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Watford (England). Urban District Council.

**Publication/Creation**

1903

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THIRTY-FIRST

***ANNUAL REPORT***

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ON THE

SANITARY CONDITION

OF THE

**Urban District of Watford,**

FOR THE YEAR

1903,

BY

**DR. ARTHUR KING, D.P.H.,**


Medical Officer of Health.

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WATFORD :

PRINTED BY J. E. KING, 42, HIGH STREET,

1904.



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# TO THE CHAIRMAN & MEMBERS OF THE WATFORD URBAN DISTRICT COUNCIL.

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## ***Annual Report for 1903.***

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Gentlemen,

I have the pleasure of submitting to you the Thirty-first Annual Report on the Sanitary condition of the Watford Urban District.

**Physical Features.** The larger part of the Urban District of Watford lies to the North West of the River Colne with a gradual slope towards the S. E. in the direction of the river, the levels varying from about 260ft. to 160ft. above sea level. The Portion of the District known as New Bushey and the Rookery, lie to the other side of the Colne and New Bushey has rather a steep incline to the North West.

The soil of the first named portion of the District is gravel and the subsoil chalk, but the soil of New Bushey is clay.

This ensures a dry site for the larger number of the houses, but those in the immediate vicinity of the river are not so well placed and here there has been some difficulty in getting a proper fall for the Sewers to the Pumping Station.

To remedy this low level ejectors have been put down and complete clearance of the faulty Sewers has been the result.

## ***House Accommodation.***

**The House Accommodation** is well up to the requirements and, if one may judge from the number of houses empty at the end of the year, the demand appears unequal to the supply.



The larger number of the new houses are of a character suited to the requirements of the working classes and the air space around them is sufficient. At the back of a great number, however, the yard is not properly paved and consequently this portion of the surroundings soon gets insanitary. I trust the new Byelaws will soon be adopted and the 75ft. of paving at the back be insisted upon in every case.

The habit of keeping fowls in the rear of cottages is unfortunately very prevalent and as the runs are very seldom covered in and are often not kept clean, a very unsavory condition of matters often exists—a condition that is made considerably worse in wet weather.

If the council saw fit to approach the chief owners of cottage property with a request that a condition of renting their houses should be that no fowls were kept at the back I think something might be accomplished to remedy this undoubted evil.

All new houses are built under the supervision of the Building Inspector and I am glad to testify from personal knowledge to the improvement that has been effected in this direction since his appointment.

I take, however, this opportunity of suggesting to the Council that they should have building byelaws that were sufficiently liberal to do away with the necessity for continually passing buildings that do not altogether conform with the regulations and that when these are adopted the Building Inspector be instructed to see that they are stringently enforced.

A good deal of the old property in the Courts and Alleys is of a very dilapidated and insanitary character, and I am glad to be able to record the abolition of some of these dwellings during the year under consideration.

In 1902 I drew the Council's attention to some cottages in Water Lane and in July, 1903, I again



requested their consideration of the matter. As a result No. 24 has been closed and plans have been submitted for rebuilding No. 8, 10, 12, 14, 16, 18, and 20.

Although these last will be on the same site and will not allow of the widening of the road there will be increased air space at the back, and the cottages themselves will be of a very different character from those they replace.

There are still some cottages in this neighbourhood that should during 1904 receive your attention, and I trust to bring this matter before you in due course.

**In Butcher's Yard.** No. 1, 3, 5, and 7, are in both an insanitary and dilapidated condition and I propose dealing with these during the coming year.

**In Chapman's Yard.** No. 1, 2, 3, 4, 5, 6, 7, 8, and 9 are in a bad state of repair and have no proper through ventilation, the back being in immediate contact with the cowsheds occupied by Mr. Warren. I think they should be condemned as insanitary dwellings.

**In Meeting Alley.** No. 1, 2, 3, 4, 5, 7, to 12 are very deficit in light. If possible the owners should be obliged to enlarge the window area and carry out other necessary alterations for making them healthy habitations.

**In Woodman's Yard.** The back rooms of No. 2, 3, 4, and 5 are two thirds below the surface of the ground and are practically cellar dwellings. They are consequently very damp and very badly lighted. As the other parts of the houses are of a better character, I should recommend that the owner be called upon to excavate areas at the back of the these houses so as to do away with the dampness and allow more light to be obtained.

**In Farthing Lane.** No 1, 2, and 3 are old houses that originally were substantially built, but have become dilapidated and insanitary through lapse of years.



They are certainly unhealthy dwellings as they now exist and I'm afraid the only remedy is to pull them down. I should recommend that either the Sanitary Committee or a sub-committee of some of its members should inspect all the buildings I have referred to with a view to taking active measures with regard to such as they think requires alteration or demolition.

The whole question of the Courts and Alleys is a difficult one to deal with. The houses here are mostly of low rent from 2s. 6d. to 3s. or 4s. a week, and are consequently gladly occupied by a class of tenants who are unable to pay the higher rents of the newer cottages.

## ***Sewerage and Drainage.***

The same difficulties that I mentioned in my 1902 report exist with regard to this question.

One feature of the older sewers, as I have before mentioned, is the scarcity and in many instances total absence of manholes along their course. This, coupled with the fact that many houses possess no inspection chamber and are not cut off from the sewer by any intercepting trap, renders it often impossible to test house drains at all without breaking down and removing one or two pipes. Permission to do this is often refused and consequently nothing can be done without tedious formalities under Section 41 of the Public Health Act. If the Council would sanction the service of a notice to open the drains in any case that may arise provided the Chairmen of the Council and Sanitary Committee approved when the facts of such case were placed before them, it would greatly expedite the discovery and remedying of defects in house drains.

I should not propose this course, but a very large number of defective drains do exist in the district and



if we are to stop the spread of epidemic disease the sooner these are discovered and rectified the better. The drainage of a large proportion of the houses on one side of Fearnley Street were found very defective and after several inspections and reports, notices were served on the owners to relay the drains. Considerable difficulty has occurred in carrying this matter through and up to the end of the year 1903 nothing had been done to remedy the defects.

I have every reason to believe the drainage of one side of Merton Road is no better than Fearnley Street. This matter will come before you at an early date.

With regard to the drainage of Callow Land, I again draw the attention of the Council to the want of fall in the sewers of a portion of this district and remind them that the only remedy for this would be to extend their district to the other side of the St Albans Railway and obtain a delivery point at a lower level. The extension of the St Albans Road Sewer has been completed and the new sewer for Balmoral Road has been laid and satisfactorily connected with the main sewer.

## ***Sewage Disposal.***

The Sewage of the Watford Urban District arrives at the Pumping Station and Sewage Farm at several different levels, and thus it has been found necessary to have resource to ejectors as well as the pumps to assist in lifting it to the highest point in the Sewage Farms.

The levels of the invert of delivery for the different Sewers are as follows :—

High Level Sewer	...	...	205'0
Railway Sewer	...	...	171'75
Old Brick Sewer...	...	...	168'1
Old Bushey Sewer	...	...	168'26
New Bushey Sewer	...	...	162'80



The Water Level in River is 168 feet.

**The High Level Sewer** takes the Sewage from Callow Land and all higher ground to the West, including that from the Harwood Farm Estate. It is delivered at a point near the Gravel Pits.

**The Railway Sewer** takes all the Sewage between the High Level Sewer and the Rickmansworth Railway, and is delivered at the Pumping Station, falling into the Tanks.

The remaining Sewage coming from the district below the Rickmansworth Railway, and from the Rookery and New Bushey District the other side of the Colne is collected and delivered by means of two old Sewers and the new one lately constructed for the purpose of draining the Rookery, and these Sewers are known as

**The Old Brick Sewer,**

**The Old Bushey** or 9in. Sewer, and

**The New Bushey** or 18in. Sewer.

The Sewage thus delivered is lifted on to the Farm by the following methods :—

An ejector station is placed at the point of delivery of the High Level Sewer and another below the ground, where the three last-named Low Level Sewers discharge and the Sewage is driven by compressed air to the delivery culverts at different points on the Farm. The remaining Sewage from the Railway Sewer is received into the Tanks at Pumping Station and pumped to the same destination by the means of Worthington Pumps.

There are 6 points of delivery on the Council's Farms, and the delivery pipes are so arranged that the whole or part of the Sewage can be allowed to flow on the Farm from any one of these points.

The Farms are two in number, Holywell and Cassio Bridge Farms containing 133 and 120 acres respectively. The 133 acres on Holywell are made up as follows:—50 acres low meadows, gravel pits, terraces, farm buildings, etc. ; 17 acres, allotments ; 10, osier beds ; and 56 plough land.

100 acres of the 120 acres on the other Farm are arable land, so that on the two Farms we have about 156 acres available for Sewage disposal.

The method of distributing the Sewage is to have a double plough grip from one manhole outlet as a conducting channel to a certain portion of the Farm that is lying fallow and to let the Sewage be delivered here or about a fortnight or more according to the season of the year.

Another channel is then ploughed in another direction and the Sewage distributed on this new area for a similar period, the old channel being ploughed up.

The soil is of a very gravelly nature, and the sub-soil is chalk ; consequently, the land appears to be able to absorb a large quantity of Sewage without getting water logged. The principal crops grown on the Farm are oats, mangolds, turnips and cabbages, and as a rule the cropped portion averages  $\frac{4}{5}$ ths of the land suitable for Sewage disposal. The cropped portions never receive Sewage while the crops are growing.

The New Farm has been receiving all the Sewage of the Town since December, 1902, none having been delivered on Holywell since that date.

I append a plan showing the Sewage Disposal Works and the Farms, the outfalls and the points on the Farm where the Sewage is delivered. The highest point of delivery on Holywell is 228 feet, and the Sewage is delivered from here to the Cassio Bridge Farm by gravitation.



The Removal of House refuse is done by the Council in all the district with the exception of New Bushey. This latter portion will, I trust, be undertaken by the Council during the coming year.

I am glad to report that the New Destructor is finished, and will be working before the expiration of the first 3 months of 1904.

I had intended reporting fully on the plan and arrangement of the Destructor in this report, but have thought it best to postpone doing so till my next years' report, when I can give more information and an account, I trust, of its complete success.

I must again recommend that all the vans used for the collecting of House refuse be covered.. I have mentioned this in my report for several years, but we still have only 2 covered vans.

## ***The Water Supply.***

The Water Supply continues to be of excellent quality and adequate in quantity.

During the past year No. 3 Well has had considerable alterations and improvements made in it. It has been cleared out and enlarged, and so arranged that the suction pipe may be removed when required for inspection.

A scheme for fresh Well accommodation, a new reservoir, increased pressure, and a softening plant is under consideration by the Water Supply Committee and the Council.

I trust if the scheme is not accepted in its entirety, the softening plant will not be the portion held over for the future.

## ***Common Lodging House.***

Two of the unregistered **Common Lodging Houses** mentioned in my last year's report have had notices to

register and one has had notice to make various alterations before registration takes place. "The Angel" appears to come under the rules of Houses let in Lodgings and will be registered as such.

Day's Lodging House continues to be kept in a satisfactory manner.

### ***Slaughter Houses.***

The **Slaughter Houses** are regularly visited, and are found to be kept in fairly satisfactory condition.

It would greatly facilitate the inspection of meat if a public abattoir were substituted for all the private slaughter houses. Under the present arrangement the Inspector makes frequent visits, but it is of course impossible for him to see but a very small proportion of the meat killed at the time of its slaughter, when alone he can form an opinion as to its fitness for food.

### ***Cowsheds.***

The question of **Cowsheds** will require your consideration during the coming year ; the constitution of many of them is faulty and requires alteration.

The **Milkshops** appear to be kept clean and in a good Sanitary condition.

### ***Bake-Houses.***

The matter of Underground Bake-houses has received a good deal of attention from the Sanitary Committee during the past year.

In July I brought the matter forward, as by the new regulations that were to come in force on January 1st, 1904, all Underground Bake-houses must have a certificate of fitness from the Urban District Council if they were to be used after the date in question.

In all there were 14 underground bake-houses and these were first visited by myself and the Sanitary



Inspector and subsequently by a sub-committee of the Sanitary Committee.

Each occupier was served with a notice stating the defects that required remedying and I am glad to report as the net result that the sanitary condition of these places has been greatly improved. Out of the 14 in existence when the matter was first considered, 5 are no longer used, plans for satisfactory above ground Bake-houses having been submitted to your Council in their place. Of the remaining nine, I may mention the great improvement effected in Mr. Phillips' Bakehouse, High Street. This was one of the worst from the point of air space, light, and ventilation and now I am pleased to report the necessary alterations have converted it into one of the most satisfactory. In another High Street Bake-house, that of Mr. Wilkins, a most satisfactory scheme for ventilation and lighting has been adopted and other improvements have been carried out to improve light and ventilation in the remaining 7.

The two Bakehouses of Mr. Knight in Langley and Vicarage Roads have had considerable improvements effected in the same directions.

## ***Factory and Workshops.***

Over 300 visits have been paid by myself and the Sanitary Inspector during the year to the Factories and Workshops of the district. As a rule we have found the accommodation for Workshops adequate and the sanitary conveniences sufficient. Where the latter were defective, notices have been served to supply the deficiency.

Most of the rooms where work is carried on have been measured up and in no case have we found any serious overcrowding.

With regard to means of exit in case of fire in the Factories, I called to my assistance Capt. Thorpe and Superintendent Butler. I considered that their opinion



of what was necessary would be most valuable and they were good enough to visit the Factories and supplied me with a list of what they thought should be done.

I have issued notices in accordance with these recommendations and trust that in my next year's report I may be able to inform you that all the necessary alterations have been satisfactorily carried out.

I reported to you last year that the Factory and Workshops Act would almost double the Work of the Sanitary Department and I can now from practical experience again emphasise this statement.

**Nuisances.** A large number of Nuisances have been found during the year, and in the majority of cases they have been abated without legal proceedings.

The Drainage of 1 to 47 Fearnley Street has not yet been reconstructed and the Drainage of Watford Heath has not yet been executed.

The Urinals in connection with some of the Public houses have been a cause of complaint at various times.

They are all regularly visited twice a week and flushed out when found necessary.

During the year considerable correspondence and a number of interviews with the owners and occupiers of the Queen's Arms, Queen Street, and the Queen's Arms, Callow Land, took place with a view to the erection of new urinals of a more improved type.

We have obtained no satisfactory result in the first instance and in the case of the Queen's Arms, Callow Land, Messrs Sedgwick and Co. have made an offer which is still under consideration and which in my opinion should be accepted.

Instead of erecting more public Urinals, I think it would be more to the interests of the Council to bear a portion of the expenses incurred in improving the sanitary condition of the Urinals already in existence, especially those in connection with Public Houses where the Public have an entrance from the street.



## ***Vital Statistics.***

The increase of population during 1903 does not appear to have been so great as during previous years.

308 New Houses and 22 Workshops have been built, 40 alterations and additions have been made, 6 Stables, 4 Bakehouses, 2 Churches and 1 School have been erected, 2 New Roads made and the extension of the St. Albans Road Sewer carried out.

To set off against this about 300 houses remain empty at the end of 1903.

Supposing, however, that the number of people leaving the Town equalises the number of new comers, the births still exceed the deaths by 533 so that we may fairly conclude that about 600 have been added to the population during the past year.

**The Total Births** were 909 against 823 in 1902, giving a birth rate of 28·7 which compares with 27·5 in the previous twelve months.

The births were distributed in the Wards as follows :—

Central Ward	... 508
St. Andrew's	... 60
Callow Land	... 268
New Bushey	... 73
	— —
	909

The number of deaths registered in the District was 376 and the gross death rate 11·8 comparing with 11·4 during 1902.

As the number of non-residents dying in the district was only one more than residents registered as dying outside the district, the nett death rate works out at the same figure as the gross 11·8 and this compares with 11·2 for the preceeding year.

During 1903 the following diseases show an increase in the number of deaths over the year 1902 : Measles 12 ; Phthisis 15 ; Cancer 6 ; Heart Disease 18.

Decreases are shown in the following : Epidemic Influenza 6 ; Bronchitis 7 ; Pneumonia 5.

TABLE I.—VITAL STATISTICS OF WHOLE DISTRICT DURING 1903  
AND PREVIOUS YEARS. WATFORD URBAN DISTRICT.

YEAR.	Population estimated to middle of each Year.	BIRTHS.		TOTAL DEATHS REGIS- TERED IN THE DISTRICT.				Total deaths in public in- stitutions in the District.	Deaths of non-residents registered in public insti- tutions in the District.	Deaths of residents regis- tered in public institu- tions beyond the District.	Nett Deaths at all Ages belonging to the District.	
		Number.	Rate.*	Under 1 Year of age.		At all Ages.					Number.	Rate.*
				Number.	Rate per 1000 Births registered.	Number.	Rate.*					
1	2	3	4	5	6	7	8	9	10	11	12	13
1893	20500	580	28.78	63	108.6	284	13.85	51	19	"	265	12.9
1894	21500	610	28.37	60	98.3	248	11.56	41	23	"	225	10.4
1895	23200	724	31.20	103	142.2	400	17.20	61	33	"	367	15.8
1896	24000	691	28.58	76	100.0	305	12.70	37	20	"	285	11.9
1897	25300	679	26.83	70	103.1	270	10.67	36	12	"	258	10.2
1898	26500	754	28.45	109	144.7	318	12.00	45	7	"	311	11.7
1899	27500	760	27.63	108	142.1	384	13.96	65	29	"	355	12.9
1900	28500	830	29.12	118	142.1	428	15.00	52	20	"	408	14.3
1901	29527	944	31.90	100	105.9	372	12.60	63	17	8	363	12.2
1902	31000	823	26.5	84	102	354	11.4	54	19	13	348	11.2
Averages for years 1893-1902	25752	739	28.7	89	120	336	13.7	51	20	10	318	12.3
1903	31600	909	28.7	83	91	376	11.8	64	19	18	375	11.8

\*Rates in Columns 4, 8, and 13 calculated per 1000 of estimated population.

Area of District in acres (exclusive of area covered by water.	{ 1,367	Total population at all ages, 29,327	{ At Census of 1901.
Number of inhabited houses, 6,196			
Average number of persons per house, 4.73			



TABLE II.—COMPARATIVE TABLE OF BIRTHS AND DEATHS FOR LAST 10 YEARS IN  
DIFFERENT PORTIONS OF DISTRICT. WATFORD URBAN DISTRICT.

NAMES OF LOCALITIES	1. WHOLE DISTRICT.				2. CENTRAL WARD.				3. ST. ANDREW'S W.				4. CALLOW LAND W.				5. NEW BUSHEY W.			
	Population esti- mated to middle of each year.	Births registered.	Deaths at all Ages.	Deaths under 1 Year.	Population esti- mated to middle of each year.	Births registered.	Deaths at all Ages.	Deaths under 1 Year.	Population esti- mated to middle of each year.	Births registered.	Deaths at all Ages.	Deaths under 1 Year.	Population esti- mated to middle of each year.	Births registered.	Deaths at all Ages.	Deaths under 1 Year.	Population esti- mated to middle of each year.	Births registered.	Deaths at all Ages.	Deaths under 1 Year.
1893	20500	580	265	63	Not known	452	198	50	Not known	96	52	5	Not known	127	35	11	Not known	54	23	4
1894	21500	610	225	60	Not known	460	169	49	Not known	80	42	6	Not known	137	22	8	Not known	57	33	6
1895	23200	724	367	103	Not known	522	197	84	Not known	4100	42	6	Not known	168	40	13	Not known	82	41	10
1896	24000	691	285	76	Not known	518	218	61	Not known	4100	54	1	Not known	182	69	35	Not known	103	35	13
1897	25300	679	258	70	Not known	422	239	69	Not known	4100	54	1	Not known	217	68	29	Not known	79	43	12
1898	26500	754	311	109	Not known	494	223	59	Not known	4100	54	1	Not known	276	63	28	Not known	64	36	12
1899	27500	760	355	107	Not known	428	184	50	Not known	4100	54	1	Not known	267	79	29	Not known	60	32	9
1900	28500	830	408	118	Not known	494	223	59	Not known	4100	54	1	Not known	276	63	28	Not known	95	53	15
1901	29527	944	363	100	Not known	428	184	50	Not known	4100	54	1	Not known	276	63	28	Not known	94	53	15
1902	31000	823	348	84	Not known	428	184	50	Not known	4100	54	1	Not known	267	79	29	Not known	64	31	4
Averages of Years 1893 to 1902	25752	739	318	89	—	471	204	60	—	80	49	4	—	196	54	22	—	75	38	10
1903	31600	909	375	83	16744	508	230	47	4131	60	32	5	7553	268	71	24	3172	73	42	7

TABLE III.—CASES OF INFECTIOUS DISEASE NOTIFIED DURING THE YEAR 1903.  
WATFORD URBAN DISTRICT.

NOTIFIABLE DISEASE.	CASES NOTIFIED IN WHOLE DISTRICT.						TOTAL CASES NOTIFIED IN EACH LOCALITY.				NO. OF CASES REMOVED TO HOSPITAL FROM EACH LOCALITY.				
	At Ages—Years.						1	2	3	4	1	2	3	4	5
	Under 1.	1 to 5.	5 to 15.	15 to 25.	25 to 65.	65 & upwards									
Small-pox	7	2	29	1	4	2	7	48	2	12	7	45	1	8	102
Cholera	114	2	62	2	12	9	52	48	2	12	48	45	1	8	102
Diphtheria	2	2	2	2	3	10	9	4	3	1	23	58	18	21	130
Membranous croup	17	2	2	2	11	2	42	69	21	23	33	58	18	21	130
Erysipelas	155	42	100	100	11	2	42	69	21	23	33	58	18	21	130
Scarlet fever	4	1	1	1	1	2	2	2	1	1	1	1	1	1	1
Typhus fever	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Enteric fever	4	1	1	1	1	2	2	2	1	1	1	1	1	1	1
Relapsing fever	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Continued fever	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Puerperal fever	103	5	43	55	55	14	58	24	7	14	14	14	14	14	14
Plague	103	5	43	55	55	14	58	24	7	14	14	14	14	14	14
Chicken Pox	103	5	43	55	55	14	58	24	7	14	14	14	14	14	14
Totals	403	9	114	223	31	26	168	150	34	51	51	105	19	29	241



TABLE IV.—CAUSES OF, AND AGES AT, DEATH DURING  
YEAR 1903. WATFORD URBAN DISTRICT.

CAUSES OF DEATH.				DEATHS IN WHOLE DISTRICT AT SUBJOINED AGES.						DEATHS IN LOCALITIES (AT ALLAGES)				DEATHS IN PUBLIC INSTITUTIONS.
				All Ages.	Under 1 year.	1 and under 5.	5 and under 15.	15 and under 25.	25 and under 65.	65 and upwards.	Central Ward.	Callow Land Ward.	St. Andrew's Ward.	
Small Pox ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Measles ...	...	...	...	26	7	15	4	...	...	19	3	...	4	1
Scarlet Fever ...	...	...	...	2	...	1	1	...	...	1	1	...	...	...
Whooping Cough ...	...	...	...	2	1	1	...	...	...	...	2	...	...	...
Diphtheria and Membranous Croup	...	...	...	10	...	4	6	...	...	5	4	...	1	...
Croup ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fever { Typhus ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Enteric ...	...	...	...	1	...	...	...	1	...	...	...	1	...	...
Other continued	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Epidemic Influenza ...	...	...	...	3	...	...	...	3	...	2	1	...	...	...
Cholera ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Plague ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diarrhoea ...	...	...	...	12	11	1	...	...	...	5	6	1	...	...
Enteritis ...	...	...	...	4	3	1	...	...	...	3	...	...	1	...
Puerperal Fever ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Erysipelas ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Septic Diseases ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Phthisis ...	...	...	...	34	...	...	2	10	21	121	4	4	5	6
Other Tubercular Diseases	...	...	...	7	1	1	2	2	1	6	...	...	1	2
Cancer, Malignant Disease	...	...	...	23	...	...	...	1	13	9	13	3	3	4
Bronchitis ...	...	...	...	38	12	8	...	...	6	12	17	9	5	7
Pneumonia ..	...	...	...	22	2	7	...	1	10	2	15	4	2	1
Pleurisy ...	...	...	...	2	...	...	...	...	1	1	1	...	...	1
Other Diseases of Respiratory Organs ...	...	...	...	2	...	...	...	1	1	1	1	...	...	...
Alcoholism	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cirrhosis of Liver }	...	...	...	4	...	...	...	...	4	...	2	...	1	1
Venereal Diseases	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Premature Birth ...	...	...	...	8	8	...	...	...	...	4	2	1	1	...
Diseases and Accidents of Parturition ...	...	...	...	3	1	...	...	2	...	1	1	1	...	...
Heart Disease ...	...	...	...	42	1	...	3	5	16	17	29	3	2	8
Accidents ...	...	...	...	9	2	1	...	...	6	...	6	1	2	...
Suicides ...	...	...	...	2	...	...	...	...	2	...	1	1	...	...
All other Causes	...	...	...	119	34	7	5	2	29	42	78	24	10	7
All Causes	...	...	...	375	83	47	23	23	114	85	230	71	32	42

## ***Zymotic Diseases.***

### DEATHS.

Small Pox	...	...	...	0
Measles	...	...	...	26
Scarlet Fever	...	...	...	2
Diphtheria	}	...	...	10
Membranous Croup				
Whooping Cough	...	...	...	2
Fevers	Typhus	...	...	
	Enteric	...	...	1
	Others	...	...	
Diarrhoea	...	...	...	12
				53

The Zymotic death rate=1.6 against 1.1. Four hundred and three cases of notifiable diseases occurred in 1903 compared with five hundred and forty-one the year before.

Small pox	...	...	...	7
Diphtheria	...	...	...	114
Membranous Croup	...	...	...	2
Erysipelas	...	...	...	17
Scarlet Fever	...	...	...	155
Enteric Fever	...	...	...	4
Puerperal Fever	...	...	...	1
Chicken Pox	...	...	...	103
				403

This is a reduction of 138 on the year 1902 and is shown in every disease except Diphtheria, where an increase of 19 appears compared with the year before.



TABLE V.—SHOWING No. OF NOTIFICATIONS AND DISEASE  
NOTIFIED FROM 1893 TO 1903

DISEASE.	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903
Small Pox ...	10	1	1	...	...	...	...	...	...	6	7
Scarlatina ...	364	60	66	44	46	33	190	150	130	264	155
Diphtheria ...	8	7	23	28	41	25	86	106	80	95	114
Membranous Group Fever—	5	2	2	...	1	1	1	2	1	3	2
Enteric or Typhoid	2	7	3	9	6	14	17	20	13	5	4
Continued ...	...	...	1	...	1	...	...	...	...	...	...
Puerperal ...	1	...	1	...	...	1	...	3	1	1	1
Erysipelas ...	26	6	13	20	17	14	30	15	19	28	17
Totals ...	416	83	110	101	112	88	324	296	244	402	300
Estimated Population	20,500	21,500	23,200	24,000	25,300	26,500	25,700	28,500	29,527	31,000	31,600

## ***Small Pox.***

Of the 7 cases which arose of this disease, 6 were in one family ; the remaining one being a tramp admitted to the Watford Workhouse. The first case appeared to have been contracted away, probably at Camden, where the patient was employed. As he was ill for several days before a medical man was called in and all the members of the somewhat numerous family with one exception refused vaccination, 5 other cases arose in the house.

Had the whole household at once been vaccinated on the removal of the first case to the Hospital, I feel quite sure there would have been no more cases of Small Pox occur and the Town would have been saved considerable expense.

The case at the Workhouse was that of a man who had been working at Tuxford and who frequented a common lodging house where a case of small pox had arisen.

On the case being notified he was at once removed to Holywell Hospital and thorough disinfection carried out. No other case occurred.

## ***Diarrhœa.***

The number of deaths from Diarrhœa were 12, comparing with 5 the year before. Eleven of these were under 1 year.

## ***Diphtheria.***

The year 1903 commenced badly as far as this disease was concerned. Although the number of cases decreased at the end of the previous year as soon as the



Callow Land schools were closed, there were still a number of cases notified, some of these being of a severe type. On January 8th, 1903, I reported as follows :—

# WATFORD URBAN DISTRICT COUNCIL.

14, HIGH STREET,

*January, 8th, 1903.*

## 2nd Report on Diphtheria Cases in Callow Land.

Since last report there have been 16 notifications of Diphtheria, as under :—

Dec. 13. Margaret Bullock, 5 months, Ferndale, Sussex Road.

This was a very mild case.

„ 15. Alfred Warren, 8 years, 193, St. Albans Road.

This boy attended Leavesden Road School.

„ 16. Alice Lawrence, 3 years, 26, Cecil Street.

„ 16. Walter Lawrence, 8 „ „

These two cases attended the Alexandra Schools, and were probably due to another child in family who had a nasal discharge of some standing.

„ 23. Arthur Johnson, 3 years, 37, Regent Street.

This boy did not go to school, but one of his sisters had been unwell sometime before, and was probably a mild unrecognised case of Diphtheria.

„ 24. Florence Abbott, 18 years, 87, Grover Road.

„ 26. Edith Field, 5 years, 59, St Mary's Road.

Neither of these cases lived in Callow Land, and they were both mild cases.

Dec. 28. Gladys Sampson, 5 years, Bradshaw Road.

This child was certified as having died of Membranous Croup, but as the servant developed Diphtheria on January 30th, it was probably Diphtheria.

„ 31. Beatrice Ellis, 11 years, 42, Yarmouth Road.

This girl had had nasal discharge for some time previous to closing the schools.

Jan. 2. Sydney Nicholas, 4 years, 30, Meeting Alley.  
Harry Nicholas, 9 years, „

These cases proved to be Scarlet Fever on admission to Hospital.

„ 3. Bessie Skinner, 18 years, Bradshaw Road.

This girl was servant at Sampson's *vide* Dec 28th.

„ 5. Annie Jones, 18 years, 50, Yarmouth Road.

This girl did not go to school.

„ 6. Harold Rowe, 3 years, Bradshaw Road.

„ 6. Dorothy Rowe, 8 years, „

These children went to London, and may have contracted the disease there.

“ 6. Annie Roadnight, 13 years, 37, Copsewood Street.

This girl did not go to school; others went to Leavesden Road Schools.

An analysis of the above cases shows as follows :—

Four of the cases did not occur in Callow Land; two of them were not Diphtheria.

Four cases did not go to school.

One case went to Leavesden Road School.



Two cases were due to Nasal Diphtheria of old standing.

One due to mild unrecognised case in same family.

One had not been to school for a week before closing.

One had nasal discharge for fortnight before Diphtheria.

Two went to London, and possibly contracted it from driver of ambulance whom they visited.

There was thus only two cases that cannot be traced to infection from cases probably existing previous to closing the schools, viz., the two Rows, of Bradshaw Road, and considering the number of cases that have occurred in this small area (Cromer Road, Yarmouth Road, and Bradshaw Road), the question arises whether these may not have arisen from sewer emanations from the manhole at the junction of Bradshaw and Cromer Roads. It was found that the sewer at this point did not properly empty itself, an accumulation of sewage, some inches in depth, always being found in this particular manhole.

The cases of Ellis and Lawrence point to the length of time that infection may remain in the cases of Nasal Diphtheria, and it is quite possible that there are still a number of children with infection about them who on returning to school may start other cases in a short time.

With regard to the opening of the Alexandra Schools, I should recommend that the School Board give notice that they will be open on Monday next for the purpose of inspection of the children by the Medical Officer of Health, and that after such inspection the Board will be ruled by his report whether they keep the School open or defer such opening for a further period,

I should recommend also that all children who do not attend at such time should obtain a certificate from either the M.O.H. or M.O. of the School Board before they are allowed back at School.

All the Callow Land Schools have been thoroughly disinfected with formalin and cleansed. The books at the Alexandra School were found to have been all placed together and it was impossible to tell those used by infected children from the others. Considering the impossibility of properly disinfecting these and the importance of not letting infected books be used on the re-assembling of the Schools, I had them all destroyed.

The Leavesden Road Schools re-commenced on January 5th, 1903.

ARTHUR KING, M.O.H.

During the month following, although there were still cases in Callow Land, we had ten cases from other parts of the district, and on February 12th my report to the Sanitary Committee was the following :—

WATFORD URBAN DISTRICT COUNCIL.

14, High Street,

WATFORD, HERTS.

*February 12th, 1903.*

### **3rd Report on Diphtheria Cases in Callow Land.**

Since I last reported there have been 26 cases of Diphtheria notified, but out of this number nine cases came from the central ward, only 17 being in Callow Land.

Of these 17 cases only ten were of a severe type. These occurred in Shakespeare Street (4), Cecil Street (2), Bradshaw Road (1), Copsewood Street (1), Regent Street (2). The Shakespeare Street cases were all in



one family, and attended Leavesden Road Schools ; the Bradshaw Road case attended the Alexandra Schools, but they had not been opened when she fell ill ; one Cecil Street case went to Leavesden Road and the other to Alexandra Schools ; and the Copsewood Street case went to Leavesden Road Boys.

The Regent Street cases were adults, and occurred in a house where there had been a case before Christmas. It will thus be seen that since the last meeting we have had only two cases that attended the Alexandra Schools, one before and one after the re-opening on January 26th ; (on my visit on January 12th I extended the closing order for another fortnight owing to the presence of a large number of possible nasal cases.) Considering the number of notifications before the Alexandra Schools were closed the above figures are very satisfactory.

I have visited the Schools since they re-opened, and requested the head teachers to exclude any child sitting next to one that is known to have developed diphtheria or scarlet fever for a period of a fortnight, and propose sending to the School Board a memorandum with regard to the early detection of infectious disease, which I think they might circulate with advantage amongst their head teachers.

It is as follows :—

#### TO THE WATFORD SCHOOL BOARD.

Gentlemen,

The attention of School Attendance Officers and of School Teachers should, in order to aid in stopping the spread of infectious disease, be drawn to the following conditions :

Frequently they themselves will obtain the earliest information of the occurrence of infectious disease

among scholars, and it is most desirable that such officer or teacher should, without delay, communicate the facts to the Medical Officer of Health. Absence of any child from school on the plea that it is suffering from one of the infectious diseases, and absence of several children of one family from School at the same time, no matter what name be given to the complaint that keeps them at home, should be reported to the Health Officer.

Furthermore, schoolmasters may properly be asked to take note, especially when an epidemic threatens or is present, of symptoms occurring in any of their scholars that may indicate the commencement of disease febrile in nature. Besides heat of skin, such symptoms are shivering, headache and languor, especially if commencing suddenly, vomiting, rashes on the skin and sore throat.

When Scarlet Fever or Diphtheria is about every trace of sore throat should be looked upon as suspicious.

In any case where such symptoms are observed the safest course will be to exclude the child from school until assurance can be had from the Medical Officer of Health or other medical man that it may attend school without harm to itself or danger to other scholars.

I remain, Gentlemen,

Yours faithfully,

ARTHUR KING,

*Medical Officer of Health.*

Up to the end of the first quarter of the year, Diphtheria continued to show a larger number of notifications than usual, the number of cases for the whole quarter amounting to 63.



Cases still occurred in Callow Land, but a certain number were connected with the Beechen Grove Infant School, a definite small epidemic occurring from one or two unrecognised cases that attended this school. Prompt inspection of the children and exclusion of suspicious cases soon stopped the spread from this centre, but the cases while they lasted were of an exceptionally virulent type, one or two deaths occurring amongst a comparatively small number of patients. During the second quarter of the year the cases decreased from 63 to 21, and during the third quarter 26 cases were notified. The cases during the Michaelmas quarter consisted principally of isolated ones at different points of the whole district, and did not point to infection from any particular centre.

By the end of September the new Sewer was finished in the St. Alban's Road, and the Balmoral Road Sewer was properly connected. Whether this improved state of the Sewerage is accountable for a decrease in the number of Diphtheria notifications I should not like to say dogmatically, but the fact remains that during the last quarter of 1903, we have had but 6 cases of Diphtheria in the whole district. In all we had 114 cases during the year, 54·3 per cent. occurred in the first Quarter; 18·1 per cent. in the second; 22·4 per cent. in the third; and 5·1 per cent. in the last.

As a conclusion I may state that, after considering all the possible causes of the increase of Diphtheria during the past year (an increase that has been in evidence for the last 5 years), I am of opinion that sewer emanations are mainly the cause of such increase.

Now the extension of the St. Albans Road Sewer has been completed, I take this opportunity of again drawing the Council's attention to the insufficient fall in a number of the Sewers in Callow Land, and the complete absence of manholes in many of the older streets in Watford.



We are comparatively free from Diphtheria now, but unless the Sewers are constantly inspected (a thing that is impossible where there are no manholes) and want of proper fall rectified where it exists we may look forward to other bad cases, which will, if occurring in Board Schools, rapidly give rise to others and produce other epidemics, like the one which appeared at the end of 1902 and beginning of 1903.

## ***Scarlet Fever.***

The prevalence of this disease during 1903 has been the exact reverse of that of Diphtheria.

We commenced the year with but 28 cases in the first 3 months, in the next Quarter we had but 21; during the Michaelmas Quarter the number rose to 35; and during the last 3 months we had 71 notifications.

This sudden increase was due to unrecognised or concealed cases that occurred during the Summer holidays, being allowed to attend school when disquarming.

I reported one of the cases to the Council as being one of wilful concealment, but it was not considered strong enough to take before the magistrates.

With regard to the origin of Scarlet Fever I am unable to see any direct connection between its prevalence and insanitary conditions; although insanitary surroundings probably favour its continuance. In Watford the large number of susceptible individuals and their congregation at Board and Sunday Schools appears to offer the best explanation of the continuance of such cases, in considerable numbers, in the district. The remedy most likely to be effective is the early notifications by the school teachers of suspicious cases to the Medical Officer of Health. My suggestion that the teachers should be supplied with post cards for this purpose has been adopted, and, I trust, in the year 1904 we shall see a



diminution in the number of Scarlet Fever notifications as the result. During 1903 there were 155 cases against 264 the year before; of these 18·0 per cent. occurred in the first quarter, 13·5 per cent. in the second, 22·5 per cent. in the third, and 46·4 per cent. in the last.

## ***Enteric Fever.***

Four cases were notified of this disease and one death occurred.]

## ***Measles.***

In 1902 I drew attention to the much greater fatality of Measles than Scarlet Fever, and I regret to say that in 1903 the deaths mounted up to 26 against 14 in 1902.

These deaths were all the more regrettable, as, I think, the number might be reduced, if greater care were taken by the parents in avoiding exposure to cold after an attack.

Of the 26 cases 18 are returned as suffering from Pneumonia, and 4 with Bronchitis.

The character of the dwelling-house also appears to bear upon the question of mortality, as out of the 26 deaths 19 took place in the Central Ward, where all the old property is situated; only 3 in Callow Land, 4 in Bushey, and none in St. Andrew's.

## ***Precautions taken to Prevent the Spread of Infectious Disease.***

The first intimation of a case of Infectious Disease generally goes to the Hospital, and the patient, in some

instances, may have been in the Hospital 2 or 3 days before the notification is received at the Council Offices.

Accordingly the Sanitary Inspector rings up the Hospital every morning to know if any case has been admitted for which no notification has arrived.

Immediately the information is obtained by one method or another the house is visited, and if the case be not removed to the Isolation Hospital, steps are at once taken to ensure proper isolation at home.

Intimation is given to the Head Master of the schools attended by members of the infected household, with the view of excluding children until there is reason to believe they are no longer in an infectious condition

On the recovery of the patient, or on the removal to the Hospital, the rooms are disinfected by means of formaldehyde — a gaseous disinfectant produced by heating paraform tablets in a special lamp—and by the formalin spray. This method of disinfection is vastly superior to that of burning sulphur, which was formerly employed. The walls are stripped, all woodwork cleansed with carbolic water, and the ceilings lime-washed. Where permission is obtained, which is usually the case, the infected bedding is sent to the Hospital for disinfection with steam.

All library books found on the premises are either sent to the Fever Hospital or are burnt.

The disinfection of the house is personally conducted by the Sanitary Inspector or his assistant.



## ***Isolation Hospital.***

This Hospital used for cases, not only from Watford Urban, but also from Rickmansworth and the Rural Districts of the Watford Union area is at the present situated in the Parish of Watford Rural. It will, however, after March 25th, 1904, come in the Watford Urban District.

During the year, 1903, we contributed 241 cases to the Hospital comparing with 310 the previous year. This gives a percentage of admissions of 85 per cent. of cases suitable for Hospital, being 2 per cent. better than the year before.

I am glad to report that the enlargement of the Hospital has been commenced and made considerable progress, and I look forward to reporting its completion in the next yearly Report.

## **Place for Performance of Post Mortem Examinations.**

This matter is well under way and will be completed, I trust, during the early part of the year 1904.

Appended is the summary of action taken by the Sanitary Inspector for the year 1903.

During that year we lost by resignation the services of Mr. Baker, who had been with this Council for about 10 years.

The new appointment fell to Mr. S. Jump, who was then holding a similar position in Sheffield.

I am glad to record that from experience of his work since appointment, I can congratulate the Council in having secured the service of an able and efficient Sanitary Officer.

I have the honour to be,

Gentlemen,

Your obedient servant,

ARTHUR KING.



## SUMMARY OF ACTION TAKEN BY THE SANITARY INSPECTOR DURING THE YEAR 1903.

Total communications received relating to the Department	...	200
Orders issued for sanitary amendment of premises	... ..	252
Defective drains opened up and re-laid	... ..	49
Defective soil pipes and ventilating shafts carried up efficiently	...	8
Wastes from baths, lavatory fittings, and sinks properly trapped	...	19
Defective closets fitted with new pans and traps and efficiently flushed	... ..	39
Drains repaired, cleansed and trapped	... ..	48
New water closets constructed to replace dilapidated buildings	...	6
Houses and premises repaired, cleansed, and purified	... ..	120
Infected houses visited and particulars taken of cases	... ..	300
Houses fumigated, paper taken off walls, and either re-papered or coloured	... ..	274
Schools and premises disinfected	... Numerous occasions.	
Accumulations of manure and organic matter removed	... ..	47
Manure receptacles constructed	... ..	4
Yards re-paved	... ..	21
Overcrowdings abated	... ..	4
Animals removed, being improperly kept (fowl runs, &c.)	...	15
Common lodging houses	... Regularly inspected.	
Bakehouses	... .. do.	
Licensed slaughterhouses	... .. do.	
Dairies, cowsheds, and milkshops	... .. do.	
Shop blinds, &c., altered and amended	... .. Various.	
Scavenging of the district	... .. Superintended.	
Carcases of dead dogs, cats, &c., taken from river and properly buried	... .. Numerous.	
Schools visited and children examined	... Numerous visits.	
Children found peeling after scarlet fever at different periods	...	12
Domestic Workshops visited	... ..	364
Notices have issued to School Teachers in all cases respecting infected households	... ..	
Houses numbered in various new streets	... ..	
Notices served Trimming of Trees	... ..	112

# RAINFALL IN 1903, AT FROGMORE, WATFORD, IN THE COUNTY OF HERTFORD.

Rain Gauge.—Diameter of funnel, 5 inches ; height of top :—Above Ground, 1 foot ; above Sea Level, 182 feet.

The vertical fluctuation of subsoil water was 6·3 feet, as compared with last year's 1·3 feet. Average for 10 years, 1894—1903, 3·77 feet.

MONTH.	RAINFALL.			NUMBER OF DAYS ON WHICH ·01 OR MORE FELL	AVERAGE HEIGHT OF SURFACE OF SUBSOIL WATER ABOVE MEAN SEA LEVEL.†
	TOTAL DEPTH.	GREATEST FALL IN 24 HOURS.			
	Inches.	Depth.	Date.		Feet.
January ...	2.67	·74	4th	19	190·98
February ...	.90	·20	25th	9	191·58
March .....	3.51	·51	6th	20	191·98
April.....	1.91	.40	28th	10	192·40
May .....	2.87	·67	3rd	18	192·70
June .....	6.03	1·99	14th	10	193·60
July .....	3.65	1·05	23rd	14	194·60
August .....	3.57	·81	10th	17	193·82
September	2.42	·59	4th	13	193·00
October.....	8.02	1 02	11th	28	193·63
November	1.65	·87	27th	10	196·44
December ...	2.35	·51	10th	13	196·35
Total .....	39.55			181	

†As measured at "Ashlands," by Professor Attfield, F.R.S. The floor of the pumphouse is 267 feet above mean sea level. The well in which these observations were taken is 84 feet deep. The heights were taken weekly. The highest reading observed was on November 16th, 196·8 feet ; the lowest on January 5th, 190·5 feet. More rain has this year penetrated to the stores below than for 21 years, the observations being commenced in 1883.



