[Report 1893] / Medical Officer of Health, Maidstone U.D.C. / Borough.

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Borough of Maidstone.

REPORT OF THE MEDICAL OFFICER OF HEALTH,

FOR THE YEAR 1893.

TO THE LOCAL BOARD.

MR. MAYOR AND GENTLEMEN,

In opening this report upon the Sanitary affairs for the Borough of Maidstone, for the year 1893, our first business must be to investigate critically the facts revealed by the Census of 1891, so far as they concern our people. This had become possible, only just recently, by the issue of the completed Census of 1891, and before the materials supplied by this Census could be made serviceable for our special requirements, and the information adapted for common use, many of the recorded details required considerable arithmetical manipulation. As far as time would allow and necessity called for it, I have endeavoured to extract most that is valuable, and have applied the teaching derived therefrom to our local uses.

The following table furnishes the figures relating to Area, Houses, and Population of the whole Borough, and of the two Sub-Registration Districts in which the Borough is divided, that is to say into East and West Maidstone, not into Maidstone and West Borough which I find is a very common mistake, but into two nearly equal halves formed by a line of division running from North to South the whole length of Week Street,

Gabriel's Hill and Stone Street, all that portion to the East being East Maidstone, and all to the West, West Maidstone.

Area, Houses and Population of Registration Districts.

TABLE A.	East Maidstone.			West Maidstone.			Whole Borough.		
	1881	1891	Increase.	1881	1891	Increase.	1881	1891	Increase.
Area in statute acres ..	2019	—	—	1989	—	—	4008	—	—
Houses—Inhabited	3063	3314	251	2292	2693	401	5355	6007	652
,, Uninhabited ..	109	152	43	189	229	40	298	381	83
,, Building.....	18	2	16	43	17	26	61	19	42
Population—Persons ..	15422	16548	1126	14201	15597	1396	29623	32145	2522
,, Males	7415	7789	374	6831	7321	490	14246	15110	864
,, Females ..	8007	8759	752	7370	8276	906	15377	17035	1658

The increase expressed in parts per cent. that has taken place during intercensal periods is as follows:—

TABLE B.	Increase of Population.			
		1891.	1881.	1871.
East Maidstone.	Males	5·04		
	Females ..	9·39		
	Persons	7·30	14·8	
West Maidstone.	Males	7·17		
	Females ..	12·30		
	Persons	9·83	11·1	
Whole Borough.	Males	6·06		
	Females ..	10·77		
	Persons	8·51	13·0	13·8
County of Kent, (extra Metropolitan.)	Males	12·3		
	Females ..	15·0		
	Persons	13·7	15·2	15·6
England and Wales.	Males	11·2		
	Females ..	12·1		
	Persons	11·7	13·2	14·3

From which it is to be seen that there has been a diminution of increase all round; also that Maidstone has fallen far short of the general rate of increase for England and Wales, and still further behind that for the County of which it forms a constituent part.

This tendency to a diminishing rate of increase which may have been observed anytime these thirty years has become much greater during the last decade. Though by no means confined to East Maidstone, this falling off has been far greater in East than West,

and is most conspicuous amongst East Maidstone males, who, positively, have not increased to half the extent of the general rate, and in the West not much more than two-thirds of the rate.

For several cogent reasons it is desirable to trace this defection still deeper, I have therefore constructed table C, based of course on the revelations of the census, showing the age and sex constitution of the whole of the inhabitants of the Borough for each period of five years from birth onwards, so as to show exactly how many men or women, or persons, of both sex, of each age period were living in Maidstone at the times of the taking the censuses for 1881 and 1891, and in parallel columns the average rate per 1000 of inhabitants at these respective ages. For example, on reference it is found that in 1881 of every 1,000 of population there were of men 45, and of women 48, or of both sexes together 93 at ages between 20—25. Whereas in 1891 the 45 men had fallen to 39, and the 48 women to 46, or taking the two sexes together from 93 persons of this age in 1881 to 85 in 1891. On further comparison of the figures of the two censuses, it turns out that on the whole almost the entire loss falls upon the males, so that taking all ages into account, where we had formerly 480 males, we have now only 470, and contrawise, where we had 520 females we have now 530; moreover, when the figures are examined in detail, the falling off of males is all but confined to the three age periods 15—20, 20—25, 25—30, in point of fact, we are eleven per 1,000 short of males at these ages, or, calculated upon our whole population, 360 fewer in 1891 than in 1881, equal to 9·1 per cent. reduction upon our male population at the prime and most vigorous

TABLE C.—AGE AND SEX CONSTITUTION OF THE POPULATION OF MAIDSTONE, with the expected mortality, calculated in accordance with the Life Table as given in the supplement to the 45th Annual Report of the Registrar General.

Age Period.	Sex.	Enumerated.		Persons, M & F, at various ages per 1,000 of the Population.		Ditto, England and *Wales.	Deaths as calculated.	
		1881	1891	1881	1891	1891	1881	1891
Under 5	Males ...	1902	1773	64	55	61	4·36	3·74
	Females..	1949	1855	66	58	62	3·83	3·37
	Persons..	3851	3628	130	113	123	8·20	7·11
5—10	Males ...	1659	1765	56	55	58	·373	·367
	Females..	1652	1875	56	58	59	·343	·359
	Persons..	3311	3640	112	113	117	·716	·726
10—15	Males ...	1464	1675	50	52	55	·184	·192
	Females..	1520	1871	51	58	56	·189	·214
	Persons..	2984	3546	101	110	111	·373	·406
15—20	Males ...	1507	1532	51	48	50	·267	·251
	Females..	1402	1593	47	49	51	·255	·266
	Persons..	2909	3125	98	97	101	·522	·517
20—25	Males ...	1347	1252	45	39	43	·329	·285
	Females..	1438	1490	48	46	48	·332	·312
	Persons..	2785	2742	93	85	91	·661	·597
25—30	Males ...	1131	1155	38	36	38	·353	·335
	Females..	1227	1329	42	41	42	·360	·369
	Persons..	2358	2484	80	77	80	·713	·704
30—35	Males ...	950	1086	32	34	30	·298	·316
	Females.	1095	1221	37	38	36	·317	·291
	Persons..	2045	2307	69	72	66	·615	·607
35—40	Males ...	869	1018	29	32	29	·398	·439
	Females..	927	1112	32	34	31	·370	·394
	Persons..	1796	2130	61	66	60	·768	·833
40—45	Males ...	793	857	27	27	26	·37	·371
	Females..	892	981	30	30	28	·35	·347
	Persons..	1685	1838	57	57	54	·72	·718
45—50	Males ...	604	731	20	23	22	·40	·461
	Females..	729	833	25	25	24	·39	·389
	Persons..	1333	1564	45	48	46	·79	·850
50—55	Males ...	570	646	19	20	19	·38	·401
	Females..	653	744	22	23	21	·34	·358
	Persons..	1223	1390	41	43	40	·72	·759
55—60	Males ...	435	493	15	15	14	·52	·521
	Females..	524	606	18	19	16	·51	·542
	Persons..	959	1099	33	34	30	1·03	1·063
60—65	Males ...	408	436	14	13	12	·48	·451
	Females..	510	545	17	17	14	·48	·485
	Persons..	918	981	31	30	26	·97	·936
65—70	Males ...	236	292	8	9	9	·55	·626
	Females..	324	392	11	12	11	·67	·729
	Persons..	560	684	19	21	20	1·22	1·355
70—75	Males ...	191	199	6	6	6	·42	·417
	Females.	255	307	9	9	8	·55	·547
	Persons.	446	506	15	15	14	·97	·964
75 and above.	Males ...	180	200	6·1	6.3	5·4	1·02	1·065
	Females..	280	281	9·4	8·7	7.6	1·47	1·355
	Persons..	460	481	15·5	15·0	13·0	2·50	2·420
All ages.	Males ...	14246	15110	480	470	485	10·702	†10·238
	Females..	15377	17035	520	530	515	10·756	†10·327
	Persons..	29623	32145	1000	1000	1000	21·458	†20·565

* This column supplies the means for making a comparison between the relative *constitution* of the Maidstone population and that of the average for all England and Wales.

† These figures are the sums of the above-recorded fractions arrived at by the application of the Registrar's formulæ; since those formulæ were constructed great improvement has taken place, reducing the general average death rate for England and Wales from 22·5 to 19·15, consequently to establish a standard that shall be up to date these figures must be multiplied by the present mean rate and divided by the former, thus:—$\frac{20{\cdot}565 \times 19{\cdot}15}{22{\cdot}5}$ with this correction we arrive at a figure 17·5 that exactly represents the **normal expected Death Rate** in accordance with our age and sex constitution.

period of manhood, in truth we may reckon it a loss of 9·1 per cent. of our bread winners; there are also indications of loss of women at these ages only to a less extent.

This state of affairs can have been brought about by one of two ways only, either there must have been a proportional exodus of young people of these ages out of, or an equal influx of persons at other ages into, Maidstone; from what we have seen of the falling off of our increase and other internal evidence, the latter explanation is out of the question, so that we have no alternative but to conclude that our population has suffered a loss by emigration, and the loss has fallen chiefly upon males from out of the most vigorous section of our population.

Although I shall have occasion to refer again to these tables, for the present I must pass to a consideration of the statistics for the year under review. Based upon the 1891 Census, and allowing a rate of increase equal to that which prevailed during the decade 1882-91, I calculate there were living in Maidstone at the middle of 1893,

In East Maidstone	16,813	
West „	15,930	
Whole Borough	32,743	persons.

Of Registered Births there were	791
„ „ Deaths „	471
Showing an excess of Births over Deaths of..	320

this being the natural increment to the population, but which, in my estimate of the present population, for the reasons already explained, has been reduced to 268, 52 being the calculated allowance for emigration.

The number of persons married was 556, so the rates per annum per thousand of population were:—

Of Births.....	24·15	per	1,000 of population.
„ Deaths	14·38	„	„
„ Marriages ..	15·48	„	„

BIRTHS.—In East Maidstone, the Births numbered 440 = 26·17 per thousand; in West Maidstone, 351 = 22·03 per thousand. 4·32 per cent. of those in East, and 3·99 per cent. of those in West, (for us unusually high numbers) were illegitimate, against a mean for Kent of 4·3 and for all England of 4·7.

This Birth rate is remarkably low, the mean rate for England, which is also low, being 29·1. After what has been said the reasons for this are clear enough, for by reference to the foregoing table C we discover that we are 196 short of women at child-bearing ages as well as 360 short of young men at marrying ages; these facts taken in conjunction with the unprosperous character of the times afford a reasonable explanation of the falling off of our Birth rate.

DEATHS.—In East Maidstone there were 264 deaths = 15·70 per thousand; in West Maidstone 207 deaths = 12·99 per thousand. The mean for England and Wales during the last decade being 19·15. On the face of it, our Death rate shows 4·77 fewer people per thousand to have died in Maidstone during 1893 than the anticipated average for England and Wales, from which it might naturally be inferred that life in Maidstone is something like 25 per cent. more secure

than the average of life speaking generally in England and Wales. Such a conclusion however would be erroneous. We are not justified in laying claim to the whole of this apparent greater security for life, the fact is before a strict comparison between our own and other communities can be drawn, we are bound to look carefully into the age and sex constitution of the respective populations, for on reflection it must be evident that a Death rate is ruled by two distinct sets of circumstances, the one *intrinsic*, the other *extrinsic*, by the age and sex of its inhabitants on the one hand, and by the quality and condition of their environment on the other. Naturally enough age is by far the most potent of all factors concerned in regulation of the Death rate, for though it is the inevitable lot of all to die some day, observation shows, and common sense assures us that vitality is far more precarious at the extremes of life than during youth or early manhood, in point of fact the Death rate for children under one year is 177 per thousand, and for people over 75 years it is 162 per thousand, whilst for boys and girls between the ages of 10—15 it is only 3·7. Moreover the rate of Deaths among males as a rule is higher than it is among females, consequently before a proper comparison can be made or a scientific conclusion drawn it is absolutely essential that an exact estimate of the age and sex constitution of the populations brought into comparison shall be made.

It is chiefly for this reason that I have been at the pains to extract from the records of the census the information embodied in Table C, wherein is set forth the precise share which each sex at each age period may, in the ordinary course of events, be expected to contribute to a perfectly normal death rate, and the sum

of these contributions, after correction amounts to 17·5, and constitutes our "*Standard Death Rate*," which for purposes of comparison is the equivalent of 19·15, the average death rate for England and Wales. By similar processes, such as I have performed for Maidstone, other places can of course be brought into comparison; such calculations have been made and published by the Registrar General for the "33 *large towns*," whereby it is possible at all times, so far as sex and age is concerned, to make a strict comparison between the mortality of our own and that of any of these places and England and Wales at large.

The precise way of employing the correction, taking our own case, is as follows:—our recorded death rate is multiplied by the average death rate for England and Wales, and the result divided by our own standard, $\frac{14{\cdot}38 \times 19{\cdot}15}{17{\cdot}5}$ or, which comes to the same thing, our recorded death rate is multiplied by the factor 1·094, which produces the figure 15·73, and this, relatively speaking, is the TRUE *death rate* for Maidstone for 1893, and we may with confidence proceed to make the comparison by subtracting this figure from 19·15, whereby we find a difference of 3·42 per thousand in our favour; this is the measure of our greater healthfulness above the average of England and Wales. Multiplying this figure by our population, and dividing by 1,000, $\frac{3{\cdot}42 \times 32{,}743}{1{,}000}$ we arrive at the number 112, which represents the saving of life within the Borough of Maidstone in 1893.

The Average Age at time of Death.

1893.	East.	West.	Whole Borough.
1st Quarter	45·58	43·56	44·64
2nd „	32·63	31·36	32·05
3rd „	22·50	32·46	26·29
4th „	37·47	34·06	35·93
Whole year	34·13	35·83	34·88
Average in past years..	32·76	33·30	32·94

For the year as a whole, the age at death was a little above, for two of the quarters singly, it was below the average, for the first quarter it was the highest ever recorded, on the other hand, with two exceptions in the 3rd quarter, it was the lowest. The reasons for this are the prevalence of *Influenza*, which was especially fatal to elderly people during the 1st quarter, and of *Diarrhœa*, which was especially fatal to infants in the 3rd quarter; these two circumstances, operating in opposite directions as regards age at death, in a measure balanced one another, but for the deficit we have shown to prevail with respect to our infant population the diarrhœal mortality probably would have been more conspicuous, and the consequent reduction of the average age at death would have been greater; be that as it may, our General Infant Mortality was by no means unsatisfactory, for we find by the following table that the deaths of infants under one year, per thousand born, were but 111, against a general average for England and Wales of 149.

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	78	159	125	138
1885	140	75	187	139	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

Passing to a consideration of the various assigned CAUSES OF DEATH, as distributed among the several classes of disease, a detailed record of this is given in Table III., from which we find that 2·01, against an average of 1·68 per thousand, resulted from one or another of the *Seven Chief Zymotics*; East Maidstone contributing 2·73 and West 1·25.

Of SMALL POX we had two cases, but no death. One happened at the very commencement and the other at the very end of the year; this latter was the more important and threatening, and came to my notice Dec. 26th, the victim was a man who had been in Hospital

at Greenwich, suffering from Inflammation of the Lungs, he discharged himself from the Hospital the 16th Dec., and slept that night at a lodging-house in Greenwich, and came to his sister's in Maidstone on the 17th, by the 20th he was very poorly, and on the 24th a rash had developed, but the disease was not recognised to be Small Pox until the 26th. Owing to its being Christmas time, the house in which he was lodged was very much overcrowded, besides the householder, his wife, and two children, there being, including the sick man, 5 visitors, 9 persons in all, with only 2 small bedrooms for their joint accommodation. From the moment of the notification of these cases, of course every precaution was taken, and fortunately in neither instance was there any spreading.

In the case just related it is interesting to note that the interval between the man's leaving Greenwich Hospital and the appearance of the rash was but 8 days, or 7 days only from the time he took his departure from the Greenwich lodging-house, this is an unusually short period for the incubation of Small Pox, and scarcely leaves it open to doubt but that he contracted the disease, not at the lodging-house, which would have otherwise seemed much more likely, but at the Hospital.

VACCINATION.—It is necessary I should again call your serious attention to the wholesale evasion of the Vaccination Laws, the administration of which, anomalously, is not subject to the control of the Sanitary Authority, but is in the hands of the Poor Law Guardians. These Acts, as every one should know, require that every child shall be vaccinated within three months of its birth, unless—

(*a*) Its death should occur within the period, or

(*b*) The state of its health renders postponement necessary; or

(*c*) The child is attacked by Small Pox, or

(*d*) Three or more unsuccessful attempts at vaccination have been made.

A certificate signed by a qualified medical practitioner must be produced in proof of causes, *b* or *d*, as reasons for exemption. A certificate of postponement must specify a period not exceeding two months, which, if necessary, may be repeated.

With the support of the Guardians it is the duty of the Vaccination Officer to see these regulations carried into effect; but so far as this Borough is concerned, as I have often said before, they have been allowed to become optional. No effort is made to persuade or compel defaulters to comply with the law.

Of all the children born in England and Wales, it is reckoned that not more than from 6 to 7 per cent. at the end of two years remain unvaccinated; but I will be bound that of recent births in Maidstone, 50 per cent. of the children remain unvaccinated. I have no means of making an accurate estimate of the precise number, all I can say is I have myself enumerated something like a hundred such in a couple of small back streets alone.

This is truly shocking when we remember that of unvaccinated persons attacked by Small Pox 35½ per cent die; whereas efficient vaccination confers an absolute immunity against death. It must be borne in mind that the protection afforded by vaccination in infancy wears itself out after a time, but re-vaccination any time during or after puberty, say 12 to 14 years, renews the protection in a permanent way.

In certain sections of our population (for example, nurses in Small Pox Hospitals, the Post Office Service, &c.,) re-vaccination is compulsory, and in such sections fatal Small Pox is absolutely unknown. In Germany it is compulsory upon *the whole population.*

The following tables afford convincing proofs, first of the value of vaccination, and secondly of the increased security derived from re-vaccination.

Analysis of Returns by the Registrar-General of 5,683 Small Pox Deaths in London during 10 years, 1879-88, showing the respective mortality as between the Vaccinated and Un-vaccinated.

Ages.	Of 1,406 stated to be *Vaccinated.*	Of 2,265 stated to be *Un-vaccinated*	Of 2,012 Vaccination not stated.	Of the total 5,683 irrespective of Vaccination.
	Per cent.	Per cent.	Per cent.	Per cent.
0 to 10 years ..	8·4	56·0	35·0	36·8
10 to 20 years ..	16·0	17·2	14·7	16·0
Over 20 years ..	75·6	26·8	50·3	47·2

Sheffield Epidemic 1887-8. Small Pox Attacks and Deaths per 1,000 persons of each class stated.

	Attack-rate.		Death-rate.	
	Vaccinated.	Un-vaccinated.	Vaccinated.	Un-vaccinated.
0—10 years.	5	101	0·1	44
Ditto, living in invaded houses	78	869	1	381
Over 10 years	19	94	1	51
Ditto, living in invaded houses	281	686	14	371
All ages	15·5	97	0·7	48
Ditto, living in invaded houses	230	750	11	372

Proportion of Mild and Severe Cases per 100 attacks among persons of each class stated.

	Vaccinated.		Un-vaccinated.	
	Mild.	Severe.	Mild.	Severe.
0—10 years	91·0	9·0	21·8	78·2
All ages	82·8	17·2	18·5	81·5

SMALL POX DEATH RATES.

	Austria.	Prussia.*	Berlin.*	Hamburg.*	London.	Paris.	Vienna.
1870	·30	·175	·22	·25	·30	5·46	·46
1871	·39	2·432	6·32	10·75	2·42	?	·74
1872	1·90	2·624	1·38	·95	·53	·06	5·36
1873	3·23	·337	·11	·008	·04	·01	2·28
1874	1·78	·095	·024	·005	·02	·02	1·35
1875	·58	*·036*	*·051*	*·000*	·01	·13	1·13
1876	·39	*·031*	*·018*	*·018*	·20	·20	1·67
1877	·53	*·003*	*·004*	*·012*	·70	·07	·84
1878	·61	*·007*	*·007*	*·002*	·38	·04	·75
1879	·51	*·013*	*·007*	*·000*	·12	·45	·46
1880	·64	*·026*	*·008*	*·000*	·12	1·09	·73
1881	·83	*·036*	*·047*	*·022*	·61	·49	1·23
1882		*·036*	*·004*	*·004*	·11	·29	1·08
1883		*·019*	*·003*	*·000*	·03	·20	·10

* Italic figures are inserted for the years in which compulsory re-vaccination was in force.

So far as my personal observation goes, and I have made house to house enquiries in some of the streets, there is absolutely no bigotry against the Vaccination Acts in Maidstone, they could and ought to be made as effective here as in any other part of England, but by sheer neglect of duty on the part of the late Vaccination Officer, an ignorant indifference, very difficult to eradicate, has been allowed to take possession of the people, so that they have come to regard the vaccination notice as a mere form of no importance

whatever, and this indifference has been wrongly interpreted to mean opposition. How *can* we expect a law so administered to be respected? Suppose a person, for some crank or other, chose to object to pay the Poors Rate, and his objection was tacitly allowed, is it not likely that the objection to pay would prove contagious?

Of MEASLES there were a few cases, two deaths only, resulting both in East Maidstone.

Of SCARLET FEVER no less than 314 cases were notified, 158 in East and 156 in West, causing altogether 11 deaths, 5 in East and 6 in West, that is to say 3·5 per cent. of the cases, the usual mortality being about 11 per cent. 124 of these cases were received into the Hospital, of which number 6 died, being a mortality rate of 4·83 per cent. This epidemic was an inheritance from the previous year, and its advance may be seen by the following table, which gives the number of notified cases of Scarlet Fever, Diphtheria, and Typhoid, quarter by quarter, since the Notification Act came into force.

YEAR.	1891.				1892.				1893.			
QUARTER.	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Scarlet Fever.....	7	4	4	5	0	4	15	25	30	90	79	107
Diphtheria and Croup..	12	3	5	13	36	27	15	28	15	53	48	46
Typhoid	4	2	2	8	2	3	3	8	4	9	11	9
Croup alone	1	0	0	7	2	1	2	2	6	4	2	3

The increase in the 4th quarter, 1893, after the abatement during the 3rd quarter, I think was due to fresh importations from London during the Fruit and Hop Harvests. With a mortality so low, the disease throughout this Epidemic must be regarded as having been of a very benign sort, and this circumstance of

itself is, I think, an explanation, in part at all events, of its excessive prevalence, many cases having been so slight that at the outset the nature of the disorder was frequently overlooked, and even when recognised, the symptoms being so trivial, the disease was liable to be treated by the parents as being of no importance, and therefore less regard than was necessary, and such as would have been bestowed had the cases been more severe, was paid to isolation. It is a moot question whether the extensive prevalence of extremely mild Scarlet Fever is not, in a certain sense, a blessing rather than an evil, whether the after protection afforded by the mild, against the severe, is not on the whole an abundant compensation for the mitigated risk incurred by the mild form of the disease; the answer to this question involves the principle that underlies vaccination, and all that is concerned in the endeavour to control disease by a resort to the prophylactic use of attenuated virus.

DIPHTHERIA, as the table just referred to shows, was excessively prevalent and ran almost a parallel course along with the epidemic of Scarlet Fever, altogether 149 cases of Diphtheria and 15 of Croup came to light, and they were distributed as follows:—

Quarter.	1st.		2nd.		3rd.		4th.		Whole Year.	
District.	E	W	E	W	E	W	E	W	E	W
Diphtheria	7	2	35	14	27	19	19	24	88	59
Croup	2	4	4	0	2	0	1	2	9	6
Total	9	6	39	14	29	19	20	26	97	65

Of the fatal cases, 13 of Diphtheria and 5 of Croup, 18 altogether, belonged to East, and 2 of Diphtheria and 2 of Croup, 4 altogether, to West Maidstone. The mortality from Diphtheria being at the rate of 10 per cent., and from Croup 47 per cent. This, at all events for Diphtheria, is a remarkably low death rate, for that disease usually destroys from 40 to 60 per cent. of its victims.

As regards the prevalence of Scarlet Fever and Diphtheria, the former, as shown by the foregoing table, began to be epidemic during the third quarter of 1892; before then Scarlet Fever had been for some long time very scarce, and year by year appeared to be becoming more so. On the other hand Diphtheria prevalence had risen as the Scarlet Fever fell, so that there was an appearance as though the one disease was the antithesis of the other; but recent experience has changed all this, and the two diseases in this particular as in many others exhibit such strong alliances as to lead one to suspect they must somehow be mutually inter-dependent.

I have a word to say regarding School attendance in connexion with the spread of these diseases. Of course both are very contagious, and because children at school-going ages are most susceptible, it naturally follows that school attendance is a frequent means of propagation; consequently the closure of schools is often resorted to as a means of staying the spread of such diseases. To the best of my judgment, in towns at all events, when due care is taken, this course is seldom necessary, but often mischievous; practical experience convinces me that in the general way less risk is incurred by keeping children together under

discipline and intelligent observation, than by sending them home to run loose upon the streets and out of sight and beyond the reach of discipline; I have repeatedly observed that the sudden accessions of these diseases often follow upon "treats," holidays, harvestings, and the like gatherings, but seldom arise during the regular course of school attendance. My rule is, in every instance upon infection being notified, immediately to stop all school attendance from the infected house, and by communication with the school authorities concerned, to prevent its resumption from implicated households until all risk is past. This course, so far, has always proved successful; twice only last year, when several cases made their appearance close upon one another in a particular school, I thought it prudent to have the schoolroom fumigated and thoroughly cleansed, but in no instance was school work suspended.

This practice does not hold good for Measles or perhaps Whooping Cough, because of their earlier infection, but that is another matter; and with Diphtheria, for a different reason, closure of a school on occasion may be necessary, not for the purpose of distributing the scholars, but because the school building, or the soil upon which it stands, has become the actual breeding ground of the infection, and before the disease can be got rid of, radical methods of disinfection must be resorted to. In my belief the repeated re-appearance of Diphtheria in certain cases on the re-assembling of schools is to be explained, not by the scholars bringing the disease back to the school, but by their return to an infected building, and probably this is possible with Diphtheria more than with most other diseases, because the bacillus of

Diphtheria is capable of living a saprophitic life at a comparatively low temperature when circumstances are favourable, in the structure of the building or the soil upon which it stands.

WHOOPING COUGH was very little prevalent, and was the cause of 5 deaths only, 4 in East and 1 in West.

TYPHOID was notified 33 times, and caused 7 deaths. This is a larger number than we have usually had, in 7 instances certainly, and probably more, the disease was imported, in 6 cases the drinking water was the assigned cause, but the largest number were attributed to faults of drainage: 20 of the cases belonged to East Maidstone, and 13 to West. With two exceptions the cases were sporadic, and had no tendency to become epidemic. The first of these exceptions occurred upon some very poor property in Stacey's Passage, Sandling Road; in the middle of December, 1892, a child living in this place contracted Typhoid, and during the progress of the disease, before the danger was recognised, the dejections from this child were disposed of without proper and sufficient precautions into a dilapidated and excessively foul unflushed closet, as was afterwards discovered, a space existed between the pan and wooden casing of this closet, into which these dejecta could and no doubt did escape, the consequence was that three other members of the same family one after the other fell with the disease.

In the other instance of spread *mutatis mutandis* the first victim was a man living in the outskirts, engaged as a gardener beyond the limits of the town, he contracted Typhoid probably from drinking foul water outside the Borough; however that may have been,

the dejecta were cast into a common privy, for the house at present is out of reach of the public sewer system; by this means no doubt the contents of the privy pit became infected, and five other members of this family were speedily attacked, fortunately without fatal effect and without spreading to the adjacent cottages, though the water supply and, until we came to know about it, the same infected privy were used in common by this family and their neighbours. Deducting the secondary cases caused by these two unfortunate instances of spreading, our Typhoid rate for the year 1893 still remains above the normal. The two practical and obvious points inculcated by the year's experience are that the sewer system should be brought within reach of the Heath Cottages, and that the abominable custom of hand-flushed closets should be abolished once and for all.

DIARRHŒA.—Excessive heat in the third quarter of the year is so constant a concomitant with Diarrhœa, we might with perfect confidence, without reference to the actual records, assume that Diarrhœal diseases prevailed, and so it proved; 23 deaths, all of children under 5, were registered under this head, 20 of these came within the time limit of Summer Diarrhœa, in the place of 14·9, which is our average number, twice before we have had a higher figure, 31 in 1880 and 27 in 1884, the excess of temperature for the third quarter in these 3 years lasted for 8 weeks out of the 13 in 1880, 9 in 1884, and 6 in 1893.

Fortunately we had nothing resembling ASIATIC CHOLERA.

INFLUENZA.—Although during the first quarter of the year a few deaths were no doubt rightly attributed

to this disorder, I cannot think it was either widely or severely prevalent seeing that the deaths from diseases of the respiratory organs were below the average in all but the first quarter, viz: +·605, −·372, −·07, and −1·858 per thousand for each of the four quarters respectively; such excess as there was, was wholly confined to West Maidstone.

PHTHISIS was the cause of 45 deaths, 22 in East, 23 in West, =1·31 deaths per thousand, our mean being 1·35.

As respects other classes of disease, the rates are given *in extenso* in Table III, and for the sake of convenient comparison with the past, a summary is here inserted.

Causes of Death.—Rate per 1,000.

	East Maidstone.		West Maidstone.		Whole Borough.	
	1893.	10 years average	1893.	10 years average	1893.	10 years average
Seven Zymotic Diseases	2·73	2·01	1·25	1·42	2·01	1·68
Other Zymotics	·06	·39	.31	·27	·18	·33
Phthisis	1·30	1·52	1·31	1·16	1·31	1·35
Other Constitutional Diseases	2·02	1·69	1·25	1·27	1·65	1·49
Diseases of the Respiratory Organs	2·67	3·71	2·70	2·50	2·68	3·10
Diseases of the Organs of Circulation	1·13	1·41	·87	1·02	1·00	1·26
Other Local Diseases	2·79	3·53	2·76	2·94	2·78	3·23
Developmental Diseases	1·54	2·57	1·25	2·14	1·40	2·36
Deaths by Violence	·59	·54	·69	·55	·64	·55
Causes ill-defined or not specified	·83	1·08	·50	·91	·67	1·00

The only heads under which excess is to be noted are the Zymotic, other Constitutional Diseases, and Violence; the excess under Zymotics was entirely due to the Scarlet Fever and Diphtheria epidemic, but after all is but trifling, only 0·33 per thousand above

our normal average; the shade of difference in excess under the other two headings is so small as to be entirely insignificant; under all others there have been reductions and in some cases substantial ones.

For your further information the following table exhibits in a concise form the position held by Maidstone, with respect to Zymotic Disease, as compared with England and Wales at large, and Urban and Rural England separately. As respects Small Pox, Measles, Whooping Cough, Fever, and Diarrhœa, it will be seen we were for the most part far better off than England and Wales altogether or its Urban or Rural constituent parts, but as respects Scarlet Fever and Diphtheria we were in excess both as compared with Urban and Rural districts. As has already been shown when deaths from all causes are taken into account, we had far lower rates than either Urban or Rural England, but without question we have been severely hit both by Scarlet Fever and Diphtheria.

Comparative Table of Zymotic Deaths per 1,000.

	All causes	Seven Zymotics.	Small Pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping Cough.	Fever.	Diarrhœa.
East Maidstone ..	15·7	2·73	—	—	·29	·77	·24	·36	·96
West ,, ..	12·9	1·25	—	·12	·38	·13	·06	·06	·44
Whole Borough .	14·4	2·01	—	·06	·34	·46	·15	·21	·71
England and Wales	19.1	2·46	·05	·36	·23	·30	·33	·23	·96
33 Great Towns ..	21·5	3·18	·07	·44	·29	·38	·43	·25	1·17
67 Large Towns ..	19·1	2·84	·05	·41	·20	·19	·31	·33	1·24
England and Wales Rural	17·6	1·94	·03	·27	·19	·24	·23	·20	·71

THE NOTIFICATION ACT.—The following is a summary of the Notifications :—

Diphtheria	147
Croup	15
Scarlet Fever	306
Typhoid	33
Erysipelas	60
Puerperal Fever	9
Small Pox	2
Continued Fever	1
Total	573

THE PUBLIC HOSPITAL.—The total admissions during the year was 136, and comprise the following cases :—

Scarlet Fever	124
Diphtheria	10
Small Pox	2
Total	136

The Deaths in the Hospital amounted to 6, =4·4 per cent. The following table gives the number of day's rations for Patients and Staff and cost thereof :—

1893.	STAFF.		PATIENTS.	
MONTH.	No. OF DAYS.	COST. £ s. d.	No. OF DAYS.	COST. £ s. d.
January	124	7 5 11·5	335	14 12 6·8
February	112	6 11 10	191	9 15 0·3
March	124	7 5 11·5	275	12 13 10·8
April	120	7 1 3	362	18 8 5
May	124	7 5 11·5	467	21 13 2·7
June	130	7 13 0	663	29 19 11·9
July	155	9 2 4·6	748	32 7 9
August	155	9 2 4·6	537	23 9 10
September	150	8 16 6	690	30 2 0·7
October	155	9 2 4·6	692	30 2 8·4
November	150	8 16 6	670	29 3 11·4
December	155	9 2 4·6	700	30 19 3·1
Total	1654	£97 6 5·9	6334	£283 8 8·1

From all of which it must be evident that the claims upon the Hospital Service during the year have been very heavy, in point of fact for a considerable period outran by a long way its capacity. As was foreseen from the commencement 20 beds for a town of 32,000 inhabitants is far too few to provide adequate isolation accommodation; it was pointed out at the time that the very fewest that could be hoped would meet the ordinary requirements of Maidstone was one bed per thousand, say 30 beds for the then 30,000 inhabitants. During the past year the want of more accommodation has been so strongly forced upon your notice that I hope a practical recognition by its enlargement will soon become an accomplished fact.

As matters now stand, so far as the section of the building occupied by the patients is concerned, there are two blocks or pavilions, each of which consists of two wards for males and females respectively, with nurses room, bath-room, and sanitary offices attached, so that two diseases of different kinds, say for instance Scarlet Fever and Diphtheria can be isolated at the same time, one sort of disease in one block, another in the other block; but it often happens that isolation is called for, for three or more kinds of disease at one and the same time, and frequently enough the utmost urgency arises for the isolation of a single individual, which entails the sacrifice of a whole block, in other words *the half* of our Hospital accommodation, and that is just what happened last Christmas. At that time both blocks were in occupation of Scarlet Fever which you remember was then epidemic, there being many cases in the town for whom hospital accommodation could not be found. Then came the single case of Small Pox; left to itself

this latter might easily have become the starting point of an epidemic of a fresh and most detested disease, consequently it was of infinite importance, even at the expense of the Scarlet Fever, to isolate that case of Small Pox. So that, grievously pressed for room as we were, *the whole of one block* had to be evacuated of its Scarlet Fever, disinfected, and given over for the space of two months to the reception of *one sick person*, and all the turning and twisting about to make this possible had to be accomplished under most embarrassing circumstances. Separation Wards would meet this difficulty.

A Refuge for Suspects is also greatly needed, in which persons whose houses are infected can be temporarily lodged, to allow of their homes, their clothing, and themselves being disinfected and kept beyond reach of mischief to others so long as the suspicion of disease attaches to them. I have reason to know these two needs, together with the necessity for increased accommodation are fully appreciated by some members of your Board, I beg respectfully to urge these requirements upon your notice, in the hope and belief that your Board and the Public will take prompt measures to provide for them.

Before dismissing the subject of the Hospital, I should like to say a few words upon a point that concerns its administration. Application has been made to your Board in behalf of the County Lunatic Asylum, claiming the right of admission for any of the Asylum Servants or Attendants found suffering from "Scarlet Fever, Measles, Small Pox," or the like infectious diseases, on the ground that the Asylum Authorities contribute largely to the rates. This application was referred to me, and I made report to

the effect that your Board is not in a position to undertake the indiscriminate admission of the Asylum Servants and Attendants. The claim is unreasonable and is founded on a mistake. The Hospital is not a refuge for *all* the infectious sick that are liable to arise within the Borough; it is only calculated to serve as an instrument in the hands of the Sanitary Authority to be used intelligently for isolation, where isolation is otherwise unattainable, and first of all for cases that stand in greatest need of isolation from a Public Health point of view, without regard to rates or rate-payers, but simply with the object of making it as serviceable as possible for the prevention of the spread of disease. To suppose that 20 beds, and that is all we have to serve a population of 32,000, could suffice to isolate all the infectious sick is absurd; double or treble 20 beds might at any moment be required for the Asylum alone, and a single gush of this sort would simply owerwhelm the Hospital, block its wards, and paralyze its usefulness for the general public, without effecting any sanitary service whatever. No, it is and ever must be hopelessly inadequate for any such extensive use, its *prime* purpose is to afford the means of immediate isolation of the *initial* cases so that isolated outbreaks shall be prevented from becoming epidemics, and its *secondary* use when an epidemic prevails is to serve for the isolation of such cases as are more especially liable to become the foci of further extension by reason of their local surroundings. Examples from out of the year's experience will show what I mean. Many isolated outbreaks of Scarlet Fever occurred in the families of Masters and Mistresses of Schools, of Dairymen, Eating-house keepers, and others, in which practically it was im-

possible to carry on the several businesses concerned without almost the certainty of the spreading of the disease through business channels. For similar reasons and in the same way it was often of great importance to isolate the first case, when it appeared singly in a family comprising numerous susceptible members. Instances of this sort, from a sanitary point of view, are desirable and profitable objects for isolation, whereas multiple cases occurring simultaneously in one and the same family are undesirable and unprofitable, because with the single cases the chances are that the infection is confined to the individual, and there is good reason to hope that early isolation will rescue the rest of the family from the danger of the infection, whereas in the multiple cases it is evident, so far as the family is concerned, the infection is already diffused and therefore there is little, certainly less, chance of any susceptible members escaping. Moreover, it is distinctly unjust to the Public to fill the beds of the Hospital with a group of multiple cases all from one house or institution, to the exclusion of an equivalent number of single cases from separate houses; for bear in mind a single case makes a house a focus of infection just as much as a number of cases do, and if the Hospital will only accommodate a portion, it follows that to achieve the greatest amount of good it is necessary to make its operations embrace the greatest possible number of foci.

This view of the case, however, is by no means the view commonly held by the ordinary public; with them there is a fixed notion that the greater the number of cases in any particular house so much the greater urgency for their removal to the Hospital, and the more these, because numerous, are embarrasing

and burdensome, so much the more claim as ratepayers, it is wrongly considered, they have upon municipal relief.

Closely allied to this subject of Hospital isolation is another, about which I desire to say a few words. I refer to district nursing; there are cases of infectious disease which can and ought to be kept under sanitary control just as effectually in their own homes as they can be in a Hospital. Cases of Enteric Fever for example; with intelligent nursing there is next to no fear of their spreading, so long as strict rules of sickroom management are enforced; this can be done perfectly well by district nursing. In Maidstone we have an excellent nursing institute in connection with the West Kent General Hospital; that organisation already undertakes district nursing to a limited extent for purely philanthropic purposes, but by its rules infectious diseases are excluded from the scope of its operations. I should like to see its action extended so as to embrace infectious diseases, making the philanthropic object subservient to the sanitary, and if a subsidy to this institution would secure this end, you may depend upon it, it would be money well and most economically spent, for the potential value of such an organisation embraces the functions of a Sanitary Samaritan, Sanitary Inspector, and Sanitary Policeman, and its power for good might be made to penetrate more deeply into the very sources and recesses of insanitary evils than anything I can imagine, and could not fail to leave a permanent impress upon the well-being of all brought under its influence.

METEOROLOGY.

Temperature and Rainfall.

Rainfall.—The rainfall for Maidstone for the year 1893 amounted to 23·29 inches, the average for the years 1880-89 having been 23·79, and the next previous ten years, 1870-79, 27·39 inches. This shows that taken as a whole the rainfall for 1893 was not so much under the mark as most people imagine, in point of fact, among recent years, 1884 with 19·58, '87 with 21·73, '88 with 21·39, and '89 with 22·78 inches, no less than four fell below 1893, but extraordinary beyond all record within my experience is the fact that during four consecutive months, from the beginning of March till the end of June, we had 2·06 inches only of rainfall, and from the 17th March to the 17th May, 60 days, including the showery month of April, not a drop; the average for the four months being very little short of seven inches; this unprecedented drought was however compensated for by the unusually heavy rains of January, February, and July, which far exceeded the average for those months. In short the drought fell upon the second quarter, during the third and fourth there was about an average, and in the first there was a large excess.

Temperature.—The year was a warm one, for each quarter the temperature was above the average, more particularly so in the second and fourth quarters. During the first three weeks of the year there was very severe cold, but after then uniform mild, indeed hot weather set in, with almost uninterrupted sunshine, such as I have never known before, and on the 20th April the shade temperature reached 78; the hottest week of the year was the 33rd, in the middle of August, when the shade thermometer just touched 90.

THE WINDS.—Compared with former years, the following figures exhibit the departures from the averages in excess or deficiency, in days:—

Year.	NW	N	NE	E	SE	S	SW	W
1893	0	−20½	+21½	+8½	+6½	−14	+17	−19½

The great excess of NE wind occurred in Jan., Mar., April, June, and Nov.

The great excess of SW wind occurred in Aug., Sept., Oct., Nov., Dec.

The deficiency of N wind occurred in Mar., April, May, July, Aug., Sept., Oct.

The deficiency of W wind occurred in Mar., April, May, June, July, Aug., Sept., Oct., Nov., and Dec.

The deficiency of S wind occurred in Mar., April, June, July, Aug., Sept., Oct., Nov.

HUMIDITY.—One of the most striking features of the year's meteorology was the comparative dryness of the atmosphere. If 100 be taken to represent saturation, the average for the year 1893 was 75·8, against the normal average of 82·4, so that the air throughout the year contained 6·6 per cent. less moisture than usual; April, May, and June being the driest months, as the following table shows:—

	Mean for 1893.	Mean for 52 years	Difference for 1893.
January	90	87	+3
February	87	85	+2
March	74	81	−7
April	65	80	−15
May	66	78	−15
June	64	75	−11
July	71	76	−5
August	69	71	−8
September	73	81	−8
October	80	89	−9
November	85	91	−6
December	86	89	−3
Mean	75·8	82·4	−6·6

SUBSOIL WATER.—Contrary, I dare say, to the general impression, having regard to the almost absolute drought of ten weeks duration, lasting from the 2nd of March to the 17th May, the subsoil was more saturated during 1893 than it had ever been since the daily observations upon the height of the Subsoil Water were commenced in 1884. Taking the year round, it stood at my laboratory 193·97 inches beneath the surface, reaching its maximum height 181·20 during March in the 10th week of the year, and its minimum 203·76 in September during the 39th week. So that the drying of the soil found to be associated with freedom from Diphtheria was never so little accomplished since these observations began; month by month, and every month the subsoil water stood at a higher level than the average for the time of year, and mostly so during the first six and the last three months. The time incidence of the high and low tides were as follows:—during the late autumn of 1892 there was a very high tide, followed by an ebb in the course of the early and mid-winter of 1893, this was succeeded during the first week in March by the highest tide I have known, then followed a rapid ebb, interrupted by two conspicuous risings, one early in June and another at the beginning of July, the lowest point being reached late in September; then came a rapid autumnal rise far exceeding the average amount, so that, looked at from a health point of view, I regard the year as having been as respects the subsoil water, very favourable to the prevalence of Diphtheria, and so it proved.

Year.	Highest.	Lowest.	Range.
1885	187·92	212·40	24·48
1886	188·64	211·68	23·04
1887	186·72	208·56	21·84
1888	189·84	203·28	13·44
1889	193·68	204·00	10·32
1890	192·24	206·52	14·28
1891	188·28	201·60	13·32
1892	182·16	204·00	21·84
1893	181·20	203·76	22·56

In inches beneath the surface at the Laboratory.

GENERAL SANITARY CONDITION AND PROGRESS.

From Mr. Walter G. Scoones, the Borough Surveyor, I learn that the following works of sanitary interest have been executed within the year 1893:—

"47 New Houses have been erected.

"24 Houses have been added to, &c.

"23 New Warehouses, Stables, &c., erected.

" 5 Warehouses, Stables, &c., added to.

" 1 Addition made to School (St. James').

" 1 New Isolation Ward to West Kent Hospital.

"New Soup Kitchen.

"New School of Science and Art.

"35 New Connections to Sewers have been made, exclusive of those from houses on new estates.

"New Roads have been constructed on the Sheal's Court Estate (Hayle and Campbell Roads), also a New Road on the Westree Estate (Florence Road). The sewers in each Road are laid, and the erection of houses has commenced and is continuing.

"In Oakwood Road a new sewer has been constructed for a length of nearly 700 feet from Tonbridge Road end, in order to take the drainage of those houses nearest that end.

"Three new flushing tanks have been constructed at the ends of sewers. One at Barming, one in Allen Road, and one in Sittingbourne Road, and the sewer ventilation considerably improved in many cases.

"A new manhole has been constructed at the end of Foley Road sewer, for flushing purposes, &c., also one at the summit of the Albert Street sewers.

"A new manhole has been constructed on the line of sewer in Waterside, also in St. Michael's Road.

"A considerable further improvement has taken place in our sewage effluent."

The following list exhibits the various "NUISANCES DEALT WITH BY STATUTORY NOTICE OR OTHERWISE," by the Sanitary Inspector, Mr. Jackling:—

Houses without drains, or reconstructed	195
Drains repaired and cleansed	325
Water Closets ditto	278
Houses provided with new Water Closets	44
Houses provided with additional Water Closets	10
Old Pan Closets with Container and D Traps removed	18
Water Closets provided with Water Supply and Flushing Apparatus	164
Soil Pipes removed outside dwellings and ventilated	12
Slop Sink and other Waste Pipes disconnected from Drains	103
Trapped Stoneware Gullies provided, in lieu of defective Brick and Bell Traps	282
Houses provided with Ash-pits or Dust-bins	250
Houses provided with new shooting, or repaired	48
Cesspools cleansed and filled up	10
House Refuse removed on complaint	8
Privies removed	3
New Privies constructed	4
Construct or Repair Urinals	3
Remove Pigs	3
Overcrowding	6
Houses cleansed and lime-washed	5
Smoke Nuisances	2
Remove Manure	6
Remove Pigeons, Poultry, and Animals	10
Houses supplied with Company's Water	8
House Roofs repaired	24
Remove Water in Cellars	
Back Yards of Dwelling Houses provided with new Concrete Pavement	101
Manure Pits constructed	6
Old Drains Trapped from Sewer, and ventilated	3
Miscellaneous, not under above heads	28
New Glazed Stoneware Pipe Drainage laid (6,565 feet)	
Total	1818

The sum of these items as a whole is considerably less than the corresponding figure for the previous year, which I take to mean that the former zeal thrown into the work of sanitary inspection has had its natural effect in reducing the number of sanitary evils that stood in need of reform, and this is my belief.

Two items in this list present themselves as conspicous exceptions to the general reduction, viz:— "Water Closets repaired and cleansed, 278," "Houses provided with New Water Closets, 44," also in another item there is a small increase, viz:—"Houses without drains or re-constructed, 195."

If we are to progress as I hope we shall, there is very little chance for a long time to come of any abatement of the field for the exercise of energy in the direction of the two former of these particulars. It is needless to remind you how often I have endeavoured to bring the matter of water supply to the Water Closets to a practical issue, naturally it affords me satisfaction to observe that there is a distinct movement in this direction, I only wish the movement was more rapid. Depend upon it the excess of Diphtheria and Typhoid recorded in the earlier part of this report was in a measure due to the chronic neglect of Water Supply to the closets, and the consequent unflushed state of the house drains and public sewers.

I attribute the excessive prevalence during 1893 of these two diseases to the lessened rainfall, for in the present condition of affairs the house drains and consequently the public sewers are, to a large degree, most improperly dependent upon the rainfall for their flushing; in absence of rain these become loaded by a deposit of solid fœculent matter, and when the rain comes, in consequence of the disturbance of this fer-

menting fœtid stuff, dangerous vapours and gases are set free, to be belched forth at the street ventilators, or anywhere else, where a way for escape presents itself.

THE COLLECTION AND DISPOSAL OF HOUSE REFUSE continues to be very well done, and now that the place of disposal has been changed from the Lock Meadows to the disused quarries in the London Road, a certain source of nuisance, and a very probable source of disease has been removed from the immediate neighbourhood of the town.

THE PUBLIC WATER SUPPLY.—The results of the periodical analyses of the four several sources of Public Water Supply will be found in Table IV., they prove these to have been quite satisfactory. On the whole the Conduit Water continues to be a trifle the best, but the Farleigh Water treads close upon its heels, there is very little to choose between them, both are examples of pure ragstone water, and the Boarley and Cossington are equally good examples of pure chalk water.

OF WATER FROM PRIVATE WELLS, 17 samples have been submitted for analysis, and in most instances were found to be more or less seriously polluted, the extent of this pollution may be readily estimated by a comparison of the figures in the following table with the corresponding figures pertaining to the Conduit Water in Table IV., for in these several cases of private wells the water in each of them is derived from the ragstone, and consequently from a precisely similar geological source as the Conduit Water, to which therefore they, if pure, ought to present an exact resemblance, in proportion, however, as they severally differ, so is it proved that they had suffered pollution.

Analyses of Waters from Private Wells.

Date. 1893	Description.	Total Solids.	Loss on Ignition.	Chlorine.	Nitrogen as Nitrates.	Ammonia.		Oxygen absorbed in		Hardness.		Appearance in 2-foot tube.
						Free.	Alb.	¼ hour.	4 hours.	Total.	Perm.	
Jan. 17..	Victory Inn, Tovil *	60·2	4·0	3·6	·95	·01	·04	·007	·023	23·8	11·9	cl. green.
,, 30..	Slingswood Cottages	34·3	3·9	4·7	·40	·00	·04	·011	·017	19·1	5·3	yell. gr. turb.
Feb. 13..	Hills' Well, Scrub's Lane.....	32·0	3·3	3·0	·87	·04	·09	·003	·007	21·0	10·0	cl. gr.
April 6..	Ditto ditto	28·2	1·4	2·0	·57	0·3	·07	·014	·025	17·8	5·7	cl. bl. br.
,, 6..	Wright's & Goble's, ditto.....	86·8	7·2	10·1	2·05	·06	·13	·012	·044	37·6	31·1	bl. gr. sl. turb.
,, 7..	Baker's, ditto	53·4	2·5	4·8	1·42	·14	·15	·018	·046	25·2	17·9	gr. very turb.
May 26..	Post Office Yard, High Street ..	83·7	4·1	9·3	·65	·01	·11	·032	·040	23·6	15·0	opg. green.
,, 26..	New Barn Farm, Sandling	23·3	1·5	1·7	·25	·03	·25	·191	·221	12·7	5·0	dirty brown.
June 23..	Heathside, Penenden Heath....	26·9	2·9	3·3	·52	·03	·04	·005	·013	11·3	6·2	gr. sl. turb.
July 10..	16, Orchard Street *	64·5	4·6	4·3	·57	·00	·04	·023	·041	23·3	14·7	gr. sl. turb.
,, 18..	Heathfield Lodge	19·9	1·9	2·3	·47	·00	·05	·011	·014	9·1	5·1	p. cl. bl.
,, 24..	Willington Street	25·3	1·0	1·5	·57	·30	·07	·013	·023	13·6	7·0	dirty gr.
Aug. 11..	21, Albert Street *	68·6	1·5	6·0	·67	·00	·05	·011	·026	25·6	16·1	p. cl. gr. blue.
Sept. 1..	5, Buckland Terrace	42·9	3·9	2·8	·57	·00	·04	·011	·021	18·9	10·0	p. cl. bl. gr.
Oct. 27..	15 and 16, Lucerne Street.....	63·9	3·0	3·5	·57	·04	·05	·010	·015	29·7	18·4	gr. br. turb.
Dec. 4..	Heath Cottages, Boxley Road..	18·4	1·6	1·6	·57	·17	·08	·011	·033	8·2	6·3	turb. green.
,, 4..	Goodwin's, Boxley Road *	32·8	1 3	4·2	·57	·30	·09	·015	·042	12·8	8·9	yell. gr. sl. turb.

* Closed.

As a result of the action of your Board, 4 of these wells have been closed.

FOOD AND DRUGS ACT.—45 samples of Food have been received and reported upon under the provisions of this Act as follows:—

ARTICLE.	RESULT OF ANALYSIS.
Milk	Pure.
Milk	,,
Milk	,,
Milk	One half of its cream removed.
Milk	Pure.
Milk	,,
Milk	13 per cent. added water.
Milk	Pure.
Milk	,,
Milk	,,
Milk	,,
Butter	,,
Lard	,,
Butter	,,
Lard	,,
Coffee	,,
Mustard	,,
Butter	,,
Lard	,,
Milk	11 per cent. added water.
Milk	Pure.
Milk	,,
Milk (Skim)	Deprived of the whole of its cream.
Milk	Pure.
Milk	,,
Milk	,,
Milk	,,
Milk (Skim)	33 per cent. added water.
Milk	Pure.
Milk	,,
Milk	,,
Milk	,,
Milk	,,
Milk	,,
Milk	,,
Whiskey	10·79 degrees below legal limit.
Milk	Deprived of one third of its cream.
Whiskey	Pure.
Brandy	,,
Milk	,,
Milk	,,
Whiskey	1·57 degrees below legal limit.
Whiskey	6·46 degrees below legal limit.
Whiskey	Pure.
Whiskey	0·51 degree below legal limit.
Total 45.	= 22·22 per cent. adulterated.

Of these 45 samples it is to be seen 30 were of Milk with 6 cases = 20 °/₀ of adulteration, 6 of Whiskey with 4 cases = 66 °/₀ of adulteration, 3 of Butter, 3 of Lard, and 1 each of Coffee, Mustard, and Brandy all free from adulteration; in two of the Whiskeys the dilution was so small as to be insignificant. Milk adulteration, especially by the abstraction of cream, is evidently a prevalent practice. On the whole, 22·22 per cent is a high rate, and not a thing to be proud of.

UNSOUND FOOD.—An important seizure was made of something like a couple of tons of putrid American Cheese; this occurred at harvest time, and the seizure was a very fortunate circumstance, for had this stuff been sold for food among the hoppers, as we were convinced it was destined to be, its consumption might have produced untold mischief, for it is a fact that decomposing cheese, especially American cheese, is liable to contain a highly poisonous substance called Tyrotoxicon, besides other poisonous ptomaines.

Another important seizure related to a carcass of beef which reached Maidstone, under very suspicious circumstances, ready dressed for sale as human food. No exact particulars as to its history were to hand in the first instance; on inspection the only noticeable departures from normal beef were, the flesh looked somewhat darker than usual, and the butchering had evidently been done in a clumsy fashion, it was seized on suspicion and in due course its history was revealed. It had come from the neighbourhood of Sevenoaks, and consisted of the carcass of a Cow recently calved, that had been slaughtered when its natural death from milk fever was imminent. Both cheese and meat were destroyed.

Once, and for the first time, we have had to put the law in force against the offence "of having exposed, without previous disinfection, clothing which had been exposed to infection."

This brings my sixteenth Annual Report to a close. For me the year has been an anxious and laborious one, but having regard to the epidemic prevalence of Scarlet Fever and Diphtheria, I feel justified in laying claim to have placed before you a satisfactory record.

I have the honour to be,

Mr. Mayor and Gentlemen,

Your obedient servant,

MATTHEW A. ADAMS.

Trinity House, Maidstone,
March, 1894.

BOROUGH OF MAIDSTONE, 1893.

TABLE I.

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

THE AREA OF { East Maidstone ..... 2,019 acres. / West ,, ... 1,989 ,,

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

HOUSES. At the census of 1891 there were { West 2,693 / East 3,314 } =6,007 inhabited houses, containing on an average { West 5·8 / East 5.0 } =Whole Borough 5·37 persons to a house.

ANNUAL RATEABLE VALUE of Property in the Borough for the Poor Rate is £133,801.

DENSITY (1893) { East..... 8·33 persons per acre. / West ..... 8·01 ,, ,,

POPULATION, estimated to the middle of 1893. } Total 32,743 { East Maidstone..... 16,813. / West ,, ... 15,930.

				Legitimate.	Illegitimate.
BIRTHS. Males .... 415 / Females .. 376	Total 791	East Maidstone 440	.....	421	 19
		West ,, ... 351	.....	337	 14

ANNUAL RATE OF BIRTHS PER 1,000....East Maidstone 26·17....West Maidstone 22·03....Whole Borough 24·15.

DEATHS. { Males .... 232 / Females .. 239 } Total ....471 { East Maidstone.... 264 / West ,, ... 207 } Whole Borough ..471.

ANNUAL RATE OF MORTALITY PER 1,000 .. East Maidstone 15·70 .. West Maidstone 12·99 . Whole Borough 14·38.

EXCESS OF BIRTHS OVER DEATHS, East Maidstone 176, West Maidstone 144, Whole Borough 320.

TABLE II.

Deaths at different ages, at rate per 10,000 per annum.

Period.	District.	Under 1 year.	1 to 5 years.	5 ,, 15 ,,	15 ,, 25 ,,	25 ,, 35 ,,	35 ,, 45 ,,	45 ,, 55 ,,	55 ,, 65 ,,	65 ,, 75 ,,	75 ,, 85 ,,	85 and above.	Total.
1st Quarter ..	E	16·6	19·0	11·9	9·5	2·3	9·5	11·9	9·5	40·4	14·2	16·6	161·7
,, ..	W	15:0	15·0	7·5	5·0	10.0	20·0	12·5	17·5	27·6	15·0	5·0	150·6
2nd Quarter..	E	21·4	23·7	9·5	4·7	7·1	11·9	19·0	11·9	4·7	16·6	—	130·8
,, ..	W	30·1	17·5	10·0	5.0	5·0	5·0	—	20·0	15·0	5·0	5·0	118·0
3rd Quarter ..	E	71·3	14·2	14·2	14·2	16·6	9·5	14·2	7·1	11·9	7·1	4·7	185·5
,, ..	W	30·1	17·5	2·5	10·0	5·0	5·0	20·0	7·5	2·5	15·0	5·0	120·5
4th Quarter ..	E	16·6	26·1	11·9	9·5	9·5	4·7	7·1	23·8	23·8	14·2	2·3	149·8
,, ..	W	20·0	15·0	12·5	7·5	5·0	10·0	15·0	25·1	15·0	2·5	2·5	130·6
Whole Year ..	E	31·5	20·8	11·8	9·5	8·9	8·9	13·0	13·0	20·2	13·0	5·9	157·0
,, ..	W	23·8	16·3	8·1	6·9	6·2	10·0	11·9	17·5	15·0	9·4	4·4	129·9

Average length of life in East and West Maidstone for each of the four quarters.

Deaths.	EAST MAIDSTONE.	Years.	Deaths.	WEST MAIDSTONE.	Years.
1st Quarter.... 68		45·58	1st Quarter.... 60		43·56
2nd ,, ... 55		32·63	2nd ,, ... 47		31·36
3rd ,, ... 78	Giving an average age for each individual of	22·50	3rd ,, ... 48	Giving an average age for each individual of	32·46
4th ,, ... 63		37·47	4th ,, ... 52		34·06
Whole Year 264		**34·13**	**Whole Year 207**		**35·83**

Average age attained at Death, during the whole year for the Borough at large=34·88.

TABLE III.

Causes of Death, 1893, showing Rate per 1,000 per Annum for each District.

Period.	District.	Seven Zymotic Diseases.	Other Zymotics.	Phthisis.	Other Constitutional Diseases.	Diseases of the Respiratory Organs.	Diseases of the Organs of Circulation.	Other Local Diseases.	Developmental Diseases.	Deaths by Violence.	Causes ill-defined or not specified.	Total from all Causes.
First Quarter	East Maidstone	·47	—	1·19	1·42	6·42	1·42	1·66	2·37	·47	·71	16·17
	West ,, ...	·50	·75	1·00	·75	5·77	·75	3·26	1·00	·75	·25	15·06
Second ,, ...	East ,, ...	3·09	—	·47	2·37	1·42	1·42	1·66	1·42	·71	·47	13·08
	West ,, ...	1·00	—	·50	1·00	3·26	·25	1·75	2·00	1·00	1·00	11·80
Third ,, ...	East ,, ...	5·47	—	2·14	1·90	1·19	·71	4·04	·95	·71	1·42	18·55
	West ,, ...	1·75	—	1·25	1·25	1·25	·50	3·50	1·25	·75	·50	12·05
Fourth ,, ...	East ,, ...	1·90	·23	1·42	2·37	1·66	·95	3·80	1·42	·47	·71	14·98
	West ,, ...	1·75	·50	2·51	2·00	·50	2·00	2·51	·75	·25	·25	13·06
Whole Year.....	East ,, ...	2·73	·06	1·30	2·02	2·67	1·13	2·79	1·54	·59	·83	15·70
	West ,, ...	1·25	·31	1·31	1·25	2·70	·87	2·76	1·25	·69	·50	12·99

N.B.—Zymotic Diseases include Small Pox, Measles, Diphtheria, Whooping Cough, Fevers, &c. Constitutional Diseases include Gout, Cancer, Scrofula, &c. Developmental Diseases include Premature Birth, Teething, Old Age, Atrophy, and Debility, &c.

TABLE IV.

Analyses of the Public Water Supplies, 1893.

Month.	Total Solids.	Loss on Ignition.	Chlorine.	Nitrogen as Nitrates.	Ammonia.		Oxygen absorbed in		Hardness.		Appearance in 2-foot tube.
					Free.	Alb.	¼ hour.	4 hours.	Total.	Perm.	
WATER COMPANY.—FARLEIGH WATER.											
January 12th.....	34·1	3·0	2·4	·47	·02	·02	·007	·012	16·9	7·2	cl. gr.
April 8th	34·1	2·2	2·6	·57	·02	·02	·005	·025	18·5	7·5	cl. gr. bl.
August 16th	33·5	1·7	2·5	·55	·01	·03	·011	·022	16·9	7·7	cl. gr. bl.
October 19th	32·0	1·1	2·3	·45	·02	·02	·007	·017	16·4	6·4	cl. p. gr.
WATER COMPANY.—BOARLEY WATER.											
January 12th.....	22·4	2·1	1·6	·33	·00	·02	·006	·014	14·0	5·6	cl. bl. gr.
April 7th	23·1	1·6	1·6	·51	·01	·04	·012	·033	15·2	5·1	cl. bl.
August 16th	22·4	1·1	1·6	·45	·00	·03	·008	·025	12·2	5·2	p. cl. gr.
October 19th	20·4	1·1	1·4	·40	·02	·02	·006	·017	14·0	4·7	cl. bl.
WATER COMPANY.—COSSINGTON WATER.											
January 16th.....	19·7	3·2	1·4	·30	·01	·02	·007	·012	14·0	5·0	cl. bl. gr.
April 7th	23·9	2·3	1·6	·51	·01	·03	·005	·029	14·4	4·4	cl. gr. bl.
August 16th	22·0	1·6	1·5	·45	·00	·02	·014	·030	12·8	5·0	cl. gr.
October 19th	26·7	1·9	2·3	·43	·02	·03	·011	·019	15·7	6·6	cl. bl. gr.
PUBLIC CONDUIT.											
January 16th.....	31·8	2·9	2·3	·45	·00	·02	·007	·014	16·2	6·6	cl. bl. gr.
April 7th	32·7	2·6	2·3	·57	·00	·01	·007	·023	17·9	7·0	cl. gr. bl.
August 16th	32·5	1·6	2·4	·50	·00	·02	·011	·019	16·3	7·2	cl. gr.
October 19th	32·1	1·0	2·1	·40	·01	·02	·009	·015	16·1	6·7	cl. bl. gr.

TABLE V.

RAINFALL IN MAIDSTONE, 1893, and excess or deficiency of Temperature.

First Quarter.				Second Quarter.				Third Quarter.				Fourth Quarter.			
Week.	Total Rain in inches.	No of Days on which Rain fell.	Temperature.	Week.	Total Rain in inches.	No. of Days on which Rain fell.	Temperature.	Week.	Total Rain in inches.	No. of Days on which Rain fell.	Temperature.	Week.	Total Rain in inches.	No. of Days on which Rain fell.	Temperature.
1st	·40	1	−12·9	14th	—	—	+2·3	27th	·46	1	+6·7	40th	·43	4	−0·5
2nd	·68	4	−2·9	15th	—	—	−0·6	28th	·82	4	−2·1	41st	2·34	5	+1·6
3rd	·59	3	−3·4	16th	—	—	+7·3	29th	·83	4	−1·3	42nd	·50	3	+5·6
4th	·33	3	+2·3	17th	—	—	+7·5	30th	·65	3	0·0	43rd	·30	2	+1·6
5th	·39	4	+4·8	18th	—	—	+5·2	31st	·74	4	−2·0	44th	·24	3	−1·7
6th	·48	4	+1·5	19th	—	—	+6·3	32nd	·02	1	+5·3	45th	·41	2	−4·2
7th	·71	5	+4·3	20th	·30	3	+5·9	33rd	·06	1	+11·7	46th	1·21	5	−1·5
8th	1·97	4	−0·4	21st	·11	1	+3·2	34th	·05	2	+2·0	47th	·61	3	−2·9
9th	·84	5	+3·5	22nd	·53	2	−1·2	35th	1·15	1	−0·8	48th	·49	3	−0·2
10th	—	—	+5·8	23rd	—	—	+2·5	36th	·33	3	+2·4	49th	·33	2	0·0
11th	·13	2	+4·2	24th	·01	1	+7·1	37th	—	—	+0·2	50th	·64	3	+3·6
12th	—	—	+2·1	25th	·58	3	+1·4	38th	·27	2	−2·4	51st	·69	3	+2·6
13th	—	—	+5·1	26th	·06	1	+1·0	39th	1·56	3	−0·6	52nd	·05	1	+1·9
Total 6·52 inches.				Total 1·59 inches.				Total 6·94 inches.				Total 8·24 inches.			
				Total Rain in 1893=23·29 inches.											

(A) TABLE OF DEATHS during the Year 1893, in the Urban Sanitary District of Maidstone, classified according to Diseases, Ages, and Localities.

(a.)	Mortality from all causes, at subjoined Ages.								Mortality from subjoined causes, distinguishing Deaths of Children under Five Years of Age.																					
	At all ages. (b.)	Under 1 year. (c.)	1 and under 5 (d.)	5 and under 15 (e.)	15 and under 25 (f.)	25 and under 65 (g.)	65 and upwards. (h.)	(i.)	Smallpox. 1.	Scarlatina. 2.	Diphtheria. 3.	Membranous Croup. 4.	Fevers. Typhus. 5.	Fevers. Enteric or Typhoid. 6.	Fevers. Continued. 7.	Fevers. Relapsing. 8.	Fevers. Puerperal. 9.	Cholera. 10.	Erysipelas. 11.	Measles. 12.	Whooping Cough. 13.	Diarrhœa and Dysentery. 14.	Rheumatic Fever. 15.	Ague. 16.	Phthisis. 17.	Bronchitis, Pneumonia, and Pleurisy. 18.	Heart Disease. 19.	Injuries. 20.	All other Diseases. 21.	Total. 22.
EAST MAIDSTONE ..																														
ACRES. Area 2019.—Males	133	28	18	8	7	34	38	Under 5		2	2	2									1	9		2	1		2	25	46
								5 upwds.			2	1		5										9	12	8	4	46	87
Females	131	22	20	12	9	30	38	Under 5		1	5	2									3	7			7		1	16	42
								5 upwds.		2	4			1			1		1				2	11	18	8	2	39	89
Including Deaths in West Kent Hospital as follows { M. F.	28		4	2	5	14	3	Under 5																			1	3	4
								5 upwds.						4										3	1	1	3	12	24
Total	264																													
WEST MAIDSTONE ..																														
ACRES. Area 1989.—Males	99	24	13	5	4	26	27	Under 5		3										2		4		1	5	1	1	20	37
								5 upwds.		1														9	10	5	7	30	62
Females	108	14	13	8	7	32	34	Under 5		1		2							1		1	3		1	7			11	27
								5 upwds.		1	2			1			3		1			1		12	9	8	3	40	81
Including deaths in Kent County Lunatic Asylum as follows..... { M. F.	3					3		Under 5																					
								5 upwds.																				3	3
Total	207																													
Totals	471	88	64	33	27	122	137	Under 5		7	7	6							1	2	5	23			4	20	1	4	72	152
								5 upwds.		4	8	1		7			4		2			3		41	49	29	16	155	319
The subjoined numbers have also to be taken into account in judging of the above records of mortality.																														
Deaths occurring outside the district among persons belonging thereto.	57	2			1	25	29	Under 5																				2	2
								5 upwds.																11	2	6		36	55
Deaths occurring within the district among persons not belonging thereto.	150		1	5	11	103	30	Under 5			1																	1
								5 upwds.																22	10	10	7	100	149

(B) TABLE OF POPULATION, BIRTHS, AND OF NEW CASES OF INFECTIOUS SICKNESS coming to the knowledge of the Medical Officer of Health, during the year 1893, in the Urban Sanitary District of Maidstone; classified according to Diseases, Ages, and Localities.

(a.)	Population at all Ages.		Registered Births	Aged under 5 or over 5	New Cases of Sickness in each Locality, coming to the knowledge of the Medical Officer of Health.												Number of such Cases Removed from their Homes in the several Localities for Treatment in Isolation Hospital.											
	Census 1891. (b.)	Estimated to middle of 1893. (c.)	(d.)	(e.)	Smallpox. 1.	Scarlatina. 2.	Diphtheria. 3.	Membranous Croup. 4.	Fevers. Typhus. 5.	Fevers. Enteric or Typhoid. 6.	Fevers. Continued. 7.	Fevers. Relapsing. 8.	Fevers. Puerperal. 9.	Cholera. 10.	Erysipelas. 11.	12.	13.	Smallpox. 1.	Scarlatina. 2.	Diphtheria. 3.	Membranous Croup. 4.	Fevers. Typhus. 5.	Fevers. Enteric or Typhoid. 6.	Fevers. Continued. 7.	Fevers. Relapsing. 8.	Fevers. Puerperal. 9.	Cholera. 10.	Erysipelas. 11.	12.	13.
EAST MAIDSTONE ..	16,548	16,813	440	Under 5		49	17	7		4					3				14										
				5 upwds.	2	109	69	2		17			4		37			2	48	6										
WEST MAIDSTONE..	15,597	15,930	351	Under 5		37	11	4							2				11										
				5 upwds.		119	51	2		14	1		5		18				51	4										
Totals	32,145	32,743	791	Under 5		86	28	11		4					5				25										
				5 upwds.	2	228	120	4		31	1		9		55			2	99	10										