	25·8	6·9	clear	none	none
22, Hartnup Street	„ 11	39·8	2·7	·329	·00	·02	·005	25·1	7·2	„	„	„
29, Dover Street ...	„ 18	40·1	2·5	·279	·00	·00	·004	24·5	7·1	„	„	„
37, Fant Lane.....	„ 25	39·6	2·5	·181	·00	·02	·006	23·8	6·8	„	„	„
3, Nelson Place, Queen's Road ...	Feb. 1	39·6	2·6	·131	·01	·02	·004	25·2	7·7	„	„	„
9, Charlton Street	„ 8	40·4	2·3	·213	·00	·02	·005	24·8	6·9	„	„	„
18, Dover Street ...	„ 15	40·0	2·3	·230	·00	·02	·004	24·4	7·1	„	„	„
132 Loose Road... ..	„ 22	41·4	2·4	·243	·01	·02	·006	25·4	7·3	„	„	„
23, Pope Street	Mar. 1	41·2	2·6	·213	·00	·01	·004	26·8	7·8	„	„	„
53, Melville Road ...	„ 8	40·0	2·5	·181	·00	·02	·004	24·9	7·1	„	„	„
82, Bower Street ...	„ 15	39·8	2·6	·213	·02	·02	·003	26·1	7·7	„	„	„
377, Tonbridge Rd.	„ 22	42·2	2·5	·296	·00	·01	·003	24·7	7·1	„	„	„
26, Fant Lane.....	„ 29	42·5	2·4	·329	·00	·01	·003	25·5	7·0	„	„	„
28, King Street	April 5	39·5	2·5	·448	·00	·03	·005	22·5	7·2	„	„	„
315, Tonbridge Rd.	„ 13	39·8	2·4	·317	·00	·04	·005	25·0	8·3	„	„	„
52, Brunswick St.	„ 19	41·5	2·5	·427	·00	·01	·004	24·2	7·5	„	„	„
"Bydews," Tovil ...	„ 26	40·2	2·5	·263	·00	·00	·004	24·2	8·0	„	„	„
"Grassmere," Tovil	May 3	40·0	2·2	·148	·01	·01	·004	22·5	7·5	„	„	„
Barming Asylum...	„ 10	40·5	2·4	·312	·00	·04	·003	25·6	7·5	„	„	„
4, Hackney Road...	„ 17	39·9	2·4	·329	·01	·02	·003	27·5	7·6	„	„	„
13, Western Road...	„ 24	40·2	2·3	·658	·01	·03	·003	28·2	7·8	„	„	„
Fant Lane	June 1	39·8	2·1	·298	·00	·01	·003	23·5	7·3	„	„	„
Queen's Road	„ 7	39·5	2·4	·296	·00	·01	·004	27·3	7·9	„	„	„
5, Nelson Place	„ 14	39·5	2·3	·235	·00	·01	·003	26·8	7·6	„	„	„
49, Peel Street	„ 21	39·6	2·0	·236	·00	·01	·003	28·6	8·1	„	„	„
443, Tonbridge Rd.	„ 28	39·8	2·3	·314	·00	·01	·003	27·5	7·6	„	„	„
"Engadine," London Road.....	July 5	39·5	2·3	·243	·00	·01	·003	27·8	7·7	„	„	„
72, Kingsley Road	„ 12	38·8	2·1	·658	·00	·02	·003	24·4	6·6	„	„	„
Market Street	„ 19	39·8	2·3	·376	·00	·01	·002	27·8	7·8	„	„	„
16, Queen Anne Rd.	„ 26	40·0	2·1	·376	·01	·01	·004	27·2	7·1	„	„	„
Pantony's Farm, Thornhills	Aug. 3	39·8	2·4	·343	·01	·01	·003	26·9	7·9	„	„	„
28, Fant Lane.....	„ 9	39·7	2·6	·345	·00	·01	·002	26·8	6·9	„	„	„
29, Hartnup Street	„ 16	39·9	2·5	·362	·00	·02	·003	26·5	7·2	„	„	„
146, Union Street ...	„ 23	39·7	2·7	·372	·00	·01	·003	25·8	6·9	„	„	„
49, Milton Street ...	„ 29	41·5	2·9	·406	·00	·01	·004	26·6	7·1	„	„	„
29, St. Faith Street	Sept. 6	40·5	2·5	·381	·01	·02	·004	24·9	6·9	„	„	„
153, Milton Street...	„ 14	39·8	2·1	·314	·01	·01	·003	23·9	6·7	„	„	„
93, London Road ...	„ 20	39·8	2·4	·326	·00	·00	·004	24·5	7·1	„	„	„
62, Milton Street ...	„ 27	39·8	2·5	·329	·00	·01	·003	24·6	6·8	„	„	„
Sanatorium, Fant Lane	Oct. 4	39·9	2·5	·326	·01	·01	·003	24·8	7·0	„	„	„
101, Tonbridge Rd.	„ 11	39·9	2·5	·322	·00	·01	·002	26·0	6·8	„	„	„
421, Tonbridge Rd.	„ 18	39·8	2·5	·340	·00	·00	·003	26·4	6·8	„	„	„
60, Whitmore St. ...	„ 25	39·8	2·3	·341	·00	·00	·003	26·2	6·3	„	„	„
19, Gladstone Road	Nov. 1	39·8	2·3	·313	·00	·02	·002	26·0	6·5	„	„	„
20, Well Road	„ 8	39·9	2·2	·321	·00	·01	·002	26·2	7·0	„	„	„
75, Allen Street.....	„ 15	39·9	2·4	·481	·00	·01	·004	26·2	6·6	„	„	„
73, Allen Street.....	„ 22	39·9	2·4	·341	·00	·01	·002	25·9	6·8	„	„	„
393, Tonbridge Rd.	„ 29	39·9	2·4	·344	·00	·02	·002	25·4	6·5	„	„	„
151, Milton Street...	Dec. 6	39·9	2·4	·339	·00	·00	·004	26·0	6·9	„	„	„
29, Carey Street ...	„ 13*	39·8	2·4	·334	·00	·01	·002	25·8	6·7	„	„	„
	Mean results for 1909.	40·0	2·4	·314	·00	·01	·003	25·3	7·2	clear	none	none

* No mixed supply after this date.

All results are given in parts per hundred thousand, except Free and Albuminoid Ammonia, which are in parts per million.

TABLE X.—Monthly Record of Meteorology, 1909.

(Taken at the Borough Surveyor's Office.)

Month.	Mean Reading of Barometer.	Mean of Max. of Thermometer.	Mean of Min. of Thermometer.	Relative Proportion of Wind.								Rainfall.	No. of Days on which ·01 or more fell.
				N.	N.E.	N.W.	S.	S.E	S.W.	E.	W.		
		Degrees.	Degrees,										
January	30·10	40	32	..	3	7	1	6	9	3	2	·82	13
February ...	30·03	42	28	4	...	5	...	11	7	...	1	·88	10
March	29·45	44	31	...	1	11	5	6	8	...	...	3·77	23
April	29·74	59	49	...	1	5	2	6	14	1	1	1·46	12
May	29·84	60	43	3	4	5	7	2	9	1	...	1·27	8
June	29·65	61	51	...	4	10	2	2	8	...	4	2·25	17
July	29·59	66	55	...	...	7	1	...	18	...	5	3·90	18
August ...	29·64	69	55	...	2	7	5	...	14	...	3	2·10	10
September ...	29·74	60	49	...	2	11	3	1	8	...	5	3·35	18
October ...	29·57	55	48	...	1	5	9	3	13	...	...	6·67	24
November ...	29·88	45	35	1	5	10	...	1	5	1	7	1·15	11
December ...	29·59	45	33	...	1	2	5	6	15	...	2	3·64	21
Means	29.73	53	42	8	24	85	40	44	128	6	30	31·26	185